Oracle® Retail Data Warehouse

Installation Guide
Release 13.1

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ORACLE

Oracle® Retail Data Warehouse Installation Guide, Release 13.1

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Preface

Oracle Retail Installation Guides contain the requirements and procedures that are necessary for the retailer to install Oracle Retail products.

There are two ways a customer can be on RDW 13.1 version.

New RDW customers who are installing RDW13.1 for the first time, should follow the content of the RDW 13.1 Installation Guide.

If a customer is already on RDW13.0.1, implementing the following two tasks will upgrade the product to RDW 13.1

1. Upgrade to RDW 13.0.2 patch by following RDW 13.0.2 Installation guide.
2. Refer to Chapter 7 "Upgrade RDW 13.0.2 to 13.1" of this guide for instructions on upgrading from 13.0.2 to 13.1.

If a customer is already on RDW 13.0.2, applying step 2 above upgrades the product to RDW 13.1.

Audience

This Installation Guide is written for the following audiences:

- Database administrators (DBA)
- System analysts and designers
- Integrators and implementation staff

Related Documents

You can find more information about this product in these resources:

- *Oracle Retail Data Warehouse Data Model*
- *Oracle Retail Data Warehouse Implementation Guide*
- *Oracle Retail Data Warehouse Operations Guide*
- *Oracle Retail Data Warehouse Release Notes*
- *Oracle Retail Data Warehouse User Guide*

See also:

- *Oracle Retail Merchandising Batch Schedule*
- Oracle Retail Extract, Transform, and Load documentation

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

https://metalink.oracle.com

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Review Patch Documentation

If you are installing the application for the first time, you install either a base release (for example, 13.0) or a later patch release (for example, 13.0.2). If you are installing a software version other than the base release, be sure to read the documentation for each patch release (since the base release) before you begin installation. Patch documentation can contain critical information related to the base release and code changes that have been made since the base release.

Oracle Retail Documentation on the Oracle Technology Network

In addition to being packaged with each product release (on the base or patch level), all Oracle Retail documentation is available on the following Web site (with the exception of the Data Model which is only available with the release packaged code):

http://www.oracle.com/technology/documentation/oracle_retail.html

Documentation should be available on this Web site within a month after a product release. Note that documentation is always available with the packaged code on the release date.

Conventions

Navigate: This is a navigate statement. It tells you how to get to the start of the procedure and ends with a screen shot of the starting point and the statement "the Window Name window opens."

> **Note:** This is a note. It is used to call out information that is important, but not necessarily part of the procedure.

```
This is a code sample
    It is used to display examples of code
```

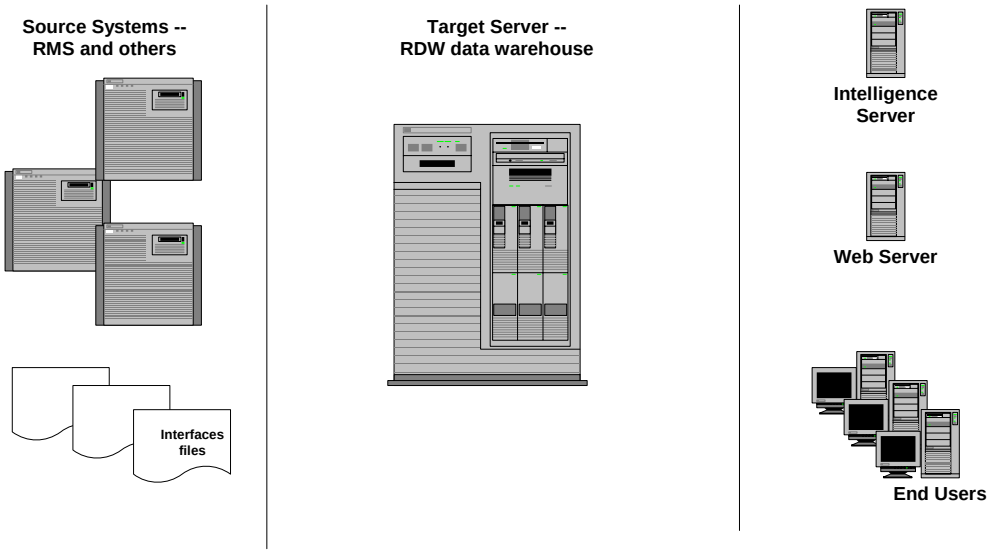
A hyperlink appears like this.

1

Preinstallation Tasks

This release of RDW incorporates optional interfaces with these Oracle Retail products which can be sources for the data warehouse: Oracle Retail Merchandising System (RMS), Oracle Retail Invoice Matching (ReIM), and Oracle Retail Price Management (RPM). Additionally, the data warehouse can also operate as a standalone product and be fed from other legacy systems. If Oracle Retail applications are used as the source systems, follow the requirements in the installation guides for each of these applications. It is recommended that the source systems be on a separate server from the data warehouse which is considered the target server. Refer to Appendix A for more detailed information on RDW and database setup.

RDW Architecture on Oracle



Implementation Capacity Planning

There is significant complexity involved in the deployment of Oracle Retail applications, and capacity planning is site specific. Oracle Retail strongly suggests that before installation or implementation you engage your integrator (such as the Oracle Retail Consulting team) and hardware vendor to request a disk sizing and capacity planning effort.

Sizing estimates are based on a number of factors, including the following:

- Workload and peak concurrent users and batch transactions
- Hardware configuration and parameters
- Data sparcity
- Application features utilized
- Length of time history is retained

Additional considerations during this process include your high availability needs as well as your backup and recovery methods.

Check Database Server Hardware Requirements

Hardware requirements for the data warehouse database server or target server include:

General Hardware Requirements	Minimum	Recommended
Memory	8GB	12GB+
Multi-processors	4 – highest MHz	8+ – highest MHz
CD-ROM drive (either local or network)		
Disk Space	300 GB	Site specific (refer to your RDW sizing information)
Swap Space	Equal to physical RAM	2.5 times the physical RAM

Note: This reflects the amount of space needed to install the database software, RETL software, as well as the RDW software, and still maintain an acceptable amount of usage on the UNIX file system. This may reflect external storage as well as internal, such as 50GB of internal space and a 250+ GB external RAID storage array.

Sizing Factors and other suggestions to factor into the selection of a data warehouse server include:

- Concurrent front-end user base. More concurrent users will require more database processing power from the server.
- DASD connectivity. Typically, it is better if the fiber channel connectivity to provide the maximum throughput to disk.
- Backup/Recovery requirements. Extra disks may be required for backup and recovery procedures.
- Server backplane speeds. Depending on the architecture of the server backplane (or comparable links), memory access and/or CPU utilization may be a factor in performance.
- Overall database size for the RDW. A capacity plan should be done for the database server and DASD requirements in general to assess how large the environment will need to be.

Note: These data warehouse server requirements should only be used as guidelines because they reflect the hardware used to run a small environment (approximately 200 gigabytes of data). Actual requirements can be somewhat smaller, or typically much larger, depending on the intended size of the RDW environment upon full implementation. Oracle can assist with making these determinations by providing information on database size estimates, server architecture, and so on.

Check Database Server Requirements

General Requirements for a database server running RDW include:

Supported on:	Versions Supported:
Database Server OS	OS certified with Oracle Database 11gR1 Enterprise Edition. Options are: ▪ Oracle Enteprise Linux 5 Update 2 (OEL 5.2) for Linux x86-64 ▪ AIX 6.1 TL1
Database Server	Oracle Database 11g Release 1 Enterprise Edition (minimum 11.1.0.7 patchset required) with the following patches and components: Patches: ▪ 7036284 (LOADJAVA RUN IN A DV ENVIRONMENT CANNOT LOAD CLASSES WITH A NAME LONGER THAN 128) ▪ 7378322 (ORA-00600: internal error code, arguments: [6704], [1], [532241], [532237]) ▪ 6800649 – (AIX only) when non-oracle user uses client utilities sqlldr/sqlplus/impdp/expdp, core dump is generated. Need to "relink all" after applying the patch RAC only ▪ 7697360 ORA-00600: internal error code, arguments: [k2vcbk_6], Database crashed during transaction recovery. Components: ▪ Oracle Database 11g ▪ Oracle Partitioning ▪ Oracle Net Services ▪ Oracle Call Interface (OCI) ▪ Oracle Programmer ▪ Oracle XML Development Kit ▪ Examples CD (Formerly the companion CD) ANSI compliant C compiler (certified with OS and database version) Perl compiler 5.0 or later x-Windows interface

Verify Single Sign-On

If a Single Sign-On is to be used, verify the Oracle Infrastructure Server 10g has been installed. Verify the Mid-Tier server hosting Oracle FoRDW is registered with the Infrastructure Oracle Internet Directory.

Check Web Browser and Client Requirements

General requirements for client running RDW include:

Requirement	Version
Operating system	Windows 2000 or XP
Display resolution	1024x768
Processor	Pentium processor (minimum 450 MHz)
Memory	minimum of 256 MB RAM
Sun JRE Plug-in	1.4.2+
Microsoft Internet Explorer	version 6.0 and higher

Supported Oracle Retail Products

Requirement	Version
Oracle Retail Merchandising System (RMS)/Oracle Retail Oracle Retail Sales Audit (ReSA)	13.1
Oracle Retail Invoice Matching (ReIM)	13.1
Oracle Retail Price Management (RPM)	13.1

Supported Oracle Retail Integration Technologies

Integration Technology	Version
Oracle Retail Extract, Transform and Load (RETL)	13.1
Oracle Retail Integration Bus (RIB)	13.1
Oracle Retail Service Layer (RSL)	13.1

Additional Oracle Technologies

Integration Technology	Version
Oracle Business Intelligence Standard EditionOne	10.1.3.4.0
Oracle Business Intelligence Enterprise Edition	10.1.3.4.0

Create a UNIX User Account to Install the Software

The following user should be created on the database server.

1. Create a UNIX group named “dev”.
2. Create UNIX user named “oretail” and assign it to the “dev” group. This user will install the RDW software.

Create Staging Directory for RDW Database Files

1. Log into the database server as oretail.
2. Create a staging directory for the RDW database schema installation software. There should be a minimum of 285 MB disk space available in this location.
3. Copy the rdw_13.1.zip file from the RDW 13.1 release to the staging directory. This is referred to as INSTALL_DIR when installing database schema software.
4. Change directories to INSTALL_DIR and extract the rdw_131.zip file. This creates an rdw/rdw/ subdirectory under INSTALL_DIR.

2

Database Schema Installation Tasks

It is assumed that Oracle 11g, with appropriate patches, has already been installed. If not, refer to Check Database Server Software Requirements in Chapter 1, Preinstallation Tasks before proceeding.

> **Note:** Become familiar with the RDW application in a development environment before setting up a production system. The following instructions are recommended for development and test environments only. When implementing RDW for a production environment, refer to capacity planning information to determine size requirements for tablespaces, tables, and indexes. The installation scripts provided need to be modified accordingly.

If a database has already been created, it is necessary to review the contents of this section to determine if all database components have been installed and configured properly. Also refer to Appendices C and D.

> **Note**: When running the scripts in this section, the following errors may be encountered "ORA-04043 object XXXX does not exist", "ORA-01432 public synonym to be dropped does not exist", "ORA-00942 table or view does not exist", "ORA-29833 indextype does not exist", "ORA-29807 specified operator does not exist", "ORA-29931 specified association does not exist", and "ORA-29816 object being disassociated is not present". These errors can be ignored. The ORA errors are caused by dropping the objects the script is about to create.

Establish Data Warehouse Partitioning Strategy

Establish a partitioning strategy before creating compressed datamart and historical tables in a production environment. In doing so, consider the database size and business requirements. For example, the amount of history to be held at various levels, and the various functional areas that might be used should be referenced when determining a partitioning strategy. Additionally, large non-compressed fact tables should be partitioned for ease of rolling off history. Refer to the *RDW Operations Guide* for more detailed information regarding the partitioning strategy for both compressed and non-compressed fact tables. Refer to Oracle11g Database Concepts Chapter 18 "Very Large Databases (VLDB)" for further details regarding partitioning concepts.

RDW does not require partitioning to function, however to achieve better performance, partitioning is very highly recommended. If you choose not to implement partitioning, the following paragraphs of the Establish Database Partitioning Strategy section may be skipped. During RDW installation, when prompted, simply choose to not setup partitioning. If you will be using partitioning, please review this section in it's entirety before proceeding with the installation.

Sample Partitioning

The RDW 13.1 database schema installer runs the partitioning script (partition.ksh) automatically using a sample partitioning strategy if you do not run the partition script yourself. This is acceptable for development or demo installations and allows for a simpler installation. However, the resulting partitioning strategy is NOT suitable for production environments. For production environments, it is highly recommended that the Production Partitioning section below be followed rather than allowing the installer to implement the sample strategy. The installer can be used to install the RDW database schema regardless of the choice made here.

Production Partitioning

To prepare for production partitioning, follow the steps provided below. Since partitioning strategies are complex, the following steps should be implemented by an experienced individual who has a thorough understanding of partitioning principles and the data to be partitioned.

> **Note:** Refer to Oracle11g Database Concepts Chapter 18 "Very Large Databases (VLDB)" for further details regarding partitioning concepts.

Step 1: Review rdw_partition_tables.xls

Use the Microsoft Excel spreadsheet to determine an appropriate partitioning strategy (<INSTALL_DIR>/rdw/rdw/product/database_dir/rdw/ddl/dm/part/rdw_partitioned_tables.xls). The Partition Type column indicates the recommended partitioning option(s) for each table. The Default Number of Partitions column indicates the number of partitions to create for each table. For hash partition, this number will be used to create DDL.

Step 2: Modify partition_attributes.cfg

Modify <INSTALL_DIR>/rdw/rdw/product/database_dir/rdw/ddl/dm/part/partition_attributes.cfg based on the partitioning strategy defined in rdw_partitioned_tables.xls. Changes to this file should be made only as indicated.

partition_attributes.cfg file: (file is comma-delimited)

Sample Entry:

```
INV_ITEM_LD_DM,DAY_IDNT,RANGE,inv_item_ld_dm.day_idnt.number,,,,,DM_FACT_DATA
```

Field 1: `Table Name` - *Do not modify*

Field 2: `Partition Key` - *Do not modify*

Field 3: `Partition Type` - Modify based on value in "Partition Type" column in rdw13_partitioned_tables.xls - Valid values are RANGE, LIST, or HASH (case sensitive)

Field 4: `Partition Data Definition Filename` - *Do not modify - This field is ignored if Partition Method is not RANGE or LIST*

Field 5: `Partition Hash Count` – Modify based on value in "Default Number of Partitions" column in rdw_partitioned_tables.xls. *This field is ignored if Partition Method is not HASH*

Field 6: `Sub-Partition Key` - *Do not modify*

Field 7: `Sub-Partition Method` – Do not modify

Field 8: `Sub-Partition Data Definition Filename` - *Do not modify*

Field 9: `Sub-Partition Hash Count` – Do not modify

Field 10: `Tablespace Name` - *Optional.*

Step 3: Modify Data Definition Files

Tables partitioned or sub-partitioned by RANGE or LIST have a corresponding data definition file in the <INSTALL_DIR>/rdw/rdw/product/database_dir /ddl/dm/part/data_def directory and should not be removed or renamed. These files are used to define the data boundaries for each partition. Values must be entered in each file based on the Recommended Partitioning Policy column in rdw_partitioned_tables.xls.

The format of a data definition file name is <table name>.<partition key column>.<partition key data type>, e.g., inv_item_ld_dm.day_idnt.number. When placing data into these files, enter one data partition value per line. If users already have RDW time tables in some environments, DAY_IDNT and WK_IDNT can be found in RDW time calendar table TIME_DAY_DM. If users do not have RDW time tables, users need to run cr_time.ksh script to generate RDW time files. DAY_IDNT and WK_IDNT can be found in time_day_dm.txt file and the file layout is defined in time_day_dm.schema file.

When entering varchar2 values in a data definition file, do not use quotation marks. When defining date values, use the DDMMYYYY format.

Sample inv_item_ld_dm.day_idnt.number (quarterly partition for year 2001)

```
2001092
2001187
2001281
```

When using RANGE partitioning, the data definition files will use the "value less than" concept. For example, in inv_item_ld_dm.day_idnt.number above, the first partition contains all data less than 2001092. The second partition contains all data greater than or equal to 2001092 and less than 2001187. A fourth "MAXVALUE" partition is automatically created for all data greater than or equal to 2001281.

When using LIST partitioning, the data definition files use the "value equal to" concept.

Step 4: Generate DDL for Tables – Run partition.ksh

Execute <INSTALL_DIR>/rdw/rdw/product/database_dir /ddl/dm/part/partition.ksh at the UNIX command prompt. This script reads configuration information from the partition_attributes.cfg file and generates the partitioned DDL file <INSTALL_DIR>/rdw/rdw/product/database_dir /ddl/dm/rdw_part.tab. This file is used later during the installation process.

Sample output from partition.ksh:

```
<INSTALL_DIR>/ddl/part > ./partition.ksh
################################################################################
# partition.ksh:
# This script will read the partition_attributes.cfg file and any referenced
# data definition files and generate partitioned DDL.
################################################################################
# The non-partitioned DDL file is ../rdw.tab.
# The partitioned DDL file that will be generated is ../rdw_part.tab.
################################################################################
Checking partition_attributes.cfg for errors
Generating Partitioned DDL for COST_ITEM_SUPP_LD_DM
Generating Partitioned DDL for INV_ADJ_ITEM_LD_DM
partition.ksh has generated the DDL for partitioned tables in the ../rdw_part.tab
file.
Completed successfully
```

Create the RDW Database and Tablespaces

Create the Database as Follows

1. Login to the RDW database server as the SYSDBA user.
2. Create the Oracle recommended OFA directory structure for the database (datafile directories, adump, bdump, cdump, arch, create, exp, pfile, udump, utl_file_dir).
3. Place an entry in the oratab file for the database and execute oraenv to set the ORACLE_SID and ORACLE_HOME environment variables.
4. Copy <INSTALL_DIR>/rdw/rdw/product/database_dir/rdw/create_db /init102_release.ora to the $ORACLE_HOME/pfile directory and rename it to init${ORACLE_SID}.ora. Modify the parameters according to guidelines specified in this file.
5. Create a symbolic link from $ORACLE_HOME/pfile/init${ORACLE_SID}.ora to $ORACLE_HOME/dbs/init${ORACLE_SID}.ora.
6. Modify the <INSTALL_DIR>/rdw/rdw/product/database_dir/rdw /create_db/crdb1.sql file. Refer to comments in this file regarding modifications that need to be made.
7. Login to SQL*Plus as SYSDBA and execute <INSTALL_DIR>/ rdw/rdw/product/database_dir/rdw/create_db/crdb1.sql. Review crdb1.log for errors and correct as needed.
8. Login to SQL*Plus as SYSDBA and execute <INSTALL_DIR>/ rdw/rdw/product/database_dir/rdw/create_db/crdb2.sql. Review crdb2.log for errors and correct as needed.
9. Login to SQL*Plus as SYSDBA and execute <INSTALL_DIR>/ rdw/rdw/product/database_dir/rdw/create_db/crdb3.sql. Review JServer.log, context.log and xdb_protocol.log for errors and correct as needed.
10. Configure the database listener.

Create RDW Tablespaces

1. As the SYSDBA user, change directories to <INSTALL_DIR>/ rdw/rdw/product/database_dir/rdw/create_db.
2. Modify the create_rdw_tablespaces.sql script as appropriate. Refer to Appendix C.
3. Login to SQL*Plus as SYSDBA and execute:
   ```
   SQL>@create_rdw_tablespaces.sql.
   ```
4. Review create_rdw_tablespaces.log for errors and correct as needed.

Load RDW Database

Create RDW Schema Owners

1. As the SYSDBA user, change directories to <INSTALL_DIR>/rdw/rdw/product/database_dir/rdw/utility.
2. Review the crusers.sql file for the names and passwords of the rdw users that will be created. The crusers.sql script will prompt for the password when executed. Rememeber the user and password provided as they are used later in the installation
3. Login to SQL*Plus as SYSDBA and execute the following script:
   ```
   SQL>@crusers.sql
   ```
4. To secure the passwords in the create users script, change the privileges on the script by entering: chmod 700 crusers.sql

Configure RETL

This release of RDW incorporates RETL. Take this time now to install and configure this on the RETL target server. RETL 13.1 is supported with RDW 13.1. See the *RETL Programmers Guide* to install and configure this tool. Once configured, populate the default data as described in the rest of this chapter.

Configure Time Text Files

This section describes the configuration of time text files required for the loading of time into RDW. The time dimension can be loaded with a 454 calendar, 13 period time calendar or a 454 with Gregorian calendar. Populate these tables according to business requirements. If RMS is implemented, the time dimension with 454-calendar time or 454 with Gregorian calendar the calendar information can be extracted from this system. Refer to the *RMS Operations Guide volume 3* for details of how to extract time. For information on the tables loaded for the Time dimension refer to the *RDW Data Model* documentation.

Extract Time from RMS

If RMS is being used as the source of the time calendar, run the RMS time extraction tool. After running time extraction in RMS (see *RMS Operations Guide volume 3* for details), FTP time_454.txt, start_of_half_month.txt, and wkday.txt from RMS install directory to the directory <INSTALL_DIR>/rdw/rdw/product/base_dir/dev/install/.

Configure Time Manually

If not using RMS to extract time, change directories to <INSTALL_DIR>/rdw/rdw/product/base_dir/dev/sample/. Copy and modify the sample text files that serve as the data to populate the time calendar dimension with appropriate time for the environment and place them in the <INSTALL_DIR>/rdw/rdw/ product/base_dir/dev/install directory. If a 454-time calendar or a 454-time calendar with Gregorian calendar will be used, copy the appropriate sample_time_454*.txt for your language to time_454*.txt and modify it. If implementing a 13 period time do the same with the sample_time_13.txt file. Copy and modify the file sample_wkday*.txt, with the description of the first day of the fiscal week, for example 'SUNDAY'. The entry in wkday.txt must be in all capital letters. If a 454-time calendar with Gregorian calendar is used, you will also need to place a start_of_half_month*.txt file in this directory. See the *RDW Operations Guide* Appendix A: API Flat File Specifications for instructions on how to modify the text files.

Note: Sample text files can be used to get started in a development environment. These files need to be modified to match the fiscal calendar before creating time in a production environment

Compile Time Modules

1. Change directories to <INSTALL_DIR>/rdw/rdw/product/base_dir/dev/install/.
2. Verify the C compiler is in the path of your UNIX session and the C compiler is in your UNIX library path. At the UNIX prompt, enter:
   ```
   which cc
   ```
3. Compile the module cr_time_454, cr_time_13 and cr_time_g with a standard ANSI C compiler. At the UNIX prompt, enter:
   ```
   cc –g –I. –o cr_time_454 c_utils.c cr_time_454.c
   cc –g –I. –o cr_time_13 c_utils.c cr_time_13.c
   cc –g –I. –o cr_time_g c_utils.c cr_time_g.c
   ```

Run the RDW Database Schema Installer

Note: Appendix D contains details on every screen and field in the database schema installer.

1. Change directories to <INSTALL_DIR>/rdw/rdw.
2. Source the oraenv script to set up the Oracle environment variables (ORACLE_HOME, ORACLE_SID, PATH, etc)

   Example:
   ```
   prompt$ . oraenv
   ORACLE_SID = [] ? mydb
   prompt$
   ```

   Verify the ORACLE_HOME and ORACLE_SID variables after running this script.

   Example:
   ```
   prompt$ echo $ORACLE_HOME
           /u00/oracle/product/mydbversion
   prompt$ echo $ORACLE_SID
           mydb
   ```
3. Set and export the following environment variables. These variables are needed in addition to the environment variables set by the oraenv script above.

Variable	Description	Example
RETL_JAVA_HOME	Java location for RETL	RETL_JAVA_HOME=java/solaris/java1.5.0_14 export RETL_JAVA_HOME
NLS_LANG	Locale setting for Oracle database client	NLS_LANG=AMERICAN_AMERICA.UTF8 export NLS_LANG
DISPLAY	Address and port of X server on desktop system of user running install. Optional for dbschema installer	DISPLAY=<IP address>:0 export DISPLAY

4. If you are going to run the installer in GUI mode using an X server, you need to have the XTEST extension enabled. This setting is not always enabled by default in your X server. See Appendix G: Common Installation Errors for more details.
5. Run the install.sh script to start the installer.

   Note: Below are the usage details for install.sh. The typical usage for GUI mode is no arguments.

   install.sh [text | silent]

   Depending on system resources, a typical installation takes around 10 to 20 minutes.
6. After the installer is complete, you can check its log file: <INSTALL_DIR>/rdw/rdw/ rdwinstall.<timestamp>.log.
7. The installer leaves behind the <INSTALL_DIR>/rdw/rdw/ant.install.properties file for future reference and repeat installations. This file contains all inputs you provided, including passwords. As a security precaution, make sure that the file has restrictive permissions.

   Example: `chmod 600 ant.install.properties`

Resolving Errors Encountered During Database Schema Installation

If the database schema installer encounters any errors, it halts execution immediately and may print to the screen one of the following two messages.

```
No actions have been performed in RDW database.  It is safe to rerun this
installer without cleaning up the installation environment.
```

If the installer prints this message, or you do not see the first message, it is safe to run the installer again without doing any manual cleanup in the database.

You can run the installer in silent mode so that you don't have to go through the installer screens again. See Appendix E of this document for instructions on silent mode.

See Appendix G of this document for a list of common installation errors.

```
RDW has been partially installed. Please drop and recreate the rdw database users
to clean up your environment before rerunning the installer.
```

If the installer prints this message, actions have already been performed against the database environment and it will need to be cleaned before attempting to run the installer again.

1. Troubleshoot and fix the source of the error.
2. Change directories to <INSTALL_DIR>/ rdw/rdw/product/database_dir/rdw/utility/
3. Login to SQL*Plus as SYSDBA.
4. Drop the RDW database users created with crusers.sql
5. Recreate users by running

   ```
   SQL>@crusers.sql
   ```

Post-Installation Tasks

Set Proper Permissions

Certain scripts created during RDW installation need to have their permissions set properly after going through the installation.

1. Change directories to <RDW_LOCATION>/rdw/base_dir/dev/rfx/etc/.
2. At the UNIX prompt, enter:
   ```
   chmod 755 *.ksh
   ```

3

Oracle BI Infrastructure Installation Preface

Depending on the customer's requirement Oracle Retail Data Warehouse 13.1 can be deployed using Oracle Business Intelligence Enterprise Edition (BI EE) or Oracle Business Intelligence Standard Edition One (BI SE One) as the front-end tool.

This document describes installation steps for Oracle BI EE and Oracle BI SE One products for a typical client configuration.

We highly recommend that you follow the steps in the order described within the chapters of this document.

RDW recommends the following installation locations:

- BI Server and Presentation Server should be installed on its own dedicated server machine.
- Oracle BI EE or Oracle BI SE One Client Tools should be installed on machines of all users who require the Administration functionality not available through Oracle BI EE or Oracle BI SE One Web interface.
- The rest of the products can be installed in varying combinations depending upon who uses them and on what machines.

4

System Requirements and Database and ODBC Configurations

Oracle Retail Data Warehouse (RDW) relies on Oracle Retail Business Intelligence Enterprise Edition (EE) and Oracle Business Intelligence Standard Edition One (SE One). The system requirements for RDW are the same as those of Oracle BI. Refer to the "Platform Requirements for Oracle Business Intelligence" chapter of the *System Requirements and Supported Platforms for Oracle® Business Intelligence Suite Enterprise Edition Guide* or Oracle Business Intelligence Standard Edition One.

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5

Oracle BI EE or Oracle BI SE One Infrastructure Installation and Configuration Tasks

This chapter provides general installation instructions and recommended configuration considerations for Oracle Business Intelligence Enterprise Edition or Oracle Business Intelligence Standard Edition One.

Install Oracle BI

For step-by-step instructions on how to install Oracle BI EE or Oracle BI SE One, see the "Installing Oracle BI EE Infrastructure" chapter of the *Oracle Business Intelligence Infrastructure Installation and Configuration Guide*.

> **Note:** You must complete all the steps described in the RDW Database Schema Installation Tasks section of this document before performing the following steps.

Install RDW 13.1 Repository, Catalog and Set up Database Connection

Create Staging Directory for RDW Oracle BI Files

1. Log into the Oracle BI server as oretail.
2. Create a staging directory for the RDW OBIEE files.
3. Copy the RDW1301ora.zip file from the RDW 13. 1 release to the staging directory. This is referred to as INSTALL_DIR when installing database schema software.
4. Change directories to INSTALL_DIR and extract the RDW131ora.zip file. This creates an rdw/metadata/ subdirectory under INSTALL_DIR.

Installing the Repository

1. Stop Oracle BI Server service.
2. Copy the Repository file (RDW.rpd) to the <BI_INSTALL_DIRECTORY>/OracleBI/server/Repository/directory from the staging directory "<INSTALL_DIR >/rdw/metadata".
3. Update the configuration file located at <BI_INSTALL_DIRECTORY>/Oracle BI/server/Config/NQSConfig.INI. Add a new line under the [REPOSITORY] section. For example:

```
 [ REPOSITORY ]
Star    =   RDW.rpd, DEFAULT;
```

4. Other default repositories should be commented out in the NQSConfig.INI. For example:

```
       [ REPOSITORY ]
Star    =   RDW.rpd, DEFAULT;
#Star   =   Paint.rpd, DEFAULT;
```

5. Save and close NQSConfig.INI.

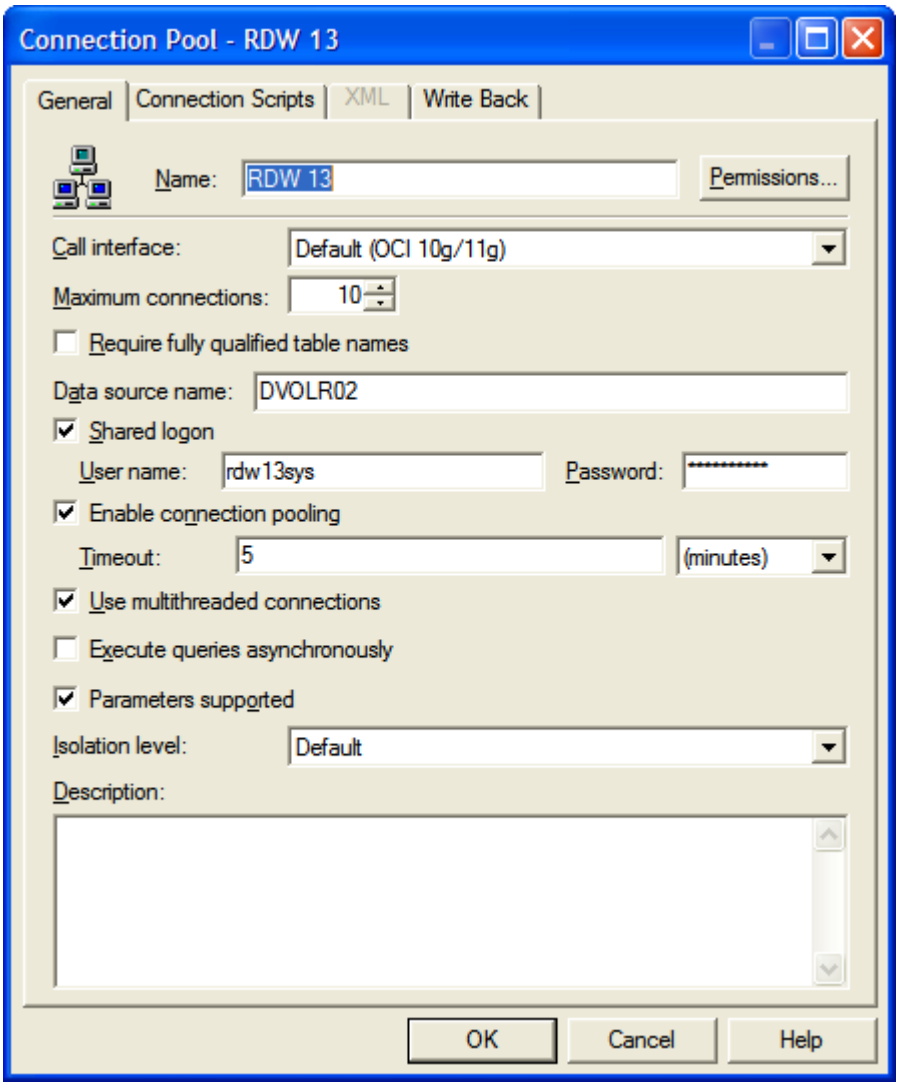
6. Start Oracle BI Server service.

Set Up the Database Connection

Refer to the "Configuring Data Sources for Oracle Business Intelligence" chapter of the *Oracle Business Intelligence Infrastructure Installation and Configuration Guide* for additional details about the database connection.

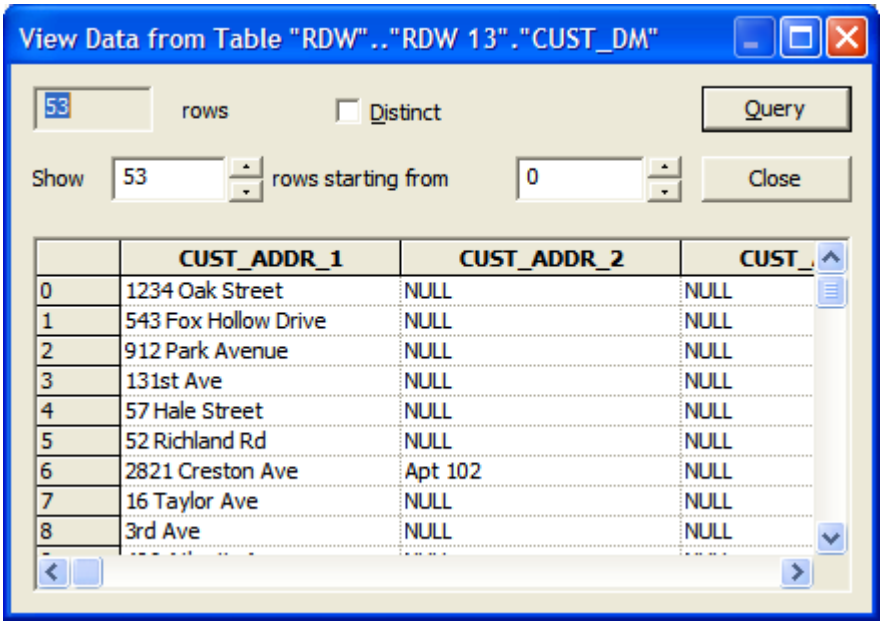
> **Note:** The screen shots in the steps below are samples only. The screens that appear depend on the set up of the user's system.

1. Open RDW.rpd using the Oracle BI Server Administration tool.
2. In the Physical Layer, open the Connection Pool (RDW13) and specify the database name, username, and password and click OK.



Connection Pool Editor

3. Save the RDW.rpd file.
4. Test the Database connection by right clicking on any of the tables in the Physical Layer and select View Data.



Successful Database Connection Confirmation

Install Catalog

1. Stop Oracle BI Presentation Server service.
2. Copy the catalog folder (RDW13) to <BI_INSTALL_DIRECTORY>/OracleBIData/web/catalog from "<INSTALL_DIR>/rdw/metadata".
3. Update the instanceconfig.xml file to point to RDW13 catalog. Instanceconfig.xml is found at <BI_INSTALL_DIRECTORY>/OracleBIData/web/config. Change the catalog path with in the file to point to RDW13. For example:

   <CatalogPath>C:/OracleBIData/web/catalog/RDW13</CatalogPath>
4. Save and close instanceconfig.xml.
5. Start Oracle BI Presentation Server service.

   OC4J service should be running before proceeding to step 6.
6. Test RDW 13 Installation by opening the browser with the URL as http://<hostname>:9704/analytics.

> **Note:** Refer to the "Making Oracle BI Presentation Services Configuration Changes" chapter of the *Oracle Business Intelligence Presentation Services Administration Guide* for additional information.

Internationalization Setup

In order to access all the languages supported by RDW 13.1, copy the following folders from "<INSTALL_DIR>/rdw/metadata" to <BI_INSTALL_DIRECTORY>/OracleBIData/web/res directory:

- L_de
- L_es
- L_fr
- L_it
- L_ja
- L_ko
- L_pt-br
- L_ru
- L_zh
- L_zh-tw

Each of these folders has language-specific translated strings in the form of xml files. For example, the L_de folder has two xml files; DashboardPromptscaptions_de.xml and RDWPackagedreportscaptions_de.xml, which have all the translated catalog strings in German.

After copying, restart the presentation server service. This ensures that the entire RDW specific catalog strings for example report names, dashboard names and dashboard prompts names can be viewed in any of the RDW 13.1 supported languages. Translations of the repository objects are handled through LOCALIZATION_DM table which is part of the RDW 13.1 data model.

Note: The following is a listing of the RDW 13 provided translated languages:

de: German
es: Spanish
fr: French
it: Italian
ja: Japanese
ko: Korean
pt-br: Brazilian Portuguese
ru: Russian
zh: Chinese Simplified
zh-tw: Chinese Traditional

Manage Users and Security

For information regarding users, user groups, security roles, permissions and privileges refer to the "Security in Oracle BI" chapter of the *Oracle Business Intelligence Server Administration Guide*.

By default RDW 13.1 is packaged with only one user called administrator (by default there is no password).

Language Selection with SSO

Refer to the chapter "Implementing Single Sign-On Products with Oracle Business Intelligence" of Oracle Business Intelligence Deployment guide for more information on the configuration changes. For end user, language display is determined by the language selected in the user's internet browser settings.

Other Important Notes

- RDW 13.1 supports retail 4-5-4, combined 4-5-4/Gregorian, or 13 period calendar. You can choose which calendar to use during database installation. The default calendar is retail 4-5-4. To implement either combined 4-5-4/Gregorian or 13 period, see the Appendix: Time of this document.
- In RDW 13.1, Differentiator Types are hard-coded within the attribute names. See the Appendix: Item Differentiators for detailed information regarding adding or modifying of these attributes.
- While making any changes to the repository, RDW recommends opening the .rpd file offline and performing a Global Consistency Check before saving the changes. The Global Consistency Check should not show any errors other then the two mentioned below.
- The RDW 13.1 repository gives two errors in the Business Layer when a Global Consistency Check is done. These errors do not affect RDW functionality in any way. These errors occur due to a limitation in Oracle BI 10.1.3.4. When a dimension is created as a time dimension then the tables within the dimension cannot be joined to any other tables directly. The two errors appear below.

  BUSINESS MODEL RDW:

  [38091] Physical table 'DIM_TIME_WK' joins to non-fact table 'DIM_ORG_LOC_WEEK_MTX' that is outside of its time dimension table source 'DIM_TIME_WK'.

  [38091] Physical table 'DIM_TIME_WK' joins to non-fact table 'DIM_ORG_LOC_WEEK_MTX' that is outside of its time dimension table source 'DIM_TIME_WK'.

6

Oracle BI Client Tools Installation and Configuration

This chapter provides Oracle BI Client Tools general installation instructions and recommended configuration for users that are not administrators, but require the Client Tools functionality not available in Oracle BI Presentation Services. Oracle BI Client tools are required for the power user like the developers for customizing any repository objects.

Install Oracle BI Client Tools

For step-by-step instructions on how to install Oracle BI EE or Oracle BI SE One, see the "Installing Oracle BI EE Infrastructure" chapter or Installing Oracle BI SE One Infrastructure" of the *Oracle Business Intelligence Infrastructure Installation and Configuration Guide*.

When asked what products to install, select the Oracle Business Intelligence Client Tools option.

Opening RDW 13.1 Repository

1. Open the Oracle BI Administration Tool.
2. Click on File >Open >Offline.
3. In the dialog box, select the RDW 13.1 file RDW.rpd which was installed in the "Install Repository" section of this guide.

It is highly recommended that you create a MUD (Multi User Development environment) when multiple developers are working with the same repository in Administration Tool. Refer to "Setting up and Using the Oracle BI Multiuser Development Environment" in the "Completing Setup and Managing Oracle BI Repository Files" chapter of the *Oracle Business Intelligence Server Administration Guide*.

7

Upgrade RDW 13.0.2 to 13.1

This chapter is only applicable to existing RDW customers who are on RDW 13.0.2 and are upgrading to RDW 13.1.

> **Note:** If there are any customizations applied to RDW language files in RDW13.0.2, upgrading to RDW 13.1 causes those customizations to be overwritten.

Populate Datamart Default Data for Russian Language

In order to access Russian language supported by RDW 13.1, implement the following steps:

1. Log into the database server as oretail.
2. Create a staging directory for the RDW upgrade code.
3. Copy the rdw13.1.0-code.zip file from the RDW 13.1 release to the staging directory. This is referred to as STAGING_DIR.
4. Change directories to STAGING_DIR and extract the rdw13.1.0-code.zip. This creates install/ and rfx/ subdirectories under STAGING_DIR.
5. Change directories to STAGING_DIR/install.
6. Copy the contents of this directory to the INSTALL_DIR/rdw/base_dir/dev/install
7. Set NLS_LANG environment variable to NLS_LANG = AMERICAN_AMERICA.UTF8.
8. Log in to SQL*Plus as RDW13DM and run the following SQL scripts:

```
SQL> @ alter_dt_fmt.sql
     @ load_wf_cust_type_dm_ru.sql
     @ load_prod_diff_type_dm_ru.sql
     @ load_dummyrows_ru.sql
     @ load_cde_dtl_dm_ru.sql
     @ load_cde_dtl_com_dm_ru.sql
     @ load_tsf_type_dm_ru.sql
     @ load_rtl_type_dm_ru.sql
```

9. Change directories to STAGING_DIR/rfx/include.
10. Copy rdw_ru.rsc file to the INSTALL_DIR/rdw/base_dir/dev/rfx/include.
11. Delete all the records from localization_dm table.
12. Import the localization_dm.dmp file located in INSTALL_DIR/rdw/base_dir/dev/install, using the rdw13dm user.

Internationalization setup for Russian Language

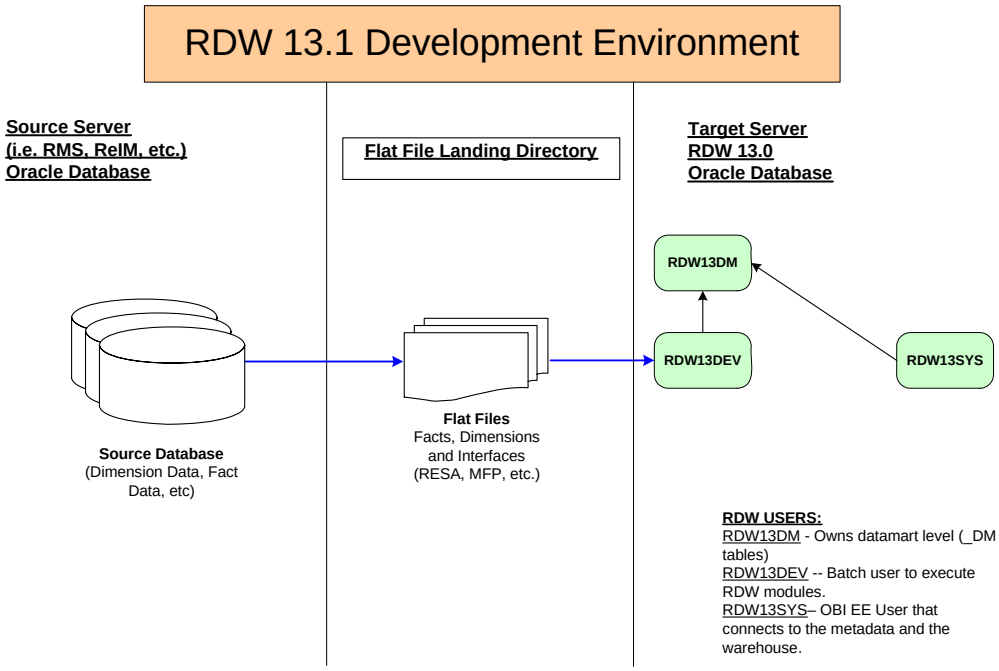
1. Log into the Oracle BI EE server as oretail.
2. Create a staging directory for the RDW upgrade.
3. Copy the rdw13.1.0-metadata.zip file from the RDW 13. 1 release to the staging directory. This is referred to as STAGING_DIR.
4. Change directories to STAGING_DIR and extract the rdw13.1.0-metadata.zip file. This creates an rdw/res/L_ru/Captions/ subdirectory under STAGING_DIR.

5. Copy the L-ru directory from "<STAGING_DIR >/ rdw/res" and replace the existing L-ru directory under <BI_INSTALL_DIRECTORY>/OracleBIData/web/res This L-ru directory has russian language-specific translated strings in the form of xml files. For example, the L_ru folder has two xml files; DashboardPromptscaptions_ru.xml and RDWPackagedreportscaptions_ru.xml, which have all the translated catalog strings in Russian.
6. After copying, restart the presentation server service. This ensures that the entire RDW specific catalog strings for example report names, dashboard names and dashboard prompts names can be viewed in Russian language.

A

Appendix: Development Database Schema Implementation

The following figure shows the source system and RDW development schemas that are referred to in this installation guide.



B

Appendix: Oracle 11g Database Parameter File

```
###############################################################################
# Oracle 11.1.0.x Parameter file
#
# NOTES: Before using this script:
#        1.  Change <datafile_path>, <admin_path>, <utl_file_path>, <diag_path>
and <hostname>
#            values as appropriate.
#        2.  Replace the word SID with the database name.
#        3.  Size parameters as necessary for development, test, and production
environments.
# ----------------------------------------------------------------------
# MAINTENANCE LOG
#
# Date     By          Parameter           Old/New         Notes
# +------+ +---------+ +-----------------+ +-------------+ +-------------+
#
#
###############################################################################
# ------------------------------------------------------------------------------
# The policy is to give 60% for sga and 40% for PGA out of Memory Target at
startup
# ------------------------------------------------------------------------------
memory_target                           = 2000M
# ------------------------------------------------------------------------------
audit_file_dest               = <admin_path>/adump
compatible            = 11.1.0
control_files                           = (<datafile_path>/control01.ctl
                                          ,<datafile_path>/control02.ctl)
db_block_size             = 8192      # Default is 2k; adjust before db creation,
cannot change after db is created
db_file_multiblock_read_count        = 16        # Platform specific (max io
size)/(block size)
db_name               = SID
diagnostic_dest                         = '<diag_path>'
java_pool_size            = 100M
job_queue_processes           = 5         # Oracle Retail required; number of
cpu's + 1
local_listener                =
"(ADDRESS=(PROTOCOL=TCP)(HOST=<hostname>)(PORT=1521))"
nls_calendar                            = GREGORIAN
nls_date_format               = DD-MON-RR # Oracle Retail required; if RDW
database see later entry for proper format
nls_language              = AMERICAN  # Default
nls_numeric_characters        = ".,"      # Should be explicitly set to ensure all
users/batch get the same results
nls_sort              = BINARY    # Should be explicitly set to ensure all
sessions get the same order
nls_territory             = AMERICA   # Default
open_cursors              = 900       # Oracle Retail required (minimum=900);
default is 50
optimizer_features_enable     = 11.1.0.7
optimizer_mode            = CHOOSE    # Oracle Retail required
```

```
plsql_optimize_level                    = 2         # 10g change; use this setting
to optimize plsql performance
processes             = 500       # Max number of OS  processes that can connect
to the db
query_rewrite_enabled         = TRUE      # Oracle Retail required for function-
based indexes
session_cached_cursors                  = 900       # Oracle Retail required;
undo_management           = AUTO
undo_retention            = 1800      # Currently set for 30 minutes; set to avg
length of transactions in sec
undo_tablespace           = undo_ts
user_dump_dest            = <admin_path>/udump
utl_file_dir                            = <utl_file_path>
workarea_size_policy                    = auto          # Should be set to auto
when pga_aggregate_target is set
#
# ***  Set these parameters for Oracle Retail Data Warehouse (RDW) database ***
#nls_date_format              = DD-MON-RRRR  # Required by MicroStrategy
#query_rewrite_integrity               = TRUSTED
#star_transformation_enabled           = TRUE
#utl_file_dir                          = <Windows_utl_file_path>,
<UNIX_util_file_path>
#
# ***  Archive Logging, set if needed  ***
#log_archive_dest_1                     = 'location=<admin_path>/arch/'
#log_archive_format              = SIDarch_%r_%s_%t.log
#log_buffer           = 10485760    # Set to (512K or 128K)*CPUs
#log_checkpoint_interval                = 51200     # Default:0 - unlimited
#log_checkpoint_timeout                 = 7200      # Default:1800 seconds
```

C

Appendix: Tablespace Creation Scripts

```
--------------------------------------------------------------------------------
---
--- Script:        create_rdw_tablespaces.sql
--- Execute as:    sysdba
--- Note:          Before running this script:
---                  Modify <datafile_path> values.
---                  Modify datafile storage parameters and sizes based on
partitioning strategy.
--------------------------------------------------------------------------------
spool create_rdw_tablespaces.log

CREATE TABLESPACE cache_data
DATAFILE '<datafile_path>/cache_data01.dbf' SIZE 15M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE dm_dim_data
DATAFILE '<datafile_path>/dm_dim_data01.dbf' SIZE 400M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE dm_dim_index
DATAFILE '<datafile_path>/dm_dim_index01.dbf' SIZE 300M
 AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE dm_fact_data
DATAFILE '<datafile_path>/dm_fact_data01.dbf' SIZE 300M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE dm_fact_index
DATAFILE '<datafile_path>/dm_fact_index01.dbf' SIZE 300M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE dim_mtx_data
DATAFILE '<datafile_path>/dim_mtx_data01.dbf' SIZE 300M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE dim_mtx_index
DATAFILE '<datafile_path>/dim_mtx_index01.dbf' SIZE 300M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE ms_meta_data
DATAFILE '<datafile_path>/ms_meta_data01.dbf' SIZE 300M
    AUTOEXTEND ON NEXT 100M MAXSIZE 2000M
```

```
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
CREATE TABLESPACE user_data
DATAFILE '<datafile_path>/user_data01.dbf' SIZE 300M
    AUTOEXTEND ON NEXT 50M MAXSIZE 2000M
    EXTENT MANAGEMENT LOCAL
    SEGMENT SPACE MANAGEMENT AUTO
;
spool off
exit
```

D

Appendix: RDW Application Installer Screens

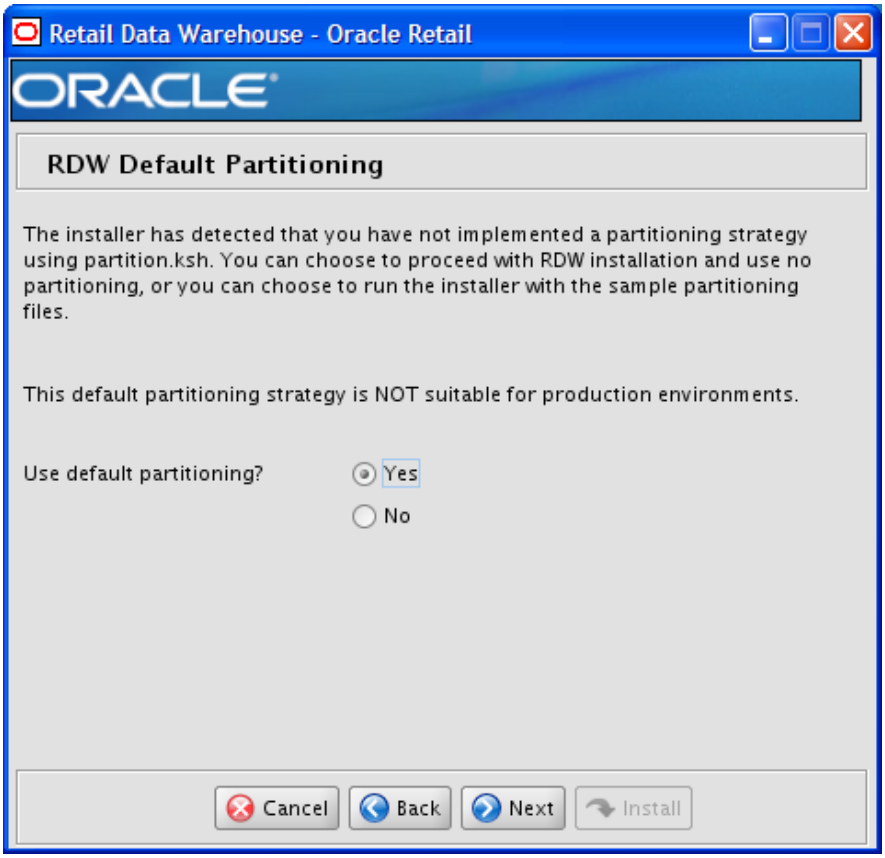
You need the following details about your environment for the installer to successfully deploy the RDW application. Depending on the options you select, you may not see some screens or fields.

Screen: RDW Partitioning

Fields on this screen:

Field Title	Use partitioning?
Field Description	Choose "Yes" to install RDW with the existing partitioning strategy. Choose "No" to install RDW without any partitioning.
Notes	If a previous RDW installation was performed with the default partitioning, and no new partitioning strategy has been implemented with partition.ksh since then, choosing "Yes" installs RDW with the default partitioning strategy. Do not use the default partitioning strategy for a production environment.

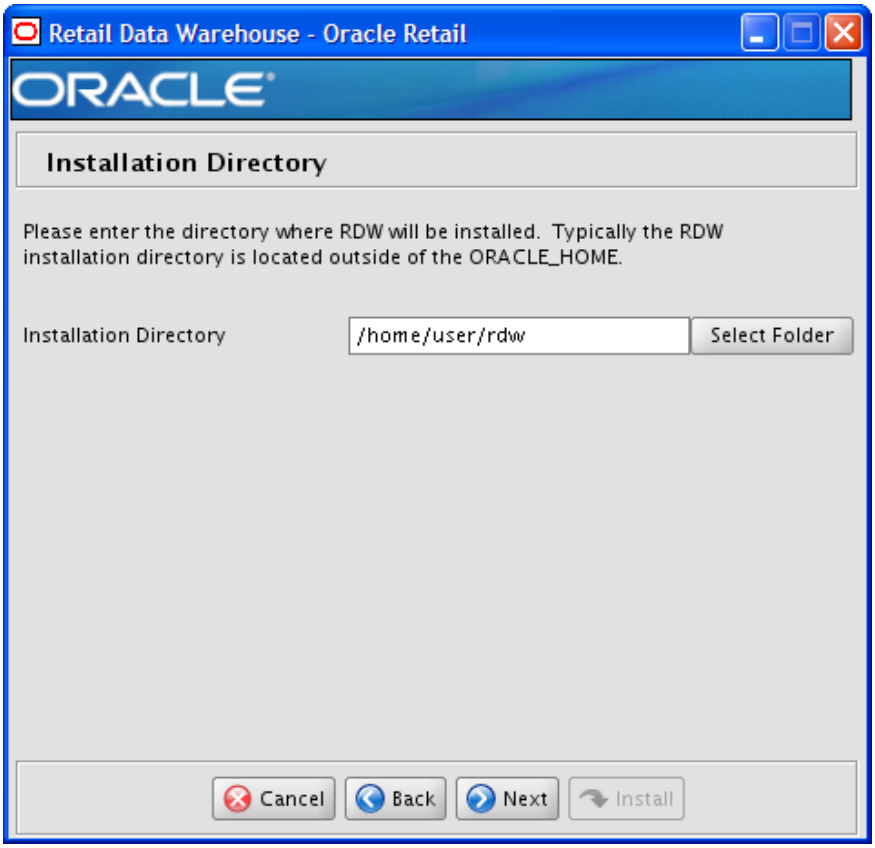
Screen: RDW Default Partitioning



Fields on this screen:

Field Title	Use default partitioning?
Field Description	Choose "Yes" to install RDW with the default partitioning strategy. Choose "No" to install RDW without any partitioning.
Notes	Do not use the default partitioning strategy for a production environment.

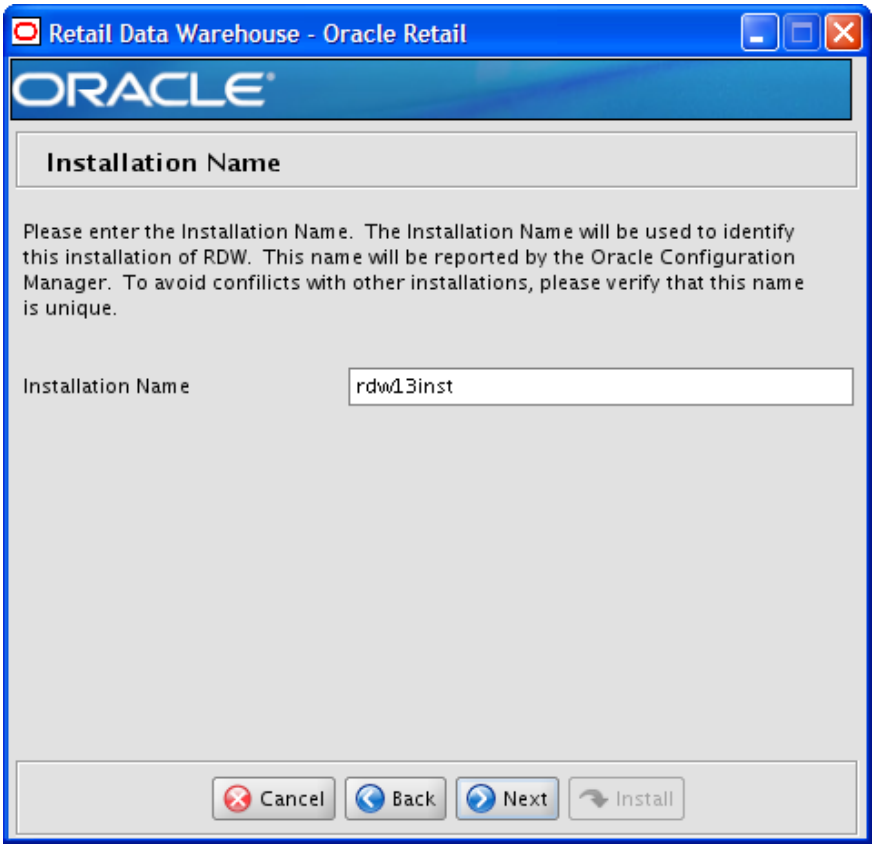
Screen: Installation Directory



Fields on this screen:

Field Title	Installation Directory
Field Description	Location outside of installer directory that houses this RDW installation, including all scripts and files needed to install RDW.
Destination	.profile.dm, .profile.dev
Example	/home/user/RDW_install
Notes	If there is a previous directory named 'rdw' in this directory it is deleted and replaced with an rdw directory from this installation.

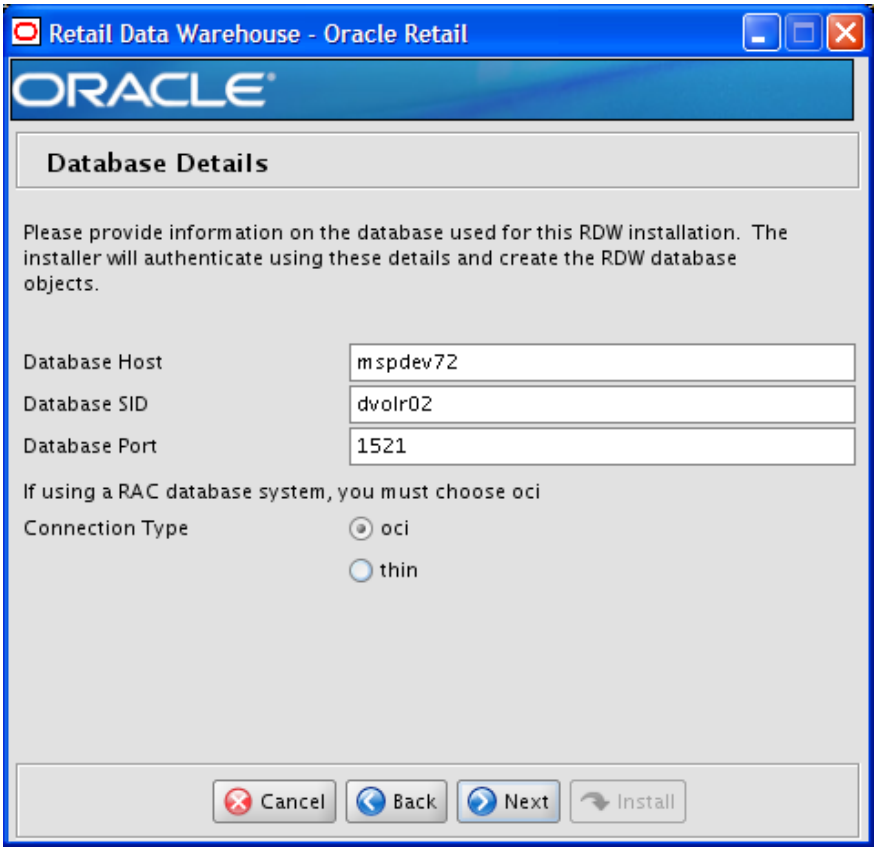
Screen: Installation Name



Fields on this screen:

Field Title	Installation Name
Field Description	Refers to a unique name to identify this RDW installation to OCM. This is arbitrary and can be chosen at the time of installation. This identifier must be unique across your entire customer support ID. The Installation Name string becomes the OCM *target name* for this RDW installation.
Example	rdw13inst
Notes	This name is required whether or not you decide to install OCM.

Screen: Database Details



Fields on this screen:

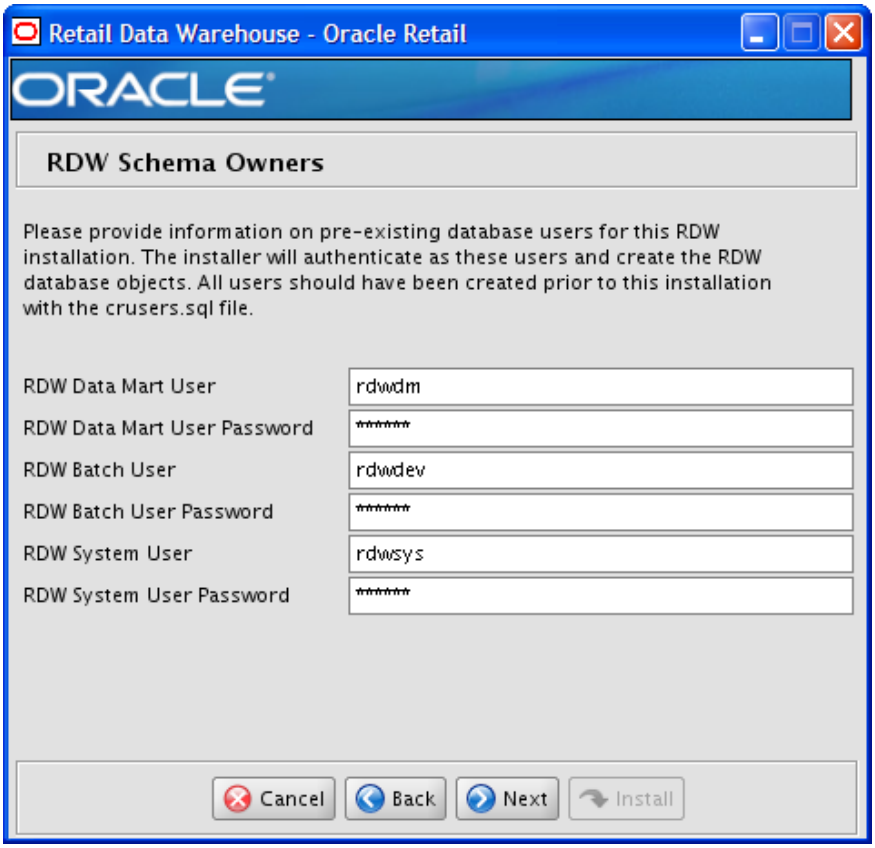
Field Title	Database Host
Field Description	The host that the target database is on.
Destination	rdw_config.env
Example	myhost
Notes	The host is required even if you choose "oci" for connection type because the host value is required to be in rdw_config.env.

Field Title	Database SID
Field Description	The identifier for the target database.
Destination	rdw_config.env, .profile.dm, .profile.dev
Example	mysid

Field Title	Database Port
Field Description	The port used in the JDBC URL to connect to the target database.
Destination	rdw_config.env
Example	1521
Notes	The port is required even if you choose "oci" for connection type because the port value is required to be in rdw_config.env.

Field Title	Connection Type
Field Description	The type of JDBC URL used to access the target database. Examples: OCI: jdbc:oracle:oci:@mydatabase Thin: jdbc:oracle:thin:@myhost:1521:mydatabase
Destination	rdw_config.env
Notes	If target database is set up in a RAC configuration, you must choose oci.

Screen: RDW Schema Owners



Fields on this screen:

Field Title	RDW Data Mart User
Field Description	The existing data mart user.
Destination	rdw_config.env, rdw_users.sql, .profile.dm
Example	rdwdm
Notes	This should match the first user created in crusers.sql

Field Title	RDW Data Mart User Password
Field Description	The password for the existing data mart user.
Destination	.profile.dm
Notes	This should match the password for the first user created in crusers.sql

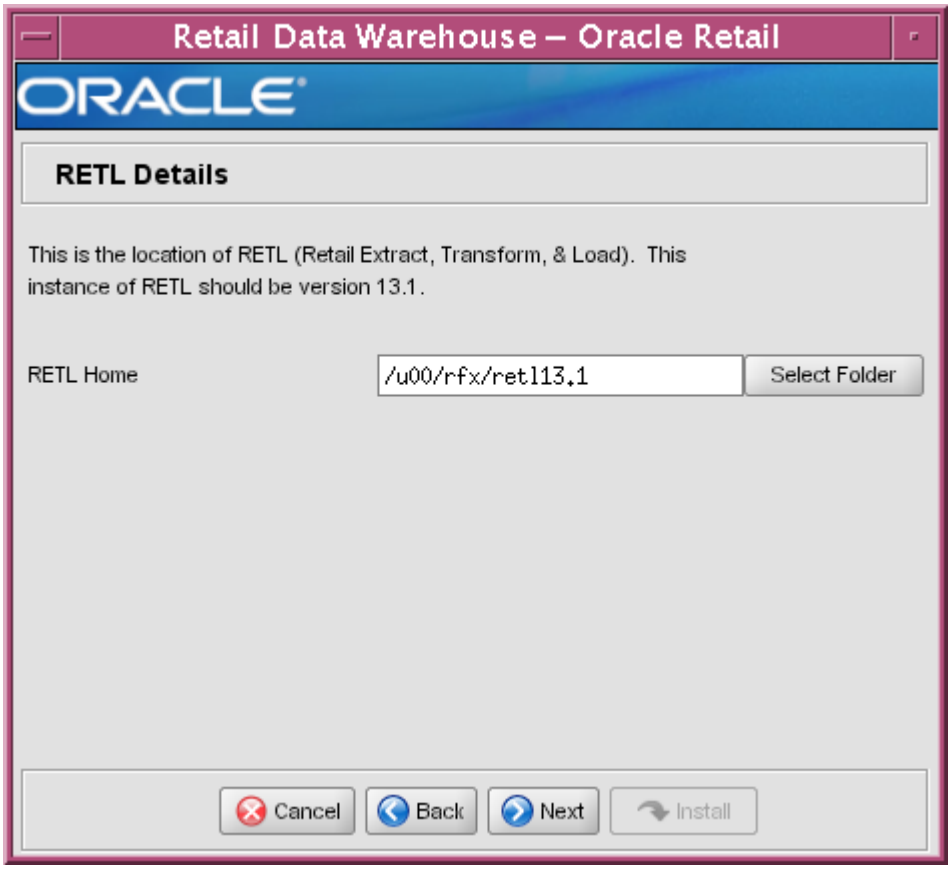
Field Title	RDW Batch User
Field Description	The existing batch user.
Destination	rdw_config.env, rdw_users.sql, .profile.dev
Example	rdwdev
Notes	This should match the second user created in crusers.sql

Field Title	RDW Batch User Password
Field Description	The password for the existing batch user.
Destination	.profile.dev
Notes	This should match the password for the second user created in crusers.sql

Field Title	RDW System User
Field Description	The existing system user.
Destination	rdw_users.sql
Example	rdwsys
Notes	This should match the third user created in crusers.sql

Field Title	RDW System User Password
Field Description	The password for the existing system user.
Notes	This should match the password for the third user created in crusers.sql

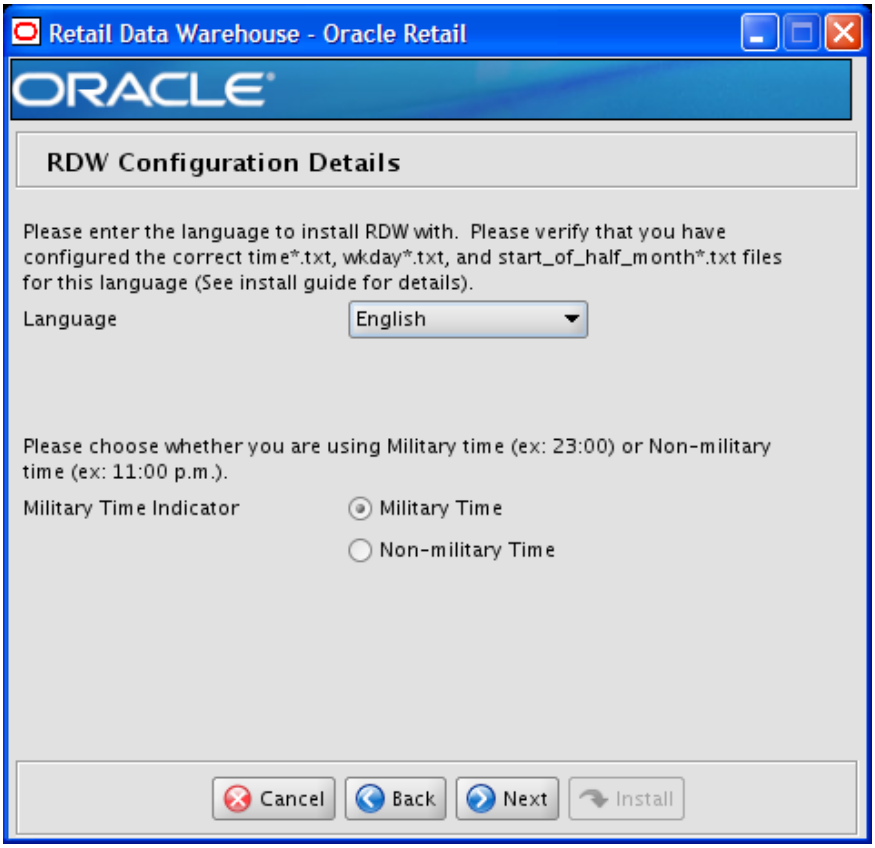
Screen: RETL Details



Fields on this screen:

Field Title	RETL Home
Field Description	The location of RETL (Retail Extract, Transform & Load) 13.0.1.
Destination	.profile.dm, .profile.dev
Example	/u00/rfx/retl13.1
Notes	The installer does not verify the version of RETL. Please check that this RETL is version 13.1 prior to installation.

Screen: RDW Configuration Details

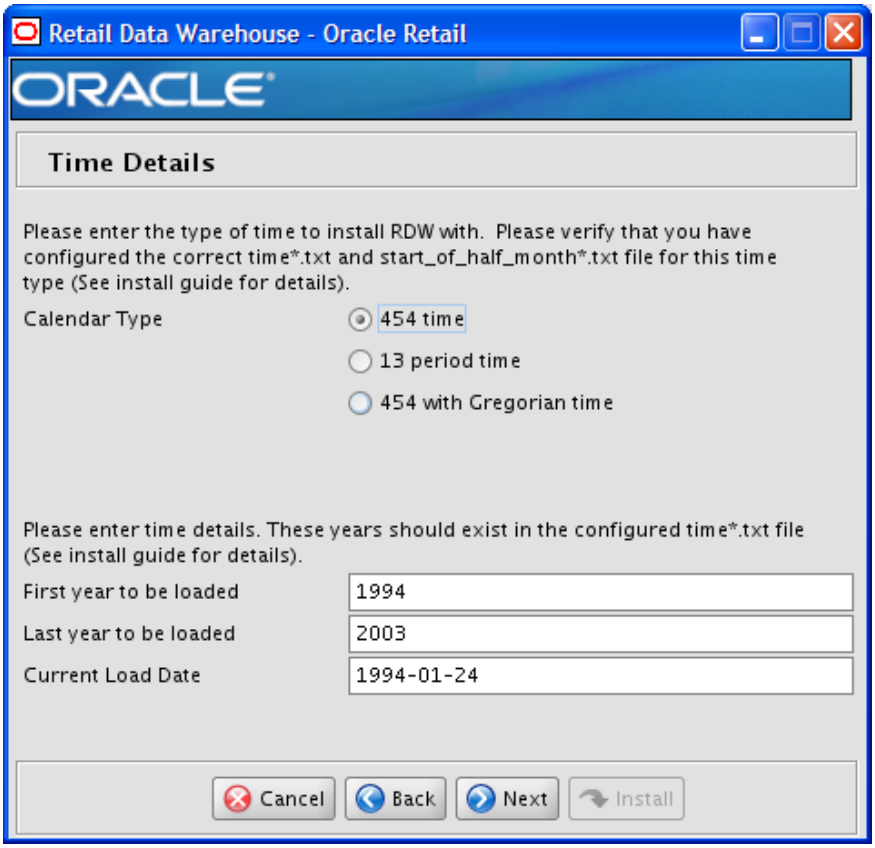


Fields on this screen:

Field Title	Language
Field Description	The language to install RDW with.
Destination	rdw_config.env
Notes	Installation will fail if you have failed to configure or configured the incorrect time text files in <INSTALL_DIR>/rdw/rdw/product/base_dir/dev/install prior to installing. Please see the section titled Configure Time Text Files for more details.

Field Title	Military Time Indicator
Field Description	The type of time used. Military time uses the value's 0:00 to 23:59 as the range of a day; Non- military time uses 12:00 am to 11:59 pm.
Destination	rdw_config.env

Screen: RDW Time Details



Fields on this screen:

Field Title	Calendar Type
Field Description	The type of time to install RDW with.
Destination	installer_cr_time.ksh
Notes	Installation will fail if you have configured the incorrect time text files in <INSTALL_DIR>/rdw/rdw/product/base_dir/dev/install prior to installing. Please see the section titled Configure Time Text Files for more details.

Field Title	First year to be loaded
Field Description	The first year to be loaded in RDW.
Destination	installer_cr_time.ksh
Example	1994
Notes	To determine the first year to be loaded, refer to the time*.txt file modified above. Verify all months or periods are included in the text file for the first year; no partial years are allowed

Field Title	Last year to be loaded
Field Description	The first year to be loaded in RDW.
Destination	installer_cr_time.ksh
Example	2003
Notes	To determine the last year to be loaded, refer to the time*.txt file modified above. Verify all months or periods are included in the text file for the first year; no partial years are allowed

Field Title	Current Load Date
Field Description	The date used for batch loading when the data mart starts loading data. Should be in the format "yyyy-MM-dd".
Destination	load_maint_dim_key_dm.sql
Example	1994-01-24
Notes	This date should set to the day before your first dimension/fact is loaded (i.e. if you're going to load data and have all items on the first day of history have a recorded load date of 2000-01-01, set Current Load Date to 1999-12-31.)

E

Appendix: Installer Silent Mode

Repeating an Installation Attempt

In addition to the GUI and text interfaces of the RDW installer, there is a silent mode that can be run. This mode is useful if you wish to run a repeat installation without retyping the settings you provided in the previous installation. It is also useful if you encounter errors in the middle of an installation and wish to continue.

The installer runs in two distinct phases. The first phase involves gathering settings from the user. At the end of the first phase, a properties file named ant.install.properties is created with the settings that were provided. Then the second phase begins, where this properties file is used to provide your settings for the installation.

To skip the first phase and re-use the ant.install.properties file from a previous run, follow these instructions:

1. Edit the ant.install.properties file and correct any invalid settings that may have caused the installer to fail in its previous run.
2. Look for duplicate properties in the ant.install.properties file. Some properties are set on multiple pages to ensure default values when a page is only displayed under certain conditions. For example, if there are two instances of input.property.name, remove all but the last one.
3. Run the installer again with the **silent** argument.

> **Example:** install.sh silent

F

Appendix: URL Reference

JDBC URL for a Database

Used by the Java application and by the installer to connect to the database.

Thick Client Syntax: jdbc:oracle:oci:@<sid>

<sid>: system identifier for the database

Example: jdbc:oracle:oci:@mysid

Thin Client Syntax: jdbc:oracle:thin:@<host>:<port>:<sid>

<host>: hostname of the database server

<port>: database listener port

<sid>: system identifier for the database

Example: jdbc:oracle:thin:@myhost:1521:mysid

G

Appendix: Common Installation Errors

This section provides some common errors encountered during installation of RDW.

Database Installer Hangs on Startup

Symptom:

When the database schema installer is run, the following is written to the console and the installer hangs indefinitely:

```
Running pre-install checks
Running tnsping to get listener port
```

Solution:

The installer startup script is waiting for control to return from the **tnsping** command, but tnsping is hanging. Type Control+C to cancel the installer, and investigate and solve the problem that is causing the **tnsping <sid>** command to hang. This can be caused by duplicate database listeners running.

Unreadable Buttons in the Installer

If you are unable to read the text within the installer buttons, it probably means that your JAVA_HOME is pointed to a pre-1.4.2 JRE or JDK. Set JAVA_HOME to a Java runtime environment of version 1.4.2 or later and run the installer again.

"Could not create system preferences directory" Warning

Symptom:

The following text appears in the installer Errors tab:

```
May 22, 2006 11:16:39 AM java.util.prefs.FileSystemPreferences$3 run
WARNING: Could not create system preferences directory. System preferences are
unusable.
May 22, 2006 11:17:09 AM java.util.prefs.FileSystemPreferences
checkLockFile0ErrorCode
WARNING: Could not lock System prefs. Unix error code -264946424.
```

Solution:

This is related to Java bug 4838770. The /etc/.java/.systemPrefs directory may not have been created on your system. See http://bugs.sun.com for details.

This is an issue with your installation of Java and does not affect the Oracle Retail product installation.

"Couldn't find X Input Context" Warnings

Symptom:

The following text appears in the console window during execution of the installer in GUI mode:

```
Couldn't find X Input Context
```

Solution:

This message is harmless and can be ignored.

Unresponsive Language Drop-Down

Symptom:

In GUI mode, when you click on the drop-down list selection for Language, the list does not appear, and this message appears in the console window:

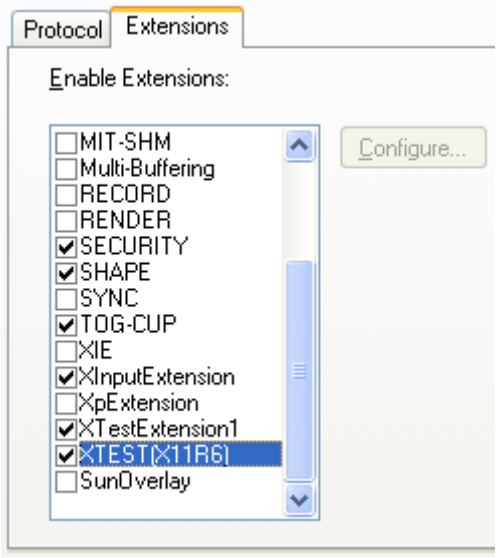
```
XTEST extension not installed on this X server: Error 0
```

Solution:

To run the RDW installer in GUI mode you must have the XTEST extension enabled in your X server.

Enabling XTEST in Exceed:

1. Open Xconfig to edit Exceed configuration
2. Go to the X Server Protocol settings
3. Click on the Extensions tab
4. Make sure that the XTEST extension is selected:



5. Restart the X Server and re-run the RDW installer.

"SP2-0734: unknown command beginning…"

Symptom:

Installation outputs the message that looks like:

```
SP2-0734: unknown command beginning "old   5:  ..." - rest of line ignored.
```

or

```
SP2-0734: unknown command beginning "new   4:  ..." - rest of line ignored.
```

Solution:

You can ignore this error. This warning is generated from invalids.sql if no objects need to be validated.

Text files not found

Symptom:

Installation outputs the message:

```
<time*.txt, wkday*.txt, or start_of_half_month*.txt> not found, please copy and
configure <time*.txt, wkday*.txt, or start_of_half_month*.txt> in
<INSTALL_DIR>/rdw/rdw/product/base_dir/dev/install prior to installation.
```

Solution:

The text file in this message is the one required for the time and language settings you have chosen in the installer and was not found in <INSTALL_DIR>/rdw/rdw/product/base_dir/dev/install prior to installation. Please verify that the proper text files have been configured.

"Invalid Username/Password; Login Denied"

Symptom:

Installation outputs the message:

```
Error: java.sql.SQLException: ORA-01017: invalid username/password; logon denied
```

Solution:

The installer cannot log into the database as one of the three users you have supplied it. Verify that they have been created with the <INSTALL_DIR>/rdw/rdw/product/database_dir/rdw/utility/crusers.sql file, and verify that you can manually log into the database with them.

"Could not verify RETL"

Symptom:

Installation outputs the message:

```
which: no retl in (<PATH>)
Could not verify RETL.  Please make sure that RETL has been installed at
<RETL_HOME>
```

Solution:

The installer cannot find RETL at the location you provided. You can verify that this is a valid RETL by putting it in your path. In the console:

```
prompt$  export PATH=$PATH:<RETL location>/bin

prompt$  which retl
```

If this returns the RETL location and not the message "`no retl in`…" This is a valid RETL location.

"Error Connecting to Database URL"

Symptom:

After entering database credentials in the installer screens and hitting next, a message pops up with an error like this:

```
Error connecting to database URL <url> as user <user>
details...
```

The message prevents you from moving on to the next screen to continue the installation.

Solution:

This error occurs when the installer fails to validate the user credentials you have entered on the screen. Make sure that you have entered the credentials properly. If you receive a message similar to this:

```
Error connecting to database URL <url> as user <user>
java.lang.Exception: UnsatisfiedLinkError encountered when using the Oracle
driver.
Please check that the library path is set up properly or switch to the JDBC thin
client.
```

It may mean that the installer is using the incorrect library path variables for the platform you are installing on. Open the file <STAGING_DIR>/rdw/rdw/common/preinstall.sh and make sure the variable "use32bit" is set to "true" if you are on a 32 bit platform, and "false" if you are on a 64 bit platform.

H

Appendix: RDW Code Tree

The following table describes the contents of each of the RDW code tree directories created during the RDW installation.

Path	Directory	Description
<base_directory>	dbasql	This directory contains all SQL scripts necessary to maintain the permissions for the database users.
<base_directory>	batch	Empty directory used for development and testing purposes only.
<base_directory>	data	This directory contains the text files that serve as the input to RDW RETL load modules. For users with Oracle Retail applications such as RMS, ReIM, etc, these text files can be generated in these source applications. The text files should be FTP from the source application to the RDW data directory. Directory is empty on installation.
<base_directory>	error	This directory holds all program error files, and status files. Directory is empty on installation.
<base_directory>	install	This directory contains all RETL modules and SQL scripts needed only at installation.
<base_directory>	log	This directory holds log files of program execution. Directory is empty on installation.
<base_directory>	rfx	This directory contains subdirectories for all the code and files related directly to RETL
<base_directory>/rfx	bookmark	This directory contains a file created during execution of each module to track the execution of the module. Files are deleted upon successful completion of module. Directory is empty on installation.
<base_directory>/rfx	etc	This directory contains files that hold variables used by RDW batch modules. The configuration file is found in this directory.
<base_directory>/rfx	include	This directory contains files that hold string language translations used by RDW batch modules.
<base_directory>/rfx	lib	This directory contains all RDW library code
<base_directory>/rfx	schema	This directory contains all RDW schema files used with each module.
<base_directory>/rfx	src	This directory contains RDW source code.

I

Appendix: Create Time in RDW

Create Time in RDW

If more time data is needed in RDW after running the installer, modify the parameters below for the new time period and run the module again. To minimize the load time for adding additional time, enter only the first year to be added as the response for the first year prompt in number 5. The RDW_LOCATION is the path you entered in the installer on the screen titled "Installation Location."

1. If RMS is not being used as the source of the time calendar, move on to step 2. After running time extraction in RMS (see *RMS Operations Guide volume 3* for details), FTP time_454.txt, start_of_half_month.txt, and wkday.txt from RMS install directory to the RDW directory <RDW_LOCATION>/rdw/base_dir/dev/install/.
2. Verify the RETL executable is in the path of your UNIX session by typing which rfx at the UNIX prompt.
3. Change directories to RDW_LOCATION/rdw/base_dir/dev/install/
4. Execute the cr_time.ksh module. At the UNIX prompt enter:
   - `cr_time.ksh`
5. This script prompts for the calendar type. Choose 1 for 454 time, 2 for 13 period time and 3 for 454 with Gregorian time.
6. At the prompt enter the 4-digit year for the beginning and ending of the time calendar:

   ```
   Please enter first year to be loaded:
   Please enter last year to be loaded:
   ```

   Note: To determine the beginning and ending fiscal year, refer to the text file modified above. Verify all months or periods are included in the text file for the first year; no partial years are allowed.

   - One text file is generated in the install directory for each dimension table.
7. At the UNIX prompt, for 454 time calendar or 13 period time calendar enter:
   - time_load.ksh
   - time_trnsfrm_load.ksh
8. At the UNIX prompt, for 454 time with Gregorian time calendar enter
   - time_load.ksh
   - g_time_load.ksh
   - time_trnsfrm_load.ksh
   - g_time_trnsfrm_load.ksh
9. Change directories on the UNIX server to RDW_LOCATION/rdw/base_dir/dev/log/. Review the log file that was created or modified.
10. Change directories on the UNIX server to RDW_LOCATION/rdw/base_dir/dev/error/. Review the error files that were created for time_load and time_trnsfrm_load. Review also the error files that were created for g_time_load and g_time_trnsfrm_load if 454 time with Gregorian calendar is used.

11. Refer to the *RDW Operations Guide* for more information on the log files and error files.

> **Note:** DAY_IDNT serves as a surrogate key for day of the time. It can represent 454 time, 13 period time or Gregorian time. Since it is a surrogate key, it does not have meaning to it as long as it is unique across all the days of the time used in RDW.

J

Appendix: Time

Time Calendar (4-5-4)

RDW provides support for the retail 4-5-4 calendar. The fiscal 4-5-4 calendar is the calendar supported by RMS and other Oracle Retail applications and is populated in RDW via an extract from RMS. The 4-5-4 calendar is the default calendar used when viewing the time dimension via the Oracle BI middle tier layer of RDW.

Note: Even if 4-5-4 is the default calendar for RDW, you can still see the Gregorian Time attributes and transformations from within Oracle BI. However, you can only utilize these objects if you have opted for Gregorian calendar during database installation.

Time Calendar (4-5-4/Gregorian)

RDW provides support for the combined 4-5-4 calendar/Gregorian calendar. If a user chooses to use the combined 4-5-4/Gregorian calendar, the user must execute the batch program that generates the text files needed to populate the Gregorian time dimension.

Note: In order to update RDW to report in combined 4-5-4/Gregorian calendar, please see the Appendix I, *Create Time in RDW* for specific instructions. Nothing needs to be modified within Oracle BI.

Time Calendar (13 period)

The 13-Period calendar can also be used, but RMS does not support it. If a user chooses to use the 13-Period calendar, the user can either provide a flat file with its 13-period time, or utilize a sample 13-period time flat file, and then ETL scripts populate the time dimension with this file during RDW installation. Within the middle-tier application, all references to Month must be manually updated to Period, to comply with the 13 period nomenclature.

Note: In order to update RDW to report in 13 period time, follow these steps:

1. Update the time dimension tables. (For complete instructions, reference the RDW Database Installation Guide.)
2. Within the repository, delete the attribute Half Year, and re-name the objects referencing month.
   - Highlighting the object in the Business Layer and pressing the delete key deletes the attribute Half Year. All relationships and hierarchies are automatically updated. The table TIME_HALF_DM and its Aliases can also be deleted the same way in the Physical layer. Global Consistency check is recommended after the change.
   - Each repository object referencing Month can be re-named by selecting the object and pressing F2. After all the changes, Global Consistency check is recommended before saving the repository.

K

Appendix: Item Differentiators

Diff Attributes

As part of the RDW install, the first five diff types are hard-coded in both the DIFF_TYPE_DM look-up table and in the names of the attributes that point to them. This matches the initial set of pre-defined diff types that are provided within the Oracle Retail Merchandising System (RMS). This leaves the remaining diff types, and their corresponding attributes, to be defined at the user's discretion at a later date.

The following is a list of differentiators:

DIFF_TYPE_KEY	Attribute Name
1	Size
2	Color
3	Flavor
4	Scent
5	Pattern

Creating New Diff Types

With each additional diff type that is added to the merchandising system, a new attribute, within RDW, should be created to suitably match the name of the new diff type. Perform the following procedure to create new Diff Type attributes:

1. Open the RDW.rpd.
2. Create a new logical column in the Dim Product Differentiator Logical table of the RDW.rpd business layer. The first time, this will be Diff 6 desc.
3. Once completed, save the repository.

Modifying Diff Types

Functionality exists within the merchandising system to modify existing diff types. This can be done by either changing the description of the diff type (that is, change the diff type "Size" to "Fashion Size") or by deleting the diff type altogether.

When the description is changed within the merchandising system, the batch process updates the description column within the PROD_DIFF_TYPE_DM table to match this new description. The attribute name within the repository must be updated manually by changing the attribute name.

When deleting a diff type within the merchandising system, the batch process updates the description column within the PROD_DIFF_TYPE_DM table to 'NULL'. The attribute name within the repository must be updated manually to the generic name corresponding to the DIFF_TYPE_KEY, by renaming. That is, if Color was deleted, the system updates the name of the Color attribute to DIFF 2.

L

Appendix: Configuring RDW and Oracle BI for Single Sign-on

Overview

What is Single Sign-On?

Single Sign-On (SSO) is a term for the ability to sign onto multiple web applications via a single user ID/Password. There are many implementations of SSO – Oracle currently provides three different implementations: Oracle Single Sign-On (SSO), Java SSO (with the 10.1.3.1 release of OC4J) and Oracle Access Manager (provides more comprehensive user access capabilities).

Most, if not all, SSO technologies use a session cookie to hold encrypted data passed to each application. The SSO infrastructure has the responsibility to validate these cookies and, possibly, update this information. The user is directed to log on only if the cookie is not present or has become invalid. These session cookies are restricted to a single browser session and are never written to a file.

Another facet of SSO is how these technologies redirect a user's Web browser to various servlets. The SSO implementation determines when and where these redirects occur and what the final screen shown to the user is.

Most SSO implementations are performed in an application's infrastructure and not in the application logic itself. Applications that leverage infrastructure managed authentication (such as deploying specifying "Basic" or "Form" authentication) typically have little or no code changes when adapted to work in an SSO environment.

What Do I Need for Oracle Single Sign-On?

The nexus of an Oracle Single Sign-On system is the Oracle Identity Management Infrastructure installation. This consists of the following components:

- An Oracle Internet Directory (OID) LDAP server, used to store user, role, security, and other information. OID uses an Oracle database as the back-end storage of this information.
- An Oracle Single Sign-On servlet, used to authenticate the user and create the SSO session cookie. This servlet is deployed within the infrastructure Oracle Application Server (OAS).
- The Delegated Administration Services (DAS) application, used to administer users and group information. This information may also be loaded or modified via standard LDAP Data Interchange Format (LDIF) scripts.
- Additional administrative scripts for configuring the SSO system and registering HTTP servers.

Additional OAS servers will be needed to deploy the business applications leveraging the SSO technology.

Can Oracle Single Sign-On Work with Other SSO Implementations?

Yes, SSO has the ability to interoperate with many other SSO implementations, but some restrictions exist.

Oracle Single Sign-on Terms and Definitions

Authentication

Authentication is the process of establishing a user's identity. There are many types of authentication. The most common authentication process involves a user ID and password.

Dynamically Protected URLs

A "Dynamically Protected URL" is a URL whose implementing application is aware of the SSO environment. The application may allow a user limited access when the user has not been authenticated. Applications that implement dynamic SSO protection typically display a "Login" link to provide user authentication and gain greater access to the application's resources.

Identity Management Infrastructure

The Identity Management Infrastructure is the collection of product and services which provide Oracle Single Sign-on functionality. This includes the Oracle Internet Directory, an Oracle HTTP server, and the Oracle Single Sign-On services. The Oracle Application Server deployed with these components is typically referred as the "Infrastructure" instance.

MOD_OSSO

mod_osso is an Apache Web Server module an Oracle HTTP Server uses to function as a partner application within an Oracle Single Sign-On environment. The Oracle HTTP Server is based on the Apache HTTP Server.

Oracle Internet Directory

Oracle Internet Directory (OID) is an LDAP-compliant directory service. It contains user ids, passwords, group membership, privileges, and other attributes for users who are authenticated using Oracle Single Sign-On.

Partner Application

A partner application is an application that delegates authentication to the Oracle Identity Management Infrastructure. One such partner application is the Oracle HTTP Server (OHS) supplied with the Oracle Application Server. OHS uses the MOD_OSSO module to configure this functionality.

All partner applications must be registered with the Oracle Single Sign-On server. An output product of this registration is a configuration file the partner application uses to verify a user has been previously authenticated.

Realm

A Realm is a collection users and groups (roles) managed by a single password policy. This policy controls what may be used for authentication (for example, passwords, X.509 certificates, and biometric devices). A Realm also contains an authorization policy used for controlling access to applications or resources used by one or more applications.

A single OID can contain multiple Realms. This feature can consolidate security for retailers with multiple banners or to consolidate security for multiple development and test environments.

Statically Protected URLs

A URL is considered to be "Statically Protected" when an Oracle HTTP server is configured to limit access to this URL to only SSO authenticated users. Any attempt to access a "Statically Protected URL" results in the display of a login page or an error page to the user.

Servlets, static HTML pages, and JSP pages may be statically protected.

What Single Sign-On Is Not

Single Sign-On is NOT a user ID/password mapping technology.

However, some applications can store and retrieve user IDs and passwords for non-SSO applications within an OID LDAP server. An example of this is the Oracle Forms Web Application framework, which maps SSO user IDs to a database logins on a per-application basis.

How Oracle Single Sign-On Works

Oracle Single Sign-On involves a couple of different components. These are:

- The Oracle Single Sign-On servlet, which is responsible for the back-end authentication of the user.
- The Oracle Internet Directory LDAP server, which stores user IDs, passwords, and group (role) membership.
- The Oracle HTTP Server associated with the web application, which verifies and controls browser redirection to the SSO servlet.
- If the web application implements dynamic protection, then the web application itself is involved with the SSO system.

Statically Protected URLs

When an unauthenticated user accesses a statically protected URL, the following occurs:

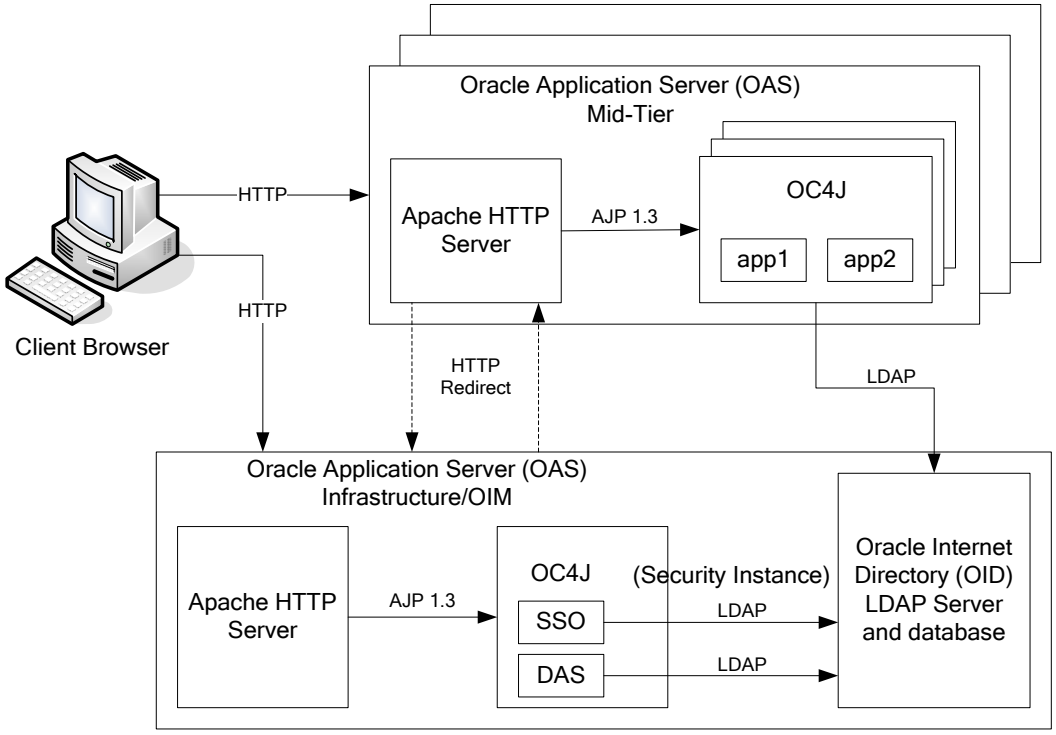
1. The Oracle HTTP server recognizes the user has not been authenticated and redirects the browser to the Oracle Single Sign-On servlet.
2. The SSO servlet determines the user must authenticate, and displays the SSO login page.
3. The user must sign in via a valid user ID and password. If the SSO servlet has been configured to support multiple Realms, a valid realm must also be entered. The user ID, password, and realm information is validated against the Oracle Internet Directory LDAP server.
4. The SSO servlet creates and sends the user's browser an SSO session cookie. This cookie is never persisted to disk and is specific only to the current browser session. This cookie contains the user's authenticated identity. It does NOT contain the user's password.
5. The SSO servlet redirects the user back to the Oracle HTTP Server, along with SSO specific information.
6. The Oracle HTTP Server decodes the SSO information, stores it with the user's session, and allows the user access to the original URL.

Dynamically Protected URLs

When an unauthenticated user accesses a dynamically protected URL, the following occurs:

1. The Oracle HTTP server recognizes the user has not been authenticated, but allows the user to access the URL.
2. The application determines the user must be authenticated and sends the Oracle HTTP server a specific status to begin the authentication process.
3. The Oracle HTTP Server redirects the user's browser session to the SSO Servlet.
4. The SSO servlet determines the user must authenticate, and displays the SSO login page.
5. The user must sign in via a valid user ID and password. If the SSO servlet has been configured to support multiple Realms, a valid realm must also be entered. The user ID, password, and realm information is validated against the Oracle Internet Directory LDAP server.
6. The SSO servlet creates and sends the user's browser an SSO session cookie. This cookie is never persisted to disk and is specific only to the current browser session. This cookie contains the user's authenticated identity. It does NOT contain the user's password.
7. The SSO servlet redirects the user back to the Oracle HTTP Server, along with SSO specific information.
8. The Oracle HTTP Server decodes the SSO information, stores it with the user's session, and allows the user access to the original URL.

Single Sign-on Topology



Installation Overview

Installing Oracle Single Sign-On consists of installing the following components:

1. Installing the Oracle Internet Directory (OID) LDAP server and the Infrastructure Oracle Application Server (OAS). These are typically performed using a single session of the Oracle Universal Installer and are performed at the same time. OID requires an Oracle relational database and if one is not available, the installer will also install this as well.

   The Infrastructure OAS includes the Delegated Administration Services (DAS) application as well as the SSO servlet. The DAS application can be used for user and realm management within OID.
2. Installing additional OAS 10.1.2 midtier instances for the Oracle Retail applications, such as RMS, that are based on Oracle Forms technologies. These instances must be registered with the Infrastructure OAS installed in step 1).
3. Installing additional application servers to deploy other Oracle Retail applications and performing application specific initialization and deployment activities.

Infrastructure Installation and Configuration

The Infrastructure installation for SSO is dependent on the environment and requirements for its use. Deploying an Infrastructure OAS to be used in a test environment does not have the same availability requirements as for a production environment. Similarly, the Oracle Internet Directory (OID) LDAP server can be deployed in a variety of different configurations. See the *Oracle Application Server Installation Guide* and the *Oracle Internet Directory Installation Guide* for more details.

OID User Data

Oracle Internet Directory is an LDAP v3 compliant directory server. It provides standards-based user definitions out of the box.

The current version of Oracle Single Sign-On only supports OID as its user storage facility. Customers with existing corporate LDAP implementations may need to synchronize user information between their existing LDAP directory servers and OID. OID supports standard LDIF file formats and provides a JNDI compliant set of Java classes as well. Moreover, OID provides additional synchronization and replication facilities to integrate with other corporate LDAP implementations.

Each user ID stored in OID has a specific record containing user specific information. For role-based access, groups of users can be defined and managed within OID. Applications can thus grant access based on group (role) membership saving administration time and providing a more secure implementation.

OID with Multiple Realms

OID and SSO can be configured to support multiple user Realms. Each realm is independent from each other and contains its own set of user IDs. As such, creating a new realm is an alternative to installing multiple OID and Infrastructure instances. Hence, a single Infrastructure OAS can be used to support many development and test environments by defining one realm for each environment.

Realms may also be used to support multiple groups of external users, such as those from partner companies. For more information on Realms, see the Oracle Internet Directory Administrators Guide.

User Management

User Management consists of displaying, creating, updating or removing user information. There are two basic methods of performing user management: LDIF scripts and the Delegate Administration Services (DAS) application.

OID DAS

The DAS application is a web based application designed for both administrators and users. A user may update their password, change their telephone number of record, or modify other user information. Users may search for other users based on partial strings of the user's name or ID. An administrator may create new users, unlock passwords, or delete users.

The DAS application is fully customizable. Administrators may define what user attributes are required, optional or even prompted for when a new user is created.

Furthermore, the DAS application is secure. Administrators may also what user attributes are displayed to other users. Administration is based on permission grants, so different users may have different capabilities for user management based on their roles within their organization.

LDIF Scripts

Script based user management can be used to synchronize data between multiple LDAP servers. The standard format for these scripts is the LDAP Data Interchange Format (LDIF). OID supports LDIF script for importing and exporting user information. LDIF scripts may also be used for bulk user load operations.

User Data Synchronization

The user store for Oracle Single Sign-On resides within the Oracle Internet Directory (OID) LDAP server. Oracle Retail applications may require additional information attached to a user name for application-specific purposes and may be stored in an application-specific database. Currently, there are no Oracle Retail tools for synchronizing changes in OID stored information with application-specific user stores. Implementers should plan appropriate time and resources for this process. Oracle Retail strongly suggests that you configure any Oracle Retail application using an LDAP for its user store to point to the same OID server used with Oracle Single Sign-On.

Enabling Single Sign-on for Oracle Business Intelligence Enterprise Edition

Single sign-on for RDW is enabled in Oracle Business Intelligence Enterprise Edition (Oracle BI EE). See the *Oracle Business Intelligence Deployment Guide* for information.

> **Note:** The Oracle Business Intelligence Deployment Guide has you use the "mail" attribute to uniquely identify users. When this is done, a users' SSO username must match their e-mail address or a "Not Logged In" page appears when using SSO with Oracle BI. Oracle Retail strongly suggests Oracle BI is configured to use the "uid" attribute to uniquely identify users.

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Appendix: Installation Order

This section provides a guideline as to the order in which the Oracle Retail applications should be installed. If a retailer has chosen to use some, but not all, of the applications the order is still valid less the applications not being installed.

> **Note:** The installation order is not meant to imply integration between products.

Enterprise Installation Order

1. Oracle Retail Merchandising System (RMS), Oracle Retail Trade Management (RTM), Oracle Retail Sales Audit (ReSA)
2. Oracle Retail Service Layer (RSL)
3. Oracle Retail Extract, Transform, Load (RETL)
4. Oracle Retail Active Retail Intelligence (ARI)
5. Oracle Retail Warehouse Management System (RWMS)
6. Oracle Retail Allocation
7. Oracle Retail Invoice Matching (ReIM)
8. Oracle Retail Price Management (RPM)

> **Note:** During installation of RPM, you are asked for the RIBforRPM provider URL. Since RIB is installed after RPM, make a note of the URL you enter. If you need to change the RIBforRPM provider URL after you install RIB, you can do so by editing the jndi_provider.xml file.

9. Oracle Retail Central Office (ORCO)
10. Oracle Retail Back Office (ORBO) or Back Office with Labels and Tags (ORLAT)
11. Oracle Retail Store Inventory Management (SIM)

> **Note:** During installation of SIM, you are asked for the AIP provider URL. Since AIP is installed after SIM, make a note of the URL you enter. If you need to change the AIP provider URL after you install AIP, you can do so by editing the jndi_providers_ribclient.xml file.

12. Oracle Retail Predictive Application Server (RPAS)
13. Oracle Retail Size Profile Optimization (SPO)
14. Oracle Retail Assortment Planning (AP)
15. Oracle Retail Item Planning (IP)
16. Oracle Retail Item Planning configured for COE (IPCOE)
17. Oracle Retail Advanced Inventory Planning (AIP)
18. Oracle Retail Integration Bus (RIB)
19. Oracle Retail Point-of-Service (ORPOS)
20. Oracle Retail Mobile Point-of-Service (ORMPOS)

21. Oracle Retail Analytics Applications
22. Oracle Retail Data Warehouse (RDW)
23. Oracle Retail Workspace (ORW)