Oracle® Retail Merchandising System

Installation Guide
Release 12.0.11
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Oracle® Retail Merchandising System Installation Guide, Release 12.0.11

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Value-Added Reseller (VAR) Language

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Oracle Retail Merchandising System, Installation Guide, Release 12.0.11

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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.

Audience

This Installation Guide is written for the following audiences:

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

Related Documents

For more information, see the following documents in the Oracle Retail Merchandising System Release 12.0.11 documentation set:

- *Oracle Retail Merchandising System Release Notes*
- *Oracle Retail Merchandising System Operations Guide*
- *Oracle Retail Merchandising System Data Model*
- *Oracle Retail Sales Audit User Guide*
- *Oracle Retail Trade Management User Guide*
- *Oracle Retail Merchandising Batch Schedule*

Customer Support

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

https://support.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

When you install the application for the first time, you install either a base release (for example, 12.0) or a later patch release (for example, 12.0.10). If you are installing the base release and additional patch and bundled hot fix releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch and bundled hot fix releases can contain critical information related to the base release, as well as information about code changes since the base release.

Oracle Retail Documentation on the Oracle Technology Network

Documentation is packaged with each Oracle Retail product release. Oracle Retail product documentation is also available on the following Web site:
http://www.oracle.com/technology/documentation/oracle_retail.html

(Data Model documents are not available through Oracle Technology Network. These documents are packaged with released code, or you can obtain them through My Oracle Support.)

Documentation should be available on this Web site within a month after a product release.

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."

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

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Preinstallation Tasks

Note: The RMS 12.0.11 patch contains all the bundled hot fix releases since RMS 12.0.10, plus "delta" defect fixes since the last bundled hot fix. The following defect fixes make up the RMS 12.0.11 patch:

- 12.0.10.2
- 12.0.10.3
- 12.0.10.4
- 12.0.10.x.delta (defect fixes since bundled hot fix release 12.0.10.4)

With this release, patching is more flexible because the patch can be started at any hot fix level. For example, if Release 12.0.10.2 has already been applied, then it is only necessary to apply 12.0.10.3, 12.0.10.4 and 12.0.10x.delta defect fixes.

This installation guide explains how to install all bundled hot fix releases plus the delta defect fixes.

Check Database Server Requirements

General Requirements for a database server running RMS include:

Supported on:	Versions Supported:
Database Server OS	OS certified with Oracle Database 10g Enterprise Edition. Options are: ▪ AIX 5.3 ▪ Solaris 10 SPARC (Actual hardware or Logical Domains) ▪ HP-UX 11.23 (PA-RISC) ▪ Oracle Enterprise Linux 4 Update 4 (OEL 4.4) for x86-64 ▪ Oracle Enterprise Linux 5 Update 3 (OEL 5.3) for x86-64 ▪ RedHat Enterprise Linux 4 Update 4 (RHEL 4.4) for x86-64 ▪ RedHat Enterprise Linux 5 Update 3 (RHEL 5.3) for x86-64
Database Server	Oracle Database 10g Release 2 Enterprise Edition (minimum 10.2.0.4.0 patchset required) with the following patches and components: Patches: ▪ 10.2.0.4 patchset (6810189) ▪ **AIX Only oneoff** 6154596 - When trying to compile Proc*C program it fails on AIX5 Database Vault specific patches: ▪ 7639262 - TDE oneoff ▪ 5945647 – Export oneoff - Available on AIX and Solaris Sparc (it is important to complete all steps of this patch) Components: ▪ Oracle Database 10g ▪ Oracle Partitioning ▪ Oracle Net Services ▪ Oracle Call Interface (OCI) ▪ Oracle Programmer ▪ Oracle XML Development Kit ▪ DBConsole if Database Vault is installed. ANSI compliant C compiler (certified with OS and database version) Perl compiler 5.0 or later x-Windows interface

Check Application Server Requirements

General requirements for an application server capable of running RMS include:

Supported on:	Versions Supported:
Application Server OS	OS certified with Oracle Application Server 10g 10.1.2.3. Options are: ▪ AIX 5.3 ▪ Solaris 10 SPARC (Actual hardware or Logical Domains) ▪ HP-UX 11.23 (PA-RISC) ▪ Oracle Enterprise Linux 4 Update 4 (OEL 4.4) for x86-64 ▪ Oracle Enterprise Linux 5 Update 3 (OEL 5.3) for x86-64 ▪ RedHat Enterprise Linux 4 Update 4 (RHEL 4.4) for x86-64 ▪ RedHat Enterprise Linux 5 Update 3 (RHEL 5.3) for x86-64
Application Server	Oracle Application Server Forms and Reports 10g version 10.1.2.3 with the following patches: ▪ 4601861 (NEED TO EXPOSE NZOS_SETIOSEMANTICS)

Check Web Browser and Client Requirements

General requirements for client running RMS include:

Product	Version
JRE Plug-in	Sun JRE Plug-in 1.4.1+
Operating System	Windows 2000 or XP
Processor	Pentium processor
Display resolution	1024x768 resolution
PC Configuration	minimum 256 MB RAM, 450 MHz
Browser	Microsoft Internet Explorer 7.0

Supported Oracle Retail Products

Product	Version
Oracle Retail Price Management (RPM)	12.0.11
Oracle Retail Allocation	12.0.11
Oracle Retail Invoice Matching (ReIM)	12.0.11
Oracle Retail Store Inventory Management (SIM)	12.0.11
Oracle Retail Warehouse Management System (RWMS)	12.0.11
Oracle Retail Data Warehouse (RDW)	12.0.10
Oracle Retail Strategic Store Solutions (ORSSS)	12.0.9
Oracle Retail Demand Forecasting (RDF)	12.1.3
Oracle Retail Grade	12.1.3
Oracle Retail Predictive Applications Server (RPAS)	12.1.3

Supported Oracle Retail Integration Technologies

Integration Technology	Version
Oracle Retail Extract, Transform and Load (RETL)	12.0.9
Oracle Retail Integration Bus (RIB)	12.0.11
Oracle Retail Service Layer (RSL)	12.0.11

Supported Oracle Applications

Requirement	Version
Oracle E-Business Suite	11.5.10 or 12.0.2

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RAC and Clustering

Real Application Cluster Database and Oracle Application Server Clustering for Oracle Retail Merchandising System has been validated to run only on Linux:

The Oracle Retail products have been validated against a 10.2.0.3 RAC database. When using a RAC database, all JDBC connections should be configured to use OCI connections rather than THIN connections. It is suggested that when using OCI connections, the Oracle Retail products database be configured in the tnsnames.ora file used by the Oracle Application Server installations.

Clustering for Oracle Application Server 10.1.3 is managed as an Active-Active cluster accessed through a hardware Load Balancer. It is suggested that a VirtualHost be added to the OAS 10.1.3 reflecting the Virtual Server Name configured in the load balancer. It is also suggested that the OC4J select method be configured to prefer the use of local OC4J instances. The Oracle Retail products are currently not validated to be distributable at the application level in an OAS 10.1.3 cluster.

Clustering for Oracle Application Server 10.1.2.2 is managed as an Active-Active cluster accessed through a hardware Load Balancer. It is suggested that the Web Cache installation included with OAS 10.1.2.2 be configured to reflect all application server Mid-Tier installations. Validation has been completed utilizing a RAC 10.2.0.3 Oracle Internet Directory database with the OAS 10.1.2.2 cluster.

References for Configuration:

- Oracle® Application Server High Availability Guide 10g Release 3 (10.1.3) Part Number B15977-02
- Oracle® Application Server High Availability Guide 10g Release 2 (10.1.2) Part Number B14003-05
- Oracle® Database Oracle Clusterware and Oracle Real Application Clusters Administration and Deployment Guide 10g Release 2 (10.2) Part Number B14197-03

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Database Installation Tasks

Before you apply the RMS 12.0.11 patch:

- Make a backup of all your objects and database schema.
- Check that RMS 12.0.10 is installed.
- Review the enclosed RMS 12.0.11 Patch Release Notes (rms-12011-rn.pdf).
- Review each of the enclosed defect documents.
- Note: The RMS 12.0.11 patch contains all the bundled hot fix releases plus the delta from the last patch to this release. The following make up the RMS 12.0.11 patch
  - 12.0.10.2
  - 12.0.10.3
  - 12.0.10.4
  - 12.0.10.x.delta (delta between 12.0.10.4 and 12.0.11 release)

With this release, patching is made more flexible by allowing the ability to start the patch at any hot fix level. For example, if 12.0.10.2 has already been applied in the environment, then applying 12.0.10.3, 12.0.10.4 and 12.0.10x.delta is only necessary.

The installation instructions explain how to install all bundled hot fixes plus the delta.

Before copying over any files:

- Note whether customizations have been made to the module. If so, then the customizations must be reapplied over the new version of the module (or the fix may need to be applied to the custom version of the code).
- Copy the original files to a different directory before copying over them in case they need to be referred to at a later date.

> **Note:** These instructions refer to RMS12DEV as the Oracle owning schema.

Copy from CD Directory

1. Copy the rms12011patch.zip file from the CD /dbserverunix directory to a newly created staging directory on your UNIX server.
2. Unzip the file by entering:
   ```
   unzip rms12011patch.zip
   ```

Apply RMS 12.0.10.2 Bundled Hot Fix Release

Run the following scripts only if the RMS 12.0.10.2 bundled hot fix release has not been installed in the environment:

Alter RMS Tables

1. Change directories to STAGING_AREA/rms12.0.10.2/dbcs.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120102dbcs.sql
   ```
3. Check the log file patch120102dbcs.log for any errors.

   The following errors can be ignored:

   - ORA-04080: trigger 'EC_TABLE_UIL_AIDR' does not exist.
   - ORA-12003: materialized view "RMS12EN3"."MV_CURRENCY_CONVERSION_RATES" does not exist.

Alter RMS Triggers

1. Change directories to STAGING_AREA/rms12.0.10.2/triggers.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120102triggers.sql
   ```
3. Check the log file patch120102triggers.log for any errors.

Alter RMS Database Objects

1. Change directories to STAGING_AREA/rms12.0.10.2/db_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120102rms.sql
   ```
3. Check the log file patch120102rms.log for any errors. Validating the invalid objects will be completed at the end.

Update Data for RMS

> **Note:** Ensure that you have your NLS_LANG set to UTF-8. For example AMERICAN_AMERICA.UTF8

1. Change directories to STAGING_AREA/rms12.0.10.2/data.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120102ctl.sql
   Enter a valid country id (e.g. US) when prompted.
   ```
3. Check the log file patch120102ctl.log for any errors.

Apply RMS 12.0.10.3 Bundled Hot Fix Release

Run the following scripts only if RMS 12.0.10.2 has been installed and RMS 12.0.10.3 bundled hot fix release has not been installed in the environment:

Alter RIB Objects

1. Change directories to STAGING_AREA/rms12.0.10.3/rib_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   `SQL> patch120103rib.sql`
3. Check the log file patch120103rib.log for any errors.

Alter RMS Tables

1. Change directories to STAGING_AREA/rms12.0.10.3/dbcs.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   `SQL> @patch120103dbcs.sql`
3. Check the log file patch120103dbcs.log for any errors.

Alter RMS Database Objects

1. Change directories to STAGING_AREA/rms12.0.10.2/db_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   `SQL> @patch120103rms.sql`
3. Check the log file patch120103rms.log for any errors. Validating the invalid objects will be completed at the end.

Update Data for RMS

Note: Ensure that you have your NLS_LANG set to UTF-8. For example AMERICAN_AMERICA.UTF8

1. Change directories to STAGING_AREA/rms120103/data.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   `SQL> @patch120103ctl.sql`
3. Check the log file patch120103ctl.log for any errors.

Apply RMS 12.0.10.4 Bundled Hot Fix Release

Run the following scripts only if RMS 12.0.10.2 and 12.0.10.3 have been installed and RMS 12.0.10.4 bundled hot fix release has not been installed in the environment.

Alter RMS Tables

1. Change directories to STAGING_AREA/rms12.0.10.4/dbcs.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120104dbcs.sql
   ```
3. Check the log file patch120104dbcs.log for any errors.

Alter RMS Triggers

1. Change directories to STAGING_AREA/rms12.0.10.4/triggers.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120104triggers.sql
   ```
3. Check the log file patch120104triggers.log for any errors.

Alter RMS Database Objects

1. Change directories to STAGING_AREA/rms12.0.10.4/db_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120104rms.sql
   ```
3. Check the log file patch120104rms.log for any errors. Validating the invalid objects will be completed at the end.

Update Data for RMS

Note: Ensure that you have your NLS_LANG set to UTF-8. For example AMERICAN_AMERICA.UTF8

1. Change directories to STAGING_AREA/rms12.0.10.4/data.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch120104ctl.sql
   ```
3. Check the log file patch120103ctl.log for any errors.

Apply the Delta from RMS 12.0.10.4 to 12.0.11

Run the following scripts only after the RMS 12.0.10.2, RMS 12.0.10.3 and RMS 12.0.10.4 bundled hot fix releases have been installed in the environment.

Install the Open Source Log4plsql Software

> **Note:** Ensure that you have your NLS_LANG set to UTF-8. For example AMERICAN_AMERICA.UTF8

Download and install the open source Log4plsql software. Log4plsql is PL/SQL debugger code that logs a trace for PL/SQL code. The user guide for Log4plsql is at the following URL:

`http://log4plsql.sourceforge.net/docs/UserGuideDOC.html`

1. Access the following URL:
   `http://sourceforge.net/projects/log4plsql/files/`
2. Select and download log4plsql v3.1.X.

   > **Note:** Ensure that you have selected log4plsql v3.1.X as other newer versions will not work with RMS 12.0.11

3. After the download has completed, unzip the file.
4. Go to Log4plsql/sql and run install.sql as the SYS user.

   > **Note:** The program must be installed to the database connected as SYS

5. After installation, compile to validate any invalid SYS objects and run the following sql statements:
   - create public synonym plog for sys.plog
   - grant execute on plog to public
   - create public synonym plogparam for sys.plogparam
   - grant execute on plogparam to public

   > **Note:** TLOG_LVL contains the level of the debug information being captured. This needs to be populated for a user using the debugging features. Otherwise the level is set to whatever is defaulted in the PLOGPARAM.DEFAULT_LEVEL. The levels in the TLOG_LVL can be one of the following:
   >
   > F – corresponds to PLOG.LFATAL
   >
   > E – PLOG.LERROR
   >
   > W – PLOG.LWARN
   >
   > I – PLOG.LINFO
   >
   > D – PLOG.LDEBUG
   >
   > Any other value set turns off the debugging feature

The PLOGPARAM.DEFAULT_LEVEL can also be set by modifying the PLOGPARAM package specs and recompiling. It is recommended to set this to OFF (PLOG.LOFF) in a production environment to avoid unnecessary debug messages captured in the log tables.

Alter Pricing types

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/pricing/types.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @pricing12011types.sql
   ```
3. Check the log file pricing12011types.log for any errors.

Alter Pricing DDL

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/pricing/dbcs.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @pricing12011dbcs.sql
   ```
3. Check the log file pricing12011dbcs.log for any errors.

Alter Pricing Objects

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/pricing/db_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @pricing12011rms.sql
   ```
3. Check the log file pricing12011rms.log for any errors. ORA-04043 errors can be ignored.

Alter RIB Objects

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/rib_objects
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @InstallAndCompileAllRibOracleObjects.sql
   ```
   You may be prompted to run additional scripts to compile invalid objects.

Alter RMS Types

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/types.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch12011types.sql
   ```
3. Check the log file patch12011types.log for any errors. ORA-4043 errors can be ignored.

Alter RMS Tables

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/dbcs.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch12011dbcs.sql
   ```
3. Check the log file patch12011dbcs.log for any errors.

Alter RMS Database Objects

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/db_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch12011rms.sql
   ```
3. Check the log file patch12011rms.log for any errors.

Add RMS Provider Database Objects

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/provider_db_objects.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch12011provider.sql
   ```
3. Check the log file patch12011provider.log for any errors.

Validate all Invalid Objects

> **Note:** Deadlocked objects may appear when running this script. This is expected. Run the script until no invalid objects remain.

1. Change directories to STAGING_AREA/utility.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @inv_obj_comp.sql
   ```
3. This script may need to be run more than once.

Update Data for RMS

> **Note:** Esure that you have your NLS_LANG set to UTF-8. For example AMERICAN_AMERICA.UTF8

1. Change directories to STAGING_AREA/rms12.0.10.x.delta/data.
2. Log in to SQL*Plus as RMS12DEV and run the following command:
   ```
   SQL> @patch12011ctl.sql
   ```
3. Check the log file patch12011ctl.log for any errors.

Insert Language Data

> **Note:** These scripts are only for customers who wish to have a primary language of English and a secondary language of any combination of the following: German, Spanish, French, Italian, Korean, Russian, Brazilian Portuguese, Japanese, Simplified Chinese or Traditional Chinese. The scripts are UTF-8 encoded. We recommend installing them into a database that has been set to UTF-8.

1. Change directories to INSTALL_DIR/rms12.0.10.x.delta/data/<lang>.
   <lang> is the country code for the language you wish to install. Country codes are noted in step 4 below.
2. Set the SQL*Plus session so that the encoding component of the NLS_LANG is UTF8. For example,AMERICAN_AMERICA.UTF8
3. Log in to SQL*Plus as RMS12DEV and run the following command:

```
SQL> @patch12011ctl_<lang>.sql
```

4. Check the log file patch12011ctl_<lang>.log for any errors.
   - <lang> is the country code for the language you wish to install.
   - de – German
   - es – Spanish
   - fr – French
   - it - Italian
   - ja – Japanese
   - ko – Korean
   - ptb – Brazilian Poruguese
   - ru - Russian
   - zhs – Simplified Chinese
   - zht – Traditional Chinese

Optional – Configure RMS with Database Vault and Transparent Data Encryption

To encrypt ReSA application data using Transparent Data Encryption (TDE), please refer to Appendix A.

To enable enhance application security for RMS using Database Vault, please refer to Appendix B.

Update RETL for RDW

Note: These steps only need to be done if you are using RDW.

1. Change directories to STAGING_AREA/rms12.0.10.2/retl4RDW/rfx/src.
2. Copy all the files from this directory to INSTALL_DIR/retl/rfx/src.
   ```
   cp -R * INSTALL_DIR/retl/rfx/src
   ```
3. Change directories to STAGING_AREA/rms12.0.10.4/retl4RDW/rfx/src.
4. Copy all the files from this directory to INSTALL_DIR/retl/rfx/src.
   ```
   cp -R * INSTALL_DIR/retl/rfx/src
   ```
5. Change directories to STAGING_AREA/rms12.0.10.x.delta/retl4RDW/rfx/src.
6. Copy all the files from this directory to INSTALL_DIR/retl/rfx/src.
   ```
   cp -R * INSTALL_DIR/retl/rfx/src
   ```

Compile RMS Batch Libraries and Programs

Note: Warning messages may appear during the compilation of the batch. These warnings can be ignored if the batch executables are successfully generated.

Set Environment Variables

1. Make sure the following variables are set:

   Note: INSTALL_DIR is the location where RMS 12 was installed.

   Make sure the path for make, makedepend, and the compiler are in $PATH environment variable.

   - MMHOME=INSTALL_DIR/rms
   - MMUSER=RMS Schema Owner
   - PASSWORD=RMS Schema Owner Password
   - ORACLE_HOME=Location of Oracle install
   - ORACLE_SID=The Oracle Sid for the RMS database

   AIX:

   - LIBPATH=$ORACLE_HOME/lib:$MMHOME/oracle/lib/bin:$LDPATH
   - OBJECT_MODE=64
   - LINK_CNTRL=L_PTHREADS_D7

   HP:

   - SHLIB_PATH=$ORACLE_HOME/lib:$MMHOME/oracle/lib/bin:
   - $SH_LIBPATH

   Solaris:

   - LD_LIBRARY_PATH=$ORACLE_HOME/lib:
     $MMHOME/oracle/lib/bin:$LD_LIBRARY_PATH

   Linux:

   - LD_LIBRARY_PATH=$ORACLE_HOME/lib:
     $MMHOME/oracle/lib/bin:$LD_LIBRARY_PATH

Compile Batch Libraries

1. Change directories to INSTALL_DIR/rms/oracle/lib/src.
2. Create library dependencies.
   a. For UNIX, run the following command:
      `make –f retek.mk depend 2>&1 | tee libdpnd.log`
   b. For Linux, run the following command:
      `make –f retek.mk –r depend 2>&1 | tee libdpnd.log`
   c. Check the libdpnd.log file for errors.
3. Create the batch libraries.
   a. For UNIX, run the following command:
      `make –f retek.mk retek rms resa 2>&1 | tee libretek.log`
   b. For Linux, run the following command:
      `make –f retek.mk –r retek rms resa 2>&1 | tee libretek.log`
   c. Check the libretek.log file for errors.
4. Install the batch libraries.
   `make –f retek.mk install`
   The batch libraries should now be in INSTALL_DIR/rms/oracle/lib/bin.

Compile Batch Source Code

1. Copy the files from STAGING_AREA/batch/proc/src to INSTALL_DIR/rms/oracle/proc/src for all bundled hot fix releases in this order: rms12.0.10.2, rms12.0.10.3, rms12.0.10.4, rms12.0.10.x.delta.
2. Copy the files from STAGING_AREA/batch/proc/bin if they exist in the release, to INSTALL_DIR/rms/oracle/proc/bin for all bundled hot fix releases in this order: rms12.0.10.2, rms12.0.10.3, rms12.0.10.4, rms12.0.10.x.delta.
   - Make sure all ksh and sql files from INSTALL_DIR/rms/oracle/proc/src are in INSTALL_DIR/rms/oracle/proc/bin

     ```
     cp <INSTALL_DIR>/rms/oracle/proc/src/*.ksh
     <INSTALL_DIR>/rms/oracle/proc/bin/*.ksh

     cp <INSTALL_DIR>/rms/oracle/proc/src/*.sql
     <INSTALL_DIR>/rms/oracle/proc/bin/*.sql
     ```
3. Change directories to INSTALL_DIR/rms/oracle/proc/src.
4. Create dependencies.
   a. For UNIX, run the following command:

      ```
      make –f mts.mk rms-depend recs-depend rtm-depend resa-depend 2>&1 | tee
      srcdpnd.log
      ```
   b. For Linux, run the following command:

      ```
      make –f mts.mk –r rms-depend recs-depend rtm-depend resa-depend 2>&1 | tee
      srcdpnd.log
      ```
   c. Check the srcdpnd.log file for errors.
5. Create batch programs.
   a. For UNIX, run the following commands in the order stated.

      ```
      make –f rms.mk PRODUCT_PROCFLAGS=dynamic=ansi ditinsrt
      make –f mts.mk rms-ALL recs-ALL resa-ALL rtm-ALL 2>&1 | tee srcall.log
      ```
   b. For Linux, run the following commands:

      ```
      make –f rms.mk –r PRODUCT_PROCFLAGS=dynamic=ansi ditinsrt
      make –f mts.mk –r rms-ALL recs-ALL resa-ALL rtm-ALL 2>&1 | tee srcall.log
      ```
   c. Check the srcall.log file for errors.
6. Install the batch programs.

   ```
   make –f mts.mk rms-install recs-install resa-install rtm-install
   ```
   The batch programs should now be in INSTALL_DIR/rms/oracle/proc/bin.

4

Application Server Installation Tasks

Copy from CD Directory

1. Copy the rms12011patch.zip file from the CD /appserverunix directory to a newly created staging directory on your UNIX server. This zip file also contains the database files.
2. Unzip the file by entering:
   `unzip rms12011patch.zip`

Set Environment Variables

> **Note:** ORACLE_HOME is the location where Oracle Application Server 10g (10.1.2.0.2) has been installed

1. Set the DISPLAY variable to the IP address plus ":0.0" (ie: 10.1.1.1:0.0) of the application server.
2. Set the following variables:

> **Note:** ORACLE_HOME is the location where Oracle Application Server 10g (10.1.2.0.2) has been installed

- **All OS Platforms**
  - PATH=$ORACLE_HOME/bin:$ORACLE_HOME/opmn/bin:$ORACLE_HOME/dcm/bin:INSTALL_DIR/forms10gr2_scripts:$PATH
  - CLASSPATH=$ORACLE_HOME/jlib/importer:$ORACLE_HOME/jlib/debugger.jar:$ORACLE_HOME/jlib/utj.jar:$ORACLE_HOME/jlib/ewt3.jar:$ORACLE_HOME/jlib/share.jar:$ORACLE_HOME/jlib/dfc.jar:$ORACLE_HOME/jlib/help4.jar:$ORACLE_HOME/jlib/oracle_ice.jar:$ORACLE_HOME/jlib/jewt4.jar
  - FORMS_BUILDER_CLASSPATH=$CLASSPATH
  - FORMS_PATH=INSTALL_DIR/toolset/bin:INSTALL_DIR/rms/forms/bin:$ORACLE_HOME/forms
  - REPORTS_PATH=INSTALL_DIR/rms/reports/bin:$ORACLE_HOME/forms
  - TK_UNKNOWN==$ORACLE_HOME/guicommon/tk/admin
  - UP=<RMS schema owner>/<RMS schema password>@<RMS database>

> **Note:** Verify that TNS is set up correctly by using the UP variable to successfully log in to the RMS 12 schema.
>
> **Example:** /u00/oracle> sqlplus $UP

- **Solaris**
  - LD_LIBRARY_PATH=$ORACLE_HOME/lib:$ORACLE_HOME/jdk/jre/lib/sparc:$ORACLE_HOME/jdk/jre/lib/sparc/native_threads
- **HP-UX**
  - SHLIB_PATH=$ORACLE_HOME/lib32:$ORACLE_HOME/lib:$ORACLE_HOME/jdk/jre/lib/PA_RISC:$ORACLE_HOME/jdk/jre/lib/PA_RISC/server
- **AIX**
  - LD_LIBRARY_PATH=$ORACLE_HOME/lib:$ORACLE_HOME/lib32:$ORACLE_HOME/jdk/jre/lib
  - LIBPATH=$LD_LIBRARY_PATH
- **Linux**
  - LD_LIBRARY_PATH=$ORACLE_HOME/lib:$ORACLE_HOME/lib32:$ORACLE_HOME/jdk/jre/lib

RMS Toolset Installation

1. Copy all libraries, forms and menus (.pll, .fmb, .mmb files) in the STAGING_AREA/toolset/src directory to the INSTALL_DIR/toolset/bin directory for all bundled hot fix releases in this order: rms12.0.10.2, rms12.0.10.3, rms12.0.10.4, rms12.0.10.x.delta.
2. Change directories to INSTALL_DIR/toolset/bin.
3. Run pll2plx10gr2_toolset to compile all Toolset .pll's.

   Note: If the pll2plx10gr2_toolset script is not used and the libraries are compiled individually, then they must be compiled in the following order (which is noted in the pll2plx10gr2_toolset script):

   - messge45.pll
   - ariiflib.pll
   - stand45.pll
   - calend45.pll
   - find45.pll
   - item45.pll
   - tools45.pll
   - mblock45.pll
   - mview45.pll
   - nav45.pll
   - work45.pll
   - itnumtype.pll
   - hierfilter.pll
   - rmslib.pll

4. Check to make sure that each .pll file has a corresponding .plx (to ensure that all .pll's compiled successfully).
5. Remove all newly created .plx files.
6. Run fmb2fmx10gr2_fm (in INSTALL_DIR/toolset/bin) to compile the Toolset reference forms.
7. Remove all newly created fm_*.fmx files (reference forms should not have executable files).
8. Run fmb2fmx10gr2 (in INSTALL_DIR/toolset/bin) to generate Toolset runtime forms – .fmx's.
9. Check to make sure that each non-reference form (.fmb file) has a corresponding .fmx file.

   Note: Disregard fm_*.fmx files should they be created. These files should be removed. They should NOT exist in the INSTALL_DIR/toolset/bin directory.

10. Remove all non-reference forms from INSTALL_DIR/toolset/bin; the following syntax leaves all reference forms (fm_*.fmb) in the bin directory, while removing all other forms:

```
> for PROG in `ls *.fmb | grep -v fm_`
> do PROGNAME=`echo $PROG`
> rm $PROGNAME
> done
```

11. Run mmb2mmx10gr2 (in INSTALL_DIR/toolset/bin) to generate Toolset runtime menus – .mmx's.
12. Check to make sure that each .mmb file has a corresponding .mmx file.

    Note: .err files may be created by the compilation scripts above. These files are logs of the compilation process and can be removed.

13. Remove all .mmb files from INSTALL_DIR/toolset/bin.

RMS Forms Installation

1. Copy all the files from STAGING_AREA/forms/src to INSTALL_DIR/rms/forms/src for all bundled hot fix releases in this order: rms12.0.10.2, rms12.0.10.3, rms12.0.10.4, rms12.0.10.x.delta.
2. Copy all libraries (.pll files) in the INSTALL_DIR/rms/forms/src directory to the directories to the INSTALL_DIR/rms/forms/bin directory.
3. Change directories to INSTALL_DIR/rms/forms/bin.
4. Run pll2plx10gr2_forms to compile all RMS .pll's.
5. Check to make sure that each .pll file has a corresponding .plx (to ensure that all .pll's compiled successfully). Remove all newly created .plx files.
6. Copy all forms (*.fmb files) in the INSTALL_DIR/rms/forms/src directory to the INSTALL_DIR/rms/forms/bin directory.
7. Run fmb2fmx10gr2_fm (in INSTALL_DIR/rms/forms/bin) to compile the RMS reference forms.
8. Remove all newly created fm_*.fmx files (reference forms should not have executable files).

9. Run fmb2fmx10gr2 (in INSTALL_DIR/rms/forms/bin) to generate RMS runtime forms – .fmx's.
10. Check to make sure that each non-reference form .fmb file has a corresponding .fmx file.

> **Note:** Disregard fm_*.fmx files should they be created. These files should be removed. They should NOT exist in the INSTALL_DIR/rms/forms/bin directory.

11. Remove all non-reference form forms from INSTALL_DIR/rms/forms/bin. The following syntax leaves all reference forms (fm_*.fmb) in the bin directory, while removing all other forms:

```
> for PROG in `ls *.fmb | grep -v fm_`
> do PROGNAME=`echo $PROG`
> rm $PROGNAME
> done
```

12. Copy all menus (*.mmb files) in the INSTALL_DIR/rms/forms/src directory to the INSTALL_DIR/rms/forms/bin directory.
13. Run mmb2mmx10gr2 (in INSTALL_DIR/rms/forms/bin) to generate RMS runtime menus – .mmx's.
14. Check to make sure that each .mmb file has a corresponding .mmx file.
15. Remove all .mmb files from INSTALL_DIR/rms/forms/bin.

> **Note:** .err files may be created by the compilation scripts above. These files are logs of the compilation process and can be removed.

RMS Reports Installation

1. Copy all reports (*.rdf files) in the STAGING_AREA/reports/src directory to the INSTALL_DIR/rms/reports/bin directory for all bundled hot fix releases in this order: rms12.0.10.2, rms12.0.10.3, rms12.0.10.4, rms12.0.10.x.delta.
2. Run rdf2rep10gr2 (in INSTALL_DIR/rms/reports/bin) to generate Reports runtime reports – .rep's.

   Note: The following error messages may appear when running rdf2rep10gr2; these errors can be ignored if report (.rep) generation was successful:

   REP-0759: One or more PL/SQL libraries have been modified since the reports was saved. The PL/SQL will be recompiled.

   REP-0202: Attempt to free a null pointer

   REP-0759 is generated by the r25conv program. The error appears any time a report is converted.

   REP-0202 is due to an Oracle bug with rwconverter and can be ignored

3. Check to make sure that each .rdf file has a corresponding .rep file.
4. Remove all .rdf files from INSTALL_DIR/rms/reports/bin.

   Note: .err files may be created by the compilation scripts above. These files are logs of the compilation process and can be removed.

Verify and Update Help File Installation

1. Unzip web_help.zip from <staging area>/webhelp at this spot
   ```
   <INSTALL>/web_html
   Help file structure should be something similar to:
   /u1/app/rmsprd/web_html/helpfiles/english/rms
   ```
2. Make sure the rhelp.pl is in the /java/help/ directory.

   $HELP_DIR/web_html/help/rhelp.pl

3. Edit the http.conf file and directory name where help files are located. Edit the OAS 10.1.2.x Application server httpd.conf file by adding the updated rms12unix.conf entries to the end of the httpd.conf:
   a. Add this in the httpd.conf file to use the perl script. It should go just above the aliases: Alias /java/help/ "$HELP_DIR/web_html/help/" (This should be pointed to the "java/help" alias to the rhelp.pl) . #PerlRequire <Location /java/help> SetHandler perl-script PerlHandler Apache::Registry AddHandler perl-script .pl
      ```
      Options +ExecCGI PerlSendHeader On </Location>
      ```
   b. Set the aliases set up in the http.conf file. Add these aliases to the end of the file . Alias /web_gif/ "$HELP_DIR/web_html/gif/" Alias /en/ "$HELP_DIR/web_html/helpfiles/english/" Alias /EN/

"$HELP_DIR/web_html/helpfiles/english/" Alias /english/ "$HELP_DIR/web_html/helpfiles/english/" Alias /french/ "$HELP_DIR/web_html/helpfiles/french/" ## If a French language customer Alias /temp/ "$HELP_DIR/web_html/temp/" .

> **Note:** Point the "en", "EN", and "english" alias to the rms directory, one level above the help files and include all variations of the "english" directory: Create a directory to put these files. We will call this the $HELP_DIR for this example. This will have the following structure $HELP_DIR/web_html/gif $HELP_DIR/web_html/help $HELP_DIR/web_html/helpfiles/english/rms ##. They may have a different language and make adjustments here: $HELP_DIR/web_html/temp

4. Make sure the *.gif files are in the $HELP_DIR/web_html/gif directory.
5. Make sure there is a "forms" directory and that the form files (for example, fm_rtkstrtw_main.htm) are located in the forms directory:

   `$HELP_DIR/web_html/helpfiles/english/rms/forms/forms_q_r/fm_rtkstrtw_main.htm`
6. Reload the Oracle HTTP Server. A full shutdown and start up of the OAS 10.1.2.x HTTP server causes the configuration file changes to take effect.

   Do a process grep on any OAS process to make sure they come down: ps -ef | grep <user_name> | grep <OAS_NAME> (for example, ps -ef | grep retailadm | grep 10.1.2.0.2_midtier)
7. The URL for the help files should launch successfully in this structure of a URL for english help files:

   `http://<server>:<http_port>//java/help/rhelp.pl?DIRECTORY=_port>//en&FILENAME=forms/forms_q_r/fm_rtkstrtw_main.htm&RTKPRODUCT=RMS`
8. Load RMS in Forms 10gR2 mode by entering the following URL in a browser. Prior to testing, the Sun JRE 1.4.1+ plug-in needs to be installed on the client machine. The plug-in can be downloaded from http://java.sun.com/.
   - http://<server>:<port>/forms/frmservlet?config=<env>
   - server = name or IP address of server where Oracle AS 10gR2 is running
   - port = Value of the "Listen" setting in AS10G_ORACLE_HOME/Apache/Apache/conf httpd.conf (default value is 7778)
   - env = name of the environment in brackets in formsweb.cfg (from step 7 above).

   > **Example:**
   > http://server:7778/forms/frmservlet?config=rms

A

Appendix: Transparent Data Encryption

Oracle Transparent Data Encryption encrypts sensitive data on disk, ensuring data protection at the operating system and backup level.

Use the following procedure to configure transparent data encryption for ReSA.

1. Create a sqlnet.ora in $ORACLE_HOME/network/admin of the database similar to the below entry:

```
ENCRYPTION_WALLET_LOCATION=
    (SOURCE=(METHOD=FILE)(METHOD_DATA=
          (DIRECTORY=/u00/oracle/admin/dvsss03/wallet)))
```

2. Create the directory under /u00/oracle/admin/ dvsss03

```
mkdir –p /u00/oracle/admin/ dvsss03
```

3. Create wallet with below command

```
ALTER SYSTEM SET ENCRYPTION KEY IDENTIFIED BY <Password>;
```

4. Confirm that the wallet is created and check if the wallet is open.

   Example:

   SELECT * FROM V$ENCRYPTION_WALLET;

```
WRL_TYPE             WRL_PARAMETER                      STATUS
file                              /u00/oracle/admin/dvsss03/wallet   OPEN
```

5. Connect to the database as the RMS schema owner and run enable_resa_tde.sql to encrypt the columns.

   Example:

```
alter table SA_TRAN_TENDER modify (CC_NO ENCRYPT);
alter table SA_TRAN_TENDER_REV modify (CC_NO ENCRYPT);
alter table SA_ERROR modify (ORIG_CC_NO ENCRYPT);
alter table SA_ERROR_WKSHT modify (ORIG_CC_NO ENCRYPT);
alter table SA_ERROR_REV modify (ORIG_CC_NO ENCRYPT);
alter table SA_ERROR_TEMP modify (ORIG_CC_NO ENCRYPT);
```

6. Confirm the columns in the tables are added for encryption.

   Example:

   select * from dba_encrypted_columns;

OWNER	TABLE_NAME	COLUMN_NAME	ENCRYPTION_ALG	SALT
RMS01	SA_TRAN_TENDER	CC_NO	AES 192 bits key	YES
RMS01	SA_TRAN_TENDER_REV	CC_NO	AES 192 bits key	YES
RMS01	SA_ERROR	ORIG_CC_NO	AES 192 bits key	YES
RMS01	SA_ERROR_WKSHT	ORIG_CC_NO	AES 192 bits key	YES
RMS01	SA_ERROR_REV	ORIG_CC_NO	AES 192 bits key	YES
RMS01	SA_ERROR_TEMP	ORIG_CC_NO	AES 192 bits key	YES

7. Edit the crt_wallet_prc.sql script and insert your wallet password where specified.

```
create or replace procedure open_wallet
as
wallet_open exception;
pragma exception_init(wallet_open,-28354);
v_stmt varchar2(100);
v_password varchar2(20);
begin
  -- edit the following line to store your secret wallet password
  v_password := '<insert your password here>';
  v_stmt :='ALTER SYSTEM SET WALLET OPEN IDENTIFIED BY  "'||v_password||'"';
  execute immediate v_stmt ;
 exception
  when wallet_open then
    null;
end;
/
```

8. Connect to the database as sysdba and create the procedure and trigger to automatically start the wallet every time database is restarted
   a. Run crt_wallet_prc.sql to create the procedure.
   b. Run crt_wallet_trg.sql to create the trigger.
9. Restart the database and verify the wallet is OPEN

```
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup
ORACLE instance started.

Total System Global Area  838860800 bytes
Fixed Size                  2044296 bytes
Variable Size             243273336 bytes
Database Buffers          591396864 bytes
Redo Buffers                2146304 bytes
Database mounted.
Database opened.
SQL> SELECT * FROM V$ENCRYPTION_WALLET ;

WRL_TYPE   WRL_PARAMETER                                                STATUS
------------------------------------------------------------------------------
------------------------------
file                    /u00/oracle/admin/dvsss03/wallet
OPEN
```

B

Appendix: RMS Policies with Database Vault

RMS 12.0.11 supports enhanced data protection using Oracle Database Vault with Oracle Database 10g Release 2. It is important to install a dedicated RDBMS home for database with DV installed. Use the following procedures to install Oracle Database Vault and set up your RMS policies.

Before Getting Started

- Make sure RMS 12.0.11 or higher is installed on a supported Oracle Database release
- Make sure the database has the Tablespace "TEMP" as a temporary Tablespace.

> **Note:** At this point Database Vault should NOT be installed in the Oracle Home

Installation Steps

1. Unzip the file DBVault_RMS_scripts_Release.zip into a temporary directory.
2. Edit all the Database Vault API scripts by replacing RMS01 with the RMS application owner schema name.
3. Add your specific administrator's database accounts to the rule 'Allow Non RMS Users for CONNECT command rule' in the file RMS_rule.sql under the create_policies directory and remove existing ones if they do not apply.
4. Read all the Database Vault API script comments for any additional instructions.
5. Install Oracle Database Vault release 10.2.0.4 as documented in the Database Vault Installation Guide
6. Login to the database as Data Vault Manager
   a. Run the script setup/RMSDBA_USER.sql
   b. Run the script setup/RMSDBA_GRANTS_VAULT_MGR.sql
7. Login to the database as SYSDBA
   a. Run the script setup/RMSDBA_GRANTS_SYS.sql.
   b. Run the script setup/VAULT_MGR_PRIVILAGE.sql (Note:Please replace vault_mgr schema as per provided user)
8. Use RMSDBA for the following tasks:
   a. RMSDBA user is intended for on boarding of new RMS business users.
   b. Make sure you change the default password for RMSDBA user after you run this script
   c. Customers are encouraged to create personalized accounts for RMSDBA like: RMSDBA_SARKARS then add it to the RMSl Application Protection Realm authorizations.
   d. For tuning, RMSDBA_SARKARS for example, can be added to the Enterprise Manager Administrators and do tuning.
9. Login to the database with the Database Vault manager
   a. Run the script setup/TABLE.sql (Note:Please replace vault_owner schema as per provided user)

   b. Run the script setup/FUNCTION.sql
   c. Run the script setup/FUNCTION_PRIVILAGE.sql (Note:Please replace dvsys and vault_owner as per provided user)

10. Login to the database with the Database Vault Administrator (owner).

    Run the script **create_policies/CREATE_RMS_DBV_POLICIES.sql**

11. While testing the security policies if you need to remove them you Login to the database with the Database Vault Administrator (owner)

    Run the script **delete_policies/ DELETE_RMS_DBV_POLICIES.sql**

12. While testing the security policies if you need to diable them you Login to the database with the Database Vault Administrator (owner)

    Run the script **disable_policies/ DISABLE_RMS_DBV_POLICIES.sql**

13. While testing the security policies if you need to enable them you Login to the database with the Database Vault Administrator (owner)

    Run the script **enable_policies/ ENABLE_RMS_DBV_POLICIES.sql**

Description

The following security policies are installed:

RMS Application Protection Realm: This realm protects against unauthorized access by privileged users to business data. RMS users are allowed access through RMS application. RMSDBA has no SELECT access to RMS Data but is authorized to the realm to be able to board new RMS users and grant them the role developer.

This RMS application protection is complemented by the SELECT Command Rule and the CONNECT Command Rule. The SELECT Command Rule prevents RMSDBA user from having SELECT access to RMS business data. The CONNECT Command Rule ensures business users access through RMS Processes.

This realm secures all RMS objects and the RMS Role DEVELOPER. Only the RMS owner RMS01 and the RMSDBA are authorized. If you create your named RMS DBAs like RMSDBA_SARKARS, you can add them to the realm authorization and the SELECT Command Rule restriction. Before running these scripts in your environment make sure to change RMS01 to your RMS application owner schema name.

Select Command Rule: This command restricts Select access to business data owned by the RMS Application. It specifically disallows RMSDBA SELECT on RMS data using the rule set 'RMSDBA no SELECT on RMS data'. This is because RMSDBA is tasked to do on boarding of new RMS application users and does not need access to business data.

Connect Command Rule: This command controls access to the RMS database using the security policy (rule set) "User Access to RMS Application" as follows:

1. Normal RMS application users are allowed access through the application tier.
2. RMSDBA and other DBAs are allowed backend access but prevented from accessing RMS Data thanks to realm protection and the Select command rule.

Following is the RMS Application Protection Matrix. It summarizes the policies that are installed by the API scripts and the additional protections that can be added to the production.

Protection Type / Authorized with Rule Set	RMS	RMSDBA	DBA & SYSTEM
Rms Realms	OWNER	OWNER	No Access
Select Command Rule	Not Restricted	Restricted Select Rule Set	No Access
Connect Command Rule	Rms Access Rule Set	Not Resctricted	Not Resctricted

ORACLE

Customers are encouraged to review the Oracle Technology Network examples on how to add protections to the production environment. This is done by adding command rules that restrict SQL commands like Drop Table, Truncate Table. These examples are available at the following link:

`http://www.oracle.com/technology/deploy/security/database-security/database-vault/dbvb1.html`