SERENA®

DIMENSIONS® RM 11.2.4

Installation Guide

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Part number: MA-RMINST-010

Publication date: June, 2012

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Preface

Objective

The purpose of this manual is to describe how to install Serena® Dimensions® RM, a comprehensive requirements management application that lets development teams capture, engineer, and manage requirements through the entire product life cycle.

Edition Status

The information in this guide applies to *Release 11.2.4 of Serena®* Dimensions® RM. This edition supersedes earlier editions of this manual.

Audience

This manual is primarily intended for system administrators who are responsible for installing Dimensions RM. It presumes that you have knowledge of the operating systems to which you are installing.

E-Learning Tutorials

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

http://courseware.serena.com/

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.

Chapter 1

Before Installing

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Introduction

Serena® Dimensions® RM is a comprehensive requirements management application that lets development teams capture, engineer, and manage requirements through the entire product life cycle.

This guide provides instructions for licensing Dimensions RM, installing and configuring your RDBMS and Administrator Oracle client (where necessary), installing Dimensions RM, and upgrading from previous versions of Dimensions RM, your RDBMS, and Serena License Manager (SLM).

IMPORTANT! *(continued on next page)*

The instructions in this guide are principally for a single-server installations of the Serena Dimensions RM product comprising:

- One of (see page 17 for details):
  - A 32-bit (Oracle 10g or Oracle 11gR2) or 64-bit (Oracle 11gR2) Serena-Supplied Runtime RDBMS.
  - Your own Oracle 10g RDBMS or 11gR1 RDBMS. (*Note, Oracle 11gR1 is not supported on Windows Server 2008 R2*).
  - Your own Oracle 11gR2 RDBMS.

  For the Serena-Supplied Runtime RDBMS, the related *Installing the Serena-Supplied Runtime* guide also describes how to install a Microsoft loopback connector if you are using Dynamic Host Configuration Protocol (DHCP) network addressing.
- A pre-installed Serena License Manager (SLM). The installation instructions for this product are provided in the related *Installing the Serena License Manager* guide.
- Pre-installed Microsoft Office.
- A Dimensions RM server, providing the following components:
  - Web Server.
  - SyncEngine.
  - ALF Emitter.
  - RM Mail Service.

IMPORTANT! *(continued)*

- RM Web Service.
- RM Admin clients.

Other installation procedures are also discussed or mapped out in this guide, for example:

- Configurations in which the Serena-Supplied Runtime RDBMS or your own Oracle RDBMS is located on a remote network node.
- Configurations in which an Administrator Oracle client is required.
- The Upgrading an existing Dimensions RM server and associated RDBMS (where appropriate)

However, for these, more complex, installations, you may also want to contact Serena Support for additional help.

System Requirements

IMPORTANT! For exact, detailed, and late-breaking information on RDBMS platforms, chip architectures, and operating-systems support referred to in the following table, see:

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

  http://support.serena.com/Roadmap/Product.aspx?sel=RTM_11.2.4

The above sources also contain details on which releases of Serena and third-party software, such as IDEs, are supported by Dimensions RM.

The following table lists the minimum requirements for Dimensions RM:

Component	Requirement
Server Operating Systems	*See the Serena public Dimensions RM Supported Platforms Web site and readme for further details:* ■ Windows XP Professional (SP3) ■ Windows 7 (32-bit & 64-bit) ■ Windows Server 2003: • R2 (32-bit) • Enterprise Edition SP2 (32-bit) • Enterprise Edition R1 & R2 (32-bit & 64-bit) ■ Windows Server 2008: • Enterprise Edition (32-bit & 64-bit) • Enterprise Edition R1 (32-bit & 64-bit) • Enterprise Edition R2 (64-bit)
Client Operating Systems	*See the Serena public Dimensions RM Supported Platforms Web site and readme for further details:* ■ Windows XP Professional (SP3) ■ Windows Vista (32-bit & 64-bit) ■ Windows 7 (32-bit & 64-bit) ■ Windows Server 2003: • R2 (32-bit) • Enterprise Edition SP2 (32-bit) • Enterprise Edition R1 & R2 (32-bit & 64-bit) ■ Windows Server 2008: • Enterprise Edition (32-bit & 64-bit) • Enterprise Edition R1 (32-bit & 64-bit) • Enterprise Edition R2 (64-bit)

Component	Requirement
RDBMS	*See the Serena public Dimensions RM Supported Platforms Web site and readme for further details:* ■ Serena-Supplied Runtime RDBMS (32-bit Windows and 32-bit UNIX versions based on Oracle 10g). See also *Installing Serena-Suppled Runtime RDBMS* for instructions on applying subsequent Oracle patches. ■ Serena-Supplied Runtime RDBMS (32-bit and 64-bit Windows version based on Oracle 11gR2). ■ Serena-Supplied Runtime RDBMS (64-bit UNIX versions based on Oracle 11gR2). ■ Oracle 10g (32-bit Windows or 32-bit or 64-bit UNIX). ■ Oracle 11gR1 (32-bit Windows or 32-bit or 64-bit UNIX). *Not supported on 32-bit Windows Server 2008 or on Windows Server 2008 R2*. ■ Oracle 11gR2 (32-bit or 64-bit Windows or 64-bit UNIX). **NOTE:** UNIX RDBMS must be installed on a remote UNIX network node.
Administrator Oracle Client *(continued on next page)*	You need to pre-install a 32-bit Administrator Oracle 10g, 11gR1, or 11gR2 Client in a different Oracle Home in order to use the following Dimensions RM components: ■ A Dimensions RM server communicating with a remote 32-bit or 64-bit Windows or 32-bit UNIX RDBMS. ■ A Dimensions RM server communicating with a local 64-bit Windows RDBMS. ■ A Dimensions RM Admin Client communicating with a Dimensions RM database, no matter where located. ■ Web Server (because this uses the Oracle Call Interface).

Component	Requirement
Administrator Oracle Client *(continued on next page)*	■ "Fat" Dimensions RM Windows clients (because these use Oracle Call Interface). **NOTE:** ■ If you have a 32-bit or 64-bit Serena-Supplied Runtime RDBMS installed on the same machine as Dimensions RM, then the required 32-bit Oracle client components will automatically be installed (as can be confirmed by connecting to the database using sqlplus). ■ If you have a 64-bit Serena-Supplied Runtime RDBMS installed on the same machine as Dimensions RM, you will normally need to install an additional 32-bit Oracle Administrator Client. ■ If you have your own 32-bit Oracle installed on the same machine as Dimensions RM, you should check to see whether the 32-bit Oracle client components are installed by attempting to connect to the database using sqlplus. Install a 32-bit Oracle Administrator client if the connection test shows that it is currently absent. ■ If you have your own 64-bit Oracle installed on the same machine as Dimensions RM, you will need to install an additional 32-bit Oracle "Fat" Dimensions RM Windows clients (because these use Oracle Call Interface) client. ■ The release levels of the Oracle Administrator client (10g, 11gR1, or 11gR2) must match that of the RDBMS. ■ The 32-bit client path must be first in the Windows PATH variables. ■ RM Import Client does not require the Oracle Administrator client (it communicates to Dimensions RM via Web services). ■ The type of Oracle client required is Administrator (required for the Dimensions RM import/export functionality).

Component	Requirement
Administrator Oracle Client *(continued)*	■ The Oracle 11gR1 Administrator Client is not supported on Windows Server 2008 R2 or Windows 7. See "Installing and Configuring Your RDBMS and Oracle Client" on page 51 for further details.
Serena License Server	You need to pre-install the Serena License Manager (SLM) if you wish by default to fully license your installation of Dimensions RM, rather than exercise the 30-day evaluation option. See the *Installing Serena License Manager* guide and "Licensing Dimensions RM" on page 37 for further details.
Web Server *(continued on next page)*	*See the Serena public Dimensions RM Supported Platforms Web site and readme for further details.* One of the following CGI-capable Web servers: ■ Microsoft Internet Information Server (IIS) 6, 7, and 7.5 ■ Apache 2.0.x, 2.2 **NOTE:** ■ The Web server must be installed on a Windows machine. ■ The Web server uses a 32-bit Oracle Call Interface (OCI) to communicate with Dimensions RM; therefore, a 32-bit Oracle Administrator client must be installed on the same machine as the Web server. If a 32-bit Serena-Supplied Runtime or 32-bit Oracle RDBMS has been installed on the same machine as the Web server, the client components will normally be present as well (as can be confirmed by connecting through sqlplus). For the 64-bit Serena-Supplied Runtime RDBMS or your own 64-bit Oracle, you will, however, normally have to also install a 32-bit client on the Web server machine.

Component	Requirement
Web Server *(continued)*	**NOTE:** *(continued)* ■ On 64-bit IIS systems, ASP.NET (the Microsoft Web application framework successor to Active Service Pages (ASP) technology) must be run in 32-bit mode. ■ On 64-bit IIS systems, the "IIS 6 Metabase compatibility" must be configured as a role service.
Web Browser	*See the Serena public Dimensions RM Supported Platforms Web site and readme for further details.* One of the following Web browsers that supports JavaScript 1.2: ■ Microsoft Internet Explorer 7, 8, & 9 ■ FireFox 3, 3.5, 3.6, 4, and 5
Disk Space	*See the readme for details.*
RAM	*See the readme for details.*
CPU	*See the readme for details.*
Microsoft Office *(continued on next page)*	Microsoft Office 2010 or 2007 SP1 or newer (`*.docx` and `*.xlsx`) or Microsoft Office 2003 SP3 or newer (`*.doc` and `*.xlx`) must be installed on the Dimensions RM server to support browser-based Word import, Document Publishing, RM Import and RM Import Designer tools. The minimum set of pre-installed Microsoft Office components required for the above tools is: ■ Microsoft Office Excel. ■ Microsoft Office Excel .NET Programmability Support. ■ Microsoft Office Word. ■ Microsoft Office Word .NET Programmability Support.

Component	Requirement
Microsoft Office *(continued)*	***NOTE*** ■ A message warns you if you do not have Office installed on your computer. ■ For consistent and reproducible use of the Document Publishing, RM Import and RM Import Designer tools, it is advisable to ensure that all users use the same version of Microsoft Office. ■ If you import requirements using the Word import feature in the RM Browser client, Word 2003 must be installed on the server to correctly import graphics from ".doc" files; Word 2010 or 2007 must be installed to import graphics in ".docx" files. ■ To be able to view Microsoft Word OLE-linked or embedded attachments when using Dimensions RM Document Publishing, the Windows user concerned must have been assigned administrator rights. This is a general Microsoft Word pre-requisite for utilizing OLE-linked or embedded attachments. ■ If Microsoft IIS is used as the Web Server for RM import and RM Import Designer, the IUSR anonymous user account must have read and execute access to the Microsoft Office components for RM Browser Import applications to function correctly. See "Configuring the Web Server for RM Import and RM Import Designer" on page 133.

Pre-Installation Requirements

To help ensure that your installation is a success, review the following installation requirements and tips.

General Requirements

Before you install, make sure that:

- You meet the system requirements described in "System Requirements" on page 15, the readme file, and the Serena public Dimensions RM Supported Platforms Web site at:

  http://support.serena.com/roadmap/RTM/RTM_Supported_Platforms.aspx

- The PC host machine is connected to a network and is configured to run TCP/IP.
- The host names of the server computers that will host the Serena-Supplied Runtime or Oracle RDBMS and the Serena License Manager (SLM) have been identified. If a single computer is to be used for all software components, it can host both the Dimensions RM server and client.
- For a Dimensions RM client-only installation (and for various other installation configuration—see page 17), that the requisite Oracle Administrator client has been installed.

NOTE The Oracle client path must be first in the Windows PATH variable.

- If you will be installing the e-mail notification service, that you know the name of the computer running the service and the name of the SMTP mail server to be used.
- Microsoft Office 2010, 2007, or 2003 is installed on the Dimensions RM server to support Document Publishing, RM Import and RM Import Designer tools. See page 20 for further details.
- No other applications are running.

Correctly Configuring the Serena-Supplied Runtime or Oracle RDBMS

The Serena-Supplied Runtime or Oracle RDBMS instance must be configured correctly before you install Dimensions RM. Please see "Installing and Configuring Your RDBMS and Oracle Client" on page 51.

Temporarily Disabling UAC Before Installing Your Own 64-Bit Oracle 11gR2 on Windows Server 2008

During testing of Dimensions RM with respect to 64-bit Oracle 11gR2 on a Windows Server 2008 platform, Serena encountered installation problems when installing Oracle when the User Account Control (UAC) security settings *were not the default* for Windows Server 2008. These problems were overcome by temporarily disabling UAC during installation of Oracle Enterprise 11gR2.

If you do not already have a working Oracle 11gR2 RDBMS on Windows Server 2008 and plan to install it for Dimensions RM, you may also need to temporarily disable UAC to ensure it installs successfully if your UAC security settings are not the default ones.

To turn off UAC, proceed as follows:

1 Navigate as follows:

```
Start | Control Panel | User Accounts
```

The **User Accounts** page appears.

2 Click **Turn User Account Control on or off**.

The **Turn User Account Control On or Off** page appears.

3 Uncheck the **Use User Account Control (UAC) to help protect your computer** check box.

4 Click **OK**.

A system restart will be needed to implement the change.

Once Oracle 11gR2 RDBMS has been successfully installed, turn UAC back on, by repeating the above procedure but selecting the **Use User Account Control (UAC) to help protect your computer** check box.

Planning Your Dimensions RM Usernames and Passwords

Introduction

You should plan your Dimensions RM usernames (for example, those for the `ICDBA`, `ICADMIN`, and the `ICPROJECT` accounts) and passwords management before installation. These usernames and passwords are normally managed through the Dimensions RM GUI (as explained in the *Administrator's Guide*).

The Dimensions RM usernames, themselves, are actually Oracle accounts resident in the Dimensions RM database. When using the Dimensions RM GUI to enter usernames and passwords the following should be borne in mind:

- Oracle password guidelines, see "Oracle Password Guidelines" on page 25.
- If you are using your own Oracle 11gR2, whether schema name and password case sensitivity is enabled, see "Oracle Enterprise 11gR2 Password and Schema Case Sensitivity" on page 26.

NOTE If you are using the 32-bit or 64-bit 11gR2 version of the Serena-Supplied Runtime RDBMS, case sensitivity is turned *off* by default.

- If you plan to use the ALM integration with Dimensions CM, certain Dimensions RM Oracle usernames and Dimension CM operating-system usernames will be in common (for example, `dmsys`). It is advisable to ensure that the password assigned to such a Dimensions RM Oracle user is the same as the that assigned to the same operating-system Dimension CM user.

NOTE It is possible to accomplish Dimensions RM tasks—without using the Dimensions RM GUI—by using Oracle procedures if you have your own Oracle database. This may well be the case if your company processes restrict all database administration on your own Oracle to a database administrator (DBA) or you have both the role of DBA and Dimensions RM administrator. Such tasks can include:

- Creating Oracle usernames and passwords with DBA access (for example, `ICBDA`, `ICADMIN`, and `ICPROJECTS`).
- Creating tablespaces.
- Dropping project tables.
- Deleting projects.
- Administering tablespaces.

Please consult your Oracle documentation for details.

Oracle Password Guidelines

The following are Oracle's password guidelines:

- Make the password be between 4 and 30 characters long.
- Use the database character set for the password's characters, which can include the underscore (_), dollar ($), and pound sign (#) characters.
- Do not start passwords with a numeral.
- Do not use a user name for a password.
- Do no use Oracle reserved words for the password.
- Do not use `change_on_install` for the `SYS` account password.
- Do not use `manager` for the `SYSTEM` account password.

IMPORTANT! If you adopt the above two recommendations, make sure that you record your choices, otherwise Serena Support will be unable to help you if you have problems.

- Do not use `sysman` for the `SYSMAN` account password.

- Do not use `dbsnmp` for the `DBSNMP` account password.
- If you choose to use the same password for all the accounts, do not use `change_on_install`, `manager`, `sysman`, or `dbsnmp` as a password.
- Have the password include at least one alphabetic, one numeric, and one punctuation mark character
- Do not use simple or obvious words, such as `welcome`, `account`, `database`, and `user` for the password.

Oracle Enterprise 11gR2 Password and Schema Case Sensitivity

Introduction

Oracle Enterprise 11gR2 introduced default password and schema case sensitivity that is set 'on' by default; this is in contrast to Oracle Enterprise 10g, where password and schema name information was case insensitive. This can cause problems when using certain `sqlplus` commands for schema operations that require schema names and passwords if you do not take account of their case.

IMPORTANT! Please consult your DBA or Oracle documentation with respect to running the sqlplus commands in the following sub-sections.

Determining if Oracle Enterprise 11gR2 Case Sensitivity is Enabled

You can determine whether or not case sensitivity is actually enabled on your RDBMS with the following `sqlplus` command:

```
sqlplus /nolog
connect / as sysdba
SQL> SHOW PARAMETER SEC_CASE_SENSITIVE_LOGON
```

If password case sensitivity is enabled, the output will be:

```
NAME                                 TYPE        VALUE
------------------------------------ ----------- -----
sec_case_sensitive_logon             boolean     TRUE
SQL>
```

and if it is not, the `VALUE` will be `FALSE`.

Enabling or Disabling Oracle Enterprise 11gR2 Case Sensitivity

You can disable Oracle Enterprise 11gR2 case sensitivity with the following sqlplus command:

```
sqlplus /nolog
connect / as sysdba
```

```
SQL> ALTER SYSTEM SET SEC_CASE_SENSITIVE_LOGON = FALSE;
commit;
```

and enable it by replacing `FALSE` with `TRUE`.

IMPORTANT!

- If the Serena-supplied 10g `create_ora_inst` script (from Dimensions CM) was used to create the instance for use by your Dimensions RM for UNIX schema (on your own remote 10g UNIX Oracle), then Oracle case sensitivity is disabled for that schema. The use of `create_ora_inst` is discussed in the *Dimensions CM Installation Guide*.
- You will also have to update the `init.ora` file with the following command:

  ```
  set sec_case_sensitive_logon=false
  ```

  The normal default location for the `init.ora` file is:

  ```
  $ORACLE_BASE/admin/<ORACLE_SID>/pfile
  ```

IIS 6 Pre-Configuration Required to View Attachments in Microsoft Word RM Published Documents

If you plan to use a Microsoft Internet Information Server (IIS) 6 as the Web Server for RM import and RM Import Designer, to be able view requirement attachments in Microsoft Word RM Published Documents you must pre-configure IIS as explained below (if this has not already the case for your particular environment).

IMPORTANT! In addition to the configuration instruction documented below, for all Dimensions RM users to be able to view attachments the Windows administrator needs to be logged into Windows.

1. Launch a Windows Command Prompt window.
2. Run the following command:

   ```
   dcomcnfg
   ```

   The **Component Service** utility appears.

3. Expand **Component Services | Computers | My Computer** in the left hand graphical tree.
4. Expand **DCOM Config** under **My Computer** in the left hand graphical tree.
5. Locate **Microsoft Word Document** in the left hand graphical tree.
6. Right click and select **Properties**.

   The **Microsoft Word Document Properties** dialog box appears.
7. Click the **Security** tab.
8. Click **Customize** followed by **Edit** in the **Configuration Permissions** area of the **Security** tab.

   The **Change Configuration Permission** dialog box appears.
9. If not already present, add the anonymous authentication `IUSR_computername` account (Internet Guest Account) and the anonymous `IWAM_computername` account (Launch IIS Process account) to the list of group and user names, granting Full Control permissions to both.
10. After Dimensions RM is installed you will also need to grant write and modify access to the '`rtmBrowser\temp`' directory, see "Access to 'rtmBrowser\temp' Directory" on page 127

Microsoft Vista or Windows 7 Specific Pre-Installation Requirements

On Windows Vista or Windows 7 machines (*only*), if you choose to use the default Internet Information Services (IIS) Web Server during installation of a Dimensions RM server (installer Step 8 on page 84) you must ensure that the 'IIS-Metabase' package is installed beforehand—this is not the case by default for Windows Vista and Windows 7. If this package is not installed, when you reach installer Step 9 on page 86, where you select the IIS Web Site, the drop down list will be empty.

To check whether the 'IIS-Metabase' package is already installed (it will not be by default) or to install it if it is not currently installed, proceed as follows:

1. Navigate to **Turn Windows features on or off** as follows:

   `Start | Control Panel (in Category mode) | Programs | Programs and Features | Turn Windows features on or off`

   The **Windows Features** dialog box appears.

2. Navigate to the following sub-folder in the graphical tree:

   Internet Information Services `| Web Management Tools | IIS 6 Management Compatibility`

3. Check the status of the **IIS Metabase and IIS 6 configuration compatibility** Windows feature.

   If the Windows feature is already installed, no further action is require.

If the Windows feature is not installed (the default), select the **IIS Metabase and IIS 6 configuration compatibility** check box and click **OK** to install the feature.

Temporarily Disabling UAC Before Installing Dimensions RM on Windows Server 2008

During testing of Dimensions RM with respect to a Windows Server 2008 platform, Serena encountered installation errors when installing Dimensions RM when the User Account Control (UAC) security settings *were not the default* for Windows Server 2008. These errors were overcome by temporarily disabling UAC during installation of Dimensions RM.

Examples of the errors encountered were:

- **TODO: <File descriptor> has stopped working**
- **RM Mail Service has stopped working**

To turn off UAC, proceed as follows:

1. Navigate as follows:

   `Start | Control Panel | User Accounts`

The **User Accounts** page appears.

2 Click **Turn User Account Control on or off**.

The **Turn User Account Control On or Off** page appears.

3 Uncheck the **Use User Account Control (UAC) to help protect your computer** check box.

4 Click **OK**.

A system restart will be needed to implement the change.

If it is necessary to disable UAC as above, it should remain disabled until you complete the following:

- Installation of Dimensions RM.
- Creation of a Dimensions RM project.
- Verification of the following Dimensions RM functionality/ connectivity:
  - The RM browser (rtmBrowser).
  - RM import.
  - Web services connectivity.
  - RM Manage.
  - Class definition functionality.

See Chapter 4, "Installing Dimensions RM" on page 79 and Chapter 5, "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91

Once the above has been successfully completed, turn UAC back on, by repeating Step 1 on page 29 to Step 4 on page 30 in the earlier procedure, but selecting the **Use User Account Control (UAC) to help protect your computer** check box. A reminder to do this also appears in Chapter 5, "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91.

Prerequisites for SSO Authentication or SSO with Smart Card Authentication

Starting with Dimensions RM 11.2.2, Single Sign On (SSO) authentication is supported. This support requires either an SSO-enabled Serena Business Manager (SBM) or Dimensions CM server installation.

The SBM or Dimensions CM software and documentation can be downloaded from the Serena web site. For information on installing and enabling an SBM or Dimensions CM SSO server, see the *Installation Guide* and *Administrator's Guide* for the relevant product.

IMPORTANT! The Dimensions RM SSO installation includes Tomcat. If Dimensions RM is installed on the same server as SBM or Dimensions CM, you must ensure that the Tomcat installed with RM does not conflict with the ports used by SBM and Dimensions CM.

General Prerequisites

- The Serena SSO Server component of Dimensions CM or SBM must be installed to a system that is accessible to the RM server.
- The Serena SSO Server must be fully configured and ready to support CAC, LDAP, or whatever authentication method you will be using. See the SBM or Dimensions CM documentation for information on installing and configuring a Serena SSO Server.

Prerequisites for SSO Authentication

- **Client Prerequisites**

  The Dimensions RM SSO software is all server side, so there are no client prerequisites.

- **Server Prerequisites**

  The following information is requested by the Dimensions RM installer. This information can be determined by examining the configuration of your SBM or Dimensions CM SSO server.

Name of field in RM installer	Description
Host Name	The host name or IP address of the computer that hosts your Serena Single Sign On server.
SSO	The HTTP (default = 8085) or HTTPS (default = 8243) port used by the Serena SSO server. **NOTE** If the specified port is not an HTTPS port, then the **Secure (HTTPS) Connection** checkbox (see below) *must* remain unchecked.
Secure (HTTPS) Connection	Enable this checkbox if the Serena SSO Server uses Secure Socket Layer (SSL) communication. **NOTE** Changing this checkbox will reset the **SSO** port to the default HTTP or HTTPS port.

Prerequisites for SSO with CAC Reader Authentication

- **Client Prerequisites**

  The following client side prerequisites are required:

  - Installation of Common Access Card (CAC) ActivClient 6.1 or later software. All configuring of the ActivClient client, if necessary, should be performed as described in the vendor documentation. How to log in using CAC and your PIN in the various Dimensions RM clients is described in the Dimensions RM client documentation.
  - Each user has a personal CAC.
  - A CAC Reader is attached to the client machine.

- **Server Prerequisites**

  The following information is requested by the Dimensions RM installer. This information can be determined by examining the configuration of your SBM or Dimensions CM SSO server.

Name of field in RM installer	Description
Host Name	The host name or IP address of the computer that hosts your Serena Single Sign On server.
SSO	The HTTP (default = 8085) or HTTPS (default = 8243) port used by the Serena SSO server. **NOTE** If the specified port is not an HTTPS port, then the **Secure (HTTPS) Connection** checkbox (see below) *must* remain unchecked.
Secure (HTTPS) Connection	Enable this checkbox if the Serena SSO Server uses Secure Socket Layer (SSL) communication. **NOTE** Changing this checkbox will reset the **SSO** port to the default HTTP or HTTPS port.

Optimizing Performance

IMPORTANT! Dimensions RM is *not* a multi-threaded application. Therefore no performance improvement will be gained when Dimensions RM is used in conjunction with hardware specially designed to utilize Oracle multi-threading database processing.

To achieve the best possible performance with your Dimensions RM implementation, Serena recommend following the guidelines laid out in this section.

General System and Architecture Guidelines

- For best results, install the Web Server, Database Server, and all RM components on a single machine. Running the Serena-Supplied Runtime or Oracle RDBMS on a different machine will degrade performance.
- If possible, on a single-server configuration, place the Microsoft Windows:
  - Internet Information Services (IIS) `Inetpub` directory. (Not applicable if using Apache.);
  - system directory;
  - user TEMP directory; and
  - page file;

  on a physical disk separate from the operating-system and Serena-Supplied Runtime or Oracle RDBMS disks. If you move the system and user TEMP directories, make sure that the environment variables are updated to the correct location.
- Do not use physical disks that have been partitioned.
- Distribute control files across physical drives or separate RAID assemblies.
- VMware servers and storage area networks (SANs) can cause performance issues when not given a high enough input-output priority.

Windows Configuration Recommendations

Disk Management

Do not use any form of Windows Disk Management, including partitioned drives and span drives.

NOTE If you have an advanced RAID controller that manages disks, they are not a performance hit *provided* they do not use the Windows utilities. If Windows Disk Manager shows partitioned drives, you will have a performance issue.

To check Windows Disk Management usage:

1 (Right-click) My Computer | Manage

to display the **Computer Management** dialog box.

2 Under **Storage**, select **Disk Management** check whether there are any named additional disk partitions (such `D:`)

If Dimensions RM, Microsoft IIS, or Oracle is installed on an additional named disk partition, the system will be very slow.

Disk Fragmentation on Windows Systems

It has been shown on some Dimensions RM systems (but not all) that Windows disk defragment can led to a measurable increase in performance when performed on a regular basis.

If such a performance increase is the case for your company's system setup, it is recommended that you defragment all drives on the server every day. On a highly fragmented disk, a Dimensions RM query that would normally take just a few seconds may on some systems take several minutes. The Serena-Supplied Runtime or Oracle RDBMS is very sensitive to fragmentation when running on Windows.

Serena recommend to use the Windows defragmentation utility, and schedule it to run daily. For example, at a DOS Command Prompt enter the following:

```
C:\> AT 01:00 /every:m,t,w,th,f,s,su Defrag C: -f

C:\> AT 02:00 /every:m,t,w,th,f,s,su Defrag D: -f

C:\> AT 03:00 /every:m,t,w,th,f,s,su Defrag E: -f
```

This example sets a different time for each drive.

To verify your entries are correct enter `AT` press the Enter key. The DOS Command window will display the schedule.

VMware ESX Server Recommendations

If you plan to run Dimensions RM on a VMware ESX server, for optimal performance Serena recommend that the VMware ESX hardware version be Version 7 or later.

It has been demonstrated at Serena that with VMware ESX server hardware Version 4 a particular Dimensions RM task took over one minute to complete; whereas, after upgrading to Version 7 (with no other configuration changes) the same task completed in under five seconds. The VMware image on ESX in question comprised a complete Dimensions RM server plus Oracle installation.

Chapter 2

Licensing Dimensions RM

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About Serena License Manager

The Serena® License Manager (SLM) is the tool you use to obtain and apply the keys that unlock Serena® Dimensions® RM. SLM enables you to centralize your license management across multiple Serena® Dimensions® RM environments. SLM can help you keep track of active licenses and versions of the software in use, for example, you can use it to see whether or not all the licenses are in use or to manually track down who is using what version and license.

If you intend to permanently install Dimensions RM rather than install it for just the default 30-day evaluation period, you will need to pre-install SLM and provide its server name or IP address during Dimensions RM installation (however, if you wish to convert an evaluation copy of Dimensions RM into a fully licensed copy, you can install SLM at a later date). The SLM installer also installs the associated Serena License server.

You can install SLM on the same system as Dimensions RM or install it separately on a dedicated license server. If you have other Serena software products installed on a license server that use a compatible version of SLM, for example Version Manager, you can use that with your Dimensions RM license. For installation instructions see the *Installing Serena License Manager* guide.

There is minimal CPU usage required on the server to run SLM.

Installing Serena License Manager

Pre-install the Serena License Manager (SLM) on a central server that all Serena products will be able to access. See the related *Installing the Serena License Manager* guide for local or remote installation instructions.

You can then direct any Dimensions RM installation to the SLM server. You can do this during installation, where you are prompted for the SLM location. You can also change the SLM reference from any existing Dimensions RM installation to another SLM server.

If you are licensing users in different locations and you have relatively slow networks, you may want to install a SLM server and set up the users

in each location on the local server computer. When you do so, you need to install SLM to a server in each location. If you have faster networks, you can install SLM on one central network computer and have all Dimensions RM users point to it.

About Dimensions RM Licenses

To use Dimensions RM, you must generate and apply license keys. The following table explains the type of license keys that you can obtain and apply for each component:

License Type	Description
Concurrent	Concurrent licenses, also known as floating licenses, can be used by any user. This is advantageous if you are in an organization spread across multiple time zones or have users who infrequently use Dimensions RM, because multiple people can share the same license.
Named	Named licenses can only be used by specific users. This allows you to limit access to the system to only those users whose login IDs are associated with licenses.

Each RM license purchase comprises the following:

- icEWB license: A license for the client tools, such as RM Concept.
- icPWB license: A license for RM Manage and Class Definition.
- icBrowser license: A license for the RM Browser client.

This allows each RM license to be used simultaneously across multiple clients. For example. if there is just one available license, a user will be able to log into both RM Browser and RM Manage, without using multiple licenses.

The Licensing Process: Checklist

After installing SLM you can use it (Web fulfillment) to get the license keys to unlock the Dimensions RM product. SLM automates the process (Web fulfillment) of getting license keys from Serena.

☐	Determine the number of Dimensions RM licenses you want to use in your organization.
☐	Contact your sales representative to purchase the licenses for your users or ensure that you have an existing Serena Support contract.
☐	Ensure that you have a valid serial number for Dimensions RM.
☐	Ensure that you registered at the Serena Support Web Site, in order to log in and get your license keys.
☐	Get the license key string from Serena Web fulfillment.
☐	Enter the key string in Serena License Manager. Repeat this step if you have more than one serial number to license.
☐	*Named licenses only*: Manually set up user IDs if you do *not* want to use the auto-add feature to enter user IDs into SLM.
☐	Set up notification for licensing issues. If notification is enabled and there is a licensing issue, you will receive an e-mail detailing the problem.
☐	If you need to reboot the SLM server machine or set it to run as a service, restart the Windows SLM server (Start | Programs | Serena | License Manager | Start License Manager Service) or remote UNIX SLM server (run the `./start_license_server script` in the directory where you installed the license server).

Licensing Dimensions RM

Getting and Applying Licenses

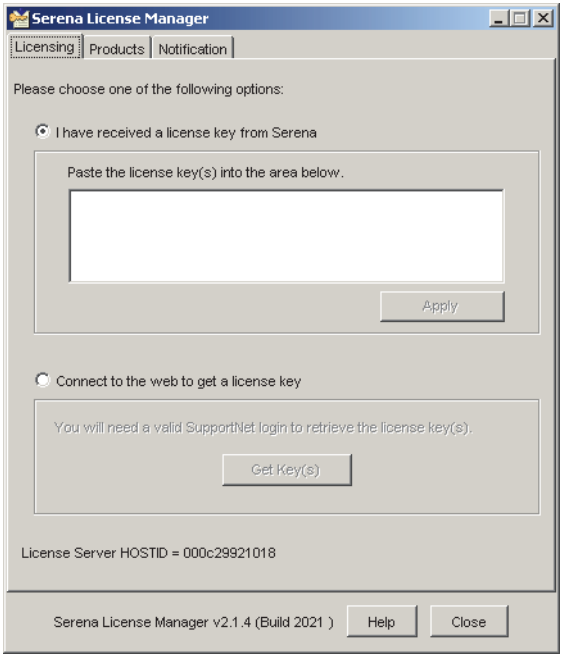
To get a license from Serena using SLM:

1 On Windows, open SLM by selecting Start | Programs | Serena| License Manager 2.1.5 | License Manager.

On remote UNIX, as user `root`, launch it by navigating to where you installed it and run the script:

```
./serenalm
```

NOTE You must ensure that your UNIX search path environment includes the path to the license server process executable `lmgrd`. This executable is located in the directory where the Serena License Server is installed.



Then:

- If you already have a license key from Serena, you can select the **I have received a license key from Serena** option and paste the key string in the field, then proceed to "Starting the License Server" on page 45.
- If you don't already have a license key, select the **Connect to the web to get a license key** option on the Licensing tab and click the **Get Key(s)** button. The Serena Support Licensing Web site login page appears.

2 To obtain the key from the Web fulfillment:

a Make sure, first, that you copy your license server host identity, which will be displayed in a "scissors" graphics.

b Click **Click here to continue >>**.

c Enter your Serena Support account user name and password and log in. If you do not have a Serena Support, you will need to register for one using a valid serial number (if you do not have a valid serial number, contact Serena).

d The Serena Support Web page appears.

e Click the Licensing tab or navigate to the following menu item:

`Support | Licensing`

f Select appropriately from the (Licensing) **Site:**, **Product:**, **Serial Number:**, and **Version:** drop down menus.

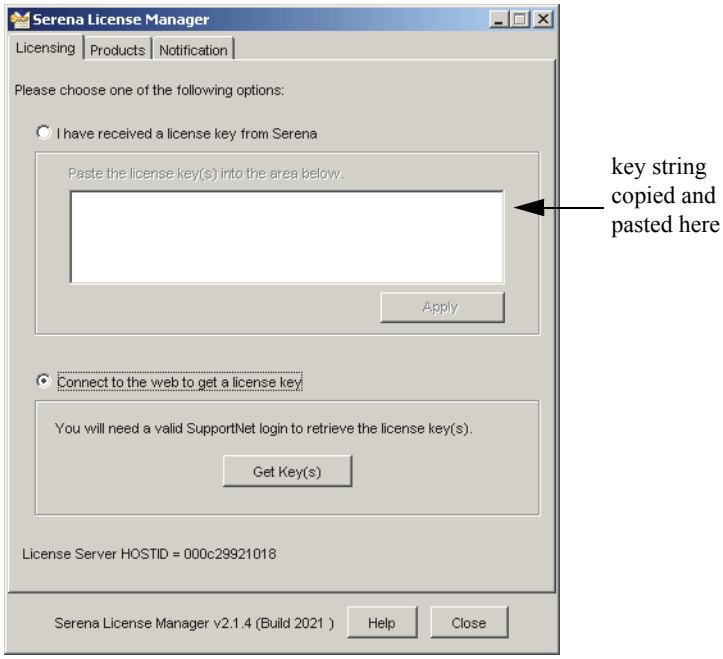
g Click **Create Licenses** and follow the instructions presented there to obtain you license key or keys.

NOTE If you require additional help, you can run an Adobe Flash video demo. Click the `View Demo` sub-tab.

h Once you have generated a license, electronically copy the entire license string and return to SLM. An e-mail will be sent to you with details of the license keys for your records.

IMPORTANT! Make sure that you do not copy any extra spaces or SLM will consider the key invalid.

3 On return to the Serena License Manager, select the **I have received a license key from Serena** option and paste the keys (just the FEATURE lines) in the field available. The **Apply** button will then become active.



4 Click **Apply**. Your license will be activated. You can now:

- For any Named licenses that you added, add valid user IDs into the license server or set the license server to add in user names automatically before logging into Dimensions RM. See "Managing User Names for Named Licenses" on page 45.
- Set up notification for issues with the licenses and license server. See "Setting Up Notification for Licensing Issues" on page 46.

The license server on Windows will start automatically; if it does not, you can start it manually using Windows Services. On remote UNIX, you will need to start it manually in all cases. See "Starting the License Server" on page 45 for more information.

To get a license from Serena if your server doesn't have Web access:

1. From a different computer with Web access, connect to the Serena Support Web site. Make sure you know the product serial number and the Host ID of the license server machine so you can enter it in the Web fulfillment system.

   You can find your license server machine's Host ID at the bottom of the **Licensing** tab of the Serena License Manager dialog box.

2. When you access the Web page with your key string, copy that key string into a text editor. Save and copy that file to a portable disk or a location on the network accessible from the license server machine.

3. Insert the portable disk in the license server machine or navigate to where the file is stored on the network. Open the file and copy the key string, select the **I have received a license key from Serena** option, and paste it in the field.

To get a license from Serena if you don't have Web access at all:

Contact Serena Support for assistance if you cannot use the Web to obtain a license. See "Contacting Technical Support" on page 11.

Adding Licenses

If all the licenses you purchased are not already in use, you can add license keys for seats you have already purchased through SLM.

If you run out of purchased license seats to use, contact your sales representative at Serena to purchase additional licenses to add to your serial number.

To add license keys from your initial purchase:

1. Follow steps listed above in "To get a license from Serena using SLM:" on page 41.

2. Click **Apply** to restart the license server.

To buy more licenses and add them to your pool of licenses:

Contact your Serena sales representative to purchase additional licenses. Once you have your serial number updated for additional seats, follow the instructions above to obtain additional licenses.

Starting the License Server

If the license server did not start automatically after you have obtained the licenses, start it before installing other Serena products.

On Windows **To start and stop the license server:**

```
Start | Programs | Serena | License Manager 2.1.5 |
    Start License Manager Service
```

To stop the license server:

```
Start | Programs | Serena | License Manager 2.1.5 |
    Stop License Manager Service
```

On UNIX **To start the license server on UNIX:**

At a command prompt, as the Dimensions RM System Administrator user not `root` run:

```
<serena_license_server_dir>/<os>/start_license_server
```

where `<serena_license_server_dir>/<os>` is the directory in which you installed the Serena License Server, `<os>` being the platform identifier, for example, `aix`.

Check the contents of the `SerenaLicenseServer.log` to make sure the service has started correctly.

To `stop` the license server:

At a command prompt, run:

```
<serena_license_server_dir>/<os>/stop_license_server
```

Managing User Names for Named Licenses

If you have purchased named user licenses, you need to specify the Dimensions RM user IDs and the features they are licensed to use in the SLM before that user can log into Dimensions RM. You can add the users' IDs manually by typing their user IDs or manually by accepting the default in the SLM.

To manually assign, reassign, or delete from features:

1. On the **Product** tab, select the feature from the **Product Licenses** list and click the **Manage User IDs** button.
2. The **User Management** dialog box opens.
   - To add users manually, click **Add User** to add a user to the feature by typing in the user ID. You can add as many users as you like by separating the IDs with a space. The user names you enter here must match the users' Dimensions RM login names.
   - To remove users from the list, select the user from the list and click **Remove User**.

To automatically assign named licenses to users who request them:

- On the Products tab, select the feature from the **Product Licenses** list and select **Auto-add user IDs for named licenses** to automatically add user IDs to a named license list when users log into Dimensions RM. This option is set by default.

  When users log in to a product, the server will check to see if there are licenses available for the feature they are attempting to use. If there is a license available, that user ID will be logged in the license server and that will be the named license assigned to the user.

Setting Up Notification for Licensing Issues

The **Notification** tab gives you the ability to set up notification from the license server. You need to supply the license server your SMTP server address and e-mail address to be notified of licensing issues by e-mail.

You can also suspend your notifications if the notices come in too frequently. It is also recommended that you set up rules in your e-mail application to funnel the incoming messages to an area where you can monitor them and where they won't interrupt your regular e-mail activity.

You can be notified of conditions such as when:

- You are out of licenses
- Users are requesting licenses that are not on the server
- Users are denied a license because they are not on the named list

To receive notification of license activity:

1. Enter your SMTP server address in the **SMTP Server IP / Hostname** field.
2. Enter your e-mail From address in the **From address** field.
3. Enter your e-mail To address in the **To address** field.
4. Click **Send e-mail notification of licensing issues** to enable notification.
5. Click **Apply Changes**.

To suspend notification of license activity:

To put notifications on hold, you can de-select **Send e-mail notification of licensing issues**. Select it again when you are ready to receive notifications.

Managing Your Licenses and the License Server

After you have installed SLM to obtain a license key for your users, you can later modify your SLM implementation, for example to run the SLM server as a service, or to move the SLM server.

Running the License Server as a Service

When the SLM installation is complete, the option to set the run the license server as a service is set by default. When the license server runs as a service the license server will restart automatically when you reboot the machine.

Should you need to stop and restart the service you do so in the lmtools utility.

To run the license server as a service:

On Windows

1. Go to the directory where you installed SLM and double click `lmtools.exe`.
2. Click the Config Services tab and select the **Use Services** check box. If you want the service to be automatic, select the **Start Server at Power Up** check box.

On UNIX

If you are using the license server on remote UNIX, refer to the *FLEXlm User's Guide (enduser.pdf)* located in the `./doc/FLEXlm User's Guide` sub-directory of the directory where you installed SLM. This third-party document will guide you through the commands necessary for checking the server status and running it as a service.

Moving the License Server

If you need to move the license server to a new machine, you must contact Serena Support for assistance. See "Contacting Technical Support" on page 11.

Upgrading Your Evaluation License

If you installed Dimensions RM and used an evaluation license, it is good for 30 days. After that period, you need to upgrade the evaluation license to a permanent license.

NOTE You must perform this procedure *only* if you evaluated Dimensions RM without an SLM server. If you were already using SLM (for example, with an extended evaluation that included a temporary license key), all that you need to do is add the permanent license keys.

To upgrade to a permanent license:

1. Set up SLM and get a permanent license key.
2. In either RM Explorer or RM Manage, select **Options** from the **Workspace** menu.
3. Click the **License** tab.
4. Type the name of the license server in the **License Server** field.
5. Click **OK**.

Setting Up Redundant License Manager Servers

To help ensure that licenses are always available in case the SLM server fails, you can set up redundant SLM servers. In this scenario, if one of

the servers fails or loses network connectivity, the remaining servers will still supply the licenses to users to ensure that they can log in.

To set up redundant servers, you must:

Request redundant server license keys from Serena Support Sales.

Redundant server license keys enable special licenses that redundant servers can share. With these keys, each of the three servers shares common license information, enabling the servers to back each other up should one go down.

When you receive redundant server license keys, you also receive detailed instructions on how to set up the redundant servers and on how to install and use the keys.

Install the License Manager server to three separate systems.

These systems must have continuous, reliable, high quality network connectivity to each other. If one of the servers becomes unavailable, the remaining two will supply the licenses. If two of the three servers become unavailable, no licenses will be supplied.

After Setting Up the Licenses

After getting and setting up licenses, you are ready to start using Dimensions RM with SLM. If you have not already done so, proceed with installing Dimensions RM (see "Installing Dimensions RM" on page 81). Make sure that the users responsible for installing Dimensions RM know the name or IP address of the SLM server so they can successfully complete their Dimensions RM installation.

Using the Licenses with Dimensions RM

When a user's system crashes suddenly

If a user's computer crashes unexpectedly, the license will remain checked out for 30 minutes. The user has up to 30 minutes to log back in to Dimensions RM before the license returns to the server.

When a user logs in to several computers	If users in your organization are logged in to more than one computer, each computer they are logged in to consumes a license.

Chapter 3

Installing and Configuring Your RDBMS and Oracle Client

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Setting Up a Local Oracle Net Service Name on the Dimensions RM Server Node	76

The Need for an RDBMS and Administrator Oracle Client

IMPORTANT! For exact, detailed, and late-breaking information on RDBMS versions and platforms, see:

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

  http://support.serena.com/roadmap/RTM/RTM_Supported_Platforms.html

The Need for an RDBMS

The Dimensions RM server requires database connectivity to one of the following supported RDBMS (in which it locates its databases):

NOTE The Dimensions RM server (and all other Dimensions RM components) are 32-bit applications that can be run on either a 32-bit or 64-bit Windows platform.

- A 32-bit Windows Serena-Supplied Runtime RDBMS (based on Oracle 10g Standard Edition). This can be located on either the same network node as the Dimensions RM server or a remote network node.
- A 32-bit UNIX Serena-Supplied Runtime RDBMS (based on Oracle 10g Standard Edition). This can only be located on a network node remote from the Dimensions RM server.
- A 32-bit or 64-bit Windows Serena-Supplied Runtime RDBMS (based on Oracle 11g2 Standard Edition). This can be located on either the same network node as the Dimensions RM server or a remote network node.
- A 64-bit UNIX Serena-Supplied Runtime RDBMS (based on Oracle 11gR2 Standard Edition). This can only be located on a network node remote from the Dimensions RM server.
- Your own 32-bit or 64-bit Windows Oracle Standard or Enterprise 10g or 11gR1 (Note *11gR1 is not supported on 32-bit Window Server 2008 or on Windows Server 2008 R2*). This can be located on either

the same network node as the Dimensions RM server or a remote network node.

- Your own 32-bit or 64-bit UNIX Oracle Standard or Enterprise 10g. This can only be located on a network node remote from the Dimensions RM server.
- Your own 32-bit or 64-bit Windows Oracle Standard or Enterprise 11gR2. This can be located on either the same network node as the Dimensions RM server or a remote network node.

The Need for a Microsoft Loopback Adapter For a Windows RDBMS

Many Windows networked systems implement Dynamic Host Configuration Protocol (DHCP) to assign dynamic IP addresses on a computer network. Dynamic addressing allows a computer to have a different IP address each time it connects to the network. This simplifies network administration by letting you add a new computer to the network without having to manually assign that computer a unique IP address.

The Window versions of the Serena-Supplied Runtime RDBMS and the Oracle RDBMS, however, require a static IP address. On a DHCP network, the assignment of a static IP address can be achieved by installing a Microsoft Loopback Adapter as the primary adapter. If this is not installed, whenever the DHCP-assigned IP address subsequently changes (for example, at a system reboot), the Oracle Net Listener will no longer work and will have to be recreated using the Oracle Net Configuration Assistant tool.

For instructions on how to install the Microsoft Loopback Adapter for the Serena-Supplied Runtime RDBMS, please refer to the related *Installing the Serena-Supplied Runtime* RDBMS guide.

For instructions on how to install the Microsoft Loopback Adapter for an Oracle RDBMS, please refer to the Oracle documentation, or alternatively you can use the instructions given above (as they are generic).

The Need for an Administrator Oracle Client

You need to pre-install a 32-bit Oracle 10g, 11gR1, or 11gR2 Administrator Client in a different Oracle Home in order to use the following Dimensions RM components:

- A Dimensions RM server communicating with a remote 32-bit or 64-bit Windows or 32-bit UNIX RDBMS.
- A Dimensions RM server communicating with a local 64-bit Windows RDBMS.
- A Dimensions RM Admin Client communicating with a Dimensions RM database, no matter where located.
- Web Server (because this uses Oracle Call Interface).
- "Fat" Dimensions RM Windows clients (because these use Oracle Call Interface).

NOTES *(continued on next page)*

- If you have a 32-bit 10g or 11gR2 Serena-Supplied Runtime RDBMS installed on the same machine as Dimensions RM, then the required 32-bit Administrator Oracle client components will automatically be installed (as can be confirmed by connecting to the database using sqlplus).
- If you have a 64-bit Serena-Supplied Runtime RDBMS installed on the same machine as Dimensions RM, you will need to install an additional 32-bit Administrator Oracle client.
- If you have your own 32-bit Oracle installed on the same machine as Dimensions RM, you should check to see whether the 32-bit Oracle client components are installed by attempting to connect to the database using sqlplus. Install a 32-bit Administrator Oracle client if the connection test shows that it is currently absent.
- If you have your own 64-bit Oracle installed on the same machine as Dimensions RM, you will need to install an additional 32-bit Administrator Oracle client.

NOTES *(continued)*

- The release levels of the Oracle client (10g, 11gR1, or 11gR2) must match that of the RDBMS.
- The 32-bit client path must be first in the Windows PATH variable.
- RM Import Client does not require the Oracle client (it communicates to Dimensions RM via Web services).
- The Oracle Administrator client is required for project backup/restore functionality.
- The Oracle 11gR1 Administrator Client is not supported on Windows Server 2008 R2 or Windows 7.

TIP Oracle provides a client only install. You do not need to do another server installation to obtain the 32-bit Oracle Administrator Client.

Installing a Serena-Supplied Runtime RDBMS

Installation Instructions

Instructions for installing:

- the 32-bit versions of the Windows and UNIX Serena-Supplied Runtime RDBMS (based on Oracle 10g)
- the 32-bit or 64-bit version of the Windows Serena-Supplied Runtime RDBMS (based on Oracle 11gR2)

are given in the related *Installing the Serena-Supplied Runtime RDBMS* guide.

For the 32-bit 10g version of the Serena-Supplied Runtime RDBMS, this related guide also includes instructions on how to obtain (from Serena) and apply the Oracle patches required to bring the RDBMS up to release level 10.2.0.3 (the minimum required for Dimensions RM) or 10.2.0.4 (the preferred release level).

For the 32-bit or 64-bit 11gR2 version of the Serena-Supplied Runtime RDBMS, no patches are required as the release level of Oracle (11.2.0.x) is at requisite level for Dimensions RM.

NOTE The UNIX Serena-Supplied RDBMS, if used, must be installed on a remote UNIX network node.

Database Settings

The only database setting option that you are offered during the installation of a Serena-Supplied Runtime RDBMS is:

Oracle database character set

The default offered is the Unicode UTF-8 database character set

AL32UTF8

It is strongly recommended that you accept that default. If you wish to use some other database character set, you are strongly advised to consult Serena Support before proceeding

Installing Your Own Oracle RDBMS

Installation

If you prefer to use your own Oracle RDBMS, namely:

- 32-bit Windows or 32-bit UNIX Oracle 10g.
- 32-bit Windows Oracle 11gR1 (not for 32-bit Windows Server 2008 or for Windows Server 2008 R2) or 32-bit UNIX Oracle 11gR1.
- 64-bit Windows or UNIX Oracle 11gR2.

rather than the Serena-Supplied Runtime RDBMS and have not yet installed it, consult with your DBA concerning its installation or implement the Oracle installation instructions. The release levels

required are: 10.2.0.3 or later, 11.1.0.6.0 or later, or 11.2.0.1 or later—if you need to patch it, you can obtain the requisite patches from Oracle.

NOTE The UNIX Oracle RDBMS, if used, must be installed on a remote UNIX network node.

Database Settings

When installing your own Oracle RDBMS, ensure that the following are set as described.

NOTE In the following, users referred to as *simultaneous users* do not relate to licenses on the system but to users simultaneously accessing the server for information.

NLS_CHARACTERSET

NLS_CHARACTERESET	Supported/Unsupported
US ASCII	Unsupported
WE81SO8859P1	Supported
AL32UTF8	Supported
UTF8	Unsupported
Double-byte	Unsupported

NLS_NCHAR_CHARACTERSET

NLS_NCHAR_CHARACTERSET	Supported/Unsupported
US7 ASCII	Unsupported
AL16UTF16	Supported
UTF8	Supported
Double-byte	Unsupported

NLS_LANGUAGE

NLS_LANGUAGE	Supported/Unsupported
American	Supported
All Others	Unsupported

Oracle Client - NLS_LANG (Windows Registry Setting)

NLS_LANG	Supported/Unsupported
AMERICAN_AMERICA. WE8MSWIN1252	Supported
All Others	Unsupported

Local Windows Clients Character Set Encoding

	Supported/Unsupported
Western European (English on English Windows Operating System)	Supported
Western European (English on French Windows Operating System)	Supported
Western European (English on German Windows Operating System)	Supported
All Others	Unsupported

Browser Character Set Encoding

	Supported/Unsupported
UTF8	Supported
Windows	**Supported**
All Others	Unsupported

Memory Management–32 Bit

NOTE The following values are not minimum values for Oracle operations but recommended starting points. If you have an Oracle DBA, they should tune these values until they achieve optimum performance for the actual data stored in the Dimensions RM database.

The users referred to in the computations are users simultaneously accessing the server for information.

Attribute	Value to be Set
Shared Memory Management	AUTOMATIC
SGA size	768MB plus 48MB for each simultaneous user over four users
PGA size	256MB plus 16MB for each simultaneous user over four users
1-4 simultaneous users SGA/ PGA	SGA 768MB; PGA 256MB
5 simultaneous users SGA/PGA	SGA 1056MB; PGA 272MB
10 simultaneous users SGA/ PGA	SGA 1536MB; PGA 352MB
20 simultaneous users SGA/ PGA	SGA 1536MB; PGA 512MB

Memory Management–64 Bit

NOTE The following values are not minimum values for Oracle operations but recommended starting points. If you have an Oracle DBA, they should tune these values until they achieve optimum performance for the actual data stored in the Dimensions RM database.

The users referred to in the computations are users simultaneously accessing the server for information.

Attribute	Value to be Set
Shared Memory Management	AUTOMATIC
SGA size	1152MB plus 64MB for each simultaneous user over eight users
PGA size	384MB plus 32MB for each simultaneous user over eight users
1-8 simultaneous users SGA/ PGA	SGA 1152MB; PGA 384MB
10 simultaneous users SGA/ PGA	SGA 1280MB; PGA 448MB
20 simultaneous users SGA/ PGA	SGA 1920MB; PGA 768MB

Processes

NOTE For most systems, 310 processes are adequate; but for large systems a greater number of processes are required. For large systems, if you have an Oracle DBA, they should tune these values until they achieve optimum performance for the actual data stored in the Dimensions RM database.

Category	Number of Processes
Each simultaneous user	At least eight
Each sync engine	At least 20
Each ALF or Mashups service	At least 18
Each RM Mail Service	At least four
All categories	A minimum of 768 (must be a multiple of 32)

ASM

Oracle Automatic Storage Management (ASM) is *not* supported by Dimensions RM.

Post-Installation Activities for Oracle Enterprise 11gR2 on Windows

Oracle 11gR2 has a new feature called *deferred segment creation*, which is on by default. This feature results in empty tables not being listed in dba_segments. Consequently the Oracle Export utility (exp) skips empty table segments by default so that they are not exported at all, even the DLL definitions.

For Oracle 11g, the use of the Oracle Export utility (exp) is deprecated by Oracle, instead you should use the Oracle Data Pump export utility (expdp) for all Oracle backups and the associated impdp utility for all associated database imports if you wish to use native Oracle utilities. These Data Pump utilities do not suffer from the above limitation.

Prior to Dimensions RM 11.2.2, the associated RM Manage utilities **Backup/Restore Project Account** and **Create New Project** were also based on the legacy Oracle `exp/imp` utilities. If you plan to backup a project account using pre-Dimensions RM 11.2.2 on Oracle Enterprise 11gR2, therefore, the RM Manage utility **Backup/Restore Project Account** skips empty table segments. This causes an `ORA-1950` error and a failure to retrieve a security dump from a Dimensions RM project table when restoring a saved Dimensions RM project (during table import from the saved dump).

The deferred segment creation database feature is controlled by the database parameter `deferred_segment_creation`. It has a default value of `TRUE`. If you set it to `FALSE`, any newly created tables after that change will be exported including empty tables segments.

Consequently, in the above circumstances, before using legacy RM Manage **Backup Project Account** you should set the `deferred_segment_creation` parameter to FALSE as described below:

Run the following SQL Plus commands (executed as Oracle `SYS` account):

```
show system set deferred_segment_creation;
alter system set deferred_segment_creation=false;
```

IMPORTANT! The above change of behavior will be applicable only for new accounts and new tables created in existing accounts.

If a legacy RM Manage Project Backup needs to be taken of an existing Dimensions RM project account, the following SQL Plus command must be executed to fix for the existing empty tables (again to be executed as Oracle SYS account):

```
declare

begin
FOR tables in (select table_name from user_tables where
    num_rows=0)
LOOP
EXECUTE IMMEDIATE 'ALTER TABLE ' || tables.table_name
    || ' ALLOCATE EXTENT';
END LOOP;
end;
/
```

Installing an Administrator Oracle Client

Obtaining the Oracle Client

In certain circumstances, you will need to install a 32-bit Windows Administrator Oracle client to run Dimensions RM components (see "The Need for an Administrator Oracle Client" on page 54).

To obtain this client (whose version must match the associated RDBMS, that is, 10g, 11gR1, or 11gR2), you can either:

- Contact Serena Support, who will send you a download link.
- Go directly to the appropriate Oracle download site.

Installation

1 After extracting the contents of the zip file, navigate to and run

```
client\welcolme.html
```

2 Proceed as follows:

10g Oracle client only

a Go to the Documentation tab.

b View or download either the Oracle *Quick Installation Guide* (this suffices in most cases) or full *Installation Guide*.

c Follow the installation instructions.

11gR2 Oracle client only

a Go to the Documentation region on the right.

b View or download either the Oracle *Database Client Quick Installation Guide* (this suffices in most cases) or full *Database Client Installation Guide*.

c Follow the installation instructions.

3 During installation:

- Ensure that you select the **Administrator** option for installation type (required for the Dimensions RM import/export functionality).
- Serena recommend that you accept the Oracle default path, for example:

  `X:\oracle\product\10.2.0\ Oracle32bitClient\`

  where 'X' is normally 'C'.
- Install the Oracle client into a different Oracle Home to that to be used by Dimensions RM in your RDBMS. Serena recommend *not* using the default name of `client1`, but to use a name similar to Oracle32bitClient for the client Oracle Home.

NOTE With multiple oracle homes, Dimensions RM needs to be run with environment variables set to ensure it sees and access the correct Oracle Home.

4 After installation:

Ensure that the 32-bit Oracle client path is first in the Windows PATH variable.

Special consideration for 64-bit Windows systems

When installing the 32-bit Oracle client on a 64-bit Windows platform, the following additional special requirements or tests need to met:

1 Do *not* install the 32-bit Oracle client into the default 32-bit Windows programs directory:

```
C:\Program Files(x86)
```

CAUTION! If you do install to that directory, Dimensions RM will *not* work.

2 After installation:

a Copy the 64-bit `%ORACLE_HOME%\NETWORK\ADMIN\tnsnames.ora` to the equivalent directory for the 32-bit Administrator client.

b Open the 64-bit `tnsname.ora` file (as a Windows Administrator) and edit the service name to make it specific to the 64-bit Oracle (for example replace `DIM10` with `DIM10.64`).

c In the 32-bit `%ORACLE_HOME%\network\admin` directory edit the `sqlnet.ora` file to replace `"SQLNET.AUTHENTICATION_SERVICES= (NTS)"` to `"SQLNET.AUTHENTICATION_SERVICES= (NONE)"`.

d Restart the Oracle TNSListener Windows service.

e Open a Windows Command Prompt

```
All Programs | Accessories | Command Prompt
```

f Check that the client can connect with:

```
sqlplus sys/<password>@<ora_sid> as sysdba
```

for example

```
sqlplus sys/change_on_install@dim10 as sysdba
```

NOTE *Not* `dim10.64."`

g Ensure you do not see '`64 bit`' in the response. The example below shows an example of the 32-bit response that is required before installing Dimensions RM:

```
D:\>SQLplus
SQL*Plus: Release 10.2.0.3.0 - Production on Tue Jun
    16 12:02:00 2009
Copyright (c) 1982, 2006, Oracle. All Rights
    Reserved.
```

Creating a Database Instance for Use by Dimensions RM

Creating an Oracle Instance in the Windows Serena-Supplied Runtime RDBMS

Creating a 32-Bit 10g Windows Serena-Supplied Runtime Oracle Instance

The default Oracle instance (`DIM10`) created by the 32-bit 10g Windows Serena-Supplied Runtime RDBMS installer is only suitable for Dimensions RM if you are an experienced Oracle DBA, as to use it involves manually merging the Dimensions CM Oracle template `Dim10Oracle10g.dbt` and the standard Oracle Provided `Transaction Processing` template, plus various other manual Oracle tasks. Consequently, Serena normally recommend that you:

- Create a new instance for use by Dimensions RM (typically called `RM`), see "Creating an Oracle Instance in Your 32-Bit or 64-Bit RDBMS" on page 66.
- To help improve database performance, delete the `DIM10` instance, see "Deleting a 32-Bit 10g Windows Serena-Supplied Runtime Default Oracle Instance" on page 65.

Deleting a 32-Bit 10g Windows Serena-Supplied Runtime Default Oracle Instance

IMPORTANT! Do *not* delete the `DIM10` default instance if you plan to install both Dimensions CM and Dimensions RM into the same RDBMS to make use of the ALM integration between these two products.

To help improve database performance, delete the Oracle instance that is created by default (`DIM10`) by the 32-bit 10g Windows Serena-Supplied Runtime RDBMS. To delete this instance:

1. Launch the Oracle Database Configuration Assistant (DBCA) as follows:

```
All Programs | Oracle-<oracle_home_name> | Configuration
    and Migration Tools | Database Configuration Assistant
```

2. When prompted to choose an operation, choose to **Delete A Database**.

3. When prompted:

   a. Select the original default database name (Oracle instance) to be deleted.

   > **CAUTION!** Make sure you select the correct database for deletion. The default name will be `DIM10`).

   b. Enter the database username and password. By default the username is `sys` and the password is `change_on_install`.

Creating a 32-bit or 64-Bit 11gR2 Serena-Supplied Runtime Oracle Instance

The 32-bit 11gR2 Serena-Supplied Runtime RDBMS installer creates a default Oracle instance of `DIM12`; and the 64-bit 11gR2 Serena-Supplied Runtime RDBMS installer also creates a default Oracle instance of `DIM12` (apart from some early versions, which create a default Oracle instance of DIM10. The created instance can be used either:

- Separately by either a Dimensions CM or a Dimensions RM server installation.
- Jointly for Dimensions CM and Dimensions RM server installations associated together in an Application Lifecycle Management (ALM) integration.

Creating an Oracle Instance in Your 32-Bit or 64-Bit RDBMS

11gR2 Oracle

Serena supply a Dimensions ALM Oracle 11gR2 database template that can be used to create an instance in your 11gR2 Oracle RDBMS. This instance can be used either:

- Separately by either a Dimensions CM or a Dimensions RM server installation.

- Jointly for Dimensions CM and Dimensions RM server installations associated together in an Application Lifecycle Management (ALM) integration.

The Oracle DBCA utility (as discussed in this section) will need to be used to implement the template currently supplied by Serena or your own template.

The following procedure summarizes the steps required to build a new Oracle instance for your Dimensions RM installation. You need to complete these steps before installing Dimensions RM.

NOTE The procedure is essentially the same for Oracle 10g, 11gR1, and Oracle 11gR2. Any differences in the steps concerned are noted.

IMPORTANT! When creating the Oracle instance, the following guidelines must be borne in mind when defining the character set (see also "Database Settings" on page 56):

- Database Character set (`NLS_CHARACTERSET`): `AL32UTF8` or `WE81SO8859P1` only, with `AL32UTF8` being the preferred default.
- Database National Character set (`NLS_NCHAR_CHARACTERSET`): `AL16UTF16` or `UTF8`.
- Oracle Client on Windows: The Character Set part of the `NLS_LANG` setting in Windows registry should be set to `AMERICAN_AMERICA.WE8MSWIN1252`. Please refer to Oracle documentation for any adjustment you may think needed based on the Language and Territory of the Oracle client.

1. If you are not using one of the built in Oracle templates, first copy your template to `%Oracle_Home%\assistants\dbca\templates`.
2. Launch the Oracle Database Configuration Assistant (DBCA) as follows:

```
All Programs | Oracle-<oracle_home_name> | Configuration
    and Migration Tools | Database Configuration Assistant
```

3. Progress to Step 1 of the DBCA. Check **Create a Database**.
4. Progress to Step 2 of the DBCA and select:
   - Oracle 10g

- The **Transaction Processing** template, or
- your own template.

- Oracle 11gR1 and 11gR2
  - The **General Purpose or Transaction Processing** template, or
  - your own template, or
  - the Serena supplied template.

5 Progress to Step 3 of the DBCA. Type in the **Global Database Name** and the Oracle **SID**. The former is limited to eight characters the first of which must be alphabetic. Provided your Oracle SID is eight characters or less, you can assign the same name to both fields as you type in the **Global Database Name**, your entry will be echoed in the Oracle **SID** field.

Follow these guidelines when defining a **Global Database Name** and **SID**:

- The **Global Database Name** and **SID** should be the same. For example: **RM**.
- Do not use underscores in the **Global Database Name** and **SID**.
- The first character must be an alphabetic character.

6 Progress to Step 4 of the DBCA:

- Oracle 10g, 11gR1, and 11gR2

  Accept the defaults when prompted to configure the database with **Configure the Database with Enterprise Manager**. Your site database administrator (DBA) may optionally change these options without impact on Dimensions RM. (For Oracle 10g, there will be no GUI tabs; for Oracle 11gR2, these options will be on the default Enterprise Manager tab.)

- Oracle 11gR1 and 11gR2 only

  Select the Automatic Maintenance Tasks tab and accept the default **Enable automatic maintenance tasks**.

7 Progress to Step 5 of the DBCA. When prompted to specify passwords for your user accounts, set the passwords in accordance with your site policies (for Oracle guidelines on passwords, see "Oracle Password Guidelines" on page 25). Dimensions RM does not

expect defined passwords.

CAUTION! Make a note of these passwords. Serena Support will be unable to help you with database queries if you do not know these passwords.

8 Progress to Step 6 of the DBCA:

- Oracle 10g

  Select the storage mechanism to use for the database, by selecting the default **File System** option unless your site DBA is going to provide the support for other methods.

- Oracle 11gR1 and 11gR2

a Select the storage type and locations for database files, by selecting **File System** from the Storage Type drop down menu. Normally you should accept the values reported in the **File Location Variables** dialog that appears.

b Accept the defaults for the **Storage Locations** unless your site DBA is going to provide the support for other methods.

9 Progress to:

- Oracle 10g

  Step 7 of the DBCA. When prompted to specify the locations for the database files to be created, accept the defaults unless your site DBA is going to provide the support for other methods.

- Oracle 11gR1 and 11gR2

  Step 10 of this procedure.

10 Progress to Step 8 (Oracle 10g) or Step 7 (Oracle 11gR1 and 11gR2) of the DBCA. When prompted to choose the recovery options for the database, deselect the **Specify Flash Recovery Area** checkbox unless your site DBA is going to provide the support.

11 Progress to Step 9 (Oracle 10g) or Step 8 (Oracle 11gR1 and 11gR2) of the DBCA. When prompted to include sample schemas or custom scripts, accept the default options.

12 Progress to Step 10 (Oracle 10g) or Step 9 (Oracle 11gR1 and 11gR2) of the DBCA.

a On the Memory tab:

NOTE In the following, users referred to as *simultaneous users* do not relate to licenses on the system but to users simultaneously accessing the server for information.

- Oracle 10g (32 Bit)
  - Set **Memory** to **Custom**.
  - Set **Shared Memory Management** to **Automatic**
  - Set **SGA Size** to 768 plus 48MB for each simultaneous user over four users. For example:
    - 1-4 simultaneous users SGA 768.
    - 5 simultaneous users SGA 816.
    - 10 simultaneous users SGA 1056.
    - 20 simultaneous users SGA 1536.
  - Set **PGA Size** to 256 plus 16MB for each simultaneous user over four users. For example:
    - 1-4 simultaneous users PGA 256.
    - Five simultaneous users PGA 272.
    - 10 simultaneous users PGA 352.
    - 20 simultaneous users SGA PGA 512.

  This allocation works up until about 20 simultaneous users as a starting point. Depending on the size of the database and the queries that are run, additional resources may be necessary to improve performance. These numbers are a guideline as a starting point only. System and user environments are all optimized differently; tuning requires detailed knowledge, as well as access to the complete environment.

  All system memory must fit into RAM without a swap/page file.

- Oracle 11gR1 and 11gR2 (64 Bit)
  - Set **Memory** to **Typical**.

- Check **Use Automatic Memory Management** if not grayed out.
- Set **Memory Size (SGA and PGA)** to 1152 plus 64MB for each simultaneous user over eight users. For example:
  - 1-8 simultaneous users SGA 1152.
  - 10 simultaneous users SGA 1280.
  - 20 simultaneous users SGA 1920.

This allocation works up until about 20 simultaneous users as a starting point. Depending on the size of the database and the queries that are run, additional resources may be necessary to improve performance. These numbers are a guideline as a starting point only. System and user environments are all optimized differently; tuning requires detailed knowledge, as well as access to the complete environment.

All system memory must fit into RAM without a swap/page file.

b On the Sizing tab, consider the following guidelines to determine the total number of processes:

- Eight processes are needed for each simultaneous user.
- 20 processes are needed for each sync engine.
- 18 processes are needed for the ALF or Mashups service.
- Four processes are needed for the RM Mail Service.
- The total number of processes must be at least:
  - Oracle 10g (32 Bit)

    160
  - Oracle 11gR1 and 11gR2 (64 Bit)

    310

c On the Character Sets tab, you are strongly advised to set the following options:

- **Database Character Set: Use Unicode (AL32UTF8)**
- **National Character Set: AL16UTF16 - Unicode UTF-16 Universal character set**

d On the Connection Mode tab, accept the default **Dedicated Server Mode** selection.

13 Progress to Step 12 (Oracle 10g) or Step 11 (Oracle 11gR1 and 11gR2) of the DBCA via intermediate steps by repeatedly clicking **Next**. Ensure that **Create Database** is pre-selected, and then click **Finish** to launch the database instance creation.

14 Click **OK** on the **Confirmation** dialog box. The database instance will now be created.

15 Click **Exit** on the screen summarizing the created database instance.

16 Verify that you can connect to the newly created Oracle instance:

a Open a Windows Command Prompt:

```
All Programs | Accessories | Command Prompt
```

b Type the following:

```
sqlplus system/<password>@<ora_instance>
```

c Check that the output confirms that you have successfully established a connection.

d To exit from SQL Plus, type:

```
exit
```

32-bit 10g Serena-Supplied Runtime RDBMS only

17 If you have used this DBCA procedure to create a 32-bit 10g Serena-Supplied Runtime RDBMS Oracle instance in addition to the default `DIM10` (as recommended for Dimensions RM), you should now delete the `DIM10` Oracle instance, see "Deleting a 32-Bit 10g Windows Serena-Supplied Runtime Default Oracle Instance" on page 65.

Creating an Oracle Instance in a Remote 64-bit 11gR2 UNIX Serena-Supplied Runtime RDBMS

The installation of a 64-bit 11gR2 UNIX Serena-Supplied Runtime RDBMS, like a default installation of its Windows equivalent, creates by default the requisite Oracle database instance ready for remote use with a (Windows) Dimensions RM installation.

Creating an Oracle Instance in a Remote 32-Bit 10g UNIX Serena-Supplied Runtime RDBMS

The installation of a 32-bit 10g UNIX Serena-Supplied Runtime RDBMS, unlike a default installation of its 64-bit equivalent, does not create the requisite Oracle database instance ready for remote use with a (Windows) Dimensions RM installation. To create the UNIX Oracle instance for use by Dimensions RM, you must use the same Oracle 10g process as that required if you have your own Oracle UNIX RDBMS, see "Creating an Oracle Instance in Your Own Remote UNIX Oracle RDBMS" on page 73.

Creating an Oracle Instance in Your Own Remote UNIX Oracle RDBMS

The following procedure:

- Details the steps required to create an Oracle instance for your Dimensions RM installation. You need to complete these steps before installing Dimensions RM.
- Utilizes an X11 Window GUI version of the Oracle Database Configuration Assistant (`dbca`) that behaves and looks similar to the WIndows version of the DBCA. A pre-requirement of its use is that the X11 Window system (or GUI built upon it) is installed on your remote UNIX—this will be the case for the majority of modern UNIX and Linux workstations.

NOTE It is possible to run `dbca` in silent mode using a response file. This is outside the scope of this guide; you should refer to your Oracle documentation if you want to do this.

IMPORTANT! When creating the Oracle instance, the following guidelines must be borne in mind when defining the character set (see also "Database Settings" on page 56):

- Database Character set (`NLS_CHARACTERSET`): `AL32UTF8` or `WE81SO8859P1` only, with `AL32UTF8` being the preferred default.
- Database National Character set (`NLS_NCHAR_CHARACTERSET`): `AL16UTF16` or `UTF8`.
- Oracle Client on Windows: The Character Set part of the `NLS_LANG` setting in Windows registry should be set to `AMERICAN_AMERICA.WE8MSWIN1252`. Please refer to Oracle documentation for any adjustment you may think needed based on the Language and Territory of the Oracle client.

To create an Oracle instance using the graphical Oracle Database Configuration Assistant, proceed as follows:

IMPORTANT! You must be logged in as a user who is a member of the UNIX '`dba`' group. The user who installed or owns the Oracle installation (usually `oracle`) is such a member; the user 'root' normally is *not* such a member.

1 Check that the GUI symbol `DISPLAY` is set correctly for your system.

You can check by typing:

```
$ echo $DISPLAY
```

You should get a response such as:

```
:0.0
```

If not set `DISPLAY`:

- Bourne Shell

```
$ DISPLAY=:0.0;export DISPLAY
```

- C-Shell

```
$ setenv DISPLAY :0.0
```

2 Enable X11 access for clients by typing:

```
$ xhost +
```

Test that you can run X11 applications by, for example, invoking an xterminal:

```
$ xterm
```

3 Once you have confirmed that you can invoke X11 applications, navigate to:

```
$ ORACLE_HOME/bin
```

4 Execute:

```
$ dbca
```

5 The remainder of this procedure for UNIX is the same (with occasional minor differences) as that previously described in this guide for Windows.

Proceed to complete Step 3 on page 67 to Step 15 on page 72 to complete the operation to create an Oracle instance.

6 Verify that you can connect to the newly created Oracle instance:

a Type the following:

```
$ sqlplus system/<password>@<ora_instance>
```

b Check that the output confirms that you have successfully established a connection.

c To exit from SQL Plus, type:

```
exit
```

Setting Up a Local Oracle Net Service Name on the Dimensions RM Server Node

For a Dimensions RM server installation with respect to a supported remotely located Windows or UNIX Serena-Supplied Runtime or Oracle RDBMS, you will need to provide the Oracle Net Service Name. This is the name that the local Windows Oracle client networking software uses to identify particular remote Oracle databases for network operations.

On your local Windows node you need to define the Net Service Name of the remote Oracle database that you want the Dimensions RM server to communicate with. To do this you use the Oracle Net Configuration Assistant as explained below:

1. Start the Oracle Net Configuration Assistant.
   - For the Serena-Supplied Runtime RDBMS:

     ```
     Start | All Programs | Oracle-<oracle_home> |
         Configuration and Migration Tools |
         Net Configuration Assistant
     ```

     For a default Serena-Supplied Runtime RDBMS installation, `<oracle_home>` will be `Dimensions` or `DimOra11`.
   - For your own Oracle Enterprise consult you vendor documentation.
2. Select **Local Net Service Name configuration** and click **Next**.
3. Select **Add** and click **Next**.
4. Each Oracle database or service has a service name. Normally this will be its SID. Enter the SID of the *remote* database you want the *local* Oracle client to communicate with. Click **Next**.
5. Select **TCP** and click **Next**.
6. To be able to communicate with the remote database, the local Oracle client needs to know the remote database's hostname. Enter the remote database's hostname. (In most cases you should also accept the standard port number of 1521.) Click **Next**.
7. Select **Yes, perform a test** to verify that the remote database can be reached using the information already provided. Click **Next**.

8 If the test was successful, you will get the message:

```
Connecting... Test successful.
```

If the test fails, you need to repeatedly click **Back** to check that the information you provide and correct it as necessary until this test is successful.

Click **Next**.

9 Having tested that your local Oracle client can simply communicate through TCP/IP with the remote database whose service name (SID) you provided in Step 4 on page 76, you now need to assign an Oracle Net Service Name. This net service name is the name that your *local Oracle client* will use to identify the *remote* database when performing locally initiated Oracle services with respect to the *remote* database.

By default the net service name will be the same as the service name you provided in Step 4 on page 76 and the **Net Service Name** field will be pre-populated with that name. However, if that name is not unique, for example, say both the local Oracle client and remote databases have an Oracle SID of `DIM10`, then you would enter a unique net service name for the local Oracle client to use when communicating with the remote database, for example, `DIM10R`.

Click **Next**.

10 Unless you want to configure another net service name, accept the default **No** and click **Next**.

11 Click **Next**.

12 Click **Finish**.

Chapter 4

Installing Dimensions RM

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Checklist

☐	Ensure that you have installed Serena License Manager (SLM) and have obtained valid license keys (see "Licensing Dimensions RM" on page 37). This step can be skipped if you choose to install a 30 day evaluation license.
☐	Ensure that you have either installed the Serena-Supplied Runtime RDBMS or have access to your own company's Oracle Standard or Enterprise (see "Installing and Configuring Your RDBMS and Oracle Client" on page 51).
☐	Ensure that you have created a database instance for use by Dimensions RM (see "Creating a Database Instance for Use by Dimensions RM" on page 65).
☐	Decide which type of Dimensions RM installation you want to install (see page 81): ■ Server, ■ Admin Client, or ■ RM Import Client.
☐	If you will be installing the RM Browser (which is a constituent component of Server), ensure that you have installed a Web server (Microsoft Internet Information Services (IIS) or Apache) and Web browser (Microsoft IE or Mozilla Firefox)—see page 19 and page 20 respectively.
☐	Determine if you need to install an Oracle Administrator Client (see "The Need for an Administrator Oracle Client" on page 54), and ensure that you correctly install it if it is required (see "Installing an Administrator Oracle Client" on page 62).
☐	If you RDBMS is on a remote network node, ensure that you have set up a local Oracle Net Service Name on the local Dimensions RM node to enable the Oracle Administrator Client to communicate with your RDBMS (see "Setting Up a Local Oracle Net Service Name on the Dimensions RM Server Node" on page 76).
☐	If you will be installing RM Import Client, ensure that you have installed—at a minimum—the Microsoft Office components identified on page 20.

☐	If you will be installing the plug-in for IBM® Rational® Software Modeler, ensure that you have the correct software pre-installed and have read *Integration Guide for IBM® Rational® Software Modeler*.
☐	If you will be configuring Dimensions RM to work with SSO or SSO and CAC, ensure that you know the details that will be required by the Dimensions RM installer. See "Prerequisites for SSO Authentication or SSO with Smart Card Authentication" on page 31.
☐	Ensure that you have satisfied all other system requirements and pre-installation requirements ("System Requirements" on page 15, "Pre-Installation Requirements" on page 21, and "Optimizing Performance" on page 33).
☐	Run the Dimensions RM installer (see "Installing Dimensions RM" on page 81).
☐	Perform the post-installation steps necessary to configure Dimensions RM (see "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91).

Installing Dimensions RM

The following sub-sections describe how to install Serena® Dimensions® RM. These instructions apply to basic installations; for more complex installations, consult Serena Support.

The following table describes the three installation options available with the Dimensions RM installer.

Option	Description
Server (continued on next page)	Installs all the Dimensions RM server, Admin Client, and RM Import components. This is the best option when installing a basic, single network node implementation. The Dimensions RM components installed by default are: ▪ Documentation ▪ RM Browser for <WebServerType> ▪ RM Class Definition

Option	Description
Server (continued)	■ RM Concept ■ RM Explorer ■ RM Import ■ RM Import Designer ■ RM Mail Configuration ■ RM Manage ■ RM Word ■ Single Sign On If you have IBM® Rational® Software Modeler 6.x or 7.x installed, you will also have an installation option of a Dimensions RM plugin for that software.
Admin Client	Installs the Dimensions RM Administrator client. The Dimensions RM components installed are all those installed for a Server apart from: ■ RM Browser for <WebServerType> ■ the installation option of a Dimensions RM plugin for IBM® Rational® Software Modeler.
RM Import Client (continued on next page)	Installs the RM Import client, which you use to import files from Microsoft Office. The Dimensions RM components installed are: ■ Documentation ■ RM Import ■ RM Import Designer RM Import Client requires a Microsoft Office installation. Dimensions RM will install the appropriate software for the version of Office installed to the system (see also page 20). **NOTE** The minimum set of pre-installed Microsoft Office components required for RM Import client is: ■ Microsoft Office Excel. ■ Microsoft Office Excel .NET Programmability Support.

Option	Description
RM Import Client (continued)	■ Microsoft Office Word. ■ Microsoft Office Word .NET Programmability Support.

To install Dimensions RM:

NOTES

- All three installation options (Server, Admin Client, and RM Import Client) will be described. For a Server installation, all of the following installer steps are encountered; for an Admin Client or RM Import Client installation, certain installer steps are skipped as they are not relevant—the particular steps skipped will be identified as and where appropriate.
- Upon successful completion of the installation, the installer will prompt you to restart your computer for configuration changes to take effect. You will not be able to use Dimensions RM until this is done, so you should plan your installation for a time when such a restart is convenient or suitable.

CAUTION!

- For Windows Vista and Windows 7 (only), if you plan to use an Internet Information Services (IIS) Web Server (installer Step 8 on page 84) you must ensure that the 'IIS-Metabase' package is installed berforehand—see "Microsoft Vista or Windows 7 Specific Pre-Installation Requirements" on page 28.
- For Windows Server 2008 it might be necessary to temporarily disable User Access Control (UAC) during installation of Dimensions RM to avoid installation errors. UAC can be turned back on after Dimensions RM is successfully installed and configured. See "Temporarily Disabling UAC Before Installing Dimensions RM on Windows Server 2008" on page 29 for details.

1. Log in as the Windows local administrator or user with local administrative privileges.
2. Navigate to the `setup.exe` file in the `RM\win32` directory that was created when you extracted the contents of the downloaded zip file.

3. For Windows systems other than Windows Server 2008, double click `setup.exe`.

   On Window Server 2008, right click on `setup.exe` and select **Run as administrator**.

4. The **Welcome** screen appears. Click **Next**.

5. On the **End User License Agreement** screen, read the terms of the agreement. Click **I accept the terms of the End User License Agreement** if you agree to its terms, and then click **Next**.

6. On the **Setup Type** screen, click **Server**, **Admin Client**, or **RMImport Client** as appropriate. Here it will be assumed that the default **Server** is chosen. Click **Next**.

7. The **Destination Folder** screen appears. The default installation directory is:

   ```
   C:\Program Files\Serena\Dimensions 11.2.4\RM
   ```

   If you want to change the location, click **Change** and navigate to the directory where you want to install Dimensions RM. Click **Next**.

8. ***This installer step is skipped for both an Admin Client and RM Import Client installation.***

   On the **Features Setup** screen, select the components you want to install. The components vary depending on the type of installation you are performing.

NOTE To determine the disk space required for each feature you select, click the feature. As well as displaying a summary of the selected feature (see below), the space required will be reported.

Component	Description
Dimensions RM for IIS	Configures Microsoft Internet Information Services (IIS) virtual directories. This component is used by the RM Browser Web client. Select this component if you have IIS installed and you want to use RM Browser. **NOTE:** A message warns you if you do not have IIS installed on your computer.
Dimensions RM for Apache	Configures Apache aliases. This component is used by the RM Browser Web client. Select this component if you have Apache installed and want to use RM Browser.
Dimensions RM Client	Installs the Dimensions RM clients.
RM Import (Office 2003)	Installs the RM Import and RM Import Designer tools if you have Office 2003 installed on your computer. If you have multiple versions of Office installed, by default the RM Import version for the latest installed version of Office will be selected.
RM Import (Office 2007)	Installs the RM Import and RM Import Designer tools if you have Office 2007 installed on your computer. If you have multiple versions of Office installed, by default the RM Import version for the latest installed version of Office will be selected.
RM Import (Office 2010)	Installs the RM Import and RM Import Designer tools if you have Office 2010 installed on your computer. If you have multiple versions of Office installed, by default the RM Import version for the latest installed version of Office will be selected.
Tutorial Files	Installs files that support the tutorial projects included with Dimensions RM.

Component	Description
Plugin for IBM Rational Software Modeler	Installs the plugin for IBM® Rational® Software Modeler, which enables the integration between Dimensions RM and RSM.
Serena Single Sign On (SSO)	Installs the components to connect RM to an existing Serena SSO server for SSO/CAC support. **IMPORTANT!** The Serena SSO server is an optional part of a Dimensions CM or SBM installation. No SSO server is included in RM.

Once you have made your selections, click **Next**.

IIS only: **9** ***This installer step is skipped for both an Admin Client and RM Import Client installation.***

On the **Select IIS Web Site** screen, select the Web site (from the drop-down list) to which you want to install RM Browser, for example, **Default Web Site**. Click **Next**.

Apache only: **10** This installer step is skipped for both an Admin Client and RM Import Client installation.

On the Apache Version screen, select the version of Apache that you have installed. Click **Next**.

Apache only: **11** ***This installer step is skipped for both an Admin Client and RM Import Client installation.***

On the Select Apache Configuration File screen, enter the path to the Apache configuration file (httpd.conf) that you would like to configure for RM Browser. This file normally resides in the `conf` folder in your Apache installation.

12 The **Choose License Server** screen opens.

a Do one of the following:

- Select **Specify License Server** if you have Serena License Manager (SLM) already installed on a computer and have active licenses on it. Type the host name or IP address of the SLM computer in the **Host Name** field.
- Select **Install a 30 day evaluation license** if you want to install an evaluation license that you can use to help you ease

into the licensing process. This license gives you a percentage more licenses than you purchased to ensure that you have enough to get Dimensions RM installed and your users started.

b Click **Next**.

13 This installer step is skipped for both an Admin Client and RM Import Client installation.

If you selected the **Serena Single Sign On (SSO)** feature, the **Choose SSO Host** screen appears. Complete the following fields:

NOTE The Serena SSO server is an optional part of a Dimensions CM or SBM installation. No SSO server is included in RM.

a **Host Name:** Enter the host name of the computer that hosts your Serena Single Sign On (STS) server.

IMPORTANT! Ensure that you specify exactly the same host name as configured for the gatekeeper in SBM or Dimensions CM. Specify a host name rather than an IP address. Else SSO may not work correctly with Web applications.

b **Port:** Enter the port through which clients connect to your Serena SSO server. The HTTP default is 8085; the HTTPS default is 8243.

c **Secure (HTTPS) Connection:** Specify whether to connect to the SSO server using HTTPS.

NOTE

- Changing this checkbox will reset the **SSO** port to the default HTTP or HTTPS port.
- Ensure that the **Port** you specified above is compatible with your choice here.

d **RM Web Server Port:** The port over which the web application submits an SSO token. The default is 80.

e **Tomcat Port:** The port used by the Gatekeeper to connect to the SSO server. The default is 8080.

IMPORTANT! The Dimensions RM SSO installation includes Tomcat. If Dimensions RM is installed on the same server as SBM or Dimensions CM, you must ensure that the Tomcat installed with RM does not conflict with the ports used by SBM and Dimensions CM.

f Click **Next**.

14 On the **Oracle Client Version** screen, select the version of the Administrator Oracle client that you have installed—**Oracle 11g** or **Oracle 10g**.

NOTE For those types of installation in which your Dimensions RM installation and associated RDBMS share the same PC, it is possible that the Oracle client components were installed along with the RDBMS (as can be confirmed by connecting to the database using sqlplus). This is not the case for the 64-bit Windows Oracle 11g or the 11g 64-bit Windows Serena- Supplied Runtime RDBMS where a 32-bit Windows Oracle Administrator client is required.

Click **Next**.

If the installer is unable to automatically detect your RDBMS `%ORACLE_HOME%` environment, you will be prompted to use **Manual Entry** at the next installer screen. Click **OK** to proceed.

15 ***This installer step is skipped for an RM Import Client installation.***

On the **Select Oracle Installation** screen, select the Serena-Supplied Runtime RDBMS or Oracle RDBMS installation to use with Dimensions RM by choosing its Oracle home name from the drop-down list. If the RDBMS installation you wish to use is not present in the drop-down list, click **Manual Entry** to manually specify it.

If you are using a 32-bit Windows Administrator Oracle client to communicate with an RDBMS, you need to specify the location for the client not the RDBMS, for example:

```
C:\Oracle\Product\11.2.0\clients32
```

Click **Next**.

16 ***This installer step is skipped for an RM Import Client installation.***

On the **Select Dimensions RM Oracle Password File** screen, either accept the default path for the `security.dat` file used to store the Oracle passwords or click **Browse** to specify an alternative location.

Click **Next**.

17 On the **Ready to Install the Program** screen, select the **Add shortcuts for the RM client applications to the desktop** check box if you want this feature, and then click **Install**.

If you selected **Plugin for IBM Rational Software Modeler** on the **Features Setup** screen (see Step 8 on page 84), before the Dimensions RM installation itself begins, this plugin will be installed—proceed to Step 18 on page 89; otherwise, the Dimensions RM installation will proceed, eventually reaching Step 19 on page 89.

IBM Rational plugin option

18 A **Welcome** screen for the plugin opens. Perform the following steps:

a Click **Next**.

b On the **Select RSM Version** screen, select either **RSM 6.0** or **RSM 7.0**, and click **Next**.

c On the **Rational Software Modeler Directory** screen, the default location of the RSM installation is displayed (for example, `C:\Program Files\IBM\SDP70`). To change the folder, click **Change**.

d Click **Next**.

NOTE If you do not have RSM installed on your computer, a message warns you that it cannot find your RSM installation. The plugin files are still installed, but they are unusable.

e On the **Ready to Install the Program** screen, click **Install**.

f When the **InstallShield Wizard Completed** screen for RSM opens, click **Finish**.

g The Dimensions RM installation itself will now proceed, eventually reaching Step 19 on page 89.

All options

19 When the **InstallShield Wizard Completed** screen for Dimensions RM opens, click **Finish** to complete the installation.

All options **20** Restart your computer. and proceed to "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91.

Chapter 5

Post-Installation Activities for a Fresh Dimensions RM Installation

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Chapter Overview

This chapter discusses the post-installation procedures and checks that are required following the fresh installation of a Serena® Dimensions® RM Server. For a Dimensions RM Admin Client or RMImport Client installation ceratin of these procedures will not be applicable, principally those with reference to the RM Browser and Web Servers.

For post-installation procedures and checks specifically for Dimensions RM upgrade installations, see "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169.

IMPORTANT! When using RM Manage or RM Class Definition from a client machine, the changes will not take effect until the Serena Dimensions RM Pool Manager is restarted on the RM server.

Checklist

☐	Check that the installation has completed successfully (see "Checking That the Installation Has Completed Successfully" on page 94).
☐	Set the optional security message if you have installed to a secure system (see "Setting the Optional Security Message" on page 95).
☐	Perform the immediate Dimensions RM post-installation activities (see "Checking for Latest Updates" on page 95 and "Immediate Dimensions RM Post-Installation Activities" on page 96).
☐	Set up the database schema and ICDBA Account (see "Creating the ICDBA Account" on page 101).
☐	Import an example Dimensions RM project (see "Importing an Example Dimensions RM Project" on page 110).
☐	If you installed the Single Sign On (SSO) components, configure SSO (see "SSO and CAC Configuration" on page 116).
☐	Configure the Web Server for RM Browser (see "Configuring the Web Server for RM Browser" on page 126).

☐	Configure the Web Server for RM Import and RM Import Designer (see "Configuring the Web Server for RM Import and RM Import Designer" on page 133).
☐	Configure the Web Server for publishing Microsoft Word attachments (see "Configuring the Web Server for Publishing Attachments in Document View" on page 134).
☐	If running 64-bit Windows with Internet Information Services (IIS), enable Gsoap to run 32-bit applications (see "Enabling Gsoap to Run in 32-Bit Mode on 64-Bit Windows" on page 135).
☐	If running an IIS Web Server, checking authentication and access control (see "Checking IIS Web Server Authentication and Access Control for IUSR" on page 135)
☐	If applicable, enable Dimensions CM-Dimensions RM ALM Integration (see "Prerequisites for the Dimensions CM to Dimensions RM Integration" on page 136).
☐	If applicable, set up Dimensions RM to work with Serena Prototype Compose rn (see "Prerequisites for Setting Up Dimensions RM to Work with Prototype Composer" on page 138).
☐	If applicable, enable a project for ALF Events (see "ALF Enabling a Dimensions RM Project" on page 139)
☐	Quickly check out the Dimensions RM installation (see "Quickly Checking the Installed and Configured Dimensions RM Server" on page 139).
☐	Turn UAC back on for Windows Server 2008, if applicable (see "Turning UAC Back on After Installing Dimensions RM on Windows Server 2008" on page 145).

Checking That the Installation Has Completed Successfully

There is a small possibility that the installation may not have completed successfully even though it may have appeared to have done so. It is recommended that you check that the expected software is listed in the `Control Panel | Add or Remove Programs` window following the installation. Select the appropriate entry (for example, **Serena**

Dimensions RM 11.2.4) and click the **Click here for support information link** to check the version number.

Setting the Optional Security Message

If you are installing to a secure system, you must enable the optional security warning as soon as installation is complete. Please see the topic "Creating Custom Login Alert Pages for RM Browser" in the *RM Browser User's Guide*.

Checking for Latest Updates

After installing Dimensions RM, periodically ensure that you visit the Serena support Web site at

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

to determine the latest patch updates for Dimensions RM, if any. This site requires first time users to register for a user name and password.

Once logged into the support site, under `Support | My Downloads` you will find an option to download patches (select **Dimensions RM** from the **Please Select Product** dropdown list and then click the **Click here for Patches** link next to the dropdown list). Search the list of patches to see if there are any maintenance patches appropriate to your version of Dimensions RM. If there are any such patches, it is normally recommended that you download them together with the associated patch readme and apply them. Each patch download normally includes the patch binary, an integral patch installer, and the associated patch readme that includes instructions for running the patch installer.

Immediate Dimensions RM Post-Installation Activities

Checking Windows Services

1. Log in as a user with local Windows administrative rights. Access Services by:

   `Start | Control Panel | Services`

   or

   `Start | Control Panel | Administrative Tools | Services`

   This will display the status of the services for your particular Windows PC.

2. Check that the following database and Dimensions RM services have Status `Started` and Startup `Automatic`.

   - Dimensions RM services:

     ```
     Serena Dimensions RM Pool Manager
     Serena License Server(*)
     ```

     (*) This service may be absent if you are using Serena License Manager (SLM) on another server. If the service should be present and is not running, refer to "Starting the License Server" on page 45 for instructions on setting it up.

   - Serena-Supplied Runtime RDBMS or Oracle services

     ```
     OracleDBConsoleRM
     Oracle<oracle_service_name>TNSListener(*)
     ```

`OracleService<oracle_service>(**)`

(*) By default this will be `OracleDimensionsTNSListener`.

(**) For the 32-bit 10g Serena-Supplied RDBMS, this will normally be `OracleServiceRM`; whereas, for the 32-bit or 64-bit 11gR2 Serena-Supplied RDBMS, this will normally be `OracleServiceDIM12` (or `OracleServiceDIM10` on some earlier versions). See "Creating an Oracle Instance in the Windows Serena-Supplied Runtime RDBMS" on page 65.

3 Open the Windows task manager and check for the following database and Dimensions RM processes:

- Dimensions RM processes (note that there will be several rmAppServer.exe processes for a default installation):

  rmAppServer.exe
  `RMServerPool.exe`

- Serena-Supplied Runtime RDBMS or Oracle Enterprise only processes:

  `oracle.exe`
  `TNSLSNR.EXE`

Licensing Dimensions RM Products

See "Licensing Dimensions RM" on page 37 details about licensing Dimensions RM components.

Virus Checkers

Real-time virus checking of certain Dimensions RM and Oracle database files can cause a noticeable slowdown in Dimensions RM server operations. The following list identifies the principal files that can be excluded from real-time virus to improve performance:

IMPORTANT! The files listed below should, of course, still be included in other forms of virus scans—it is only their exclusion from real-time checking for all reads and writes during operation that is being recommended.

File Name	Execution Mode	Risks Introduced by Excluded from Real-Time Virus Checking
Datacacheserver.exe *(continued on next page)*	■ Run as system user continuously once the product is installed. ■ Memory usage of this particular process increases/ decreases depending upon the load.	This executable is continuously using the active system memory and is accessed by each and every request over the Internet or intranet.
Datacacheserver.exe *(continued)*	■ Multiple process are launched and run in the memory.	
Oracle.exe	■ Run as system user continuously once the Oracle is installed and the instance is started. ■ Memory usage of this particular process increases/ decreases depending upon the load.	As above.

File Name	Execution Mode	Risks Introduced by Excluded from Real-Time Virus Checking
rmAppserver.exe	■ Run as system user continuously once the product is installed. ■ Memory usage of this particular process increases/ decreases depending upon the load. ■ Multiple process are launched and run in the memory.	As above.
RMServerPool.exe	■ Run as system user continuously once the product is installed. ■ Memory usage of this particular process increases/ decreases depending upon the load. ■ Multiple process are launched and run in the memory.	As above.

File Name	Execution Mode	Risks Introduced by Excluded from Real-Time Virus Checking
rtmBrowser.exe	■ Launched and then killed once the request is served—that is, this process will not run continuously in memory. ■ Run as IUSR anonymous user account.	rtmBrowser.exe is launched and killed for each and every request. It does not continuously occupy active memory; consequently, it can be safely be included in an on-demand scheduled virus scan.

Creating the ICDBA Account

Before you can log in to Dimensions RM, you have to create an `ICDBA` Oracle account and password in the schema within the Serena-Supplied RDBMS or Oracle RDBMS that is to be used for Dimensions RM.

There are two methods of doing this:

- Using RM Manage "Create IC DB Account" (Recommended)

  Starting with Dimensions RM 11.2.1, you now have the option of creating the ICDBA Oracle account (and associated password) from within RM Manage.

  See "Creating the ICDBA Account From Within RM Manage" on page 102.

- Using the "setupRM.sql" Script (or Your Own Edited Version)

  You or your database administrator (DBA), as an Oracle `SYSDBA` user (for example, `SYS`), can manually run the pre-prepared `setupRM.sql` SQL script located at:

  `<install directory>\Serena\Dimensions <version>\RM\sql`

  for example:

  ```
  C:\Program Files\Serena\Dimensions 11.2.4\RM\sql\
      setupRM.sql
  ```

  IMPORTANT! If you run an edited version of the script, it should be noted that Dimensions RM requires both the user account ICDBA and its associated password to be in upper case.

  For the Serena-Supplied Runtime RDBMS, the default password for `SYS` is `CHANGE_ON_INSTALL`

  The procedure for running this script is described in "Running the setupRM.sql SQL Script" on page 103. See also, "Changing the ICDBA Password in the setupRM.sql SQL Script" on page 104 and "Sample SQL Scripts" on page 109.

Creating the ICDBA Account From Within RM Manage

To create the ICDBA account:

1. Select the database in which you want to create the ICDBA account (for example, `RM`).
2. Select **File** | **Create ICDBA Account**, click the **Create ICDBA Account** button , or right-click the database and select **Create ICDBA Account**.
3. The **Create ICDBA account** dialog box opens.
4. In the **Password** field of the **Create ICDBA account area**, type the password that you want to assign to the Dimensions RM `ICDBA` account.

IMPORTANT! The password must be in upper case only.

5. In the associated **Confirm Password** field, re-type the password.
6. In the **Account Name** field of the **Enter SYSDBA account password** area, enter the appropriate `SYSDBA` Oracle account that you want to use, for example, `SYS`.
7. In the associated **Password** field, type the associated password for the account name.

NOTE For the Serena-Supplied Runtime RDBMS, the default password for the `SYS` account is `CHANGE_ON_INSTALL`.

8. By default, the ICDBA account is created in a new SERENA_RM_ADMIN tablespace for the ICDBA account and its size is set to 1024 MB. To set a different size or create the ICDBA account in an existing tablespace, click the **Advanced** button. The dialog expands to display the advanced features.
   - To set a different size for the SERENA_RM_ADMIN tablespace, set the **Tablespace** and **Units** values as desired.
   - To create the ICDBA account in an existing tablespace, select the **Create in existing tablespace** option, and select the desired tablespace from the list.

- If you wish to resize one of the tablespaces or create a new one with a specific name, click the **Administer Tablespaces** button and complete the fields as necessary.

9 Click **Create**.

IMPORTANT! For the Oracle 11g RDBMS and the 11g versions of the Serena-Supplied Runtime RDBMS, Oracle account passwords expire by default after 180 days. Unless your DBA has re-configured such RDBMS to override this default and allow permanent passwords, you must change the ICDBA password before 180 days elapse using the RM Manage **Change Administrator Password** menu item, see "Changing Database Administrator Account Passwords Using RM Manage" on page 108.

Running the setupRM.sql SQL Script

Follow these steps to configure the schema and create the ICDBA account:

1 Open a Windows Command Prompt window:

```
All Programs | Accessories | Command Prompt
```

2 Navigate to the location of the `setupRM.sql` file, for example:

```
C:\Program Files\Serena\Dimensions 11.2.4\RM\sql\
    setupRM.sql
```

3 In the Command Prompt window, enter the following commands:

```
sqlplus sys/<password>@<databasename> as sysdba
SQL> @setupRM.sql
SQL> exit
```

for example:

```
sqlplus sys/change_on_install@rm as sysdba
SQL> @setupRM.sql
```

```
SQL> exit
```

NOTE The error message:

```
ORA-01543: tablespace 'USERS' already exists
```

can be safely ignored.

Changing the ICDBA Password in the setupRM.sql SQL Script

You may wish to change the ICDBA password to something other than the default `ICDBA` in the `setupRM.sql` file (it must be in upper case) before running it.

To change the ICDBA password:

1. Open the `setupRM.sql` file in a text editor.
2. Locate the following line:

```
create user ICDBA identified by ICDBA default tablespace users;
```

3. Change the second occurrence of `ICDBA` to an upper case password of your own choice. The first character must be an alphabetic character, and underscores (_) are reserved for special characters. This password is not case-sensitive. The following example line includes the password `SERENA_123`:

```
create user ICDBA identified by SERENA_123 default tablespace users;
```

4. Save the file.

Password Expiration for Oracle 11g Passwords

The standard security default on Oracle 11g is for passwords to expire after 180 days. If your passwords expire you will receive an ORA-28001 error message. Your DBA should ensure that Oracle accounts are created so that they do not expire. You should also update the `security.dat` file in `<`*install directory*`>\Serena\Dimensions <`*version*`>\RM\` on a regular basis.

Starting with Dimensions RM 11.2.1, you can change the passwords for the Dimensions RM database administrator Oracle accounts `ICDBA`, `ICADMIN`, and `ICPROJECTS` from within RM Manage —see "Changing Database Administrator Account Passwords Using RM Manage" on page 108.

For other Oracle accounts, the following SQL script can be run when creating them such as to disable password expiration, but this will only work if run prior to a password actually expiring.

CAUTION! Serena makes no warranty of any kind in regard to the contents of this script, including but not limited to implied warranties of merchantable quality or fitness for any particular purpose. Serena shall not be liable for errors contained in it or for incidental or consequential damages in connection with the furnishing, performance, or use of this script. The information in this script is subject to change without notice.

Script start

```
/*
With Oracle 11 the new security defaults set Oracle Account
    to expire the passwords after 180 days. This forces
    the user to change all DB passwords for Oracle
    accounts
   sys
   system
   ICDBA
   ICADMIN
   ICPROJECTS
   <RM Projects>
This is good default security but requires good Oracle
    knowledge to maintain these accounts. As a work around
    this script creates a profile where passwords will NOT
    expire. Then assigns account RM needs to this profile.
    This must be run before the account have their
    password expire. Once the passwords expire they must
    be changed.

Please be aware that by running this script you are
    reducing the security of the Oracle database. Be sure
    you understand the risks and accept them before
    running this script.
*/
```

```
CREATE PROFILE "SERENANOLOCKOUT" LIMIT CPU_PER_SESSION
    DEFAULT
   CPU_PER_CALL DEFAULT
   CONNECT_TIME DEFAULT
   IDLE_TIME DEFAULT
   SESSIONS_PER_USER DEFAULT
   LOGICAL_READS_PER_SESSION DEFAULT
   LOGICAL_READS_PER_CALL DEFAULT
   PRIVATE_SGA DEFAULT
   COMPOSITE_LIMIT DEFAULT
   PASSWORD_LIFE_TIME UNLIMITED
   PASSWORD_GRACE_TIME UNLIMITED
   PASSWORD_REUSE_MAX 1
   PASSWORD_REUSE_TIME UNLIMITED
   PASSWORD_LOCK_TIME 5
   FAILED_LOGIN_ATTEMPTS UNLIMITED
   PASSWORD_VERIFY_FUNCTION NULL
;
```

```
/*
As a minimum the ICADMIN and ICPROJECTS accounts should be
    set to not expire as these accounts do not receive
    pending expiration warnings. They are more involved to
    change than the others requiring generation of a new
    Security.DAT file.
*/
ALTER USER ICADMIN PROFILE SERENANOLOCKOUT;
ALTER USER ICPROJECTS PROFILE SERENANOLOCKOUT;

/*
Next set the primary RM accounts: ICDBA and the PROJECTS to
    not expire.

Below please copy and edit the line
     ALTER USER RMDEMO PROFILE SERENANOLOCKOUT;
Change RMDEMO to your first project name - uppercase
Then copy this line so each project has its own line.
*/
ALTER USER ICDBA PROFILE SERENANOLOCKOUT;
ALTER USER RMDEMO PROFILE SERENANOLOCKOUT;

/*
And lastly the Main Oracle accounts. This is where the
    security starts to get weak if you do not change the
    passwords on a regular basis. If you do not have a DBA
    to maintain these for you it may be good to make sure
    they do not expire and lockout.Especially as the RM
    admin you will rarely use these accounts.
*/
ALTER USER SYS PROFILE SERENANOLOCKOUT;
ALTER USER SYSTEM PROFILE SERENANOLOCKOUT;
ALTER USER SYSMAN PROFILE SERENANOLOCKOUT;
ALTER USER DBSNMP PROFILE SERENANOLOCKOUT;

Script end
```

Changing Database Administrator Account Passwords Using RM Manage

Starting with Dimensions RM 11.2.1, for the Dimensions RM database administrator Oracle accounts `ICDBA`, `ICADMIN`, and `ICPROJECTS` you now have the option of changing their passwords from within RM Manage.

To change the ICDBA, ICADMIN, or ICPROJECTS account password:

1. Select the database whose administrator accounts (one or more of ICDBA, ICADMIN, or ICPRPOJECTS) you want to change associated passwords.
2. Select **File** | **Change Administrator Password**, click the **Change Administrator Password** button , or right-click the database and select **Change Administrator Password**.
3. The **Change administrator password** dialog box opens.
4. In the **Select account to modify area**, select the `ICDBA`, `ICADMIN`, or `ICPROJECTS` account as appropriate from the **Account** drop-down list.
5. In the **Change account password** area, type the new password that you want to assign to the chosen account.

IMPORTANT! The password must be in upper case only.

6. In the associated **Confirm Password** field, re-type the password.
7. In the **Enter ICDBA account password** area (note for ICDBA, this will be entitled **Enter current ICDBA account password**), type the current ICDBA password.
8. Click **Change**.

IMPORTANT! For the Oracle 11g RDBMS and the 11g versions of the Serena-Supplied Runtime RDBMS, Oracle account passwords expire by default after 180 days. Unless your DBA has re-configured such RDBMS to override this default and allow permanent passwords, you must change the ICDBA password before 180 days elapse.

Sample SQL Scripts

Dimensions RM installs various sample scripts in the directory:

```
<install directory>\Serena\Dimensions <version>\RM\sql
```

for example:

```
C:\Program Files\Serena\Dimensions 11.2.4\RM\sql\
    setupRM.sql
```

These are primarily intended for knowledgable DBAs and comprise the following:

setupRM.sql

See "Creating the ICDBA Account" on page 101.

SetupDatabase.bat

A Windows batch file that runs the `setupRM.sql` SQL file. If used, this should be edited for your own particular set up.

icadmin-upgrade-RM2009R1.sql

A SQL file that can be used for database upgrade operations with respect to upgrading Dimensions RM 2009 R1 databases to 2010 R1. Please consult Serena support for details.

icadmin-upgrade-RM2009R1.bat

A Windows batch file that runs the icadmin-upgrade-RM2009R1.sql SQL file. If used, this should be edited for your own particular set up.

icadmin-upgrade-RM2009R1SP1.sql

A SQL file that can be used for database upgrade operations with respect to upgrading Dimensions RM 2009 R1SP1 databases to 2010 R1. Please consult Serena support for details.

icadmin-upgrade-RM2009R1SP1.bat

A Windows batch file that runs the icadmin-upgrade-RM2009R1SP1.sql SQL file. If used, this should be edited for your own particular set up.

Importing an Example Dimensions RM Project

After you install Dimensions RM, you must create a project from a provided example project or an existing project backup (but see "Special Considerations When Restoring Existing Projects With E-mail Rules" on page 115). The following steps explain how to create a project from a provided sample project. This is just an example; you can use these steps with other projects.

NOTE There are other options available for importing and creating projects, such as importing a saved project or creating a blank project. For information about these options, see the *Serena Dimensions RM Administrator's Guide*.

Do NOT use the QLARIUS or RMDEMO sample projects as a starting point for an actual production project. Always start with the BLANK project or a project of your own that was created from the BLANK project and then saved (see the Saved Projects tab).

To import an example project:

1. Start RM Manage.
2. Right click the Dimensions RM database (for example, `RM`) in the tree structure and select **New Project**. The **Please enter password** dialog box opens.
3. In the **Password** field, type the password for the Dimensions RM ICDBA account.

NOTE Step 4 only occurs when creating the first project in a chosen database. For subsequent projects created in that database, you go directly to Step 5.

4. Starting in Dimensions RM 11.2.1, the passwords for Oracle user accounts `ICDBA`, `ICADMIN`, and `ICPROJECTS` are no longer hard coded. The password for the `ICDBA` account has to be assigned first when creating that account (as explained in "Creating the ICDBA Account" on page 101); whereas, the passwords for the `ICADMIN`

and `ICPROJECTS` accounts have to be assigned on first-project creation within a database as explained here.

IMPORTANT! You must ensure that you create the ICDBA account and associated password before assigning passwords to `ICADMIN` and `ICPROJECTS`. There is no software check to ensure that this has been done in the correct order.

a The **Enter ICADMIN/ICPROJECTS password** dialog box opens.

b In the **ICADMIN Password** field, type the password to be assigned that account.

IMPORTANT! The password must be in upper case only.

c Serena recommends that you use the same password for the ICADMIN and `ICPROJECTS` accounts. This is done by default.

However, if you want to assign a different password to ICPROJECTS, select the **Change ICPROJECTS password** checkbox and enter an appropriate upper case password in the **ICPROJECTS Password** field.

d By default, the account is created in a SERENA_RM_ADMIN tablespace. To create the account in an existing tablespace, click the **Advanced** button. The dialog expands to display the advanced features:

- To create the account in an existing tablespace, select the **Create in existing tablespace** option, and select the desired tablespace from the list.
- If you wish to resize one of the tablespaces or create a new one with a specific name, click the **Administer Tablespaces** button and complete the fields as necessary.

e Click **OK**.

IMPORTANT!

- When creating the accounts for `ICADMIN` and `ICPROJECTS`, Dimensions RM automatically generates a new `security.dat` file. The old version of this file is renamed and retained as a backup.
- For the Oracle 11g RDBMS and the 11g versions of the Serena-Supplied Runtime RDBMS, Oracle account passwords expire by default after 180 days. Unless your DBA has re-configured such RDBMS to override this default and allow permanent passwords, you must change the `ICADMIN` and `ICPROJECTS` passwords before 180 days elapse using the RM Manage **Change Administrator Password** menu item, see "Changing Database Administrator Account Passwords Using RM Manage" on page 108.

5 The **Please Enter Project Information** dialog box opens.

6 Type a project name in the **Project Name** field (for example, `MYPROJECT)`.

7 Type a project password in the **Project Password** field (for example, `MYPROJECT`) and retype it in the **Confirm Project Password** field.

8 Type a system administrator password in the **Administrator Password** field (for example, `MYPROJECT)`. (An Oracle privileged account is required to create new projects.)

9 Retype the system administrator's password in the **Confirm Administrator Password** field, and click **OK**. The new project will now be created.

NOTE The project password is one that Dimensions RM uses as an Oracle user password. It is not needed to use Dimensions RM. The administrator account (which is automatically created and named by appending `ADMIN` to the project name, for example, `MYPROJECTADMIN`) and password (for example, `MYPROJECT`) are the ones you need to remember when you first open the project you are in the process of creating (for example, `MYPROJECT`).

Starting with Dimensions RM 11.2.1, the project administrator Oracle account only has access rights with respect to the RM Manage tool itself. No other Dimensions RM tools can be accessed with this account.

Depending on the sizes of various tables in your database, for particular tables, **Tablespace Error** dialog boxes may open during project creation to indicate that a particular table is not at high enough value. If this occurs, for each **Tablespace Error** dialog box:

a Read and take note of the error message in the dialog box.

b Click **Yes**. A **Resize Tablespace** dialog box will open.

c In the **Resize Tablespace** dialog box, enter in **New Datafile Size** the new tablespace size increased (at least) as recommended in Step a.

d Click **Resize**. A **Resize** dialog box will open.

e In the **Resize** dialog box, click **Yes**.

f In the **Resize Tablespace** dialog box, click **Close**.

10 Click **OK** in the **Success** dialog that informs you that the project has been created. The **Import** dialog opens.

11 Click the Sample Projects tab and select a sample project (for example, RMDEMO).

IMPORTANT! Do NOT use the QLARIUS or RMDEMO sample projects as a starting point for an actual production project. Always start with the BLANK project or a project of your own that was created from the BLANK project and then saved (see the Saved Projects tab).

12 Select the **Include Security Data** check box. This will enable you to include user accounts, user groups, and access right definitions in the sample project.

13 For sample projects such as RMDEMO, a buffer of 1 MB is sufficient, so you can accept the default value in the **Buffer Size (Mb)** list.

14 Click **Install**. After the installation is complete, you are prompted whether you want to view the log file. Click **Yes** or **No** as appropriate.

NOTE See the Dimensions RM readme for information on possible Oracle errors that can be safely ignored.

15 Exit RM Manage.

Your new project (for example, MYPROJECT) based on a sample project (for example, RMDEMO) will now be available for use. You can test its availability as follows:

1 Start RM Manage.

2 Click the Dimensions RM database (for example, RM) in the tree structure. The **Logon Information** dialog box opens.

3 In the **User Name** field, type the name of the system administrator for the project that you just created (for example, MYPROJECTADMIN).

4 In the **Password** field, type the password of the system administrator for the project that you just created (for example, MYPROJECT).

5 Click **OK**.

6 In the **RM Manage** dialog box, click the '+' sign next to the Dimensions RM database (for example, `RM`) in the tree structure. Your new project (for example, `MYPROJECT`) will appear in the tree structure and will be labeled `(current)`.

   If the project is not shown as `(current)` it will need to be converted as follows:

   a Select the database that contains the project you want to convert.

   b Select **File** | **Convert Database**, click the **Convert Database** button , or right-click the database and select **Convert Database**. This starts the conversion tool.

   c To expand the database that contains the project you want to convert, click + next to the database name.

   d Enter the `ICDBA` password.

   e Select the project and click **Upgrade**.

   f To start the upgrade, click **Continue**. The upgrade may take several minutes to complete.

NOTE For more information about working with projects, including creating Dimensions RM users, see the *Serena Dimensions RM Administrator's Guide*.

Special Considerations When Restoring Existing Projects With E-mail Rules

If you create a new project from the back up of an existing project, there are special considerations that need to be taken into account if the existing project uses e-mail rules.

If you back up a project that uses e-mail rules and then restore it to a different Dimensions RM database, the restored project will:

- Miss out some of the rules.
- Assign some of the rules to the wrong user.

If you wish to back up and restore a project that uses e-mail rules, please contact Serena Support who will work with you to overcome these issues and successfully back up and restore the project.

SSO and CAC Configuration

The Serena Single Sign On (SSO) option in the Dimensions RM installer installs components needed for the RM server to communicate with a Serena SSO server. The Serena SSO server is an optional part of a Dimensions CM or SBM installation.

For information about installing and configuring the Serena SSO server, see the Dimensions CM or SBM documentation.

Configuring SSL Certificates

You must create and configure SSL certificates to ensure security. See the Dimensions CM or SBM documentation for general information on the creation and configuration of SSL certificates for Serena SSO.

NOTE For initial setup and testing, demonstration certificates are included in the installation. These are not intended for production use and should be replaced with your own certificates. See the Dimensions CM or SBM documentation.

- Create a certificate for the RM server (RM_CERT). Configure the STS server to trust this certificate. The certificate can be either self-signed or signed by a certificate authority (CA_RM_CERT).

NOTE To communicate with the Serena SSO server (STS server), your RM Server and fat client systems must include a copy of the STS server certificate.

See "Exporting a Certificate from the STS Server" on page 117 and "Adding a Certificate for RM Server to the STS Keystore" on page 117.

- Create a certificate for the RM web server (RM_WEB_CERT). To enable SSO with remote fat clients, the RM web server should be configured for SSL and the certificate should be signed by a known certificate authority.

IMPORTANT! Remote fat clients use SSL when connecting to RM Server to avoid transferring plain-text passwords and certificates over the network.

Exporting a Certificate from the STS Server

After you have configured the Dimensions CM or SBM STS server with your own SSL certificates (rather than the demo certificates it may have shipped with), you must export a certificate from the STS server and then copy it to the RM Server.

To export a certificate from the STS server:

1. From a command prompt, navigate to the following directory on the STS server:

   ```
   TokenService.war\WEB-INF\conf
   ```

2. Run the following command:

   ```
   keytool -export -keystore keystore.jks -file sts.cer
       -alias sts
   ```

3. Enter the password for the keystore and press ENTER.
   The certificate file is exported to the file `sts.cer`.

4. Run the following command to convert the file to PEM format:

   ```
   openssl x509 -in sts.cer -inform DER -out sts.pem
       -outform PEM
   ```

5. Copy the resulting `sts.pem` file to the configured location on the RM Server. Verify that the value of the registry key `SSO_TRUST_CERTIFICATE` matches the actual location of the file. See "RM Server Parameters" on page 120.

Adding a Certificate for RM Server to the STS Keystore

The RM server certificate has to be added to a configured truststore (the default file name is `truststore.jks`).

Here is an example command line to import a certificate into a truststore:

```
%java_home%/bin/keytool -importcert
-file CERTIFICATE
-alias ALIAS
-keystore TRUSTSTORE
-storepass PASSWORD
```

Where:

CERTIFICATE – Is a filename with a certificate in `.DER` format.

ALIAS – Is `rm_ca` if adding CA_RM_CERT, or `RMServer` if adding RM_CERT.

TRUSTSTORE – Is the filename for the keystore (`rm_truststore.jks` when adding CA_RM_CERT, or `truststore.jks` when adding RM_CERT).

To convert the RM Server certificate to .DER format, you can use an openssl command like the following:

```
openssl x509 -in CERTIFICATE.pem -inform PEM -out
    CERTIFICATE.der -outform DER
```

NOTE A Demo RM server certificate is automatically installed with the SBM STS server starting with SBM version 2009R4.01.

Modifying the Tomcat Service

The Dimensions RM SSO installation includes Tomcat. If Dimensions RM is installed on the same server as SBM or Dimensions CM, you must ensure that the Tomcat installed with RM does not conflict with the ports used by SBM and Dimensions CM. If you need to change the ports that were specified at install time, see the following procedure.

NOTE The port numbers shown in the following procedure are the defaults.

To change the ports used by tomcat:

1. Open the following file in a text editor:

   RM_Root`\common\tomcat\conf\server.xml`

2. Modify the ports specified in the following sections as needed:

   - **Server Port:**

     ```
     <Server port="8005" shutdown="SHUTDOWN">
     ```

- **Connector Port for HTTP or HTTPS:**

```
<Connector port="8080" protocol="HTTP/1.1"
               connectionTimeout="20000"
               redirectPort="8443" />
```

- **Connector Port for AJP:**

```
<Connector port="8009" protocol="AJP/1.3"
    redirectPort="8443" />
```

3 Save the file.

4 Open the following file in a text editor:

RM_Root\common\tomcat\webapps\RMClient\WEB-INF\web.xml

5 Modify the port specified in the following section as needed:

```
<param-name>rm.url</param-name>
<param-value>http://localhost:80</param-value>
```

NOTE This port is for internal communication between components on the RM server. It is not necessary to use HTTPS on this port.

6 Save the file.

7 Restart the Tomcat service.

To remove the RM Tomcat service:

1 From a command prompt, navigate to:

RM_Root\common\tomcat\bin

2 Enter the following command:

```
service.bat remove
```

To reinstall the RM Tomcat service:

1 From a command prompt, navigate to:

RM_Root\common\tomcat\bin

2 Enter the following command:

```
service.bat install
```

Enabling SSO as a Login Source

Before you can use SSO authentication with RM projects, you must enable SSO as a login source for the database that contains them. The SSO login source is enabled via the RM Manage interface. See the *Serena Dimensions RM Administrator's Guide* for details.

Registry Keys and Configuration Files on the RM Server

The following sections list the registry keys and configuration files located on the RM server system that are necessary to implement SSO. This may be of use in troubleshooting the configuration.

RM Server Parameters

The location of the registry keys depends upon whether the system is running a 32- or 64-bit version of Windows:

- **32-bit:**

  ```
  HKEY_LOCAL_MACHINE\SOFTWARE\Serena
      Software\RTM\Environment\Default
  ```

- **64-bit:**

  ```
  HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Serena
  ```

`Software\RTM\Environment\Default`

RM Server Registry Keys	
Key	**Description**
RMKey (String)	Contains a full path to a file with a private key of the RM server certificate. The Key file should not be password protected. The file must be in .pem format. Example: `C:\Program Files\Serena\Dimensions \RM\conf\rmkey.pem`
RMCertificate (String)	Contains a full path to a file for a certificate of the RM server. The file must be in .pem format. Example: `C:\Program Files\Serena\Dimensions \RM\conf\rmcert.pem`
SSOServer (String)	Contains the URL to the SSO/STS server. Only the host name and port are required. Example: `http://ssohost:8085`
STSServer (String)	Contains the URL to the STS server if it is installed separately. This is optional and is not needed when SSO is provided by SBM only.
SSO_TRUST_CERTIFICATE	Contains the full path to the STS server certificate. Example: `C:\Program Files\Serena\Dimensions \RM\conf\sts.pem`

RM Server Registry Keys	
Key	**Description**
SSO_RELYING_PARTY	Should contain the SSO "Relaying Party" used to validate and request Token. For more information about this value, read the STS server configuration information Contains a default value of: `uri:org:eclipse:alf:sso:relyingparty:anonymous:anonymous:anonymous;uri:org:eclipse:alf:sso:relyingparty:serena.application.engine.notification.server:anonymous:anonymous`
SSO_CLOCK_TOLERANCE	"Expiration Tolerance" time in sec, used to validate the STS Token. Sometimes clocks (server and relying party) are not perfectly aligned. A token might be issued say at 12:00:00 but the Relying Party might be 2-3 minutes behind so it is 11:57:00. In such a case, the token will be needlessly rejected. So we need to have a small (configurable) amount of time that allows for clock skew. Value set by the installer: `300`

Gatekeeper Parameters

The Gatekeeper runs on the RM installation of Tomcat. Its parameters are contained in two configuration files located in the following directory:

RM_ROOT`\common\tomcat\alfssogatekeeper\conf`

IMPORTANT! Ensure that the gatekeeper configuration specifies the same host names in Dimensions RM as in SBM or Dimensions CM. Specify host names rather than IP addresses. Else SSO may not work correctly with Web applications.

gatekeeper-core-config.xml	
Parameter	**Description**
SecurityTokenService	URL to the STS server. This is configured by the installer. Example: `http://sts-server:8085/TokenService/services/Trust`
SecurityTokenServiceExternal	Same as the SecurityTokenService.
FederationServerURL	URL to the Federation server. This is configured by the installer. Example: `http://sts-server:8085/ALFSSOLogin/login`

gatekeeper-services-config.xml	
Parameter	**Description**
Path: <GatekeeperProtectionControl> <ProtectedURIs> Element: <URIMatcher requestURI="/RMClient/*" />	URIMatcher should have one line that contains "/RMClient/*" string. This is a definition of a filter to protect a particular web application.
Path: <Service name="default" ProtectionLevel="all">> <ServiceEntryPoints> <BrowserRequests> Element: <URIMatcher requestURI="/RMClient/*" />	Protected URL mask.
Path: <GlobalLogoutURI> Element: <URIMatcher requestURI="/*/logout-sso.jsp" />	The default logout URL to use with the sequence to invalidate SSO token. When accessing this URL, the Gatekeeper automatically rejects the SSO token causing the login screen to appear.

RM Client Parameters

The web.xml file on the RM Server contains parameters for the RM client. The file is located in the following directory:

`RM_ROOT/common/tomcat/webapps/web-inf`

web.xml	
Prameter	**Description**
<context-param> <param-name>rm.url</param-name> <param-value>http://localhost:80 </param-value> </context-param>	The value is the URL to which the RM Web server posts the SSO token. This is internal server-to-server communication; HTTPS may not be necessary. The default is always localhost. Check the notes about this URL in the SSO installation section.

RM Web Client Parameters

The icEnv.js file on the RM Server contains parameters of the RM Browser client. The file is located in the following directory:

RM_Root`\rtmBrowser\jscript`

icEnv.js	
Parameter	**Description**
After the installation there is a line similar to: `var SSO_URL='http://`*rmhost.domain.net*`:8080';`	You should verify the protocol and port if Tomcat is reconfigured on another port or protocol. The example is shown for a configuration without SSL. *rmhost.domain.net* represents the hostname of the server where the RM Client web application is installed. To verify that the URL is correct, open the URL in a Web browser.

Registry Keys and Configuration Files on the Fat Client

The following lists the SSO-related registry keys and configuration files located on systems with a fat client installation. This may be of use in troubleshooting the configuration.

The location of the registry keys depends upon whether the system is running a 32- or 64-bit version of Windows:

- **32-bit:**

  `HKEY_LOCAL_MACHINE\SOFTWARE\Serena Software\RTM\Environment\Default`

- **64-bit:**

`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Serena Software\RTM\Environment\Default`

RM Fat Client Registry Keys	
Key	**Description**
RMKey (String) (Optional)	Contains a full path to a file with a private key of the RM server certificate. The Key file should not be password protected. The file must be in .pem format. Example: `C:\Program Files\Serena\Dimensions\RM\conf\rmkey.pem`
RMCertificate (String) (Optional)	Contains a full path to a file for a certificate of the RM server. The file must be in .pem format. Example: `C:\Program Files\Serena\Dimensions\RM\conf\rmcert.pem`
SSOServer (String)	Contains the URL to the Dimensions CM or SBM SSO/STS server. Only the host name and port are required. Example: `http://ssohost:8085`

RM Fat Client Registry Keys	
Key	**Description**

RMServer
(String)
	Contains the URL to the RM server.
	
	Fat clients communicate with the RM server to request an SSO token. This registry key allows the use of non-standard ports. Remote fat clients must use HTTPS, so the URL must contain https for the protocol portion of the URL.
	
	To use a specific port:
	`https://rmserverhost:8443`
	To use a the default HTTPS port:
	`https://rmserverhost3`

CAC (String) (Optional)	If this key contains a non-empty value, CAC logins are "enforced". In such a case, a user can be validated as a "pure" RM local user or by using smart cards. If this key doesn't exist, a user can be validated with SSO using a username/password combination.
CACertificate (String)	Contains the full path to a file with the CA_RM_WEB (a trusted issuer of the certificate) to validate the RM web server certificate. The file must be in .pem format. **NOTE** Connection to RM Web uses SSL only, therefore this setting is important.

Configuring the Web Server for RM Browser

NOTE the Dimensions RM browser application RM Browser has been tested against Microsoft's Internet Information Server (IIS) versions 6 and 7, and Apache versions 2.0 and 2.2.x.

Access to Windows System TEMP Directory

If your Dimensions RM log in hangs, one possible reason may be that the IIS or Apache anonymous authentication `IUSR_computername` account does not have the requisite:

- read,

- modify, and
- delete

access to the Windows system `TEMP` directory. You must have such access for Dimensions RM log in to occur.

Access to 'rtmBrowser\temp' Directory

If you plan to use a Microsoft Internet Information Server (IIS) as the Web Server for RM import and RM Import Designer to view requirement attachments in Microsoft Word RM Published Documents, as well as pre-configuring IIS as explained in "IIS 6 Pre-Configuration Required to View Attachments in Microsoft Word RM Published Documents" on page 27 the `IUSR_computername` and `IWAM_computername` accounts require:

- write, and
- modify

access to be granted for the '`rtmBrowser\temp`' directory in the Dimensions RM installation.

IIS Configuration

Configuration Performed by the Dimensions RM Installer

The Dimensions RM installer performs the following steps to configure the IIS Web server for RM Browser:

- Creates a virtual directory with an alias of **rtmBrowser** under the **Default Web Site**.
- Creates a virtual directory with an alias of **help** under the **rtmBrowser** virtual directory.
- Creates a virtual directory with an alias of **cgi-bin** under the **rtmBrowser** virtual directory

NOTE Cookies must be enabled on the client machines before users can log in to RM Browser. Internet Explorer (IE) does not allow cookies to be enabled when the URL you are using as a hostname for RM Browser contains one or more underscores.

You can see the above directory folders by navigating as follows:

```
Control Panel | Administrative Tools | Computer Management
    | Services and Applications | Internet Information
    Services (IIS) Manager | Web Sites | Default Web Site
```

Resolving an "Error getting xml request: 404" Web Page Error

In certain circumstances, RM Browser for IIS may fail at the login page with a Web Page error of "`Error getting xml request: 404`".

To resolve this problem if it occurs, proceed as follows:

1. Open the IIS Manager:

   ```
   Control Panel | Administrative Tools | Computer
       Management | Services and Applications | Internet
       Information Services (IIS) Manager
   ```

2. Click **Web Services Extensions**.
3. Select **All Unknown CGI Extensions**, and then click **Allow**.
4. Select **All Unknown ISAPI Extensions**, and then click **Allow**.
5. Restart the IIS as follows:

   ```
   Right click Internet Information Services (IIS) Manager
       (in the left-hand tree) | All Tasks | Restart IIS
   ```

6. Relaunch RM Browser for IIS, and check that you can log in. If you have not set up specific Dimensions RM users, you will need to do this first using RM Manage. If you have based your Dimensions RM project on RMDEMO, `EPHOTO` is a suitable user you can use once you have assigned that user a password.

NOTE See the *Serena Dimensions RM Administrator's Guide* for details on how to assign Dimensions RM users and passwords.

Resolving an "Error getting xml request: 405" Error with IIS 7

In certain circumstances, RM Browser for IIS 7 may fail at the login page with a Web Page error of "`Error getting xml request: 405`".

To resolve this problem if it occurs, perform the following steps to set up the Web Server (IIS) role on Windows 2008 Server:

1. From the Windows Start menu, open Administrative Tools and select **Server Manager.**
2. In the Server Manager tree, click the **Roles** node. In the Roles Summary section, click **Add Roles**.
3. In the Add Roles Wizard that appears, click **Next**. The wizard prompts you to select one or more roles to install on the server. Select the **Web Server (IIS)** role.
4. The Add Roles Wizard prompts you to install the Windows Process Activation Service. Click **Add Required Features** to install the service. Click **Next** to continue.
5. Click **Next** to proceed through the Introduction to Web Server (IIS) overview.
6. In the Select Role Services dialog box, select the following role services for each listed section:
   - Common HTTP Features – Select all
   - Application Development – CGI, ISAPI Extensions, ISAPI Filters
   - Health and Diagnostics – Select all
   - Security – Basic Authentication, Windows Authentication, Digest Authentication
   - Performance – Select all
   - Management Tools – IIS Management Console, IIS Management Scripts and Tools, Management Service (click **Add Required Features** when prompted to install the Windows Process Activation Service)
7. Click **Next** to continue. Click **Install** to confirm your installation selections.
8. Click **Close** after the installation succeeds.

Manually Granting Permissions

Browser security settings are typically configured automatically during installation. However, due to local security settings you may sometimes

need to manually grant the correct permissions to the anonymous authentication `IUSR_computername` account. Follow these steps if necessary to ensure that permissions are set correctly for the `IUSR_computername` account.

To grant permissions:

Oracle 10g, 11gR1, or 11gR2

1. In Windows Explorer, select the following directory:

   `<Oracle_Home>\ora10g\BIN`

   or

   `<Oracle_Home>\ora11g\BIN`

   where `<Oracle_Home>` is the location of your Oracle installation.

2. Select File | Properties, and then click the Security tab in the **Properties** dialog box.

3. Add the `IUSR_computername` to the list of group and user names, or add a group in which `IUSR_computername` user is a member (it is a member of Guest by default).

   Alternatively, make `IUSR_computername` user part of a group that has access to this directory.

4. Allow Read & Execute permissions for this user or group.

5. Click **Advanced**.

6. Make sure that the following check boxes are selected:

   - **Allow inheritable permissions from parent to propagate to this object and all child objects. Include these with entries explicitly defined here.**
   - **Replace permission entries on all child objects with entries shown here that apply to child objects**

7. Click **OK**.

8. Click **Yes** in the security message that is displayed.

9. Click **OK**.

IIS 7 & Windows 2008 Server

10. For IIS 7 and Windows Server 2008, open the IIS Manager:

    `Control Panel | Administrative Tools | Computer Management | Services and Applications | Internet`

```
Information Services (IIS) Manager
```

11 In the **Features** view, double-click **ISAPI and CGI Restrictions**.

12 Select rtmbrowser or rmAppServer then click **Edit features settings** in the **Actions** pane.

13 From the **Edit ISAPI and CGI restrictions settings** dialog box, select both **Allow unspecified CGI modules** and **Allow unspecified ISAPI modules**.

14 Click **OK**.

15 Repeat steps Step 11-Step 14 for rtmservices as well.

Oracle 10g, 11gR1, or 11gR2

16 Repeat this procedure for the following directories:

```
<Oracle_Home>\ora10g\nls
<Oracle_Home>\ora10g\oracore
<Oracle_Home>\ora10g\NETWORK\ADMIN
```

or

```
<Oracle_Home>\ora11g\nls
<Oracle_Home>\ora11g\oracore
<Oracle_Home>\ora11g\NETWORK\ADMIN
```

17 Repeat this procedure for the Dimensions RM installation directory (for example, `C:\Program Files\Serena\Dimensions 11.2.4\RM`), except grant Read & Execute and Write permissions.

18 Reboot your computer.

Apache 2.0 Configuration Summary

The installer makes the following changes to the `httpd.conf` file:

- In Section 2, modifies the following line to include `Default.htm`:

```
DirectoryIndex Default.htm index.html
```

- In Section 2, under the `Alias` section, adds three more aliases:

```
Alias /rtmBrowser/help/ "C:/Program Files/Serena/
    Dimensions 11.2.4/RM/help"
<Directory "C:/Program Files/Serena/Dimensions
    11.2.4/RM/help">
Options Indexes FollowSymlinks MultiViews
```

```
AllowOverride None
Order allow,deny
Allow from all
</Directory>

Alias /rtmBrowser/ "C:/Program Files/Serena/
    Dimensions 11.2.4/RM/rtmBrowser"
<Directory "C:/Program Files/Serena/Dimensions
    11.2.4/RM/rtmBrowser">
Options Indexes FollowSymlinks MultiViews ExecCGI
AllowOverride None
Order allow,deny
Allow from all
</Directory>

ScriptAlias /rtmBrowser/cgi-bin "C:/Program Files/
    Serena/Dimensions 11.2.4/RM/cgi-bin"
<Directory "C:/Program Files/Serena/Dimensions
    11.2.4/RM/cgi-bin">
    Options ExecCGI
    AllowOverride None
    Order allow,deny
    Allow from all
</Directory>
```

where `C:/Program Files/Serena/Dimensions 11.2.4/RM` is the Dimensions RM home directory and `rtmBrowser` is the name of the alias (in the alias name line).

Apache 2.2 Configuration Summary

The installer searches for the end of the first IFModule entry by looking for `</IfModule>` and adds the following lines:

```
LoadModule gsoap_module "C:/Program Files/Serena/
Dimensions 11.2.4/RM/bin/mod_gsoap22.so"
<IfModule mod_gsoap.c>
<Location /rtmservices>
SetHandler gsoap-handler
SOAPLibrary "C:/Program Files/Serena/Dimensions
11.2.4/RM/bin/rtmService.dll
</Location>
</IfModule>
```

Configuring the Web Server for RM Import and RM Import Designer

NOTE RM Browser has been tested against Microsoft's Internet Information Server (IIS) versions 6 and 7 and Apache versions 2.0 and 2.2.x.

The Dimensions RM installer configures the Web server for RM Import and RM Import Designer; no manual configuration is required. For reference, the following sections summarize the tasks the installer performs to configure the Web server.

Access to Windows System TEMP Directory

See "Access to Windows System TEMP Directory" on page 126.

IIS Configuration Summary

The installer performs the following tasks:

- Creates a virtual directory with an alias of **rtmservices** under the **Default Web Site**.
- Creates a Web service extension called **rtmservices** that allows the Web server to run `mod_gsoap.dll` and `rtmService.dll`.
- Creates an application pool called **GSoapAppPool**. This is the application pool for the **rtmservices** virtual directory.

You can see the above directory folders by navigating as follows:

```
Control Panel | Administrative Tools | Computer Management
    | Services and Applications | Internet Information
    Services (IIS) Manager | Web Sites | Default Web Site
```

IIS Manual Configuration

For RM import and RM Import Designer, the IUSR anonymous user account must have read and execute access to the Microsoft Office components (see page 20) for RM Browser Import applications to function correctly. This is done in an analogous manner to the IIS

configurations described in "Configuring the Web Server for RM Browser" on page 126.

Apache Configuration Summary

The installer makes the following changes to the `httpd.conf` file:

- Searches for the end of the first `IFModule` entry by looking for `</IfModule>`
- Adds the following lines:

```
LoadModule gsoap_module "C:/Program Files/Serena/
    Dimensions 11.2.4/RM/bin/mod_gsoap.so"
<IfModule mod_gsoap.c>
   <Location /rtmservices>
       SetHandler gsoap-handler
       SOAPLibrary "C:/Program Files/Serena/
       Dimensions 11.2.4/RM/bin/rtmService.dll
   </Location>
</IfModule>
```

Configuring the Web Server for Publishing Attachments in Document View

The installer makes changes to `DCOM` security settings that lets the Web server launch Microsoft® Word to publish attachments to documents from Document View in RM Browser.

NOTE If you install Word after you install Dimensions RM, you need to run a batch file manually to change these settings. The batch files are in the `<RM Install Dir>\support` directory and are named `setupword_apache.bat` and `setupword_iis.bat`.

Enabling Gsoap to Run in 32-Bit Mode on 64-Bit Windows

For Dimensions RM Web Services to operate in a 64-bit Windows system when utilizing Internet Information Services (IIS), the Gsoap application pool needs to be set to run 32-bit applications. To do this proceed as follows:

1 Navigate to the IIS manager:

```
Start | Administrative Tools | Internet Information
    Services (IIS) Manager
```

2 Navigate in the left hand graphical tree to:

```
<host_name> | Application Pools
```

3 In the right hand **Application Pools** pane:

```
(Right Click) GSoapAppPool | Advanced Settings
```

The **Advanced Settings** dialog box appears.

4 In the **General** grouping of settings, change **Enable 32-Bit Applications** from the value **False** to the value **True**.

5 Click **OK**.

Checking IIS Web Server Authentication and Access Control for IUSR

The Dimensions RM installer should correctly set all the permissions for an Internet Information Services (IIS) 5.1 or 6.0 Web Server, including the IUSR anonymous user account. You should, however, check the IUSR account settings as follows and set the appropriate permissions if the installer failed to set them for you:

NOTE For IIS 7, `IUSR_<MACHINE_NAME>` is the default for anonymous access, so the following procedure is not necessary in the case of IIS 7.

1 Navigate to the IIS manager:

```
Start | Administrative Tools | Internet Information
    Services (IIS) Manager
```

2. Navigate in the left hand graphical tree to:

   ```
   <host_name> | Web Sites
   ```

3. Right click on the Web Site that you are using (for example, **Default Web Site**) and select **Properties.**

   The **Default Properties Web Site** dialog box appears.

4. Click the **Directory Security** tab.

5. In the **Authentication and access control** region, click **Edit**.

   The **Authentication Methods** dialog box appears.

6. Check that the Dimensions RM installer has correctly set the anonymous user `IUSR_<MACHINE_NAME>` to be enabled for anonymous access (**Enable anonymous access** check box checked).

7. If `IUSR_<MACHINE_NAME>` is not enabled for anonymous access, enter its name in the User Name field and click **Enable anonymous access** and **OK**.

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 compatible release levels. Dimensions RM 11.2.4 supports integration with the following releases of Dimensions CM:
  - 12.2
  - 12.1.1
- A Dimensions CM desktop client must be installed on the Dimensions RM web server machine.

- For certain installations (as described in this 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 the *Dimensions CM-Dimensions RM ALM Integration Guide*).
  - The requisite Dimensions RM baselines or collections to one or multiple Dimensions CM projects/streams (see *Dimensions CM-Dimensions RM ALM Integration Guide*).

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.

Prerequisites for Setting Up Dimensions RM to Work with Prototype Composer

To set up Dimensions RM to work with Serena Prototype Composer, IIS must be configured to set up a MIME type for BAPL files with respect to the default websites.

For IIS6:

1 From the Windows Run prompt type:

```
inetmgr
```

The **Internet Information Services (IIS)** utility opens.

2 In the left hand graphical tree, navigate to Default Web Site.

3 (Right click) Default Web Site | Properties

The **Default Web Site Properties** dialog box opens.

4 Click the HTTP Headers tab.

5 Click **MIME Types**.

The **MIME Types** dialog box opens.

6 Click **New**.

The **MIME Type** dialog box opens.

a In **Extension**, type the `.bapl`.

b In **MIME type**, type `text/bapl`.

c Click **OK**.

7 Click **New**.

The **MIME Type** dialog box opens.

a In **Extension**, type the `.bap`.

b In **MIME type**, type `text/bap`.

c Click **OK**.

8 Save the configuration changes by clicking **OK**.

9 Restart the IIS.

For IIS7:

1 Open IIS Manager and navigate to the level you want to manage.

For information about opening IIS Manager and navigating to locations in the user interface, consult the Microsoft documentation.

2 In **Features View**, double-click **MIME Types**.

3 In the **Actions** pane, click **Add**.

4 In the **Add MIME Type** dialog box, type a file name extension in the **File name extension** text box. (Provide both `.bapl` and `.bap`)

5 Type a MIME type in the **MIME type** text box. For example, type `application/octet-stream`.

6 6.Click **OK**.

ALF Enabling a Dimensions RM Project

Before a Dimensions RM project can be used in conjunction with Application Lifecycle Framework (ALF) events, the project must be enabled to emit ALF events and send notifications to the ALF event Manager. This is done by using the RM Manage `File | Configure ALF` options menu item. PLease see the *Administrator's Guide* for details of this menu item and how to install and configure the ALF Emitter Service.

Quickly Checking the Installed and Configured Dimensions RM Server

This section describes some quick checks that you can perform to establish that your Dimensions RM server installation is functioning correctly:

1. If you have not already imported an RMDEMO example project into a new project MYPROJECT, please proceed to "Importing an Example Dimensions RM Project" on page 110. Ensure that you select the **Include Security Data** check box described in Step 12 on page 114, this will enable you to include user accounts, user groups, and access right definitions in the sample project.

2. In RM Manage, assign a password to existing user EPHOTO:

   a Log in to the Dimensions RM database (for example, RM) using:

   - User Name

     MYPROJECTADMIN

   - Password

     MYPROJECT

   b Click the **View User Information** toolbar button

   c In the left hand navigation tree, select user EPHOTO.

   d Select the Password tab.

   e Assign and confirm password of RTM and check **Password Never Expires**.

   f Click **Accept Changes**. In some circumstances the password may already be RTM.

3. In RM Manage, define a project schema for EPHOTO and view the class definition:

   a Click the **View Project Information** toolbar button

   b In the left hand navigation tree, right click the Dimensions RM database name, for example RM.

   NOTE Make sure you right click on the database name (for example, RM) not the project name (for example, MYPROJECT).

   c Select **Change User**. The **Logon Information** dialog box appears.

   d Enter the following:

   - User Name

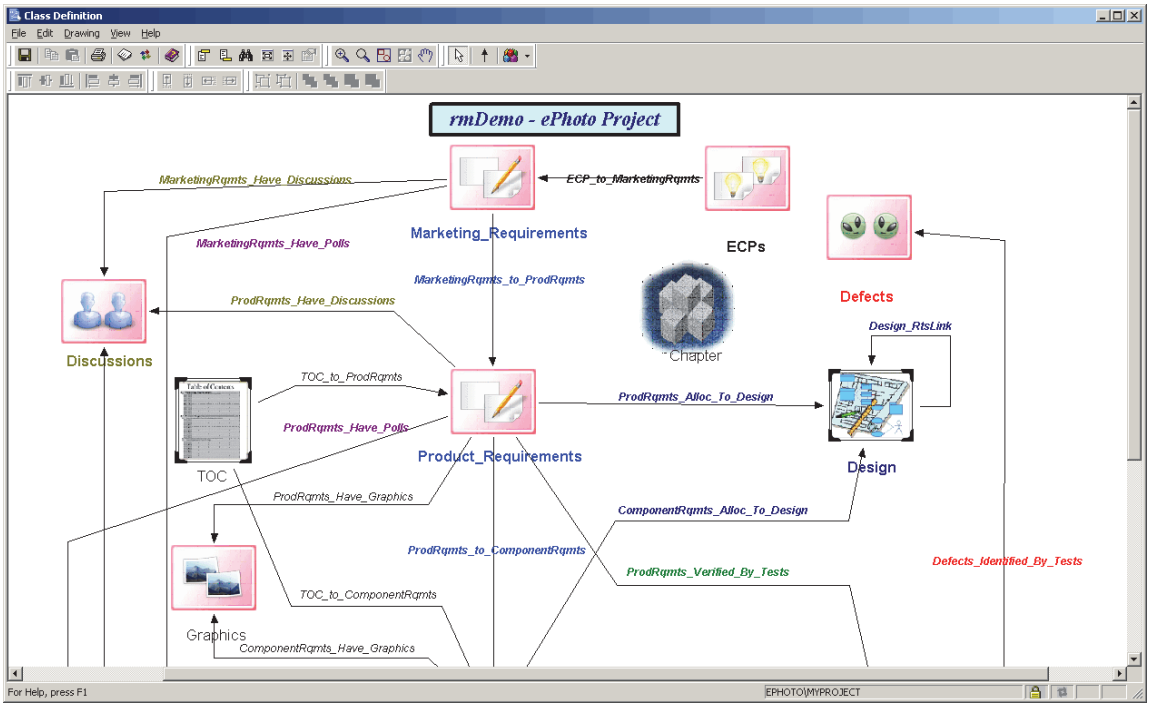
     Ephoto

- Password

  RTM

e In the left hand navigation tree, right click the Dimensions RM project name based on the imported `RMDEMO` example project, for example `MYPROJECT`.

f Select **Define Project Schema**. After a short delay the **Class Definition** tool will open.



g Save the class definition and exit the **Class Definition** tool:

```
File | Save
File | Exit
```

h Log out of RM Manage.

4 In RM Browser, publish a traceability report for `EPHOTO`:

a Log in using the following parameters:

- Username

  Ephoto

- Password

  RTM

- Database

  <database_name> (for example, RM)

- Project

  <project_name> (for example, MYPROJECT)

b Click the Requirements tab.

c Click the Reports sub-tab.

d In the left hand navigation tree, double click **Traceability Reports**.

e Click **ePhoto Marketing Requirements Trace**.

f Click the Documents tab.

g Click the All Documents sub-tab.

h Double click **ePhoto Requirements**.

i Click the **Addition toolbar buttons** toolbar button

j Click the **Publish** toolbar button

k Save the generated Word document.

l Log out of RM Browser.

5 In RM Manage, create a new group:

a Log in to the Dimensions RM database (for example, `RM`) using:

- User Name

  MYPROJECTADMIN

- Password

  MYPROJECT

b In the left hand navigation tree, single click the Dimensions RM database name, for example `RM`.

> **NOTE** Make sure you single click on the database name (for example, `RM`) not the project name (for example, `MYPROJECT`).

c Click the **View Group Information** toolbar button

d In the left hand navigation tree, select user **Groups - <database_name>** (for example, **Groups - RM**).

e (Right click) | New Group

f Type the name of a new group, for example, `TEST`.

g Fill in a description if desired, and click **Accept Changes**.

6 In RM Manage, create a new user and assign it to the new group `TEST`:

a Click the **View User Information** toolbar button

b In the left hand navigation tree, select user **Users - <database_name>** (for example, **Users - RM**).

c (Right click) | New User

d Type the name of a new user, for example, `TEST99`.

e Fill in a descriptions if desired, and click **Accept Changes**.

f In the left hand navigation tree, select the new user `TEST99`.

g Click the Group Membership tab.

h Select the new group `TEST` in the **Not a Member** list and click **Add** to make the new user `TEST99` a member of the new group `TEST`.

i Click the Password tab.

j Assign a permanent password to the new user `TEST99`, for example, `TEST99`.

7 In RM Manage, assign the new group `TEST` and new user `TEST99` to the `MYPROJECT` project and grant all access:

a Click the **View Project Information** toolbar button or `View | Projects`.

b In the left hand navigation tree, right click the Dimensions RM project name based on the imported `RMDEMO` example project, for example `MYPROJECT`.

c Click the Group Assignment tab.

d In the **Assign groups/users to project MYPROJECT** region, check the new group `TEST`.

e Click the Default Access tab.

f Right click on the new group `TEST` and select **Grant All**.

g Right click on the new user `TEST99` and select **Grant All**.

h Log out of RM Manage.

8 In RM Browser, publish a traceability report for the new user TEST99:

a Log in using the following parameters:

- Username

  test99

- Password

  test99

- Database

  <database_name> (for example, RM)

- Project

  <project_name> (for example, MYPROJECT)

b Repeat the Step b on page 142 through to Step k on page 142.

9 In RM Browser, create a requirement for the logged in user `TEST99`:

a Click the Requirements tab.

b Click the **New** toolbar button The **New** dialog box appears.

c Select **Component_Requirements** from the **Class** drop down list and ensure that the **Category** drop down list is pre-populated with your demo project MYPROJECT.

d Populate the **Title** and **Text** text fields with suitable entries.

e Check **Close requirements after save**.

f Click **Save**.

g Click the Categories sub-tab if it is not already selected.

h The new requirement will be located at the bottom of the list of requirements in the **Component_Requirements** list.

i Log out of RM Browser.

10 The Dimensions RM server quick installation checks are now complete. If there are any problems, please contact Serena Support.

Turning UAC Back on After Installing Dimensions RM on Windows Server 2008

In "Temporarily Disabling UAC Before Installing Dimensions RM on Windows Server 2008" on page 29 it was explained that it may be necessary, in certain circumstances, when installing Dimensions RM on Windows Server 2008 to temporarily disable User Account Control (UAC) to avoid installation errors.

If it is necessary to disable UAC, it should remain disabled until you successfully complete the following:

- Installation of Dimensions RM.
- Creation of a Dimensions RM project.
- Verification of the following Dimensions RM functionality/ connectivity:
  - The RM browser (rtmBrowser).
  - RM import.
  - Web services connectivity.
  - RM Manage.
  - Class definition functionality.

You should then turn UAC back on as follows:

1 Navigate as follows:

```
Start | Control Panel | User Accounts
```

The **User Accounts** page appears.

2 Click **Turn User Account Control on or off**.

The **Turn User Account Control On or Off** page appears.

3 Check the **Use User Account Control (UAC) to help protect your computer** check box.

4 Click **OK**.

A system restart will be needed to implement the change.

Chapter 6

Upgrading an Earlier Release of Dimensions RM

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Upgrade Scenarios

There are various scenarios for upgrading earlier releases of Serena® Dimensions® RM server, admin client, or RM import client to the current release level.

The main types of upgrade are as follow:

- **Upgrading Dimensions RM on the Same Server as the Earlier Version**

  In this scenario there are two types of upgrade depending on the release level of the existing Dimensions RM, namely:

  - An earlier version of the Dimensions RM server, admin client or RM import client and RDBMS schema that *is supported* by the current Dimensions RM upgrade installer, namely:

    - A Dimensions RM server of release level 2009 R2, 2010 R1, and 11.2.x.

    - The following RDBMS versions: Serena-Supplied Runtime RDBMS (10.2.0.2 patched to 10.2.0.3 or 10.2.0.4), Oracle Enterprise 10.2.0.3 or later, Oracle Enterprise 11.1.0.6.0 (32-bit version only available for the above versions of Dimensions RM).

    Proceed to "Pre-Installation Tasks for an Upgrade Installation" on page 151 and then "Upgrading from Dimensions 2009 R2, 2010 R1, or 11.2.x" on page 159.

  - Earlier versions of the Dimensions RM server, admin client, or RM import client that *are not supported* by the current Dimensions RM upgrade installer, namely:

    - A Dimensions RM server, admin client, or RM import client of release level 2009 R1 or earlier.

    - The following RDBMS versions: Serena-Supplied Runtime RDBMS (9.2.0.7 or earlier) or Oracle 9.2.0.7 or earlier.

    If you have any of these releases you will need to:

    a Back up your current Dimensions RM projects using the RM Manage Backup/Restore Project Account (see Administrator's Guide)

b Uninstall your current Dimensions RM server, admin client, or RM import client.

c Upgrade your RDBMS—where necessary— to the release level required for Dimensions RM, see "System Requirements" on page 15.

NOTE If you wish to upgrade from the 32-bit Oracle 9i or 10g based Serena-Supplied Runtime RDBMS to the 32-bit or 64-bit Oracle 11gR2 based version, please contact Serena Support for help; if upgrading your own Oracle RDBMS, please consult your DBA or vendor documentation.

CAUTION! There is no support for rolling back a Dimensions RM installation once the RDBMS has been upgraded, for example, you cannot rollback a Dimensions RM installation using Oracle 11gR2 to one using Oracle 10g.

d Install the current release of Dimensions RM server, admin client, or RM import client.

e Restore your Dimensions RM project accounts.

Proceed to "Pre-Installation Tasks for an Upgrade Installation" on page 151 and then "Upgrading from Dimensions 2009 R1 or Earlier" on page 160.

- **Other Upgrade Scenarios**

There are numerous other upgrade scenarios for which only roadmaps of the steps required for some will be documented in this guide. In using these roadmaps, you will need to consult:

- Your DBA or system administrator (if your company has one).
- Platform and RDBMS vendor documentation.
- this guide and the *Administrator's Guide*.
- Serena Support.

The following roadmaps are provided:

- Upgrade procedure for changing server platforms after upgrading to the latest Dimensions RM release, proceed to "Pre-Installation Tasks for an Upgrade Installation" on page 151 and then "Changing Server Platforms" on page 161.

- Upgrade procedure for moving Dimensions RM projects to a new RDBMS server of the same release, proceed to "Migrating Dimensions RM Projects to a New RDBMS of the Same Release Level" on page 163.
- Upgrade procedure for moving Dimensions RM projects to a new Oracle 11g RDBMS server from an Oracle 10g RDBMS, proceed to "Migrating Dimensions RM Projects to a New 32-Bit Oracle 11g RDBMS from a 32-Bit Oracle 10g RDBMS" on page 165.
- Upgrade procedure for moving a Dimensions RM projects from a 32-bit Windows server to a 64-bit Windows server (including using the 64-bit Oracle 11g RDBMS server), proceed to "Migrating Dimensions RM Projects from a 32-Bit Windows Server to a 64-Bit Windows Server" on page 167.

Checklist

☐	Perform the pre-installation tasks for an upgrade installation (see "Pre-Installation Tasks for an Upgrade Installation" on page 151).
☐	*Dimensions RM 2009 R2, 2010 R1, and 11.2.x upgrade (if applicable).* Run the in-line upgrade installer (see "Upgrading from Dimensions 2009 R2, 2010 R1, or 11.2.x" on page 159).
☐	*Dimensions RM 2009 R1 or earlier upgrade (if applicable).* Perform the procedures to: ▪ Uninstall your existing Dimensions RM. ▪ Install the current release of Dimensions RM. ▪ Restore your backed up projects. See "Upgrading from Dimensions 2009 R1 or Earlier" on page 160.
☐	Other upgrade scenarios (if applicable). See "Other Upgrade Scenarios" on page 161.
☐	Perform the post-installation tasks for an upgrade installation (see "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169).
☐	Quickly check the upgraded installation (see "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

Pre-Installation Tasks for an Upgrade Installation

General

This section details the pre-installation tasks that must be undertaken before an upgrade installation is begun. These are additional to those for a fresh installation (see Chapter 1, "Before Installing").

CAUTION! Please ensure that you read and implement, where appropriate, the tasks documented in both this section and in Chapter 1, "Before Installing"). Failure to do this may result in the upgrade installation failing (and you not being able to re-instate your existing Dimensions RM installation).

Recording Your Dimensions RM Mail Configuration

1. Log in to the Dimensions RM server machine as an administrator.
2. Record the RM Mail configuration:
   a. Select:

      ```
      (Windows) Start | Serena | Dimensions RM <version> |
          RM Mail Configuration
      ```

   b. Click through the **RM Mail** dialog tabs, and write down all of the configuration information, for example:
      - Database location.
      - Projects.
      - Server port number.

Backing Up Your Existing Dimensions RM Database and Projects

CAUTION! Before you upgrade, make sure that you have a reliable backup of any RDBMS database installation and Dimensions RM projects that will be affected. Because a failed upgrade can make your database installation unusable, you must make sure that you have a fallback position for such circumstances.

Depending on your type of RDBMS, proceed as follow:

- If your RDBMS is purely used for Dimensions RM, you can use RM Manage utilities to create such backups, as described in this sub-section.

- If you have a Serena-Supplied Runtime RDBMS that is also used for Dimensions CM, please contact Serena Support for advice on backing up your RDBMS
- If you are using your own Oracle, please contact your DBA or vendor documentation.

CAUTION! In the remainder of this sub-section, it will be assumed that your RDBMS is purely used for Dimensions RM. Proceed as follows:

IMPORTANT! When you back up a project account, you back up an Oracle account containing:

- Oracle tables holding the entire Dimensions RM schema metadata.
- Other Oracle tables holding the actual requirement data.

1 Ensure that no users are accessing Dimensions RM.

2 Log in to RM Manage as an administrator.

3 Place each project account offline:

a Select the project account you wish to place offline.

b Do one of the following:

- File | Place Project Account Offline
- Click the **Place Project Offline** button.
- Right-click and select **Place Project Account Offline**.

4 Stop the **Serena Dimensions RM E-Mail Service** service. This can be done from the following locations:

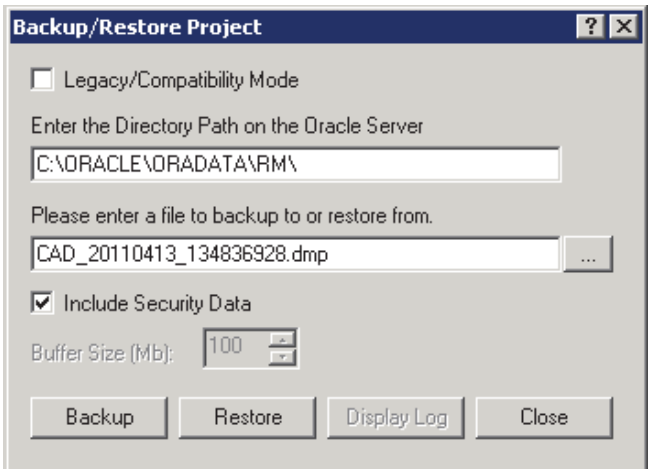
- RM Mail Control tab.
- Windows **Services** (from the Windows **Control Panel**, double-click **Administrative Tools** and then double-click **Services**).

5 Select the project account you want to back up.

6 Select File | Backup/Restore Project Account

7 If prompted, enter your administrator password and click **OK**.

8 The Backup/Restore Project dialog appears. Complete the following fields as needed.



Backup/Restore Project Dialog	
Field	**Description**
Legacy/ Compatibility Mode	Formats the backup so that it is compatible with RM 11.2.1 or older. **NOTE** Oracle 11 Standard edition requires the use of Legacy mode regardless of the version of RM. The Enterprise edition is free of this limitation.
Oracle Directory Path	This field is automatically populated with the last modified server directory path for the selected project. Edit the path as needed. **NOTE** This field is not available in Legacy Mode.

Backup/Restore Project Dialog	
Field	**Description**
File Name	This field is automatically populated with a name for the backup file. The name is based upon the project name and the current date and time. Edit this name as needed. **NOTE** In normal mode, the location is relative to the Oracle directory path. In Legacy Mode, the path to the Saved Projects directory of the RM installation is prepended to the file name. **TIP** Note the location to which you save the files. You may need to browse to that location from the Import dialog of the new RM installation or copy the files to the location expected by the new RM installation.
Security Data	Exports all the users that have been assigned to this project, as well as their permissions, so that they may be imported into another project.
Buffer Size	**NOTE** Legacy Mode only. This sets the temporary space available for the operation. The default, and maximum, buffer size is 100MB. You can adjust the amount if needed.

9 Click the **Backup** button. The backup operation runs.

10 Click **Display Log** to view a log of the backup operation.

NOTE The log file is saved in the directory where the backup was created. It has the same name as the project, but with a .log extension instead of a .dmp extension. It also includes the letters "Exp" and a time stamp based upon the backup operation, e.g. *ProjectName_ExpDate_ExpTime*_Exp.log

11 Repeat the steps from Step 5 forward for each project you wish to backup.

12 Restart the **Serena Dimensions RM E-Mail Service** service.

13 Place each project account back online:

a Select the project account you wish to place online.

b Do one of the following:

- File | Place Project Account Online
- Click the **Place Project Online** button.
- Right-click and select **Place Project Account Online**.

Special Considerations When Restoring Existing Projects With E-mail Rules

If you back up of an existing project in preparation for an upgrade, there are special considerations that need to be taken into account if the existing project uses e-mail rules.

If you back up a project that uses e-mail rules and then restore it to a different Dimensions RM database, the restored project will:

- Miss out some of the rules.
- Assign some of the rules to the wrong user.

If you wish to back up and restore a project that uses e-mail rules, please contact Serena Support who will work with you to overcome these issues and successfully back up and restore the project.

Shutting Down Your Dimensions RM System

To ensure a successful Dimensions RM server upgrade:

1 Exit all Dimensions RM tools and applications and check that no users are accessing Dimensions RM.

2 Using the Windows Services Tool, shut down the services for the `Serena Dimensions RM E-Mail Notification Service` and `Serena Dimensions RM Pool Manager`, if running.

Backing Up Certain Existing Dimensions RM Files

You are strongly advised to back up certain Dimensions RM files (detailed below) in your existing `RM` directory (located in the top-level Dimensions RM installation directory) to a directory outside the existing installation directory. This is because the upgrade installation overrides them with default files.

In the following, an existing installation directory of:

```
C:\Program Files\Serena\Dimensions 2009 R2\RM
```

and an existing backup directory of

```
C:\RM2009R2_Backup
```

will be taken as examples for consideration. Please modify these according to your own particular set up.

Back up the following sub-directories or files:

```
conf      (only if the default files were changed)
rtmBrowser\conf
rtmBrowser\forms
rtmBrowser\jscript
```

NOTE The Dimensions RM upgrade installer will also back up most of these files for you, adding the suffix '_<previous_version>', for example, '_2009.2' for Dimensions RM 2009 R2. But it should be remembered that the upgrade installer only supports upgrades from Dimensions RM 2009 R2, 2010 R1, and 11.2.x; upgrading earlier versions of Dimensions RM require the existing version of Dimensions RM to be removed and the current release of Dimensions RM to be installed as a fresh installation.

If you have saved projects to the default location of

```
Saved Projects
```

in the existing installation directory structure, then they too should be backed up.

Ensuring Your Database is Active

Before running an upgrade installation, ensure that the locally or remotely located RDBMS database used by Dimensions RM is active ("up") by establishing that you can connect to it using standard RDBMS database utilities.

Upgrading Your Serena License Manager

Dimensions RM 2009 R2, 2010 R1, and 11.2.1 support versions 2.1.4 and 2.1.4.1 of Serena License Manager (SLM). To upgrade from these earlier versions to SLM 2.1.5 (which is supported by the current release of Dimensions RM), you need to proceed as follows:

1. Shut down your existing version of SLM.
2. Back up the following files in the existing SLM installation directory:
   - Windows
     - `merant.opt` (if you created such a file)
     - `serena.lic`
   - UNIX
     - `licmgr.ini`
     - `merant.opt` (if you created such a file)
     - `serena.lic`
     - `users.lst`
3. Uninstall the existing SLM using **Add or Remove Programs** in the Control Panel.
4. Install the new version of SLM, see *Installing the Serena License Manager* and "Licensing Dimensions RM" on page 37.
5. Restore the files in Step 2 to the new SLM installation directory and start up SLM.

Upgrading from Dimensions 2009 R2, 2010 R1, or 11.2.x

NOTE For instructions on upgrading Dimensions RM 2009 R1 or earlier, please see "Upgrading from Dimensions 2009 R1 or Earlier" on page 160.

The current Dimensions RM installer supports in-line upgrading from the following versions of Dimensions RM:

- 2009 R2
- 2010 R1
- 11.2.1
- 11.2.2

The following sub-sections describe how to run this upgrade installer for basic upgrade installations; for more complex upgrade installations, consult Serena Support.

The upgrade installation software for the Dimensions RM Server, Admin Client, or RM Import Client components is contained within the same software package as that for a fresh installation (the software automatically checks if a Server, Admin Client, or RM Import Client capable of being upgraded is present and enters upgrade mode if that is the case).

IMPORTANT! Before launching a Dimensions RM upgrade installation, you should ensure that you have performed the tasks detailed in "Pre-Installation Tasks for an Upgrade Installation" on page 151 onwards.

CAUTION! During upgrades you must *not* change:

- Server names.
- Project names.
- Database names.

If you wish to do any of these, contact Serena Support.

To upgrade Dimensions RM 2009 R2, 2010 R1, or 11.2.x:

1. Navigate to the `setup.exe` file in the `RM\win32` directory that was created when you extracted the contents of the downloaded zip file.
2. Double click `setup.exe`. (If upgrading on a Windows Server 2008 platform, right click on `setup.exe` and select **Run as administrator**.).
3. A dialog box appears asking you **Do you want to upgrade to Serena Dimensions RM 11.2.4?** Click **Yes**.
4. The upgrade installation follows the same steps as Step 4 on page 84 to Step 20 on page 90 of a fresh installation, see "Installing Dimensions RM" on page 81, with the following differences:
   - **a** At Step 12 on page 86, if you are upgrading a fully licensed existing Dimensions RM installation rather than an evaluation installation, **Specify License Server** will be checked and the **Host Name** field will be pre-populated with the SLM host name.
   - **b** On completion of Step 20 on page 90, proceed to "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169 rather than "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91.

Upgrading from Dimensions 2009 R1 or Earlier

NOTE For instructions on upgrading Dimensions RM 2009 R2 or later, please see "Upgrading from Dimensions 2009 R2, 2010 R1, or 11.2.x" on page 159.

The current Dimensions RM installer does *not* support in-line upgrading of Dimensions RM 2009 R1 or earlier. The following sub-sections describe how to upgrade such versions using uninstallation and fresh installation.

IMPORTANT! Before launching a Dimensions RM upgrade installation, you should ensure that you have performed the tasks detailed in "Pre-Installation Tasks for an Upgrade Installation" on page 151.

CAUTION! During upgrades you must not change:

- Server names.
- Project names.
- Database names.

If you wish to do any of these, contact Serena Support.

To upgrade Dimensions RM 2009 R1 or earlier:

1. Uninstall the existing Dimensions RM version using **Add or Remove Programs** from the Windows Control Panel.
2. Navigate to the `setup.exe` file in the `RM\win32` directory that was created when you extracted the contents of the downloaded zip file.
3. Double click `setup.exe`.
4. The upgrade installation follows the same steps as Step 4 on page 84 to Step 20 on page 90 of a fresh installation, see "Installing Dimensions RM" on page 81, with the following difference:

   On completion of Step 20 on page 90, proceed to "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169 rather than "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91.

Other Upgrade Scenarios

Changing Server Platforms

This section provides a roadmap for the operations required to change server platforms after upgrading to the latest Dimensions RM release. If you require additional help, please contact Serena Support.

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Migration Scenario Roadmap

1. Install the fresh release of Dimensions RM on the new server platform (see "Installing Dimensions RM" on page 79). The new server platform will, of course, need to meet all the relevant pre-requisites including those for its RDBMS.

2. Check out the fresh release of Dimensions RM installation as explained in "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

3. On the old server platform, create Dimensions RM database and project backups (with the **Include Security Data** check box checked) as explained in "Backing Up Your Existing Dimensions RM Database and Projects" on page 152. The location of these backups should be recorded ready for their copying to the new server platform.

   If your RDBMS is not solely used for Dimensions RM, you will need to:

   - For the Serena-Supplied Runtime: RDBMS: consult Serena Support or your DBA.
   - For your own Oracle RDBMS: consult your DBA or vendor documentation.

4. Shut down the Dimensions RM Web server and its associated Windows services (see "Checking Windows Services" on page 96).

5. Copy the backup files from Step 3 and other Dimensions RM files such as XML files and style files to the new server platform.

6. Restore your backed up Dimensions RM projects from your old server platform into the new Dimensions RM on the new server platform as explained in "Converting or Restoring Your Project Accounts" on page 172 and the *Administrator's Guide*.

7. Upgrade your project release levels to the latest level as explained in Step 1 on page 172 to Step 3 on page 173 of "Converting or Restoring Your Project Accounts" on page 172.

8 Again check out the Dimensions RM installation on the new server as explained in "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

Migrating Dimensions RM Projects to a New RDBMS of the Same Release Level

This section provides—*for an RDBMS containing only Dimensions RM*—a roadmap for the operations required to migrate Dimensions RM projects to a new Serena-Supplied Runtime RDBMS or your own Oracle RDBMS of the same release level *without rebuilding the Dimensions RM server*.

Please see "Backing Up Your Existing Dimensions RM Database and Projects" on page 152 and the Administrator's Guide for the RM Manage operations for backing up project accounts etc. If you require additional help, please contact Serena Support.

If you are migrating to your own new Oracle RDBMS, please consult your DBA or Oracle documentation for any Oracle-specific steps not supported by RM Manage.

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Migration Scenario Roadmap

1 Backup you Dimensions RM project accounts making sure your check the **Include Security Data** check box. Ensure you keep a copy of the DMP files on a second machine.

2 Use the Oracle Universal Installer (OUI) to remove either the Serena-Supplied Runtime RDBMS or your own Oracle products following the Oracle documentation.

3 Reboot the RDBMS server.

4. Delete both the root Serena-Supplied Runtime RDBMS or Oracle and program files directories.

5. Reboot the RDBMS server again.

6. Install the new version of the Serena-Supplied Runtime RDBMS or your own Oracle RDBMS of the same release level according to:

   - Serena Supplied Runtime RDBMS

     Installing the Serena-Supplied Runtime RDBMS.

   - Your Own Oracle RDBMS

     Your own Oracle documentation.

7. Add the new Oracle server name to `TNSnames` files for RDBMS server and clients.

8. Check out Oracle client connections to the RDBMS server.

9. Prepare the new Serena-Supplied Runtime RDBMS or your own new Oracle RDBMS for use by Dimensions RM, see "Installing and Configuring Your RDBMS and Oracle Client" on page 51 and "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91. In particular:

   a. Create the ICDBA account, see "Creating the ICDBA Account" on page 101.

   b. Use RM Manage to restore all projects, see "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169.

10. Copy files such as XML, styles, Oracle DMPs, etc to the new DB paths.

11. Check out the Dimensions RM installation on the new server as explained in "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

Migrating Dimensions RM Projects to a New 32-Bit Oracle 11g RDBMS from a 32-Bit Oracle 10g RDBMS

This section provides—*for an RDBMS containing only Dimensions RM*—a roadmap for the operations required to migrate Dimensions RM projects to a new 32-bit 11g Serena-Supplied Runtime RDBMS or your own Oracle RDBMS, where the original RDBMS was 10g, without rebuilding the Dimensions RM server. This roadmap shares many steps in common with the roadmap described in "Migrating Dimensions RM Projects to a New RDBMS of the Same Release Level" on page 163.

Please see "Backing Up Your Existing Dimensions RM Database and Projects" on page 152 and the Administrator's Guide for the RM Manage operations for backing up project accounts etc. If you require additional help, please contact Serena Support.

If you are migrating to your own new Oracle RDBMS, please consult your DBA or Oracle documentation for any Oracle-specific steps not supported by RM Manage.

IMPORTANT! If you upgrade to a different version of Oracle, you must uninstall and reinstall Dimensions RM. The RM installer asks which version of Oracle it is being installed to and installs files specific to the version of Oracle that you specify.

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Migration Scenario Roadmap

1. Backup you Dimensions RM project accounts making sure your check the **Include Security Data** check box. Ensure you keep a copy of the DMP files on a second machine.

2. Perform a full Oracle backup using either RM manage tools as explained in the **Administrator's Guide** or native Oracle backup procedures—refer to your DBA or vendor documentation.
3. Save TNSames files for both the RDBMS server and Oracle client.
4. Use the Oracle Universal Installer (OUI) to remove either the Serena-Supplied Runtime RDBMS or your own Oracle products following the Oracle documentation.
5. Uninstall the Oracle client if that does not get done as part of Step 4.
6. Uninstall Dimensions RM.
7. Reboot the RDBMS server.
8. Delete both the root Serena-Supplied Runtime RDBMS or Oracle and program files directories.
9. Reboot the RDBMS server again.
10. Install the new version of the 11g Serena-Supplied Runtime RDBMS or your own Oracle 11g RDBMS according to:
    - Serena Supplied Runtime RDBMS

      Installing the Serena-Supplied Runtime RDBMS.
    - Your Own Oracle RDBMS

      Your own Oracle documentation.
11. Install the new Oracle 11g Administrator client if not done as part of Step 10, see "Installing an Administrator Oracle Client" on page 62.
12. Move the `TNSnames` file to the location appropriate to Oracle 11g.
13. Add the new Oracle server name to `TNSnames` files for RDBMS server and clients.
14. Check out Oracle client connections to the RDBMS server.
15. Prepare the new Serena-Supplied Runtime RDBMS or your own new Oracle RDBMS for use by Dimensions RM, see "Installing and Configuring Your RDBMS and Oracle Client" on page 51.

16 Install Dimensions RM. See"Installing Dimensions RM" on page 81.

IMPORTANT! The Dimensions RM installer asks which version of Oracle it is being installed to and installs files specific to the version of Oracle that you specify.

17 See "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91. In particular:

   a Create the ICDBA account, see "Creating the ICDBA Account" on page 101.

   b Use RM Manage to restore all projects, see "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169.

18 Copy files such as XML, styles, Oracle DMPs, etc to the new DB paths.

19 Check out the Dimensions RM installation on the new server as explained in "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

Migrating Dimensions RM Projects from a 32-Bit Windows Server to a 64-Bit Windows Server

This section provides—*for an RDBMS containing only Dimensions RM*—a roadmap for the operations required to migrate Dimensions RM projects from a 32-bit Windows server to a 64-bit Windows server (including a new 64-bit Oracle 11g RDBMS server). This roadmap shares many steps in common with the roadmap described in "Migrating Dimensions RM Projects to a New 32-Bit Oracle 11g RDBMS from a 32-Bit Oracle 10g RDBMS" on page 165.

NOTE The Dimensions RM server remains as a 32-bit application on the new 64-bit platform. There is no native 64-bit version of the Dimensions RM server.

Please see "Backing Up Your Existing Dimensions RM Database and Projects" on page 152 and the Administrator's Guide for the RM Manage

operations for backing up project accounts etc. If you require additional help, please contact Serena Support.

If you are migrating to your own new Oracle RDBMS, please consult your DBA or Oracle documentation for any Oracle-specific steps not supported by RM Manage.

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Migration Scenario Overview

1. Install the fresh release of the 32-bit Dimensions RM on the new 64-bit Windows server platform (see "Installing Dimensions RM" on page 79). The new server platform will, of course, need to meet all the relevant pre-requisites including those for its RDBMS.

2. Check out the fresh release of Dimensions RM installation as explained in "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

3. Backup you Dimensions RM project accounts making sure your check the **Include Security Data** check box. Ensure you keep a copy of the dump files on a second machine.

4. On the old server platform, perform a full Oracle backup using either RM manage tools as explained in the **Administrator's Guide** or native Oracle backup procedures—refer to your DBA or vendor documentation.

5. Save TNSames files for both the RDBMS server and Oracle client.

6. Install the new 64-bit version of the 11g Serena-Supplied Runtime RDBMS or your own Oracle 11g RDBMS on the new 64-bit Windows server according to:

   - Serena Supplied Runtime RDBMS

     Installing the Serena-Supplied Runtime RDBMS.

- Your Own Oracle RDBMS

  Your own Oracle documentation.

7. Install a new 32-bit (not 64-bit) Oracle 11g Administrator client on the new 64-bit Windows server. See "Installing an Administrator Oracle Client" on page 62.

8. Copy files such as XML, styles, Oracle dump files, etc to the new DB paths on the 64-bit Windows server.

9. Move the `TNSnames` file to the location appropriate to the new 64-bit RDBMS.

10. Add the new Oracle server name to `TNSnames` files for RDBMS server and clients.

11. Check out Oracle client connections to the RDBMS server.

12. Prepare the new 64-bit Serena-Supplied Runtime RDBMS or your own new Oracle RDBMS for use by Dimensions RM, see "Installing and Configuring Your RDBMS and Oracle Client" on page 51 and "Post-Installation Activities for a Fresh Dimensions RM Installation" on page 91. In particular:

    a Create the ICDBA account, see "Creating the ICDBA Account" on page 101.

    b Use RM Manage to restore all projects, see "Post-Installation Activities for an Upgraded Dimensions RM Installation" on page 169.

13. Check out the Dimensions RM installation on the new server as explained in "Quickly Checking the Upgraded Dimensions RM Server" on page 175).

Post-Installation Activities for an Upgraded Dimensions RM Installation

General

This section details the post-installation tasks for an upgrade installation. Normally, these are the only post-installation activities that are required,

that is, you do not normally need to perform those tasks required for a fresh installation as documented in Chapter 5, "Post-Installation Activities for a Fresh Dimensions RM Installation").

CAUTION! Please ensure that you read and implement, where appropriate, the tasks documented in this section. Failure to do this may result in the upgrade installation failing (and you not being able to re-instate your existing Dimensions RM installation).

SSO Configuration

If you installed the RM Single Sign On (SSO) components, see "SSO and CAC Configuration" on page 116.

Restoring Certain Existing Dimensions RM Files

In "Backing Up Certain Existing Dimensions RM Files" on page 157 you were advised to back up the following sub-directories or files:

```
conf       (only if the default files were changed)
rtmBrowser\conf
rtmBrowser\forms
rtmBrowser\jscript
```

to a directory outside the previous installation directory. This is because the upgrade installation overrides them with default files.

NOTE The Dimensions RM upgrade installer will also back up most of these files for you, adding the suffix '_<previous_version>', for example, '_2009.2' for Dimensions RM 2009 R2. But it should be remembered that the upgrade installer only supports upgrades from Dimensions RM 2009 R2, 2010 R1, and 11.2.x; upgrading earlier versions of Dimensions RM require the existing version of Dimensions RM to be removed and the current release of Dimensions RM to be installed as a fresh installation.

If you had saved projects in the default location of

```
Saved Projects
```

in the previous installation directory structure, then that too should have been backed up.

You should now restore your backed up versions of Saved Projects to the new Dimensions RM 11.2.4 installation directory.

Additionally, if you have tailored versions of any of the files in the sub-directories:

```
conf      (only if the default files were changed)
rtmBrowser\conf
rtmBrowser\forms
rtmBrowser\jscript
```

they should be merged into the new sub-directories in the Dimensions RM `11.2.4` installation directory.

IMPORTANT! The above should be a merging operation, that is, the new sub-directories should be retained and only tailored/modified backup files copied to the new sub-directories. The new sub-directories in their entirety *must not* be replaced with the backup versions.

Updating the security.dat File

Starting in Dimensions RM 11.2.1, the password mechanism used for the administrator Oracle accounts `ICDBA`, `ICADMIN`, and `ICPROJECTS` was enhanced to use the 3DES algorithm. As a consequence of this the `security.dat` file created for the `ICADMIN` and `ICPROJECTS` accounts has a different format (see the *Administrator's Guide*).

When you perform an in-line upgrade of Dimensions RM, the installer copies the existing `security.dat` file to the new Dimensions RM 11.2.4 installation directory and renames it `security.dat.old`. Additionally it creates new `security.dat` file in the old format.

Before you can use Dimensions RM, you must ensure that the `security.dat` file is updated to the new enhanced format. This is automatically done as a consequence of updating the configuration of your upgraded database, which is also required before you can begin to use Dimensions RM. See "Converting Upgraded Databases and Projects

to Latest Version" on page 172.

NOTE An "Error Code 87" during the database conversion process may indicate that the security.dat file is invalid.

Converting Upgraded Databases and Projects to Latest Version

IMPORTANT! For an in-line upgrade of Dimensions RM, it will be necessary to convert the Dimensions RM database and projects to the latest version. The procedure for doing this is the same as described in Step 1 on page 172 to Step 3 on page 173 of "Converting or Restoring Your Project Accounts" on page 172, except that:

- No projects will initially be visible in the RM Manage graphical tree until you run **Convert Database** in Step 3 on page 173.
- You will be directly prompted to update the configuration of the upgraded database. This will also automatically update the `security.dat` file to the new enhanced format.

Converting or Restoring Your Project Accounts

IMPORTANT! As well as Step 1 to Step 3 used in converting the database and upgrading projects for an in-line upgrade of Dimensions RM these steps and Step 4 to Step 5 are also required when you upgrade Dimensions RM 2009 R1 or earlier by restoring projects after an uninstall and a fresh Dimensions RM installation.

When you back up a project account, you back up an Oracle account containing:

- Oracle tables holding the entire Dimensions RM schema metadata.
- Other Oracle tables holding the actual requirement data.

1. Stop the **Serena Dimensions RM E-Mail Service** service.

   This can be done from the following locations:

- RM Mail Control tab.
- Windows **Services** (from the Windows **Control Panel**, double-click **Administrative Tools** and then double-click **Services**).

2 Log in to RM Manage as an administrator.

3 Check that the project you wish to restore has `(Current)` next to its name. If this is not the case (for example it has a suffix of (`VRM2009R2 GA`) or there are no projects currently visible at all), then you will first need to run the **Convert Database** command on the database and its project accounts before performing the project account restores. Proceed as follows:

a Right click on the Dimensions RM database in the left-hand graphical tree.

b Select **Convert Database**. The **Database Validation** dialog box appears.

c Click the Dimensions RM database in the **Database Validation** dialog box graphical tree. The **ICDBA Password** dialog box appears.

d Enter the ICDBA Password and click **OK**.

e The **Database Validation** dialog box displays the various project accounts and their current status.

f Select a project account that requires updating and click **Upgrade**. The **Conversion Progress** dialog box appears.

g Click **Continue**.

h When the **Conversion Progress** dialog box reports successful upgrading of the project, click **Close**.

i Repeat Step f to Step h for any other projects that require upgrading.

j When all projects have been upgraded, click **Close** in the **Database Validation** dialog box.

4 Restore each project account (*backup/restore upgrades only*):

a Select the project account you want to restore.

b Do one of the following:

- File | Backup/Restore Project Account
- Click the **Backup/Restore Project Account** button.
- Right-click the project and select **Backup/Restore Project Account**.

c If prompted, enter your administrator password and click **OK**.

d If data already exists in the project account, you are prompted by the **Backup/Restore Project** dialog box to confirm that you want to restore data. Any data existing in the project account will be overwritten during the restore.

e Enter the name of the file to restore from. You may type the file name or select it by clicking **Browse** and searching for the file in the directory.

f To include the security information for the saved project account, check the **Include Security Data** check box. This will import all the users that have been assigned to this project as well as their permissions.

g Change buffer size, if needed. For most imports, a default buffer size of 5MB should be sufficient, but for large project accounts you may wish to increase the buffer size. This is the amount of temporary space that is needed to complete the Oracle import command. The amount of buffer space used by the Oracle import command may be increased up to 100 MB.

h Click **Restore**.

The **Table already exist** dialog box appears to inform you that RM tables already exist in the selected project, and that all the tables will be removed before the dump file is restored.

i Click **Yes**.

The existing tablespace may not be large enough to accommodate the data contained in the project account that is being restored. In this case, you will be prompted to resize the tablespace with a suggested increment before continuing. The process of resizing the tablespace is discussed in the Administrator's Guide, but is very straightforward.

j Once the restore has completed, click **Display Log** to view the output from the restore. The log file is saved in the directory where the dump file exists and has the same name with a .log extension instead of a .dmp extension.

5 Restart the **Serena Dimensions RM E-Mail Service** service.

NOTE An "Error Code 87" during the database conversion process may indicate that the security.dat file is invalid.

Quickly Checking the Upgraded Dimensions RM Server

Please see the checks for a fresh installation documented in "Quickly Checking the Installed and Configured Dimensions RM Server" on page 139 and ensure that those appropriate to an upgrade installation can be performed.

Chapter 7

Secure Socket Layers (SSL)

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Working with Secure Socket Layers

Secure socket layers (SSL) is an advanced security feature that allows Web servers to provide resource protection using the following methods:

- **Encryption.** Allows you to keep the information that passes between the Web server and a client such as a Web browser, RM Import, or RM Import Designer confidential.
- **Data Integrity Protection.** Provides the means for protecting information that passes between the Web server and a client such as a Web browser, RM Import, or RM Import Designer from being altered by a third party.

Setting Up Secure Socket Layers

You set up secure socket layers on the Web server using the user interface or configuration file provided by the Web server.

For information on setting up secure sockets layers, refer to your Web server documentation.

Resolving HTTP 413 Errors in RM Import

If you are using Microsoft Internet Information Services (IIS) 6 and are enabling client certificates, an HTTP 413 error may be reported as a result of loading large files when you click the **Import** button in RM Import. To prevent this, make sure that the `UploadReadAheadSize` metabase property in IIS is larger than the file content length. If you continue to receive this error, increase the `UploadReadAheadSize` metabase property until the HTTP 413 error is no longer reported.

For more information, please refer to Microsoft Internet Information Services (IIS) 6 documentation.

Chapter 8

Lightweight Directory Access Protocol (LDAP)

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Configuring LDAP

Serena® Dimensions® RM supports multiple login sources, including Lightweight Directory Access Protocol (LDAP). For information about configuring LDAP, see the *Serena Dimensions RM Administrator's Guide*.

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