

# **Oracle® Retail Merchandising System**

Installation Guide

Release 10.1.25

E22639-01

July 2011

Copyright © 2011, Oracle. All rights reserved.

Primary Author: Donna Linde

Contributors: Nathan Young

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure the safe use of this software. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software in dangerous applications.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

This software and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

## Value-Added Reseller (VAR) Language

### Oracle Retail VAR Applications

The following restrictions and provisions only apply to the programs referred to in this section and licensed to you. You acknowledge that the programs may contain third party software (VAR applications) licensed to Oracle. Depending upon your product and its version number, the VAR applications may include:

- (i) the **MicroStrategy** Components developed and licensed by MicroStrategy Services Corporation (MicroStrategy) of McLean, Virginia to Oracle and imbedded in the MicroStrategy for Oracle Retail Data Warehouse and MicroStrategy for Oracle Retail Planning & Optimization applications.
- (ii) the **Wavelink** component developed and licensed by Wavelink Corporation (Wavelink) of Kirkland, Washington, to Oracle and imbedded in Oracle Retail Mobile Store Inventory Management.
- (iii) the software component known as **Access Via**™ licensed by Access Via of Seattle, Washington, and imbedded in Oracle Retail Signs and Oracle Retail Labels and Tags.
- (iv) the software component known as **Adobe Flex**™ licensed by Adobe Systems Incorporated of San Jose, California, and imbedded in Oracle Retail Promotion Planning & Optimization application.

You acknowledge and confirm that Oracle grants you use of only the object code of the VAR Applications. Oracle will not deliver source code to the VAR Applications to you. Notwithstanding any other term or condition of the agreement and this ordering document, you shall not cause or permit alteration of any VAR Applications. For purposes of this section, “alteration” refers to all alterations, translations, upgrades, enhancements, customizations or modifications of all or any portion of the VAR Applications including all reconfigurations, reassembly or reverse assembly, re-engineering or reverse engineering and recompilations or reverse compilations of the VAR Applications or any derivatives of the VAR Applications. You acknowledge that it shall be a breach of the agreement to utilize the relationship, and/or confidential information of the VAR Applications for purposes of competitive discovery.

The VAR Applications contain trade secrets of Oracle and Oracle’s licensors and Customer shall not attempt, cause, or permit the alteration, decompilation, reverse engineering, disassembly or other reduction of the VAR Applications to a human perceivable form. Oracle reserves the right to replace, with functional equivalent software, any of the VAR Applications in future releases of the applicable program.



---

---

# Contents

<b>Send Us Your Comments.....</b>	<b>vii</b>
<b>Preface .....</b>	<b>ix</b>
Audience .....	ix
Related Documents.....	ix
Customer Support.....	ix
Review Patch Documentation .....	ix
Oracle Retail Documentation on the Oracle Technology Network.....	ix
Conventions.....	x
<b>1 Preinstallation Tasks.....</b>	<b>1</b>
Check Database Server Requirements .....	1
Check Application Server Requirements.....	3
Check Web Browser and Client Requirements.....	3
<b>2 Database Installation Tasks.....</b>	<b>5</b>
Copy from CD Directory.....	5
Alter RMS Objects.....	5
Alter RMS Tables .....	5
Alter RMS Database Objects.....	5
Validate all Invalid Objects.....	6
Update Data for RMS .....	6
Compile RMS Batch Libraries and Programs.....	6
Set Environment Variables .....	6
Compile Batch Source Code .....	7
<b>3 Application Server Installation Tasks.....</b>	<b>9</b>
Copy from the CD Directory .....	9
Set Environment Variables .....	9
Install RMS Forms.....	10
<b>A Appendix: AIX Shared Library Bug Fix .....</b>	<b>11</b>



---

---

# Send Us Your Comments

Oracle Retail Merchandising System, Installation Guide, Release 10.1.25

Oracle welcomes customers' comments and suggestions on the quality and usefulness of this document.

Your feedback is important, and helps us to best meet your needs as a user of our products. For example:

- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

If you find any errors or have any other suggestions for improvement, then please tell us your name, the name of the company who has licensed our products, the title and part number of the documentation and the chapter, section, and page number (if available).

---

**Note:** Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Applications Release Online Documentation CD available on My Oracle Support and [www.oracle.com](http://www.oracle.com). It contains the most current Documentation Library plus all documents revised or released recently.

---

Send your comments to us using the electronic mail address: [retail-doc\\_us@oracle.com](mailto:retail-doc_us@oracle.com)

Please give your name, address, electronic mail address, and telephone number (optional).

If you need assistance with Oracle software, then please contact your support representative or Oracle Support Services.

If you require training or instruction in using Oracle software, then please contact your Oracle local office and inquire about our Oracle University offerings. A list of Oracle offices is available on our Web site at [www.oracle.com](http://www.oracle.com).





---

---

# 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 10.1.25 documentation set:

- *Oracle Retail Merchandising System Release Notes*

## 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, 13.1) or a later patch release (for example, 13.1.2). 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](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

---

# Preinstallation Tasks

## Check Database Server Requirements

General requirements for a database server running RMS include the following:

Supported on 10gR2	Versions Supported:
Database Server OS for 10gR2	OS certified with Oracle Database 10gR2 Enterprise Edition. Options are: <ul style="list-style-type: none"><li>▪ AIX 5.3</li><li>▪ Solaris 10 (Sparc)</li><li>▪ HP-UX 11.31 (Itanium)</li></ul>
Database Server	Oracle Database 10g Release 2 Enterprise Edition (10.2.0.4 patchset required) with the following components: <ul style="list-style-type: none"><li>▪ Oracle Database 10g</li><li>▪ Oracle Partitioning</li><li>▪ Oracle Net Services</li><li>▪ Oracle Call Interface (OCI)</li><li>▪ Oracle Programmer</li><li>▪ Oracle XML Development Kit</li><li>▪ Companion CD</li><li>▪ ANSI compliant C compiler (certified with OS and database version)</li></ul> Patches: <ul style="list-style-type: none"><li>▪ 10.2.0.4 patchset: 6810189</li><li>▪ AIX oneoff patch: 6154596 (PRO*C THROWS PCC-2014 WHEN DIAGNOSTIC DIRECTIVE #WARNING IS USED).</li></ul> Other components: <ul style="list-style-type: none"><li>▪ Perl compiler 5.0 or later</li><li>▪ X-Windows interface</li></ul>

Supported on 11gR2	Versions Supported:
Database Server OS for 11gR2	OS certified with Oracle Database 11gR2 (11.2.0.2) Enterprise Edition. Options are: <ul style="list-style-type: none"><li>▪ AIX 5.3</li><li>▪ AIX 6.1</li><li>▪ Solaris 10 (Sparc)</li><li>▪ HP-UX 11.31 (Itanium)</li></ul>
Database Server	Oracle Database 11g Release 2 (11.2.0.2) Enterprise Edition with the following components: <ul style="list-style-type: none"><li>▪ Oracle Partitioning</li><li>▪ Example CD</li></ul> <b>Patches:</b> 10170431: CTWR CONSUMING LOTS OF CPU CYCLES. <b>Other components:</b> <ul style="list-style-type: none"><li>▪ Perl compiler 5.0 or later</li><li>▪ X-Windows interface</li><li>▪ ANSI compliant C compiler (certified with OS and database version)</li></ul>

The following change should be made on your database server:

Go to the \$ORACLE\_HOME/dbs/initpfile.ora and append the pfile with the following parameter:

`_allow_level_without_connect_by=true`

## 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 10.1.2.2. Options are: <ul style="list-style-type: none"> <li>▪ AIX 5.3</li> <li>▪ AIX 6.1</li> <li>▪ Solaris 10 (Sparc)</li> <li>▪ HP-UX 11.31 (Itanium)</li> </ul>
Application Server	Oracle Application Server 10g 10.1.2.3 with the following patches: <ul style="list-style-type: none"> <li>▪ 5632264 (NEED UPDATED TIMEZONE FILES (VERSION 4) FOR MORE DST RULE CHANGES)</li> </ul>

If you are having trouble with your Oracle Application Server Forms and Reports font size, use the following procedure to correct the problem.

The following change should be made on your application server:

Add the following Tag in the basejini.htm file found in the "%ORACLE\_HOME%\forms<xx>\server" folder.

```
<PARAM NAME = "mapFonts" VALUE = "yes" >
```

**Note:** The above-mentioned tag (mapFonts) is applicable only for Oracle Application Server Forms and Reports 10g version 10.1.2.2.0 (AIX5.3).

## Check Web Browser and Client Requirements

General requirements for client running RMS include:

Requirement	Version
Operating system	Windows 2000 or XP
Display resolution	1024x768
Processor	Pentium processor (minimum 450 MHz)
Memory	minimum of 256 MB RAM
Jinitiator	1.3.1.26
Browser	Microsoft Internet Explorer version 7.0



---

---

## Database Installation Tasks

Before you apply the RMS 10.1.25 patch:

- Make a backup of all your objects and database schema.
- Check that RMS 10.1.24 is installed.
- Review the enclosed RMS 10.1.25 Patch Release Notes (rms-10125-rn.pdf).
- Review each of the enclosed defect documents.

---

---

**Note:** The previous tech stack should work for this release.  
These install instruction refer to the new tech stack.

---

---

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 RMS10DEV as the Oracle owning schema.

---

---

### Copy from CD Directory

1. Copy the rms10125dbpatch.zip file from the CD /dbserverunix directory to a newly created staging directory on your UNIX server.
2. Unzip the file by entering:  
`unzip rms10125dbpatch.zip`

### Alter RMS Objects

This section describes the tables and objects that must be adjusted.

#### Alter RMS Tables

To alter RMS tables, do the following.

1. Change directories to STAGING\_AREA/dbcs.
2. Log into sqlplus as RMS10DEV and run the following command:  
`SQL> @patch10125dbcs.sql`
3. Check the log file patch10125dbcs.log for any errors.

#### Alter RMS Database Objects

To alter RMS database objects, do the following.

1. Change directories to STAGING\_AREA/db\_objects.
2. Log into sqlplus as RMS10DEV and run the following command:  
`SQL> @patch10125rms.sql`
3. Check the log file patch10125rms.log for any errors.

## Validate all Invalid Objects

To validate invalid objects, do the following.

---

---

**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 into sqlplus as RMS10DEV 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

To update data for RMS, do the following.

1. Change directories to STAGING\_AREA/data.
2. Log into sqlplus as RMS10DEV and run the following command:  
SQL> @patch10125ctl.sql
3. Check the log file patch10125ctl.log for any errors.

## 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

To set environment variables, do the following.

1. Make sure the following variables are set:

---

---

**Note:** INSTALL\_DIR is the location where RMS 10 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



## Compile Batch Source Code

To compile batch source code, do the following.

1. Copy the files from STAGING\_AREA/batch/proc/src to INSTALL\_DIR/rms/oracle/proc/src.
2. Change directories to INSTALL\_DIR/rms/oracle/proc/src.
3. To make dependencies, run the following command:  

```
make -f mts.mk rms-depend recs-depend rtm-depend resa-depend 2>&1 | tee srcdpnd.log
```
4. Check the srcdpnd.log file for errors.
5. To make batch programs 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
```

for Oracle Enterprise 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
```
6. Check the srcall.log file for errors.
7. To install batch programs, run the following command:  

```
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.



---

## Application Server Installation Tasks

---



---

**Note:** If you have modified any forms, reports, or toolset libraries, make a backup copy so that you can reapply any custom modifications.

---

### Copy from the CD Directory

To copy from the CD directory, do the following.

1. Copy the rms10125apppatch.zip file from the CD /appserverunix directory to a newly created staging directory on your UNIX server.
2. Unzip the file by entering:  

```
unzip rms10125apppatch.zip
```

### Set Environment Variables

To set environment variables, do the following.

---

**Note:** ORACLE\_HOME is the location where Oracle Application Server 10g (10.1.2.2) has been installed.  
 INSTALL\_DIR is the location where RMS 10 was installed.

---

1. Set the DISPLAY variable to the IP address plus ":0.0" (for example, 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 (10.1.2.2) 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 into the RMS 10 schema.

---

---



---

**Example:** /u00/oracle> sqlplus \$UP

---



---

#### AIX

- LD\_LIBRARY\_PATH=\$ORACLE\_HOME/lib:\$ORACLE\_HOME/lib32:\$ORACLE\_HOME/jdk/jre/lib
- LIBPATH=\$LD\_LIBRARY\_PATH

## Install RMS Forms

To install RMS forms, do the following.

1. Copy all the files from STAGING\_AREA/forms/src to INSTALL\_DIR/rms/forms/src.
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 (\*.mmmb 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 .mmmb file has a corresponding .mmx file.
15. Remove all .mmmb 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.

---



---

## Appendix: AIX Shared Library Bug Fix

Update the \$ORACLE\_HOME/rdbms/lib/env\_rdbms.mk file with below changes (in Bold). This only applies to AIX 10.2.0.4 and later.

The env\_rdbms.mk file for Oracle 10g onward has Bug #2143531. This bug was not fixed because there is a workaround. For the workaround, the following changes in **bold/italic** need to be made to the \$ORACLE\_HOME/rdbms/lib/env\_rdbms.mk file. Notice that changes are made in both the BUILD\_WITH\_CONTEXT and BUILD\_WITH\_NO\_CONTEXT functions.

```
-----
BUILDLIB_WITH_CONTEXT=generate_export_list() \
{ \
/bin/nm -X32_64 -B -h -g "$$1" | grep -v ' U ' | awk '{print $$3}' | \
egrep -v '^\.|^TOC' | sort | uniq ; \
}; \
generate_import_list() { \
LIB_NAME=$$1; \
IMP_FILE=$$2; \
\
cat ${ORACLE_HOME}/rdbms/lib/xa.imp | head -1 | awk '{print $$0, "."}' >
${IMP_FILE}; \
/bin/nm -X32_64 -C -B -h -g ${LIB_NAME} | grep ' U ' | grep -v "::" | grep -v "("
| grep -v "\.cc" | awk '{print $$3}' | sed -e "s/\././g
" | grep -v "^_" >> ${IMP_FILE}; \
}; \
\
generate_import_list "$(OBJS)" $(SHARED_LIBNAME).imp; \
generate_export_list $(OBJS) > $(SHARED_LIBNAME).exp; \
$(LD) -bnoentry -bM:SRE -bE:$(SHARED_LIBNAME).exp -bI:$(SHARED_LIBNAME).imp \
-o $(SHARED_LIBNAME) $(OBJS) -L$(ORACLE_HOME)/lib -lc_r -lm $(LLIBCINTSH)
$(MATHLIB)
-----
BUILDLIB_NO_CONTEXT=generate_export_list() \
{ \
/bin/nm -X32_64 -B -h -g "$$1" | grep -v ' U ' | awk '{print $$3}' | \
egrep -v '^\.|^TOC' | sort | uniq ; \
}; \
generate_import_list() { \
LIB_NAME=$$1; \
IMP_FILE=$$2; \
\
cat ${ORACLE_HOME}/rdbms/lib/xa.imp | head -1 | awk '{print $$0, "."}' >
${IMP_FILE}; \
/bin/nm -X32_64 -C -B -h -g ${LIB_NAME} | grep ' U ' | grep -v "::" | grep -v "("
| grep -v "\.cc" | awk '{print $$3}' | sed -e "s/\././g
" | grep -v "^_" >> ${IMP_FILE}; \
}; \
\
generate_import_list "$(OBJS)" $(SHARED_LIBNAME).imp; \
generate_export_list $(OBJS) > $(SHARED_LIBNAME).exp; \
$(LD) -bnoentry -bM:SRE -bE:$(SHARED_LIBNAME).exp -bI:$(SHARED_LIBNAME).imp \
-o $(SHARED_LIBNAME) $(OBJS) -L$(ORACLE_HOME)/lib -lc_r -lm $(LLIBCINTSH)
$(MATHLIB)
```