

# Oracle9i Enterprise Edition

Installation Guide

Release 2 (9.2.0.1.0) for OS/390

May 2002

Part No. A97311-01

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# Send Us Your Comments

**Oracle9i Enterprise Edition Installation Guide, Release 2 (9.2.0.1.0) for OS/390**

**Part No. A97311-01**

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- Did you find any errors?
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# Preface

## Intended Audience

Use this guide if you are performing such tasks as:

- installing Oracle9i on OS/390
- issuing Oracle9i subsystem commands
- migrating or upgrading your Oracle server on OS/390 to Oracle9i

This guide provides information only for Oracle products and their interactions with OS/390. A thorough understanding of the fundamentals of OS/390 is necessary before attempting to use this software.

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## Product Name

The complete name for this product is Oracle9i Enterprise Edition for OS/390. To maintain readability and conciseness in this document, the product is also referred to as Oracle9i for OS/390 or Oracle9i.

## Related Documents

The documentation set has two parts: OS/390-specific documentation and product-specific documentation. Your site automatically receives both parts for the Oracle products that you have acquired. Use the product-specific documentation to learn how to use a product. Use the OS/390-specific documentation to learn about special requirements or restrictions for using that product under OS/390.

### OS/390-Specific Documentation

The OS/390-specific documentation set is used to install, maintain, and use Oracle9i for OS/390 products, and consists of this installation guide and the following documents:

- *Oracle9i Enterprise Edition Messages Guide for OS/390*
- *Oracle9i Enterprise Edition Release Notes for OS/390*
- *Oracle9i Enterprise Edition System Administration Guide for OS/390*
- *Oracle9i Enterprise Edition User's Guide for OS/390*

### Product-Specific Documentation

Product-specific documentation describes how to use the Oracle9i products. The information in these books is constant for all operating systems under which the products run. Refer to the environment-specific (in this case, the OS/390-specific) documentation for information that does not apply to every environment.



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## Conventions

Examples of input to the system and output from the system are shown in a special font:

```
//SYSIN   DSN=oran.orav.INSTLIB(member)
```

All output is shown in this book as it actually appears on your console or monitor. For your system input, the following conventions apply:

Convention	Meaning
<i>italic font</i>	indicates that a word or phrase of your choice must be substituted for the term in <i>italic font</i> , such as the actual member name. For example: <i>member</i>
<i>oran.orav</i>	is the standard example for high-level and second-level data set name qualifiers. Substitute your system's actual high-level and second-level qualifiers. These qualifiers may appear in lowercase or in UPPERCASE typeface.
<> Angle brackets	indicate that the enclosed arguments are required and that at least one of the arguments must be entered. Do not enter the brackets themselves.
[ ] Square brackets	indicate that the enclosed arguments are optional. Do not enter the brackets themselves.
{ } Braces	indicate that one of the enclosed arguments is required. Do not enter the braces themselves.
Vertical lines	are used to separate choices.
. . . Ellipses	indicate that the preceding item can be repeated. You can enter an arbitrary number of similar items.
Other punctuation	must be entered as shown unless otherwise specified. For example, commas and quotes.

Commands, reserved words, and keywords appear in uppercase in both examples and text. A fileid can appear with both uppercase and lowercase text. When portions of a fileid appear in *italics*, the use of *italic characters* indicates that those portions can vary. Reserved words and keywords must always be entered as is, because they have reserved meanings within Oracle.

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## Storage Measurements

Storage measurements use the following abbreviations:

- K, for kilobyte, which equals 1,024 bytes
- M, for megabyte, which equals 1,048,576 bytes
- G, for gigabyte, which equals 1,073,741,824 bytes

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle Corporation is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

## Accessibility of Code Examples in Documentation

JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

## Documents Referenced in this Guide

### **Oracle for OS/390 Books**

*Oracle9i Enterprise Edition Messages Guide for OS/390*

*Oracle9i Enterprise Edition Release Notes for OS/390*

*Oracle9i Enterprise Edition System Administration Guide for OS/390*

*Oracle9i Enterprise Edition User's Guide for OS/390*

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## **Other Oracle Books**

*PL/SQL User's Guide and Reference*

## **IBM Books**

*MVS/ESA Initialization and Tuning Guide*

*OS/390 MVS Initialization and Tuning Reference*

*OS/390 MVS System Commands*

*OS/390 V2R7.0 eNetwork CS IP and SNA Codes*

*RACF Command Language Reference*

*RACF System Programmer's Guide*

*RACF Macros and Interfaces*

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# Pre-Installation Activities

This chapter describes activities you can perform to prepare for installing Oracle9i for OS/390 before you receive your software distribution media.

The following topics are included:

- [Overview](#) on page 1-2
- [Ensuring Adequate Address Space IDs \(ASIDs\)](#) on page 1-2
- [Creating or Activating a Resource Class](#) on page 1-2
- [Associating Userids with Services](#) on page 1-4
- [Adding Program Properties](#) on page 1-6
- [Adding an APF-Authorized Library](#) on page 1-7

## Overview

Some activities that are related to installing Oracle9i for OS/390 can be performed independently, even before the software arrives. All of these activities are related to product security features, and one (which is optional) requires an IPL of your system before it takes effect. Depending on the organization and procedures of your installation, you may need to work with system security personnel or systems programmers to perform these activities.

The descriptions that are presented here are provided in RACF (IBM OS/390 Security Server) terms with the assumption that RACF is in use. Any product which fully implements OS/390 System Authorization Facility (SAF) can be substituted. If your installation uses a product other than RACF, refer to the documentation for that product for information on how to perform the steps that are discussed in this chapter.

## Ensuring Adequate Address Space IDs (ASIDs)

Oracle9i for OS/390 instances can be composed of multiple address spaces and can make extensive use of OS/390 Cross Memory Services. When a cross-memory address space is terminated, the address space ID (ASID) that was used for this address space is made unavailable. Eventually, the pool of OS/390 ASIDs can become exhausted, which prevents new address spaces from being created. In order to avoid the above condition, the RSVNONR parameter in the IEASYSxx member of SYS1.PARMLIB should be set to a higher value. Refer to the *IBM OS/390 MVS Initialization and Tuning Reference*, for details on specifying the RSVNONR parameter, .

## Creating or Activating a Resource Class

The authorization-checking mechanism of SAF is based on resource names, which are simply character strings that identify the data, interface, or other entity that is protected. Resource names are organized into classes. A resource class is a name for a group of resources with similar name structure and attributes. RACF has a number of predefined resource classes for items such as data sets, tape volumes, and terminals.

Oracle9i for OS/390 introduces three types of resources that are subject to authorization checking:

1. OSDI commands

2. The client-service bind interface
3. The database server SYSOPER/SYSDBA connection privilege

These resources must have an associated resource class. By default, Oracle9i for OS/390 is set up with the assumption that the resources are in the FACILITY class, which is a predefined RACF class. FACILITY is a general-use class whose resource name structure accommodates all three of the resource types of Oracle9i for OS/390. If you use the default FACILITY class, then you may need to activate the class if your installation has not previously defined resources in the class. Directions for activating the FACILITY class are provided in the *IBM RACF Security Administrator's Guide*. This is done with a **SETROPTS CLASSACT RACF** command and does not require an OS/390 IPL. This command is described in the *IBM RACF Command Language Reference*.

The security standards or procedures of your installation may make it preferable to create distinct resource classes for Oracle9i for OS/390 resources. RACF allows security administration privileges to be granted on a resource class basis. If you create distinct classes for Oracle9i for OS/390, those RACF administration privileges can be granted to users without enabling administrative privileges on other (non-Oracle9i for OS/390) resources that may be associated with the FACILITY class.

If you decide to create resource classes for Oracle9i for OS/390, then two classes should be created: one for OSDI commands and one that is shared by both bind and database SYSOPER/SYSDBA connect authorizations. Adding installation-defined resource classes is described in the *IBM RACF System Programmer's Guide* and *RACF Macros and Interfaces* reference. The procedure involves coding Assembler Language macro instructions that are assembled to create non-executable load modules that are the class table and router table, and an IPL of OS/390 is required to activate the change.

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**Note:** This is the only pre-installation activity that requires an IPL.

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If you choose to add new resource classes for Oracle9i for OS/390, then the ICHERCDE macro that you code for the class table entries should specify parameters as in the following example, which defines the classes \$ORACMD and \$ORACONN.

```
$ORACMD ICHERCDE CLASS=$ORACMD,  
        GROUP=$ORACONN,  
        ID=192,                Some number between 128 & 255
```

```
MAXLNTH=19,
RACLIST=ALLOWED,
FIRST=ALPHANUM,
OTHER=ANY,
POSIT=42,           Probably unique to this class
OPER=NO,
DFTUACC=NONE
$ORACONN ICHERCDE CLASS=$ORACONN,
MEMBER=$ORACMD,
ID=191,             Some number between 128 & 255
MAXLNTH=19,
FIRST=ALPHANUM,
OTHER=ANY,
POSIT=42,           Probably unique to this class
OPER=NO,
DFTUACC=NONE
```

---

**Note:** In this example, the continuation indicators that are required in position 72 of each continued record are omitted.

---

You must also add entries to the installation-supplied router table module ICHRFR01, as in the following example:

```
ICHRFR01 CLASS=$ORACMD,ACTION=RACF
ICHRFR01 CLASS=$ORACONN,ACTION=RACF
```

After the class table is updated and the system is IPLed, the new classes can be activated with the SETROPTS CLASSACT command as described in the *RACF Security Administrator's Guide* and RACF CLR. You must also provide Oracle9i for OS/390 with the class names. This is done in the subsystem parameter file discussed in Chapter 1, "Configuring and Initializing the Subsystem", in the *Oracle9i Enterprise Edition System Administration Guide for OS/390*.

## Associating Userids with Services

Oracle9i for OS/390-managed services execute as system address spaces, similar to **started tasks** or STCs. Some of the OS/390 system functions that are invoked by Oracle9i for OS/390 services perform authorization checks based on the OS/390 userid that is associated with the service address space. Depending on the security



configuration and standards of your installation, those system functions may fail if no userid is associated with the address space. You, or security personnel for your installation, may need to take steps to ensure that Oracle9i for OS/390 services have an associated userid that can be authorized for system functions that are invoked by the database and network services.

With RACF, this authorization is normally accomplished by defining appropriate profiles in the STARTED resource class. Each profile associates a RACF userid with a started task based on the JCL procedure name of the started task. You will choose and specify JCL procedure names for Oracle9i for OS/390 services when those services are configured. You may want to decide on procedure names now, however, so that RACF profiles can be defined. There are no special procedure naming requirements as far as Oracle9i for OS/390 is concerned, so you can choose procedure names that meet the standards or requirements of your installation. Of course, the names should not be the same as the names of any members already in your system procedure library. The ISPF panel-driven database configuration process will generate a JCL procedure name based on the service SID specified. The generated name is ORAsid, where *sid* is the service SID. After the configuration process is complete, you may change the name of this procedure if it does not match the standard naming conventions at your site.

Defining the JCL procedure name in the USER resource class is an alternate method in which the procedure name itself is also used as the userid.

If you are already running the MPM and TNS programs of previous releases as started tasks (as opposed to submitting them as batch jobs), then your installation probably already has STARTED or USER profiles for the associated JCL procedures. You should not rely on those for Oracle9i for OS/390 because the Oracle9i for OS/390 procedures should have different names. Plan to create at least two new STARTED or USER profiles, one for the database service and one for the network service. These may be all that you need, because different instances of a type of service can generally share the same JCL procedure. You may want to create additional profiles, though, if you want different instances of a service to run with different userids. Note that this requires using distinct JCL procedures even though the procedures themselves may be otherwise identical.

Details on the STARTED and USER resource classes are in the *RACF Security Administrator's Guide*. The RDEFINE command that is used to add profiles is described in the RACF CLR.

With RACF, it is also possible to associate a userid with a started task using a **started procedures table** that is built with Assembler macros somewhat like the resource class table discussed in the previous section. Activating such changes

requires an IPL, however, and is not the preferred method. Refer to the *RACF Security Administrator's Guide* for more information.

Certain database features are implemented using OS/390 Unix System Services or USS (formerly called Open Edition). These features include the UTL\_FILE package, external LOB (BFILE) support, and JAVA. In order for these features to work, the database service address space must be capable of being "dubbed" as a USS process. This requires that the OS/390 userid that is associated with the address space have a default USS segment that is defined to the security subsystem. For additional information, refer to "Database Service Interaction with OS/390 Unix System Services" in the *Oracle9i Enterprise Edition System Administration Guide for OS/390*.

## Adding Program Properties

The database and network service region programs must run nonswappable and noncancelable, and should not be subject to system time limits. In addition, the database service runs in protect key 7. These attributes are indicated by adding entries for these programs to the OS/390 Program Properties Table (PPT), via a member of the SYS1.PARMLIB data set named SCHEDxx, where xx is a 2-letter or 2-digit suffix. You may need to work with your systems programmer to determine the correct member name and to add the entries. The entries that you add should be similar to those in the following example. The comments, which are included for clarity, are allowed but are not required.

```

/* SCHEDxx PPT entry for Oracle database region */
PPT PGMNAME(ORARASC)      /* Program (module) name */
    NOCANCEL              /* Not cancelable */
    KEY(7)                /* Protection key */
    NOSWAP                /* Not swappable */
    SYST                  /* Not subject to timing */
/* SCHEDxx PPT entry for Oracle network region */
PPT PGMNAME(ORANET8)      /* Program (module) name */
    NOCANCEL              /* Not cancelable */
    NOSWAP                /* Not swappable */
    SYST                  /* Not subject to timing */

```

The entries in the SCHEDxx member are normally read at OS/390 IPL. You can cause OS/390 to re-read the member without an IPL by using the SET SCH operator command. The PPT entries must take effect before Oracle database and network services are started.

Details on the SCHEDxx member, the PPT, and the SET SCH command can be found in the *IBM OS/390 MVS Initialization and Tuning Reference* and *OS/390 MVS System Commands*.

## Adding an APF-Authorized Library

Oracle9i for OS/390 requires the database and network region programs to run with APF authorization, which means that the load modules must reside in an APF-authorized library. While it is possible to copy these modules into an existing authorized library, Oracle Corporation recommends that you create an authorized library specifically for Oracle9i for OS/390. Because OS/390 requires all modules that are loaded by an authorized program to come from authorized libraries, the library will contain a number of modules in addition to the database and network region programs, including the Oracle database kernel. The authorized library must be a PDSE (Partitioned Data Set - Extended) type rather than a PDS (Partitioned Data Set) type.

A load library can be authorized in either of two ways: one way is to add an entry for the data set to the PROGxx member of SYS1.PARMLIB, the other way is to add an entry for the data set to the IEAAPFxx member of SYS1.PARMLIB. The first way (using the PROGxx member) utilizes a newer mechanism. The second way (using the IEAAPFxx member) utilizes an older mechanism. You may need to talk to your systems programmer to determine which method to use and the correct suffix to substitute for xx. If you plan to name the authorized library ORAN.ORAV.AUTHLOAD, for example, then the following code shows a suitable entry in PROGxx:

```
APF ADD DSN= (ORAN.ORAV.AUTHLOAD) SMS
```

If your installation is using IEAAPFxx instead of PROGxx, a comparable entry there would be:

```
ORAN.ORAV.AUTHLOAD ,
```

Note that the comma in the above entry is included only if the entry is not the last record in the member. Omit the comma in the new entry if it is last in the member, and make sure that the preceding entry has a comma.

Changes to PROGxx or IEAAPFxx do not take effect until the next IPL. If your installation has enabled OS/390 dynamic APF facilities, a library can be authorized without an IPL by using a SETPROG APF,ADD operator command as shown in the following example:

```
SETPROG APF,ADD,DSN=ORAN.ORAV.AUTHLOAD,SMS
```

The authorization that is conferred by the SETPROG command is independent of the PROGxx or IEAAPFxx members and lasts only until the next IPL. This means that you would use this technique only if you expect to install the software and actually configure and run a database service or network service before the next IPL of your system.

Regardless of the technique used, a data set does not need to exist to be authorized. If you can choose the data set name that you will use, then this step can be performed before the data set is created and populated. Refer to [Chapter 2, "Installation Steps"](#), for a discussion of data set names.

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# Installation Steps

This chapter discusses the steps required to install Oracle9i for OS/390.

The following topics are included:

- [Checklist: Installation of Oracle9i for OS/390](#) on page 2-2
- [Overview](#) on page 2-3
- [Installation Setup and Initialization](#) on page 2-3
- [Product Installation](#) on page 2-10

## Checklist: Installation of Oracle9i for OS/390

### Installation Setup and Initialization

- ☐ Step 1: Load the Oracle Installation JCL
- ☐ Step 2: Create the ISPF Libraries
- ☐ Step 3: Invoke the Product Installation and Customization Process
- ☐ Step 4: Select Product Set from the Oracle Product Install Menu (Panel OR@PRIM)
- ☐ Step 5: Select Installation/Customization Options from the Oracle Primary Option Menu (Panel OR@INST)

### Product Installation

- ☐ Step 1: Modify Tape Unit and Library Index (Panel ORINIP00)
- ☐ Step 2: Select Oracle Products for Installation (Panel ORPRODS)
- ☐ Step 3: Select Language Message Modules (Panel ORLANG)
- ☐ Step 4: INSTLIB/ISPSLIB File Tailoring Information (Panel ORINIP15)
- ☐ Step 5: Define JOB Cards for Install Jobs (Panel ORINIP20)
- ☐ Step 6: Define PROCs, CLISTs, Linklist, and Temporary Space (Panel ORINIP25)
- ☐ Step 7: Review/Modify Space Specifications for Major Libraries (Panel ORDSN)
- ☐ Step 8: Specify VOLSER for Other Libraries (Panel ORDSNO)
- ☐ Step 9: Define USS Products Installation Parameters (Panel ORINIP50)
- ☐ Step 10: Product Installation Definition Complete (Panel ORINIP60)
- ☐ Step 11: Generate the Installation Job
- ☐ Step 12: Run the Installation Job (ORIJA01)
- ☐ Step 13: Run the Generated Installation Jobs

## Overview

Installation consists of the following steps:

- Installation set up and initialization on this page
- Product installation on page 2-10

For installation messages, refer to the *Oracle9i Enterprise Edition Messages Guide for OS/390*.

For administration and configuration considerations when migrating from an Oracle7 database to an Oracle9i database or upgrading from an Oracle8 or Oracle8i database with MPM to an Oracle9i database, refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390*.

## Installation Setup and Initialization

The following steps guide you through the process of setting up your user environment to run the Oracle Installation Dialog Facility. If this is your initial installation of this release of Oracle9i for OS/390, then proceed with [Step 1: Load the Oracle Installation JCL](#). If this release of the Oracle software is already installed, and if you would like to configure an Oracle database, then refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390*.

### Step 1: Load the Oracle Installation JCL

The Oracle9i Enterprise Edition for OS/390 distribution tapes are standard-label tapes containing many files, including the one that contains the JCL to start the Oracle installation. You can copy this file to a disk data set with the JCL provided here.

Before using the JCL, you must customize it for your site. The distribution tapes are designed for installations using 3380 type and 3390 type storage devices.

The following job loads the installation JCL:

```
//INSTAL1 JOB 1, 'GETFILE1', CLASS=A, MSGCLASS=X, NOTIFY=DBA1
//*
//S1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//SYSUT1 DD DSN=ORACLE.OORX022.F1,
// DISP=OLD,
// UNIT=tape,
// VOL=SER=OS0202,
// LABEL=(1,SL,EXPDT=98000)
//SYSUT2 DD DSN=oran.orav.INSTLIB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=SYSDA,
// VOL=SER=volser,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920),
// SPACE=(27920,(600,100,20))
//SYSIN DD *
COPY INDD=SYSUT1,OUTDD=SYSUT2
SELECT MEMBER=OSPIJA00
/*
//
```

where:

<i>tape</i>	is the tape drive on which you mount the tapes.
<i>oran.orav</i>	are the high-level and second-level data set name qualifiers chosen for this installation.
<i>volser</i>	is the DASD volume serial number on which the Oracle INSTLIB library is to be allocated. The Oracle INSTLIB library contains installation-related material, including most of the jobs that you run during the installation process.

### Step 2: Create the ISPF Libraries

The Partitioned Data Set (PDS), which is created when the first file is downloaded from the tape, contains member OSPIJA00. This member is a batch job that creates and loads (from the same tape) the Oracle ISPF libraries that are used during the Oracle installation. If these libraries already exist on your system, then they are deleted before the new data sets are created.



Member OSPIJA00 loads the following ISPF libraries:

ISPCLIB	contains the Oracle installation CLISTs. This library also contains a CLIST called NEWDSRPT that produces a report listing the default library sizes for the data sets corresponding to the products that you selected during your installation. Refer to <a href="#">Appendix A, "Data Set Names and Space Allocations"</a> for more information about using this CLIST.  Oracle Corporation requires you to unload the Oracle CLIST library into a data set with a record format (RECFM) of fixed block (FB) and a LRECL of 80 characters.  If you prefer to use variable block (VB) records for system CLISTs, then use ISPF option 3.3 to copy all of the library members into a VB data set with the same logical record length (LRECL) and block size as your existing CLIST libraries. Ensure that the new VB data set has the name <i>oran.orav.ISPCLIB</i> , where you substitute the high-level and second-level qualifiers of your installation for the <i>oran.orav</i> qualifiers in the ISPCLIB data set name.
ISPMLIB	contains the Oracle installation messages.
ISPPLIB	contains the Oracle installation panels.
ISPSLIB	contains the Oracle installation skeletons.
ISPTLIB	contains the Oracle installation tables.

In ISPF EDIT, modify the following items in the OSPIJA00 job to run on your system:

- jobname, accounting information, CLASS, and MSGCLASS on the JOB card
- symbolic parameters in the PROC statement (listed in [Table 2–1, "OSPIJA00 Job Parameters"](#) on page 2-7)

The last four symbolic parameters supply the data set names of existing ISPF libraries in your system. These parameters reference the associated DCB (data control block) attributes so that the created Oracle libraries can be assigned matching attributes. Ensure that the default data sets exist on your system. If they do not exist, replace the data set names with the correct names for your system.

If you are uncertain about the correct data set names in your system, issue the following TSO command from ISPF option 6 (TSO Command Processor) to view the current session allocations:

```
LISTALC STATUS
```

Use the first data set name that is listed above each of the following DDnames for each of the symbolic parameters in the job:

- ISPCLIB or SYSPROC
- ISPMLIB
- ISPPLIB
- ISPSLIB

In the following example, the bold data set names are the ones that you specify in the symbolic parameters:

```
--DDNAME---DISP--  
SYS1.USER.ISFPLIB  
    ISPPLIB  KEEP  
SYS2.USER.ISPLIB  
    KEEP  
TSO1.USER.ISPF.ISPLIB  
    KEEP  
SYS1.ISPF.CLIB  
    SYSPROC  KEEP  
SYS1.ISPF.ISPSLIB  
    ISPSLIB  KEEP  
SYS3.ISPF.MLIB  
    ISPMLIB  KEEP  
SYS2.V21.ISPMLIB  
    KEEP
```

**Table 2–1 OSPIJA00 Job Parameters**

Parameter	Default	Description
INDEX	ORACLE.ORALIBV	High-level qualifiers for the four created data sets. These should normally be changed to the high-level and second-level qualifiers that you used in Step 1 for the INSTLIB data set.
TPUNIT	TAPE	Tape unit specification for the distribution tapes
TPVOL	OS0202	Volume serial number specification for the first distribution tape. Do not change this parameter.
PDASD	SYSDA	Disk unit specification for the created data sets
PDVOL	XXXXXX	Volume serial number specification for the created data sets
TDASD	SYSDA	Temporary disk space unit name
DCBPLIB	ISP.SISPPENU	DCB data set model of the first ISPF panel library
DCBMLIB	ISP.SISPMENU	DCB data set model of the first ISPF message library
DCBSLIB	ISP.SISPSENU	DCB data set model of the first ISPF skeleton library
DCBCLIB	ISP.SISPCLIB	DCB data set model of the first ISPF CLIST library

When you have completed your changes to member OSPIJA00, save and submit the job. OS/390 requests a tape mount for the first Oracle distribution tape on the device that is specified in the TPUNIT symbolic parameter. When the job ends, examine the output to confirm successful execution before proceeding to [Step 3: Invoke the Product Installation and Customization Process](#).

### Step 3: Invoke the Product Installation and Customization Process

After you successfully create the ISPF installation libraries, invoke ORIPO01 to start the customization process.

To invoke the ORIPO01 CLIST, logon to TSO, enter ISPF, and select option 6 (TSO Command Processor) from the main ISPF menu. From option 6, use the EXEC command to invoke the ORIPO01 CLIST from the ISPCLIB data set that was created in "[Step 2: Create the ISPF Libraries](#)":

```
----- ISPF COMMAND SHELL -----  
Enter TSO or Workstation commands below:  
===> EXEC 'oran.orav.ISPCLIB(ORIP001)'
```

Substitute your high-level and second-level qualifiers for *oran.orav* in the following examples.

During the CLIST execution, you are prompted three times:

1. At the first prompt, enter the high-level and second-level data set name qualifiers for the ISPF data sets that were copied from the tapes. These values should match those that you specified in the INDEX parameter in ["Step 2: Create the ISPF Libraries"](#).
2. At the second prompt, enter C to confirm the qualifiers you entered.

After your second reply, you are prompted with \*\*\*. When you press [Enter], panel OR@PRIM is displayed.

### Step 4: Select Product Set from the Oracle Product Install Menu (Panel OR@PRIM)

Place an S in front of Oracle9i Server and enter the high-level and second-level qualifiers that you want used for this product set, for example, *ORAN.ORAV*. Generally, these qualifiers match the corresponding qualifiers used in Step 1 of the Installation Set Up and Initialization. Refer to ["Data Set Name Qualifier Rules"](#) in [Appendix C, "Installation Reference"](#) for more information.

When you select Oracle9i Server on panel OR@PRIM and press [Enter], panel OR@INST is displayed. You are led through a series of panels that let you select and customize the Oracle server and tools for your installation.

### Step 5: Select Installation/Customization Options from the Oracle Primary Option Menu (Panel OR@INST)

Different installation and customization options may be performed from this panel. In general, they should be performed in the order shown. However, you may choose not to perform some of the customization options. You select the option that you want to perform by entering the option number on the panel command line.

These options go in pairs - a definition option, which takes you through a series of ISPF panels, and a generate option, which produces a job stream based on the information provided on the ISPF panels, to further populate the Oracle INSTLIB library. (The generate option is typically followed by other tasks to complete the installation or customization that you are performing.)

From the Oracle Primary Option Menu, select the task that you want to perform:

**1. Define Oracle Products Installation Parameters**

This is the option that will begin the product installation process. Because this is the process that actually unloads the Oracle products from the distribution tapes, it must be performed before any of the other options.

Go to the ["Product Installation"](#) section on page 2-10 for product installation instructions.

**2. Generate Installation Job "ORIJA01"**

Go to the ["Product Installation"](#) section on page 2-10 for instructions on when to select this option.

**3. Define New Oracle Database Parameters**

This is the option that will begin the customization process for a new Oracle database. Refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for information on how to complete the database customization process.

**4. Generate Database Job "ORDJA01"**

Refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for instructions on when to select this option.

**5. Reset all Product and Language selections**

This option relates only to option 1. It can be used to nullify all product and language selections made by the user on panels ORPRODS and ORLANG.

Refer to [Appendix C, "Installation Reference"](#) for more information about option 5.

**X. Exit ORACLE Install Dialog facility.**

This option, as well as PF3, may be used to terminate the Oracle Install Dialog facility.

## Product Installation

After selecting the product installation option from the Primary Option Menu, you will see panel ORPRIM0, Define Installation Parameters. This panel shows a list of the various installation parameters that must be provided in order to complete the product installation. Press [ENTER] on the panel to begin specifying the installation parameters. You will be presented with the customization panels for the installation of the Oracle9i software.

The following rules apply to the customization panels:

- Most customization parameters have default values that you can change by typing in a new value in place of the default value. Other required parameters have no default values, and you must supply values for these parameters before proceeding to the next panel.
- You can move forward from one panel to the next by entering C on the command line.
- Most panels allow you to return to the previous panel by pressing the [PF3] key.

### Step 1: Modify Tape Unit and Library Index (Panel ORINIP00)

#### 1. Oracle Distribution Library

Identify the OS/390 tape unit name on which you intend to mount the Oracle distribution tapes during the installation jobs. The tape volume serial numbers that appear on this panel should not be changed unless you are instructed to do so by Oracle Support Services.

#### 2. Oracle Library Index

Identify the high-level and second-level data set qualifiers to be used for the Oracle product libraries. The default values for these come from the information that you supplied on panel OR@PRIM. Enter new names if you want to change the default values.

When the information on this panel is correct, enter C to continue to the next panel.

### Step 2: Select Oracle Products for Installation (Panel ORPRODS)

This panel shows a list of all the products on the distribution tapes. Enter S next to the products that you want to install. All product prerequisites are chosen automatically. If you select a product that has optional products associated with it (which were not already selected), then you will see this panel displayed a second time with the optional product list.

When the information in this panel is correct, enter C to continue to the next panel.

### Step 3: Select Language Message Modules (Panel ORLANG)

This panel shows a list of the National Language Support (NLS) language message modules available with this release. Enter S next to the modules that you want to install. American English is the standard message module set provided with Oracle9i for OS/390 and is always installed. The more language module sets that you install, the greater your installation disk requirements are.

When the information in this panel is correct, enter C to continue to the next panel.

### Step 4: INSTLIB/ISPSLIB File Tailoring Information (Panel ORINIP15)

1. Oracle ISPSLIB (skeleton) Library member

This item is showing the file tailoring skeleton member that will be used during the generate step. You cannot change this value.

2. Oracle Installation Library

Provide information about the INSTLIB library in which the installation jobs are built. This is normally the same data set that is created when the first file is downloaded from the Oracle distribution tapes (in ["Installation Setup and Initialization"](#) step 1). However, you may change the Oracle INSTLIB library name if required. Enter **NEW** or **SHR** for DATA SET DISPOSITION. The DATA SET DISPOSITION defaults to SHR. If the data set is new, then specify a VOLUME SERIAL and DEVICE TYPE.

When the information in this panel is correct, enter C to continue to the next panel.

### Step 5: Define JOB Cards for Install Jobs (Panel ORINIP20)

This panel allows you to define the JOB card structure that will be used with each of the generated installation jobs. The additional lines can be used to add JES subsystem control cards or similar requirements. The JOBNAME parameter and the NOTIFY parameter default to your TSO logon userid. Change the default information as needed.

When the information in this panel is correct, enter C to continue to the next panel.

### Step 6: Define PROCs, CLISTs, Linklist, and Temporary Space (Panel ORINIP25)

1. Define Oracle Procedure and CLIST Target Libraries

Provide the data set names for the target libraries where the Oracle JCL procedures (cataloged procedures) and TSO CLISTs will reside. You also provide a suffix for the Oracle JCL procedures. Because the suffix is appended to the end of each installation procedure, you can load the new version of Oracle JCL procedures to the same target library as a prior release without replacing the older procedures. The suffix is required and defaults to XX.

### 2. Define Oracle Linklist Library

Several modules in the Oracle product set must reside in the system linklist. These modules take approximately 64K bytes of space. Provide the name of the system linklist library that you want these modules to be copied into.

### 3. Oracle Temporary Disk Space Unit Name

Provide the unit name for the temporary disk work space. The default, SYSDA, is acceptable in most systems.

When the information in this panel is correct, enter C to continue to the next panel.

## Step 7: Review/Modify Space Specifications for Major Libraries (Panel ORDSN)

Provide the volume serial number, device type, SMS classes, and space information for each of the major Oracle library data sets listed on this panel. You should discuss your SMS configuration with your system programmer to determine appropriate values for this panel.

Refer to [Appendix A, "Data Set Names and Space Allocations"](#), for information about the Oracle data sets, their space allocations, and the NEWDSRPT CLIST, which produces a report listing default library sizes. The default space figures in this panel are for the entire product set. These allocations are too large for a product subset.

When the information in this panel is correct, enter C to continue to the next panel.

## Step 8: Specify VOLSER for Other Libraries (Panel ORDSNO)

Provide the volume serial number, device type, and/or SMS classes for all other Oracle library data sets. The information specified in this panel applies to all other Oracle data sets, in other words, those not listed on panel ORDSN. You should discuss your SMS configuration with your system programmer to determine appropriate values for this panel.

When the information in this panel is correct, enter C to continue to the next panel.



**Step 9: Define USS Products Installation Parameters (Panel ORINIP50)****1. Unix System Services directory path for ORACLE\_HOME**

Provide the OS/390 Unix System Services (USS) directory into which you want the Oracle USS products installed. This directory is known as ORACLE\_HOME. This directory does not need to exist prior to completing the USS products installation.

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---

**Note:** Oracle Corporation recommends that you use a separate file system for ORACLE\_HOME. Approximately 700 cylinders of DASD space are required if you choose to install all of the USS products.

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---

**2. Unix System Services directory path for temporary files**

Provide a Unix System Services directory path that will be used as a temporary staging directory for files that are required by the USS products installation. This directory path defaults to /tmp. However, you may change it if doing so is appropriate for your site.

---

---

**Note:** The temporary staging directory must exist prior to running the ORIJU01 job. Approximately 300 cylinders of DASD space are required in the temporary staging directory if you choose to install all of the USS products.

---

---

When the information in this panel is correct, enter C to continue to the next panel.

**Step 10: Product Installation Definition Complete (Panel ORINIP60)**

The appearance of this panel indicates that you have completed the Product Installation Definition process. You may use [PF3] to back up through the previous panels to make any corrections that you need. If you are satisfied with all of the parameter values in the customization panels, you may use [PF4] to return to the Primary Option Menu panel.

**Step 11: Generate the Installation Job**

Select option 2 (Generate Installation Job) from the Oracle Primary Option Menu panel. The installation CLISTs generate a job stream in a new member, ORIJA01, in the Oracle INSTLIB library.

The output displays as the generate step is executing. When you see the GENERATION PROCESS COMPLETED message, press [Enter] to return to the Oracle Primary Option Menu. Then press [PF3] to exit the install dialog.

### Step 12: Run the Installation Job (ORIJA01)

You do not need to edit the generated job, ORIJA01, although you might want to change the jobname. Submit this job after you have made any changes appropriate for your site.

ORIJA01 creates multiple members in the INSTLIB library, including a series of installation jobs with member names ORIJB00 through ORIJU01.

Examine the output from the ORIJA01 job to confirm its successful execution. The return code from ORIJA01 should be 0, indicating successful execution.

### Step 13: Run the Generated Installation Jobs

Submit each job in the order shown below. Some jobs might not be present in your installation depending on the installation options that you selected.

---

---

**Caution:** Even if the basic JOB card and related data are specified properly in the associated customization panel, you might need to change information such as the jobname in each job before submitting it for execution.

---

---

Before running these jobs, ensure that the Oracle PROCLIB and TSO CLIST libraries that were specified in panel ORINIP25 already exist. Otherwise, you receive JCL errors.

The following list describes the purpose of each job and any special considerations for its execution.

#### **ORIJB00**

This job deletes the Oracle distribution libraries (if any), reallocates new ones, and downloads the libraries for the selected products from the distribution tapes. This job requires that the Oracle distribution tapes be mounted.

The delete, reallocate, and copy operations are performed only for those data sets corresponding to the products that you selected to install.

After installation of the data sets is complete, and before running the catalog jobs, the `oran.ora`.SQL(INITMETA) data set needs to be edited. Also, make this change to the HFS file `$ORACLE_HOME/rdbms/initmeta.sql`.

Change the string: `%s_xslLocation%` to the following string:

`your_oracle_home/rdbms/xml/xsl`

For example, if `your_oracle_home` is `/oracle/v900`, then the new string would be the following:

`/oracle/v900/rdbms/xml/xsl`

The `your_oracle_home` will always be an HFS file specification, even in the `oran.ora`.SQL(INITMETA) data set.

## **ORIJC00**

This job copies several modules from the Oracle AUTHLOAD library to the system linklist library that you specified on panel ORINIP25. These modules take approximately 64K bytes of space.

After this job has been successfully run, if you plan to start your OSDI subsystem before the next IPL, then you must refresh the system linklist by issuing the following system operator command:

```
F LLA,REFRESH
```

After issuing the foregoing command, message CSV210I should appear after a brief delay.

## **ORIJD00 (for Oracle server)**

This job copies the following customized parameter members to the Oracle database PARMLIB library:

- `SERVFNA`      FNA file used by various installation and customization jobs
- `ORAENV`      Environment variable file containing the `ORACLE_HOME` specification for the USS products

This job also copies the following Oracle JCL procedures to the PROCLIB library that was specified during the installation customization process:

- `ORAEXPxx`      invokes the Export utility

- ORAIMPxx invokes the Import utility
- ORALDRxx invokes the SQL\*Loader utility
- ORARMNxx invokes the Recovery Manager utility

where:

- xx is the procedure suffix specified on panel ORINIP25 on page 2-11.

### **ORIJE00 (for SQL\*Plus)**

This job copies the following Oracle JCL procedure to the PROCLIB library that was specified during the installation customization process:

- ORASQLxx invokes SQL\*Plus

where:

- xx is the procedure suffix specified on panel ORINIP25 on page 2-11.

### **ORIJF00 (for Oracle Precompilers)**

This job copies the following Oracle JCL procedures to the PROCLIB library that was specified during the installation customization process:

- ORACOBxx invokes Pro\*COBOL V1
- ORACB2xx invokes Pro\*COBOL V9
- ORACxx invokes Pro\*C
- ORAFORxx invokes Pro\*FORTRAN
- ORAOTTxx invokes the Object Type Translator
- ORAPLxx invokes Pro\*PL/1

where:

- xx is the procedure suffix specified on panel ORINIP25 on page 2-11.

## **ORIIG00 (for Oracle Text)**

This job copies the following customized parameter member to the Oracle PARMLIB library:

- CTXFNA            FNA file used by installation and customization jobs

## **ORIJU01 (for USS Products)**

This job copies the USS Products installation scripts and tar files from OS/390 data sets to the temporary USS directory that was specified on the installation panel.

After this job has run successfully, you must complete the OS/390 USS products installation by logging into Unix System Services and executing the `ussinst.sh` script that is located in the temporary directory:

```
. /tmp/ussinst.sh
```

This shell script will install the USS portions of the Oracle server and each of the USS products that you selected into the `ORACLE_HOME` directory that you specified on panel ORINIP50.

If you selected Oracle Enterprise Manager Intelligent Agent during the product selection process, you will need to run an interactive configuration script called `customize.sh`. Refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for instructions.

This completes the Oracle Product Installation process. Refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for information on how to configure the products installed.



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## Data Set Names and Space Allocations

This appendix provides information about the NEWDSRPT CLIST and Oracle default data sets. The following topics are included:

- [Using the NEWDSRPT CLIST](#) on page A-2
- [Oracle Default Data Sets](#) on page A-2

## Using the NEWDSRPT CLIST

During installation, the NEWDSRPT CLIST is loaded into your Oracle ISPCLIB library. This CLIST produces a report, as a selected PDS member, listing the default library sizes for the data sets corresponding to the products you selected during installation.

When you run this CLIST, it prompts you for this information:

- high-level and second-level qualifiers for your Oracle ISPTLIB library
- high-level and second-level qualifiers for your selected output library (the low-level qualifier is DSPRT)
- PDS member name for the report

The CLIST writes the report to your selected member in the high-level `oran.orav.DSPRT` library. The output PDS must already exist for the CLIST to execute successfully. The output PDS can be FB or FBA and have a LRECL of 80 or 133.

TSO message ***File DSPRT not freed, is not allocated*** is an informational message and does not indicate an error condition.

## Oracle Default Data Sets

If you choose to install all products on this tape, member DFLTLIST in the Oracle ISPSLIB library lists the target data sets that are created during the Oracle9i for OS/390 installation. It also provides the default space allocations, in tracks, for each data set.

Member SHIPLIST in the Oracle ISPSLIB library contains a list of all the Oracle product data sets that are shipped on this distribution tape with their respective space allocations. If you do not install all of the products on this tape, you can use this member to determine how your data set space allocations differ from the default list that is provided in member DFLTLIST.



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# Oracle Library Reference

This appendix describes the Oracle library data sets that were created during the installation process. You might not have all of these data sets on your system, depending on which products you selected to install.

## Oracle Libraries

The following Oracle libraries can be created on your system depending on which products you select during the installation process.

- *oran.orav.AUTHLOAD*

This data set contains programs that must have APF authorization (normally you identify this as an authorized library in ["Step 2: Create the ISPF Libraries"](#) on page 2-4).

- *oran.orav.CMDLOAD*

This data set contains all other executable Oracle utilities, tools, and supporting modules, including Oracle Net and Oracle Access Manager for CICS and IMS TM.

- *oran.orav.CTX.PKH*

This data set contains PL/SQL header files for Oracle Text.

- *oran.orav.DOC*

This data set contains the Oracle online documentation files.

- *oran.orav.H*

This data set contains the header files and includes files that are used by the precompilers.

- *oran.orav.MACLIB*

This data set contains the CICS and IMS TM macros.

- *oran.orav.MESG*

This data set contains the NLS data objects and message files.

- *oran.orav.PARMLIB*

This data set contains sample initialization and parameter files.

- *oran.orav.SQL*

This data set contains SQL scripts that create and initialize database tables and PL/SQL sample scripts. The PL/SQL sample script names are documented in the *PL/SQL User's Guide and Reference*.

- *oran.orav.SQLLIB*

This data set contains object files necessary for linking Oracle Call Interface or Oracle Precompiler programs.

- *oran.orav.SRCLIB*

This data set contains files to run the demo scripts for Oracle tools and Programmatic Interfaces. It also contains SMF examples, PL/SQL samples, OCI samples, Oracle Precompiler samples, and sample JCL and source code for Oracle Access Manager for CICS and IMS TM.

The PL/SQL sample source names are the same as those that are documented in the *PL/SQL User's Guide and Reference*.

- *oran.orav.USSTAR*

This data set contains the tar files for all of the USS products.

## Precompiler Sample Programs

The following precompiler sample programs are on this distribution tape:

Oracle SRCLIB Member	Sample Program
AMISAMP1	IMS COBOL
AMISAMP2	IMS COBOL FASTPATH
AMISAMP3	IMS C
Pro*C SAMPLE1 – SAMPLE11	CSMP1 – CSMP11
Pro*COBOL V1.8 SAMPLE1 – SAMPLE11	COBSMP1 – COBSMP11
Pro*COBOL V9 SAMPLE1 – SAMPLE11	CB2SMP1 – CB2SMP11
Pro*Fortran SAMPLE1 – SAMPLE11	FORSMP1 – FORSMP11
Pro*PL/1 SAMPLE1 – SAMPLE11	PLISMP1 – PLISMP11

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**Note:** If you are using the IBM C header file syslib.h version 1.05.x, then use the Pro\*C option  
CODE=ANSI\_C.

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## Installation Reference

This appendix documents additional installation information that is referenced in the installation sections. The following topics are included:

- [Choosing Data Set Name Qualifiers](#) on page C-2
- [Data Set Name Qualifier Rules](#) on page C-3
- [OR@INST Panel Options](#) on page C-4

## Choosing Data Set Name Qualifiers

Step 1 of the primary Oracle9i for OS/390 installation setup and initialization process creates the first of several OS/390 data sets. Later in the installation, you can specify the high-level and second-level data set name qualifiers that are used for subsequently created data sets. Refer to [Appendix A, "Data Set Names and Space Allocations"](#), for a list of the data sets and their default space allocations.

Oracle Corporation recommends that you use the same qualifiers for all of the installation-related data sets. At this time, you need to choose and use the qualifiers that were selected in ["Installation Setup and Initialization"](#) in [Chapter 2](#).

While choosing qualifiers, remember the following requirements:

- You must choose unique qualifiers.

Using different qualifiers ensures that the products in the product set are maintained in separate libraries as required.

---

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**Attention:**

1. Do not use the same qualifiers that you have used for any other Oracle for OS/390 product set that you have previously installed. If you do, the installation procedures will delete and reallocate your current Oracle libraries.
  2. Do not concatenate these libraries with any existing libraries that you are running for previously installed product sets.
- 
- 

- In most OS/390 systems, some preparation is required before creating data sets with a new high-level data set name qualifier.

If you intend to use a new high-level qualifier for your Oracle data sets, then you must define an ALIAS before running the job that loads the installation JCL. If in doubt, ask your OS/390 systems programmer for assistance.

# Data Set Name Qualifier Rules

The following two rules concern the value that was entered for **Target Data Set Name Qualifiers** on panel OR@PRIM during the installation process:

- The high-level qualifier can be up to nine characters, including a period.  
Once entered, the first 8 characters become the initial value for the **High Level Qualifier** on panel ORINIP00, described in "[Step 1: Modify Tape Unit and Library Index \(Panel ORINIP00\)](#)" on page 2-10.
- The second-level qualifier can be up to 17 characters, including periods.  
Once entered, the 17 characters become the initial value for the **Second Level Qualifier** for item 2 on panel ORINIP00.

These two rules allow for Oracle data sets with high-level and second-level qualifiers, as in the following examples:

aaaaaaaa  
aaaaaaaa.bbbbbbbb.cccccccc  
aaaa.bbbbbbbb.cccccccc  
aaaaaaaa.bb.cc.dd.ee.ff.gg

where the initial values on panel ORINIP00 are seen in these examples as:

High Level Qualifier	Second Level Qualifier
aaaaaaaa	
aaaaaaaa	bbbbbbbb.cccccccc
aaaa	bbbbbbbb.cccccccc
aaaaaaaa	bb.cc.dd.ee.ff.gg

## OR@INST Panel Options

Options 1 through 5 on installation panel OR@INST are:

- |          |  |
|----------|--|
| Option 1 | starts the Oracle product installation process by bringing up panel ORPRIM0.   |
| Option 2 | <p>generates an INSTLIB member based on the options that were chosen from the installation panels available through option 1.</p> <p>This INSTLIB member contains a batch job stream that is used to populate the INSTLIB with a series of Oracle product installation jobs.</p>   |
| Option 3 | <p>starts the Oracle database customization process by bringing up panel ORNEWDB.</p> <p>This option is only valid for the Oracle9i for OS/390 product set and must not be selected for any other product set.</p>   |
| Option 4 | <p>generates an INSTLIB member based on the options that were chosen from the customization panels available through Option 3.</p> <p>This INSTLIB member contains a batch job stream that is used to populate the INSTLIB with a series of customization jobs for the new Oracle database that is being defined.</p> <p>This option is valid only for the Oracle9i for OS/390 product set and must not be selected for any other product set.</p> |



Option 5 relates only to option 1.

Option 5 can be used to nullify all of the product and language selections that were made by the user on panels ORPRODS and ORLANG. These panels are available only through option 1. Option 5 nullifies the selections, and a message appears in the upper-right corner of the OR@INST panel screen when the reset is complete.

Option 5 is not the only method available to change the selections. The following method also exists:

While completing the option 1 panels, you can individually reset (change to blank) any selections on the ORPRODS panel by returning to the panel and making the necessary changes line-by-line.

Regardless of the method that is chosen to accomplish the reset, once a reset of any or all selections is done, the user must proceed again through all the panels of option 1 before choosing option 2. Otherwise, the generate fails and gives an error message stating that no products or languages were selected.



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