

Oracle® Forms Developer and Reports Developer

Installation Guide

Release 6i for IBM AIX

April 2000

Part No. A83556-01

Topics Include:

- Features and Requirements
- Setting Up the Environment
- Installation Tasks
- Completing the Installation
- Configuring Oracle Forms
- Configuring Oracle Reports
- Configuring Oracle Graphics
- Configuring Oracle Procedure Builder
- Configuring Oracle Browser
- Configuring Oracle Project Builder
- Installing and Running the Demos
- Creating User Exits
- Configuring Toolkit Resources

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Send Us Your Comments

Oracle Forms Developer and Reports Developer Installation Guide Release 6i for IBM AIX

Part No. A83556-01

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

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If you would like a reply, please give your name, address, and telephone number.

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Purpose

This document provides installation and configuration information for Oracle Forms Developer and Reports Developer Release 6*i*. This preface describes the following topics:

- Audience
- Typographic Conventions
- Command Syntax
- Related Documentation
- Oracle Services and Support

Audience

This document is for database administrators and others responsible for installing Oracle products on UNIX operating systems. While command examples are provided, this document does not attempt to teach Oracle or UNIX administration.

Typographic Conventions

<code>monospace</code>	Monospace type indicates UNIX commands, directory names, user names, path names, and file names.
brackets []	Words enclosed in brackets indicate key names (for example, Press [Return]). Note that brackets have a different meaning when used in command syntax.
<i>italics</i>	Italic type indicates a variable, including variable portions of filenames. It is also used for emphasis.
UPPERCASE	Uppercase letters indicate Structured Query Language (SQL) reserved words, initialization parameters, and environment variables.

Because UNIX is case-sensitive, conventions in this document may differ from those used in other Oracle product documentation.

Command Syntax

Command syntax appears in `monospace` font. The following conventions apply to command syntax:

backslash \	A backslash indicates a command that is too long to fit on a single line. Enter the line as printed (with a backslash) or enter it as a single line without a backslash: <pre>dd if=/dev/rdskc0t1d0s6 of=/dev/rst0 bs=10b \ count=10000</pre>
braces { }	Braces indicate required items: <code>.DEFINE {macro1}</code>
brackets []	Brackets indicate optional items: <code>cvtcrt termname [outfile]</code> Note that brackets have a different meaning when used in regular text.

ellipses ...	Ellipses indicate an arbitrary number of similar items: <code>CHKVAL fieldname value1 value2 ... valueN</code>
<i>italics</i>	Italic type indicates a variable. Substitute a value for the variable: <code>library_name</code>
vertical line	A vertical line indicates a choice within braces or brackets: <code>SIZE filesize [K M]</code>

Related Documentation

For additional information related to Oracle Forms Developer and Reports Developer, see *Oracle Forms Developer and Reports Developer: Guidelines for Building Applications*. This document describes Oracle Browser, Oracle Forms, Oracle Graphics, Oracle Procedure Builder, Oracle Project Builder, and Oracle Reports. Use your Web browser to view this document in `$ORACLE_HOME/doc60/admin/manuals/US/guide60/atgtoc.htm`.

Oracle Services and Support

A wide range of information about Oracle products and global services is available on the Internet, from <http://www.oracle.com>. The sections below provide URLs for selected services.

Oracle Support Services

Global Support Sales offices are listed at <http://www.oracle.com/support>. Templates are provided to help you prepare information before you call. You will also need your CSI number (if applicable) or complete contact details, including any special project information.

Products and Documentation

Oracle Store, for U.S.A. customers, is at <http://oraclestore.oracle.com>. Links to stores in other countries are provided from this site.

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Features and Requirements

Completing a quick, successful installation depends on the local system satisfying the software dependencies and space requirements for Oracle software. This chapter describes the requirements for installing Oracle Forms Developer and Reports Developer Release 6*i* on AIX. Verify that the system meets these requirements before starting the installation.

This chapter describes the following topics:

- Introduction
- Installation Overview
- Server-Based Installation
- Online Documentation and Help
- Related Publications
- System Requirements
- Disk Space and Memory Requirements
- Issues and Restrictions

Introduction

Oracle Forms Developer and Reports Developer is an integrated set of database tools supporting multiple platforms, user interfaces, and data sources. These tools are built on a layer called Oracle Toolkit, which provides a uniform programming interface to the underlying user interface. Oracle Toolkit makes it possible to create applications that run against multiple user interfaces, such as Motif or Windows, while retaining the full native look and feel of the interface.

Installing Oracle Forms Developer and Reports Developer involves the following steps:

1. *Satisfy Prerequisites:* Make sure that the local system satisfies the hardware, software, memory, and disk space requirements for the products you want to install. These requirements and restrictions are described in this chapter.
2. *Check the UNIX Environment:* Make sure that the UNIX environment is properly set up for the products you want to install. See Chapter 2, "Setting Up the Environment".
3. *Install:* Use the Oracle Installer to install the Oracle software. See Chapter 3, "Installation Tasks".
4. *Post-Installation:* Create database objects, establish the user environment, and configure the installed Oracle products for the local system. See Chapter 4, "Completing the Installation" and Chapter 5 through Chapter 10 as appropriate for your installation. Using Oracle Express with Oracle Reports is described in Chapter 6, "Configuring Oracle Reports".
5. *Demonstration:* This optional step is described in Chapter 11, "Installing and Running the Demos".
6. *Create User Exits:* This optional step is described in Chapter 12, "Creating User Exits".

With Oracle Forms Developer and Reports Developer Release 6i, you can deploy applications on the World Wide Web.

Oracle Forms Developer and Reports Developer tools are built using standard application programming interfaces (APIs), allowing organizations to supplement the Oracle Forms Developer and Reports Developer product set with tools from other vendors.

If you use the Motif interface, the resource database is automatically constructed. For detailed information, see Appendix A, "Configuring Toolkit Resources".

Table 1–1 describes the products Oracle Forms Developer and Reports Developer supports.

Table 1–1 Oracle Forms Developer and Reports Developer Supported Products

Product	Use
Oracle Browser Release 6i	Programmers, non-programmers, or experienced database users can use Oracle Browser to query databases.
Oracle Forms Release 6i	Use Oracle Forms to build interactive applications that access Oracle Server data. You can deploy Forms on the Web with Oracle Forms Developer and Reports Developer Release 6i in Motif or character mode.
Oracle Graphics Release 6i	Use Oracle Graphics to create multimedia graphical displays dynamically linked to a database. Your Web publications can be enhanced with data-driven graphic displays with Oracle Forms Developer and Reports Developer Release 6i.
Oracle Procedure Builder Release 6i	Use Oracle Procedure Builder to create, edit, and debug PL/SQL code.
Oracle Reports Release 6i	Use Oracle Reports to build and generate reports that access Oracle Server data. You can deploy Oracle Reports on the Web with Oracle Forms Developer and Reports Developer Release 6i in Motif or character mode.
Oracle Projects Release 6i	Use Oracle Project Builder to administer and manage projects using Oracle Browser, Oracle Forms, Oracle Graphics, Oracle Procedure Builder, and Oracle Reports.

Installation Overview

This overview describes performing a client-only installation, a client only configuration, and a server-based installation.

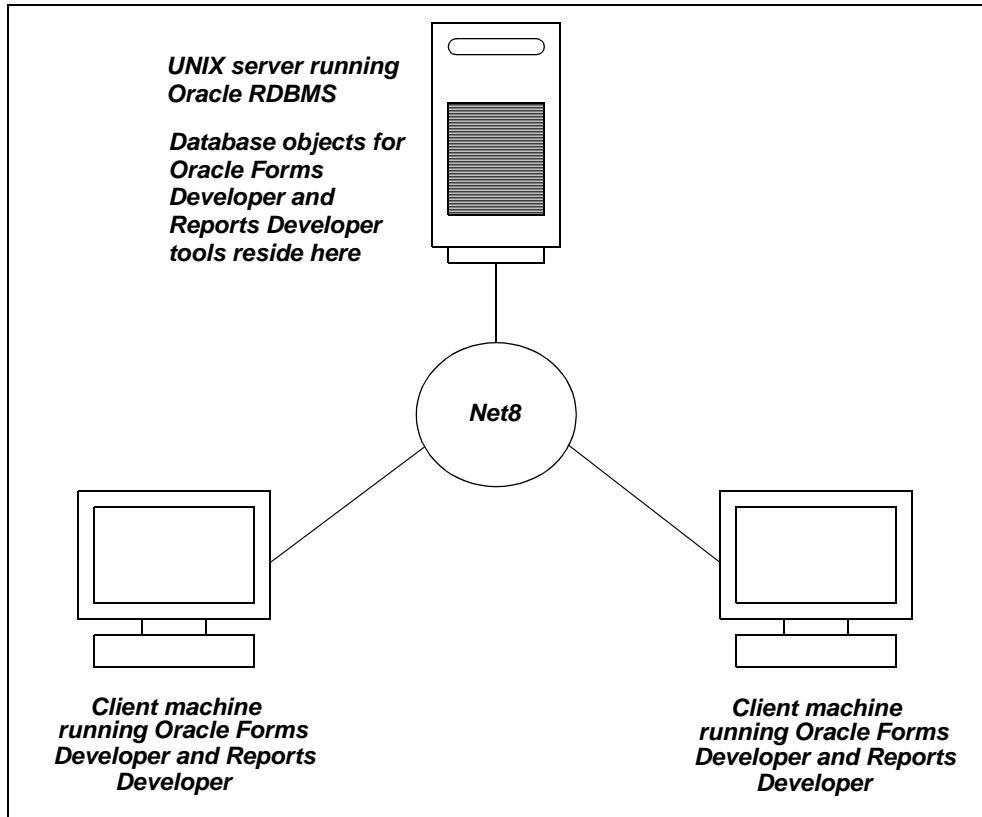
Client-Only Installation

You can install Oracle Forms Developer and Reports Developer tools in a `ORACLE_HOME` directory separate from the `ORACLE_HOME` directory containing the Oracle Server software that the tools access. A client-only installation consists of Oracle Forms Developer and Reports Developer software, database objects, and Oracle Net8. Although you need to install the database objects only once for each server, Oracle Forms Developer and Reports Developer tools must be installed on each system used to access the server.

Client-Only Configuration

Figure 1–1, "Client-Only Installation" illustrates a configuration in which Oracle Forms Developer and Reports Developer is installed on client machines connecting to the database server with Oracle Net8.

Figure 1–1 Client-Only Installation



Server-Based Installation

For Oracle Forms Developer and Reports Developer Release 6i, in a server-based installation, Oracle Forms Developer and Reports Developer and the Oracle Server release 8.0.6 are installed in the same ORACLE_HOME directory and the Oracle

Forms Developer and Reports Developer tools connect to the local database. This option was not available in previous releases.

Attention: Oracle Forms Developer and Reports Developer only supports server-based installations that use Oracle Server release 8.0.6.

Supported User Interfaces

Table 1–2 lists the Oracle Forms Developer and Reports Developer Release 6*i* tools and whether they support character mode, Motif, or Web interfaces on IBM AIX:

Table 1–2 Oracle Forms Developer and Reports Developer Release 6*i* Tools

Oracle Product	Character Mode	Motif (v1.2.3)	Web
Oracle Browser Release 6 <i>i</i>	No	Yes	No
Oracle Forms Release 6 <i>i</i>	Yes	Yes	Yes
Oracle Graphics Release 6 <i>i</i>	No	Yes	Yes
Oracle Reports Release 6 <i>i</i>	Yes	Yes	Yes
Oracle Procedure Builder Release 6 <i>i</i>	No	Yes	No
Oracle Project Builder Release 6 <i>i</i>	No	Yes	No

Note: Oracle Forms Developer and Reports Developer does not have a character mode designer, and there is no character mode runtime component for Oracle Graphics or Oracle Browser. The designer component of all Oracle Forms Developer and Reports Developer products, and the runtime component of Oracle Graphics and Oracle Browser, support only the Motif graphical user interface.

Online Documentation and Help

Installation Guide

Oracle Forms Developer and Reports Developer IBM AIX documentation is included with this Oracle product distribution. To access the documentation, use

your browser to open the `unixdoc/Developer/index.htm` file on the CD-ROM. The `index.htm` file contains links to the platform-specific documentation. The browser you use to view Oracle product documentation should support HTML level 3.

If you do not have a browser installed on the system, use an Oracle-supplied browser. Your Oracle distribution includes both character mode and Motif browsers, which you can install or run directly from the CD-ROM. The browsers are in the `orainst` directory.

To start a browser, enter:

```
$ cd mount_point_directory/orainst
$ ./oraview
```

The `oraview` script invokes the appropriate browser for the system. If you want more information about the `oraview` script, enter:

```
$ ./oraview -h
```

Context-Sensitive Online Help

Oracle Forms Developer and Reports Developer provides a context-sensitive online help system. Access online help by selecting [Contents] from the [Help] menu. For example, if you are in a Reports property sheet and need information about a current setting, select [Help-Contents]. A window containing one or more pages of information about the setting is displayed. If the page shown extends beyond the window, use [Scroll Down] to display the rest of the page. When you have finished reading help files, select [Quit].

Cue Cards

Cue cards provide step-by-step instructions of common tasks. To access cue cards, select the [Help] pull-down menu, then select [Cue Cards].

Related Publications

Oracle8 Server IBM AIX Documentation

The following documents provide additional information and are included on your product CD-ROM in HTML format:

- *Oracle8 Installation Guide for IBM AIX*

- *Oracle8 Administrator's Reference for IBM AIX*

System Requirements

This section describes the system requirements for installing Oracle Forms Developer and Reports Developer on AIX.

Hardware Requirements

Table 1-3 lists hardware requirements for installing and running Oracle Forms Developer and Reports Developer on AIX.

Table 1-3 AIX Hardware Requirements

Hardware Item	Requirement
CPU	An AIX-based system
Memory	A minimum of 32 MB internal memory (RAM)
Swap Space	Two to four times the physical RAM
Media Device	A CD-ROM drive, supported by AIX, that can read ISO 9660 format CD-ROM disks with RockRidge extensions
Display Device for GUI Tools	X11 Server

Operating System Requirements

Table 1-4 lists operating system requirements for installing and running Oracle Forms Developer and Reports Developer on AIX.

Table 1-4 Operating System Requirements

Software Item	Requirement
Operating System	AIX 4.3.2
	The <code>pthread</code> library must be installed from your AIX distribution CD-ROM.

Table 1–4 Operating System Requirements

Software Item	Requirement
AIX 4.3.2	IX71948 (required if running PSSP 2.4)
	IX79690 (to add <code>fastpath</code> for VSDs to AIX)
	IX81863 (resolves AIO process hanging in <code>listio</code> and <code>liowait</code>)
	IX87313 (to allow the 64-bit application buffer to cross a segment boundary)
	IX87382 (resolves a socket lock problem for AF_UNIX)
	IX89087 (resolves threads hanging AIO in stress tests)
	IY02407 (resolves data being copied to wrong segments during AIO)
	the <code>bos.adt.base</code> file set
	the <code>bos.adt.libm</code> file set
	the <code>x11.samples.lib.Core</code> file set

User Interface Requirements

Table 1–5 lists user interface requirements for installing and running Oracle Forms Developer and Reports Developer products on AIX.

Table 1–5 User Interface Requirements

Software Item	Requirements
Window Manager	Motif Window Manager <code>mwm</code> delivered with AIX 4.3.2
X11 Server	X11R5 and Motif 1.2.3 delivered with AIX 4.3.2

Motif Versions Compatibility

On AIX 4.3, both Motif 2.1 and Motif 1.2 are available. Oracle Forms Developer and Reports Developer only works with Motif 1.2 and X11R5. At installation time, the default paths of `/usr/lpp/x11/lib/R5` are set to `LIBPATH`.

If your installation does not have Motif and XToolkit installed at these locations, modify the `LIBPATH` settings in the following files:

- `$ORACLE_HOME/forms_server`
- `$ORACLE_HOME/forms60.csh`
- `$ORACLE_HOME/forms60.sh`

- `$ORACLE_HOME/reports_server`
- `$ORACLE_HOME/reports60.csh`
- `$ORACLE_HOME/reports60.sh`

Mandatory Motif Patch

To run Oracle Forms Developer and Reports Developer Motif Client applications, contact your IBM customer support representative to obtain a patch corresponding to PTF No. U46460 and install the patch on your system.

Relinking Requirements

You can relink the Motif Oracle Forms Developer and Reports Developer tools using dynamic Motif and X11 libraries.

The Oracle Forms Developer and Reports Developer distribution provides all the necessary components for relinking the character mode Oracle Forms Developer and Reports Developer tools.

Disk Space and Memory Requirements

Table 1–6 lists disk space and database space for Oracle Forms Developer and Reports Developer. These are minimal estimates, not precise calculations.

To calculate the total disk space requirement, decide which products and options are required for your installation. Total the Distribution and DB Space columns (adding only those products and options that are required for your installation). Combine the totals from the two columns to determine the total required disk space for your installation.

Table 1–6 Space Requirements

Products and Options	Distribution (MB)	Database (MB)
GUI Common Area	40.3	0.53
Oracle Forms	117.0	0.32
Runtime (Char.)	3.5	0.00
Designer (Motif)	3.5	0.00
Runtime (Motif)	3.5	0.00
Generator (Char.)	3.5	0.00

Table 1–6 Space Requirements

Products and Options	Distribution (MB)	Database (MB)
Generator (Motif)	3.5	0.00
Oracle Reports	66.3	0.39
Converter	3.9	0.00
Designer (Motif)	3.9	0.00
Migration Utility	0.2	0.00
Runtime (Char.)	3.9	0.00
Runtime (Motif)	4.0	0.00
Oracle Graphics	39.5	0.12
Designer (Motif)	3.8	0.00
Runtime (Motif)	3.8	0.00
Batch	3.8	0.00
Oracle Browser	28.0	0.04
Query Builder	0.3	0.00
Schema Builder	0.3	0.00
Oracle Procedure Builder	20.0	0.00
Procedure Builder (Motif)	3.0	0.00
Oracle Installer	57.3	0.00
Oracle Project Builder	9.2	0.00
Project Builder (Motif)	0.6	0.00
Oracle Common	177.7	0.00
Oracle Documentation Library	504.0	0.00
Oracle JDK Appletviewer	13.8	0.00
Oracle Jinitiator	8.9	0.00
Total Distribution Space / Total Database Space		
Total Disk Space = (Total Distribution Space + Total Database Space)		

Issues and Restrictions

National Language Support (NLS)

Message and resource files for Oracle Forms Server and message files for Oracle Reports Server are available for the following languages:

- American English
- Arabic
- Chinese, Simplified (for mainland China)
- Chinese, Traditional (for Taiwan and Hong Kong)
- Croatian
- Czech (for the Czech Republic)
- Danish
- Dutch (for the Netherlands)
- Finnish
- French, Canadian
- French, European
- German
- Greek
- Hebrew
- Hungarian
- Italian
- Japanese
- Korean
- Norwegian
- Polish
- Portuguese, Brazilian
- Portuguese, Iberian
- Romanian

- Russian
- Swedish
- Slovak (for Slovakia)
- Slovenian
- Spanish, Iberian
- Spanish, Latin American
- Thai
- Turkish

Resource files for Oracle Reports Server are available for the following languages:

- American English
- Chinese, Simplified (for mainland China)
- Chinese, Traditional (for Taiwan and Hong Kong)
- Dutch
- French
- German
- Italian
- Japanese
- Korean
- Spanish, Iberian

Setting Up the Environment

Use this chapter to prepare your environment for installing Oracle Forms Developer and Reports Developer after you have verified that the system meets the requirements described in Chapter 1, "Features and Requirements".

This chapter describes:

- Performing Pre-Installation Tasks
- Setting Up Environment Variables

Performing Pre-Installation Tasks

Perform the following pre-installation tasks:

- Creating a UNIX Account to Own Oracle Software
- Deciding to Install or Upgrade Database Objects
- Setting Up the tnsnames.ora File

Creating a UNIX Account to Own Oracle Software

The *oracle* account is the UNIX account that owns the Oracle Forms Developer and Reports Developer software after installation. You must run the Installer from this account.

On AIX, log in as *root* and use the *useradd* operating system administration utility to create an *oracle* account with the following properties:

Login Name	Any name. This document refers to it as the <i>oracle</i> account.
Default GID	Corresponds to the OSDBA group.
Home Directory	Choose a home directory consistent with other user home directories. The home directory of the <i>oracle</i> account does not have to be the same as the ORACLE_HOME directory.
Login Shell	The default shell can be <i>/bin/sh</i> , <i>/bin/csh</i> , or <i>/bin/ksh</i> . The examples in this document assume the Bourne shell (<i>/bin/sh</i>).

Note: You must have root access to your system to complete this step. Use the *oracle* account only for installing and maintaining Oracle software. Never use it for purposes unrelated to Oracle Software. Do not log in to the database when using the *oracle* (UNIX) account. Do not use *root* as the *oracle* account.

Ensure that the *hostname* and *domainname* UNIX commands return valid values (not empty values) on your system.

Deciding to Install or Upgrade Database Objects

Database objects are tables, views, and sequences that Oracle Forms Developer and Reports Developer uses to store Oracle Forms Developer and Reports Developer objects, such as Oracle Forms applications, in the database.

Database objects must exist in each database where you are storing Oracle Forms Developer and Reports Developer objects. If you have already installed the database objects on your database, do not install them again.

If you are upgrading to Oracle Forms Developer and Reports Developer Release 6*i*, you may need to upgrade the database objects to Release 8.0.6.

Enter the following to determine if the database objects already exist for the products you want to install in the database on the server.

```
$ sqlplus system/manager
SQL> SELECT table_name
2 FROM dba_tables
3 WHERE table_name LIKE 'table_name';
```

If these database tables already exist, you can find them in the SYSTEM account in the database. If these database tables do not exist, then you must create them with the Installer. Table 2-1 lists the database tables.

Table 2-1 Database Tables

Product	Table
Oracle Browser	BROWSER%
Oracle Forms	FRM50%
Oracle Graphics	GO%
Oracle Reports	SRW2%

Setting Up the tnsnames.ora File

If you are installing database objects, you must set up the `tnsnames.ora` file before you run the Installer. The `tnsnames.ora` file contains details of the remote databases available to the Oracle Forms Developer and Reports Developer products installed in a client-only configuration.

A `tnsnames.ora` file consists of the following entries:

```
alias =
  (DESCRIPTION =
    (ADDRESS =
```

```

        (PROTOCOL = tcp)
        (HOST = hostname)
        (PORT = service_number)
    )
    (CONNECT_DATA =
        (SID = ORACLE_SID)
    )
)

```

If you have Oracle Net8 Assistant, you can use it to update the file. Otherwise, you need to use a text editor to update the file with the following information: shown in Table 2-2.

Table 2-2 *tnsnames.ora* File Values

Variable	Replace with:
<i>alias</i>	The aliased name of the service being described. This is the name you will use to connect to the database.
<i>hostname</i>	The name of the remote host (server) where the database resides.
<i>service_number</i>	The port number on which the Oracle Net8 listener process listens for data packets on the remote host where the database resides. This is typically defined in the <i>/etc/services</i> file.
<i>ORACLE_SID</i>	The value of the system identifier (sid). This is the name of the instance on the host name (defined above) to which you want to connect.

Oracle products will look for the *tnsnames.ora* file in the following order:

1. The *.tnsnames.ora* file in the user's home directory. (Note the dot before the file name.)
2. *\$TNS_ADMIN/tnsnames.ora*
3. */var/opt/oracle/tnsnames.ora* for AIX
4. *\$ORACLE_HOME/network/admin/tnsnames.ora*

Make sure you put the *tnsnames.ora* file in one of these locations; otherwise, you cannot connect to the database through Net8.

To place the *tnsnames.ora* file in a location other than the default locations (*\$ORACLE_HOME/network/admin* or */var/opt/oracle*), set the *TNS_ADMIN* environment variable to the directory where *tnsnames.ora* is located. For example, if *tnsnames.ora* resides in the */tns* directory, set *TNS_ADMIN* to */tns*.

Setting Up Environment Variables

Oracle Corporation recommends that you set up the environment variables in the startup file of the user who will own the Oracle Forms Developer and Reports Developer installation. Log into the `oracle` account and set up the environment variables according to the instructions in this section. The startup file, normally located in your UNIX login home directory, will vary depending upon the shell used. Typically, `.profile` is used for the Bourne and Korn shells, and `.cshrc` is used for the C shell.

Syntax of Environment Variables

The syntax for setting an environment variable for the Bourne or Korn shell is:

```
$ set variable_name=value; export variable_name
```

The syntax for setting an environment variable for the C shell is:

```
% setenv variable_name value
```

Setting Up the DISPLAY Variable

Set to the machine name or IP address, X server, and screen being used by your workstation to connect to the system where the software will be installed. Do not use the machine name or IP address of the system where the software is being installed. Use the machine name or IP of your own workstation. If you are not sure what the X server and screen should be set to, use 0 (zero) for both. If you get an Xlib error similar to “Failed to connect to server” or “Connection refused by server” when starting the Installer, run one of the following commands:

For the Bourne or Korn shells:

```
$ DISPLAY=machine name:0.0
$ export DISPLAY
$ xhost +
```

For the C shell:

```
% setenv DISPLAY machinename:0.0
% xhost +
```

Note: Oracle does not support PC Xserver emulators. If you are having a problem with an emulator on a PC, try to duplicate the problem on your server's console.

For more information, see "Setting Up the DISPLAY Environment Variable" on page 4-14.

Setting Up the LIBPATH Variable

LIBPATH should be set to include directories where shared libraries are located. This variable should include `$ORACLE_HOME/lib`. See "Setting Up LIBPATH for Each User" on page 4-10.

Setting Up the MALLOCTYPE Variable

Set MALLOCTYPE to 3.1.

Setting Up the ORACLE_AUTOREG Variable

ORACLE_AUTOREG points to the location of your toolkit automation registry file, which is named `autoprefs.oar`.

For the Bourne or Korn shell, enter:

```
$ set ORACLE_AUTOREG=$ORACLE_HOME/guicommon6/tk60/admin; export ORACLE_AUTOREG
```

For the C shell, enter:

```
% setenv ORACLE_AUTOREG $ORACLE_HOME/guicommon6/tk60/admin
```

Setting Up the ORACLE_BASE Variable

ORACLE_BASE is required for OFA-compliant installations. This variable defines the base of the directory structure for your Oracle installation. The *oracle* operating system user must have read, write, and execute privileges on this directory.

If ORACLE_BASE is undefined, the Oracle Installer derives the value of ORACLE_BASE from the mount point you provide: *mount_point/app/oracle*. If you define it before starting the Installer session, the Installer takes the value of ORACLE_BASE from the environment.

Setting Up the ORACLE_HOME Variable

ORACLE_HOME should be set to the directory where the Oracle software will be installed. If performing a client-only installation, this directory should not contain any Oracle Server software.

Setting Up the ORACLE_TERM Variable

You can run the Installer in either Motif or character mode. If you want to run the Installer in character mode, set the ORACLE_TERM environment variable to the correct terminal type before installing Oracle Forms Developer and Reports Developer.

Following are examples of using the Bourne, Korn, and C shells for a vt200 terminal type.

For the Bourne or Korn shell, enter:

```
$ set ORACLE_TERM=vt220; export ORACLE_TERM
```

For the C shell, enter:

```
% setenv ORACLE_TERM vt220
```

If ORACLE_TERM is not set, the Installer uses the value of the TERM environment variable and searches for an equivalent ORACLE_TERM resource file.

Table 2-3 lists common ORACLE_TERM settings:

Table 2-3 Supported Terminals for the Oracle Installer

To Run:	Set ORACLE_TERM to:
ANSI terminal for SCO	ansi
AT386 console	386
AT386 xterm	386x
UnixWare Terminal	386u
Intel xterm	386s
Data General 200	dgd2
Data General 400	dgd4
IBM High Function Terminal and aixterm (monochrome)	hft
IBM High Function Terminal and aixterm (color)	hftc
hpterm terminal emulator and HP 700/9x terminal	hpterm
IBM 3151 terminal	3151 (for IBM)
NCD X Terminal with vt220 style keyboard	ncd220
Sun cmdtool/shelltool using a type 4 keyboard	sun
Sun cmdtool/shelltool using a type 5 keyboard	sun5

Table 2–3 Supported Terminals for the Oracle Installer

To Run:	Set ORACLE_TERM to:
vt100 terminal	vt100
vt220 terminal	vt220
Wyse 50 or 60 terminal	wy50
Wyse 150 terminal	wy150
Sun xterm using a type 4 keyboard	xsun
Sun xterm using a type 5 keyboard	xsun5

Setting Up the TWO_TASK Variable

When installing database objects, set the TWO_TASK environment variable to the correct alias for the database where you want to create the database objects.

Removing the ORA_NLS33 Variable

For the Installer to function properly, the ORA_NLS33 environment variable, used in earlier releases, *cannot* be set. Check to see if the variable is set by entering:

```
$ echo $ORA_NLS33
```

If the variable is set to any value, remove it.

For the Bourne or Korn shell, enter:

```
$ unset ORA_NLS33
```

For the C shell, enter:

```
% unsetenv ORA_NLS33
```

Installation Tasks

This chapter describes the installation of Oracle Forms Developer and Reports Developer. Before beginning this chapter, complete the tasks described in Chapter 2, "Setting Up the Environment".

This chapter describes the following topics:

- Mounting the Product Installation CD-ROM
- Installing the Software
- Upgrading the Software
- Creating or Upgrading Database Objects

Mounting the Product Installation CD-ROM

To install Oracle Forms Developer and Reports Developer, use the version of the Installer that is supplied on the Oracle Forms Developer and Reports Developer CD-ROM.

Note: In the following instructions, the CD-ROM mount point is referred to as `/cdrom`. If your mount point is different, substitute the correct mount point name for all references to `/cdrom`.

Perform the following steps to mount your CD-ROM:

1. Log in as `root` by entering:

```
$ su root
passwd: password
#
```

2. Create the mount point directory for mounting the CD-ROM by entering:

```
# mkdir /cdrom
```

3. Mount the CD-ROM to the mount point by entering:

```
# mount -o -or -v -cdrfs device_name /cdrom
```

Note: You must have `root` privileges to mount or unmount the CD-ROM. Be sure to unmount the CD-ROM before removing the CD-ROM from the drive using the `umount` command.

4. Exit the `root` account by entering:

```
# exit
$
```

Installing the Software

The Oracle Installer installs Oracle executables (programs or software) on the system's hard disk. Certain Oracle products also require database objects which are stored in the database itself. With the RDBMS product, for example, the database

objects include those necessary to create a database, such as the system tables and views.

This section describes performing an installation. To upgrade existing software, see "Upgrading the Software" on page 3-9. To create or upgrade database objects, see "Creating or Upgrading Database Objects" on page 3-10.

Starting the Installer

After you mount the product installation CD-ROM, the `Install Type` dialog box appears.

WARNING: Do not run the Installer as the `root` user.

Perform the following steps to begin the installation:

1. Click `OK`.

The `preamble.txt` dialog box appears.

2. Click `OK`.

The `version 6i` dialog box appears.

3. Click `OK`.

The `Install Type` dialog box appears.

4. Select one of the following:

- **Default Install**

Select this option if the Installer default values are appropriate for your installation. If, after selecting `Default Install`, you decide the default options are not appropriate for your installation, you can click the `Back` button and return to this dialog box.

If you select this option, click `OK` and go to "Selecting Installation Activities and Options".

- **Custom Install**

If you select this option, click `OK` and go to "Customizing Your Installation".

Customizing Your Installation

Perform the following steps to customize your installation:

1. Define the installation source.

Specify whether you are installing from a CD-ROM or from a staging area. You can only choose to install from a staging area during a custom installation.

When installing directly from the CD-ROM, you load and install the Oracle distribution in one session. Select this option if you are performing a single installation or if you have insufficient disk space to support a staging area.

If you install from a staging area, you can load and install the distribution in distinct phases. You must choose between temporary and permanent staging areas.

If you choose a temporary staging area, you load the software into a staging area, and the Installer converts the contents into the installed distribution during the Installer session.

A permanent staging area is neither removed nor converted during installation. Therefore, you can use it to perform multiple installations.

Installing from a permanent staging area requires approximately twice the disk space of installing from a temporary staging area or distribution medium. See Chapter 1, "Features and Requirements" for space requirements.

Attention: Do not attempt to add files to an existing staging area. If it is necessary to recreate a staging area, then you must delete all existing files before using the Installer to create the new one. If you install a software patch from a staging area, you must create a staging area for just the patch release.

2. Relink the executables.

Relinking regenerates a program from its component parts. The Installer automatically relinks products that require relinking.

Specify relinking if you:

- install a new Oracle protocol adapter
- link Oracle products together
- install user exits

- install patches or bug fixes
3. Use the root installation script file.

If an earlier `root.sh` file exists, the Installer asks whether to append root-related activities to that file or save the old file as `root.sh0` and overwrite `root.sh`.

Unless you want to run old `root.sh` activities with the present installation, rename the old files rather than appending the new ones.
 4. Use National Language Support (NLS).

To use a language other than American English, select either `All Languages` or select a language from the displayed list. (Installer prompts and messages are always displayed in American English.)
 5. Click `OK`.

Selecting Installation Activities and Options

After you choose the `Default Install` option, or after you choose the `Custom Install` option and complete the "Customizing Your Installation" section, the Installer displays the `preamble.txt` and `README` files included with this release.

Perform the following steps to select installation activities and options:

1. Read these files for additional product information; then click `OK`.

The `Installation Activity Choice` dialog box appears.
2. Select one of the following:
 - `Install, Upgrade, or De-Install Software`

Select this option to install or upgrade Oracle Forms Developer and Reports Developer software. When you select this option, you have the choice to create or upgrade database objects during this session.
 - `Create/Upgrade Database Objects`

This option creates database objects in an existing database without installing any new products.
 - `Perform Administrative Tasks`

This option relinks product executables in an existing Oracle Forms Developer and Reports Developer installation.
3. Click `OK`.

The `Installation Options` dialog box appears.

4. Select one of the following:

- **Install New Product - Create DB Objects**

Select this option for a new installation of a product. This option creates a new `$ORACLE_HOME`.

- **Install New Product - Do Not Create DB Objects**

Select this option if you have an existing Oracle database or plan to create database objects later.

- **Add/Upgrade Software**

Select this option to install or upgrade software in an existing `$ORACLE_HOME`.

- **Build Oracle8 Staging Area**

Select this option to create a staging area. For example, if you will be performing more than one installation of the product.

A staging area allows you to load your software into a designated directory, independent of the actual installation. You can complete the installation at a later time.

- **Install Documentation Only**

Select this option to install online documentation. You cannot install software when you select this option.

- **De-Install Software**

Select this option to de-install old products before upgrading products using the existing `$ORACLE_HOME`.

- **Migrate from ORACLE7 to ORACLE8**

Select this option to migrate from Oracle7 to Oracle8.

5. Click `OK`.

Confirming Default Settings

After you complete the "Selecting Installation Activities and Options" section, the `Environment Variables` dialog box appears.

You set up the environment variables in Chapter 2, "Setting Up the Environment". Perform the following steps to confirm the values of the environment variables:

1. Confirm the path name for the following environment variables:

■ ORACLE_BASE

If the value shown is incorrect, enter the ORACLE_BASE for your Oracle product directory structure. This directory will contain the Oracle Forms Developer and Reports Developer software and associated administration files. If you set ORACLE_BASE before starting the installer, this field defaults to the value you chose.

■ ORACLE_HOME

The Installer prompts you to complete the path name of the ORACLE_HOME directory. If you set ORACLE_HOME before installation, its value is used. Otherwise, the value shown is the OFA-compliant value computed by the Installer. The OFA-compliant path is `ORACLE_BASE/product/release_number`. Enter the release number of the distribution (for example, 6.0).

■ ORACLE_SID

If the value shown is incorrect, enter the value of the server identification.

Note: For a list of environment variables used by the Installer, see "Setting Up Environment Variables" on page 2-5.

2. Click OK.

The Installer writes installation log information to the following content-specific files in the `ORACLE_HOME/orainst` directory:

- `install.log`
- `sql.log`
- `make.log`
- `os.log`

If log files already exist in the default location, the Installer renames the existing files. Storing log files from multiple installations in the same files hinders any subsequent debugging. You can change the values displayed in the `Defaults` file by clicking the Back button.

Setting Up the Software Asset Manager

After you complete the "Confirming Default Settings" section, the `Software Asset Manager` dialog box appears.

Perform the following steps to set up the Software Asset Manager:

1. For each product you will install:
 - a. Scroll to the product in the `Products available` box.
 - b. Press the space bar to highlight the product.
 - c. Click the `Install` button to move the product to `Products installed` box.

Note: If you chose the `Install Documentation Only` option of the `Installation Options` dialog box, select the products corresponding to the documentation you are installing. Only the documentation is installed; the products themselves *are not* installed.

The Software Asset Manager tracks the size of the distribution you selected and the space available in the destination directory (`ORACLE_HOME`).

2. Click the `Options` button if you want to bring up a dialog window that allows you to choose the dialog windows you will see during installation and whether you want to log the installer's actions.

Note: Because the `Log Installer Action` of the `Options` button generates a lot of data, do not select this option unless you are requested to do so by an Oracle Support Services analyst.

3. Press `[Return]`.

Selecting a Component

After you complete the "Setting Up the Software Asset Manager" section, the `Component Selection` dialog box appears.

From the following list of components, tab to select the one that applies and use the space bar to deselect the other components:

- Forms Server for Web deployment *or* Reports Multitier Server for Web deployment
Deselect this option. This option applies to Oracle Forms Server and Reports Server.
- Motif Bitmapped Interface
Select this option to build a Motif (bit-mapped) interface for Oracle Forms Developer and Reports Developer.
- Designer and Generator Executables *or* Reports Designer and Converter Executables
Select this option to build Oracle Forms designer and generator executables or to build Oracle Reports designer and converter executables.
- Character Mode Interface
Select this option to build a character mode interface for Oracle Forms Developer and Reports Developer.

Upgrading the Software

This section describes upgrading from Developer/2000 Release 2.1 to Oracle Forms Developer and Reports Developer Release 6*i*. It is assumed that Developer/2000 Release 2.1 is installed in your ORACLE_HOME before you begin upgrading to Oracle Forms Developer and Reports Developer Release 6*i*. You must de-install old versions of Developer/2000 Release 2.1 products.

Note: Upgrading Developer/2000 to Oracle Forms Developer and Reports Developer Release 6*i* does not require a Database Object upgrade.

Perform the following steps to upgrade the software:

1. Start the Release 2.1 Installer as described in "Starting the Installer" on page 3-2.
Use the Installer provided with Developer/2000 Release 2.1 to de-install the old version of Developer/2000. Use the new Installer to install the new version only.
2. At the Installation Activity Choice dialog box, select the Install, Upgrade, or De-Install Software option.

Select one of the following:

- Select `Default Install` for the default options.

If, after selecting `Default Install`, you decide the default options are not adequate for your installation, select the `Back` button and select `Custom Install`.

- Select `Custom Install` if you do not want to use the default options.

The National Language Support (NLS) dialog box appears when you select `Custom Install`. To use a language other than American English, select either `All Languages` or select a language from the displayed list. (Installer prompts and messages are always displayed in American English.)

3. At the `Installation Options` dialog box, select the `De-Install Software` option. See Step 4 of "Starting the Installer" on page 3-6.
4. Continue answering the Installer prompts.
5. At the `Software Asset Manager` dialog box, select the products you want to upgrade, and confirm that you want to delete the old products.
6. After the `Developer/2000 Release 2.1` products are deleted, start the new installer and install the `Oracle Forms Developer` and `Reports Developer Release 6i` products as described in the previous sections.

Creating or Upgrading Database Objects

To create or upgrade database objects, perform the following steps:

1. Make sure your environment is correctly set. See Chapter 2, "Setting Up the Environment".
2. Restart the Installer. From the `Installation Activity Choice` dialog box, choose the `Create/Upgrade Database Objects` option to create new database objects for `Oracle Forms Developer` and `Reports Developer` or to upgrade database objects from a previous release to release 8i.

Completing the Installation

This chapter describes post-installation and configuration tasks you perform to complete the installation.

The chapter describes the following:

- Verifying Your Installation
- Setting Printer Configuration Files
- Setting Up the Environment
- Setting Up Character Mode
- Setting Up the GUI
- Enabling the Use of Other Languages
- Setting Up the Post-Install Environment

Verifying Your Installation

If you have startup problems, use `DEBUG_SLFIND` to direct error messages to a file you choose. To do this, set `DEBUG_SLFIND` to `stdout`, `stderr`, or another file name.

Rerun the tool. Check for error messages in the file that indicate if a resource file is missing.

Ensure that the permissions for `/dev/audio` and `/dev/audioctl` are set to allow read-write access. To check permissions, enter:

```
$ ls -l /dev/audio*
```

Setting Printer Configuration Files

After running the Oracle Installer, set your printer configuration files to prepare your system for printing by performing the following tasks:

- Locating and Installing PPD and AFM Files for Your Printers
- Setting Up the Default Printers
- Updating the Toolkit Font Mapping File
- Setting Printer Commands (Optional)
- Specifying a Default Printer
- Printing to HP PCL Printers
- Testing Printing Capabilities and Fixing Errors

Locating and Installing PPD and AFM Files for Your Printers

This task provides instructions for choosing an appropriate PostScript Printer Definition (PPD) file for your printer. Oracle Toolkit uses the PPD files to determine which fonts are available on a PostScript printer, since AIX does not allow the Toolkit to obtain this information from the printer directly.

Each PPD file provides paper sizes, available fonts, and default resolution for a printer. If this file lists a PostScript font, a corresponding Adobe Font Metrics (AFM) file must exist in the

`$ORACLE_HOME/guicommon6/tk60/admin/AFM` directory since the file is used by the Toolkit to calculate font metrics.

An AFM file specifies font metric information for Type 1 font programs. Each AFM file lists the following information about one font: font attributes such as style, weight, width, and character set; whether the font is fixed pitch or proportional; and the size of each character.

Oracle provides PPD and AFM files for some common printers and fonts. If you cannot find the appropriate file for your printer, you can obtain PPD and AFM files from your printer vendor or from Adobe Systems. You can also use the `default.ppd` default printer definition file.

1. To find the PPD file for your printer, enter:

```
$ cd $ORACLE_HOME/guicommon6/tk60/admin/PPD
$ ls *.ppd | more
```

This lists all the PPD files that are included with the Oracle distribution.

2. To determine the fonts listed in the PPD file, enter:

```
$ grep Font PPD_filename | more
```

3. To check whether all the necessary fonts are in the

`$ORACLE_HOME/guicommon6/tk60/admin/AFM` directory, enter:

```
$ cd $ORACLE_HOME/guicommon6/tk60/admin/AFM
$ ls | more
```

See your printer documentation to determine the fonts you need for your printer

Changing the Default PPD File

You can also specify a PPD file by creating a `default.ppd` that is a copy of another PPD file to better describe the local default printer.

For example, enter:

```
$ mv default.ppd default.ppd.old
$ cp another_PPD_file default.ppd
```

When an invalid PPD file is specified for the current printer, for example when an incorrect file is specified or no file is specified, the Oracle Toolkit uses `default.ppd`.

Modifying the PPD Files

Do not modify the PPD files unless you want to add fonts to the printer and you want these changes reflected in Oracle applications. If you add fonts to your printer, also add entries for these fonts to the printer's PPD file.

The format for a font entry is:

```
*Font font_name: encoding "version" charset
```

where:

<i>font_name</i>	specifies the Adobe font name as specified in PostScript
<i>encoding</i>	specifies the PostScript encoding name
<i>version</i>	specifies the font's version number
<i>charset</i>	specifies the Adobe character set name

Setting Up the Default Printers

To set up default printers for Oracle Forms Developer and Reports Developer products, update the `$ORACLE_HOME/guicommon6/tk60/admin/uiprint.txt` file with entries for each of your printers. Using this file enables you to obtain correct paper sizes and correct printer resolution and enables Toolkit application users to set print jobs to use various paper sizes available on the selected printer.

Oracle Toolkit uses the `uiprint.txt` file, located in the `$ORACLE_HOME/guicommon6/tk60/admin` directory, to display the list of printers available on your system. Each printer is defined by a line in the `uiprint.txt` file containing five fields separated by colons.

For each of your printers, enter the following line into the `uiprint.txt` file:

```
printer:printer_driver:Toolkit_driver:printer_descr:printer_descr_file:
```

where:

<i>printer</i>	contains the name of the printer, as used with <code>lpr</code> or <code>lp</code> commands. This parameter also specifies the default printer if both the <code>ORACLE_PRINTER</code> and <code>PRINTER</code> environment variables are not set on your system.
<i>printer_driver</i>	specifies the type of print driver used for the printer. The Toolkit supports the PostScript, ASCII, and PCL selections for the printer driver.

<i>Toolkit_driver</i>	specifies the version of the printer driver that should be used by the Toolkit. The Toolkit supports 1 for ASCII or Level 1 PostScript, 2 for Level 2 PostScript printers, and 5 for HP PCL printers.
<i>printer_descr</i>	contains a free-format description of the printer. It can show, for example, the location and speed of the printer.
<i>printer_descr_file</i>	specifies the printer definition file to be used with the printer. The format of this file is dependent on the driver specified for the printer. The Toolkit supports the Adobe PPD and the HP HPD file formats. See "Locating and Installing PPD and AFM Files for Your Printers" on page 4-2 for complete instructions.

Attention: The first non-commented line (line without a number in column one) must define a valid printer. The Printing services and Saving output to file options may not work properly unless the `uiprint.txt` file is configured properly.

Updating the Toolkit Font Mapping File

The `uifont.ali` file contains alias mappings from one Toolkit font to another, and is used to map unavailable fonts to substitutes. For example, the Arial font is found only on Microsoft Windows and is mapped to Helvetica on AIX.

The `uifont.ali` file resides in the `$ORACLE_HOME/guicommon6/tk60/admin` directory. If you want to use another directory, see the following section.

See Also: Comments in the `uifont.ali` file. This file is updated for each new release.

Set the TK60_FONTALIAS Environment Variable

Oracle Toolkit first looks for `uifont.ali` in the location specified by `TK60_FONTALIAS`. If `TK60_FONTALIAS` is not set, or if `uifont.ali` is not in the specified location, the Toolkit looks for `uifont.ali` in the `$ORACLE_HOME/guicommon6/tk60/admin` directory.

Modify the `uifont.ali` File

If you want to modify the `uifont.ali` file, make sure that the general structure of each line is as follows:

new font = existing font

where:

new_font is a font you want to add
existing_font is a font that already exists on your printer

The format of each line in `uifont.ali` is as follows:

```
face.size.style.weight.width.charset = face.size.style.weight.width.charset
```

where the values are separated by periods (.) and:

<i>face</i>	specifies the name of the font the Toolkit uses for printing. Common fonts include Palatino, Helvetica, Courier, and Times.
<i>size</i>	specifies the size of the font in points.
<i>style</i>	specifies the style options: plain, italic, oblique, underline, outline, shadow, inverted, or overstrike. If there is more than one style, the list must be enclosed in parentheses, for example, (plain italic).
<i>weight</i>	specifies the weight options: ultralight, extralight, light, demilight, medium, demibold, bold, extrabold, or ultrabold.
<i>width</i>	specifies the choice of width options: ultradense, extradense, dense, semidense, normal, semiexpand, expand, extraexpand, or ultraexpand.
<i>charset</i>	specifies the name of a character set. This option is not supported in the current release.

The following rules apply:

- Any Arial that has both italic and overstrike styles maps to a 12-point font. Each font line may be continued to the next line by using the backslash (\).
- Separate each element from the next by a period (.).
- Combine styles using the plus sign (+) to delimit parts of a style. For example:

```
Helvetica.12.Italic+Overstrike = Helvetica.12.Italic.Bold
```

maps any Helvetica 12-point font that has both italic and overstrike styles to a 12-point, bold, italic Helvetica font.

- Use quotes to enclose element names that contain a space. For example:

```
"Avant Garde".12.Italic+Overstrike = Helvetica.12.Italic.Bold
```

maps any Avant Garde font that has both italic and overstrike styles to a 12-point, bold, italic Helvetica font.

- Use a period as a place holder if you choose not to define an element. Trailing periods may be truncated. For example, in the following statement the two sides are equivalent even though the size is not specified on the left side:

```
Arial..Italic+Overstrike = Helvetica.12.Italic.Bold
```

Setting Printer Commands (Optional)

You can set `TK6_PRINT` to store the print command and `TK6_PRINT_STATUS` to store the printer status command. You must supply a *print_string*, like:

```
lp -s -d'%n' -n%c
lpstat -p '%n'
```

which allows you to embed the following strings:

`%n` is the name of the printer
`%c` is the number of copies (printed as a decimal number)

If you do not set `TK6_PRINT`, the value defaults to:

```
lp -s -d'%n' -n%c
```

If you do not set `TK6_PRINT_STATUS`, the value defaults to:

```
/usr/bin/lpstat -p '%n'
```

To set `TK6_PRINT` and `TK6_PRINT_STATUS` for the Bourne shell, enter:

```
$ set TK6_PRINT="print_string"; export TK6_PRINT
$ set TK6_PRINT_STATUS="print_string"; export TK6_PRINT_STATUS
```

To set `TK6_PRINT` and `TK6_PRINT_STATUS` for the C shell, enter:

```
% setenv TK6_PRINT "print_string"
% setenv TK6_PRINT_STATUS "print_string"
```

Specifying a Default Printer

Oracle Forms Developer and Reports Developer determines your default printer by searching for values of the following variables in the following order:

1. `TK6_PRINTER`
2. `ORACLE_PRINTER`
3. `PRINTER`

4. the first entry in your `uiprint.txt` file

To specify a default printer, set `TK6_PRINTER` to the applicable printer.

Note: The default printer must be specified in one of the ways listed above; otherwise, Printing services and Saving output to file options may be disabled.

Printing to HP PCL Printers

With Oracle Forms Developer and Reports Developer, printing to PostScript, ASCII, and HP PCL printers are fully supported. Similar to PPD files for PostScript printers, HPD or HP glue files provide information on what fonts are available for an HP PCL printer. Many HP glue files are provided in `$ORACLE_HOME/guicommon6/tk60/admin/HPD`. HP's AutoFont Support Installer (available on PCs) generates these files automatically. Documentation for their file format is available in HP's *PCL5 Developer's Guide*.

As with PostScript's AFM files, every HP font must have an associated TFM file; TFM files should be provided by the font vendor, and new fonts should be added to the glue file for your printer when installed. The TFM files are located in `$ORACLE_HOME/guicommon6/tk60/admin/TFM`.

For a new font, specify these fields in the glue file:

```
FONT={fontname}  
/tfm={tfm-filename}
```

where:

fontname is a descriptive name for the font
tfm-filename is the base file name for TFM file

You can also specify these fields in the glue file, after the `FONT=` field, if the TFM file isn't specific enough, by entering:

```
/ptsize={size {size ...}}
```

If the font is a bitmapped font, but is listed in the TFM file as a scalable font, you can limit the point sizes used by listing all acceptable sizes by entering:

```
/symset={symset {symset ...}}
```

This field limits the supported symbol sets to those listed on the field. See the HP PCL documentation for a list of recognized symbol sets.

Oracle Forms Developer and Reports Developer also supports the 'defaultpaper' field for printing to PCL format. This field can be used to set the defaultpaper to be used by the Toolkit. The format of this field is:

```
<defaultpaper={papername}
```

For example, `<defaultpaper=A4` will set the default paper to A4.

The *papername* is case insensitive. If the user specifies this field in more than one place, then the final `defaultpaper` field's *papername* will be used as the `defaultpaper`. If the user has specified a `defaultpaper` and the *papername* is not supported by the printer, the `defaultpaper` setting will be ignored and the `defaultpaper` will be set to LETTER. If the *papername* specified in this field is incorrect, then the `defaultpaper` will be set to LETTER.

Testing Printing Capabilities and Fixing Errors

1. Test printing capability.

Start up any Oracle Forms Developer and Reports Developer tool and print to the default printer.

2. Select a printer from the Choose Printer dialog.

The Choose Printer dialog lists printers available on your system, giving the type and a full description of each. Oracle Toolkit obtains this list from the `$ORACLE_HOME/guicommon6/tk60/admin/uiprint.txt` file. You can choose a printer from the list of available printers.

You can also specify a new printer and its type. To choose a new printer, enter its name, or choose a corresponding type from the Choose Printer dialog containing the drivers supported by Oracle Toolkit. The Toolkit checks to see if the name corresponds to a valid printer. If the printer is valid, Oracle Toolkit allows you to associate a PPD file with the printer through a file dialog. If you do not want to associate a PPD file, the Toolkit uses `default.ppd`.

Setting Up the Environment

This section describes how to set up the generic user environment for Oracle Forms Developer and Reports Developer. The environment variable below is required to

run Oracle Forms Developer and Reports Developer, regardless of the chosen user interface (character mode, Motif, or Web).

Setting up the Oracle Forms Developer and Reports Developer Environment requires the following task:

Setting Up LIBPATH for Each User

To run the Oracle Forms Developer and Reports Developer products, you must set the LIBPATH environment variable. Oracle Forms Developer and Reports Developer products use dynamic, or shared, libraries. Therefore, you must set LIBPATH so that the dynamic linker can find the libraries. To determine if your LIBPATH is set, enter:

```
% echo $LIBPATH
```

Set the LIBPATH environment variable for the first time to:

```
/usr/lpp/X11/lib/R5 :$ORACLE_HOME/lib
```

You can reset the LIBPATH.

To reset it for the Bourne shell, enter:

```
$ set LIBPATH=/usr/lpp/X11/lib/R5 :$ORACLE_HOME/lib:${LIBPATH}
$ export LIBPATH
```

To reset it for the C shell, enter:

```
% setenv LIBPATH \
/usr/lpp/X11/lib/R5 :$ORACLE_HOME/lib:${LIBPATH}
```

Note: If you set LIBPATH in a previous Developer/2000 installation, and you are now setting it for the current installation, be sure to remove the old \$ORACLE_HOME/lib entry from the path.

Setting Up Character Mode

This section explains how to set up the character mode user environment for Oracle Forms Developer and Reports Developer.

Perform the following tasks to set up the character mode user environment:

- Determining Your Terminal Resources

- Setting ORACLE_TERM

Determining Your Terminal Resources

This section helps you decide whether you need to set the ORACLE_TERM environment variable.

Note: You must set ORACLE_TERM if TERM is not already set to the device name of a supported terminal. If you do not properly set TERM and ORACLE_TERM, the Oracle Forms Developer and Reports Developer character mode tools cannot start up.

Check the value of TERM by entering:

```
$ echo $TERM
```

See Table 4-1 to determine whether TERM is already set to the device name of one of the supported terminals.

TERM Set

If TERM is already set to a supported device, you do not need to set ORACLE_TERM, and you are finished setting your terminal resources.

TERM Not Set

If TERM is not already set, set ORACLE_TERM to a supported device name before using any Oracle Forms Developer and Reports Developer character mode tools.

Setting ORACLE_TERM

Select the device name for ORACLE_TERM from the list of device names provided in Table 4-1.

Set the ORACLE_TERM environment variable for each user.

Setting ORACLE_TERM overrides the default AIX environment variable TERM for Oracle tools. The value of TERM, however, remains the same.

Supported Terminals

Table 4-1 lists device names to which you can set ORACLE_TERM and the corresponding terminal file names that the character mode Oracle Forms Developer

and Reports Developer tools use. Oracle Toolkit terminal files are located in the `$ORACLE_HOME/guicommon6/tk60/admin/terminal/US` directory.

Many of the tools also require their own terminal files, such as `fmrcansi.res` to be used with `tk6cansi.res` for Oracle Forms. Check the product-specific chapters for a list of these files.

Table 4–1 Supported Terminals for Character Mode Tools

Device Name	Terminal	Terminal File Names Used by Oracle Terminal
sun5	Sun cmdtool Type 5 keyboard	tkqcsun5.res
vt100	DEC vt100 terminal (or emulator, including xterm)	tkqcv100.res
vt220	DEC vt220 terminal (or emulator, including xterm)	tkqcv220.res
xsun5	Sun xterm Type 5 keyboard	tkqcxsun5.res

Setting Up the GUI

This section explains how to prepare the GUI environment for Oracle Forms Developer and Reports Developer. The section describes:

- Getting Help with X and OSF/Motif
- Relocating the Key Definition File
- Setting Up the X Window System and Motif Environments

In this section, it is assumed you have a working knowledge of X Window and OSF/Motif setup and administration, including an understanding of the client/server architecture of the X Window System and Motif.

Getting Help with X and OSF/Motif

Oracle customers can contact Oracle Support Services regarding any problems with Oracle products. However, Oracle Corporation does not offer technical support for the X Window System or Motif provided by your operating system vendor. Refer

your questions about the X Window System or Motif to your on-site expert, or to your operating system vendor or Motif vendor. Relocating Key Definition File

Note: Oracle does not support PC Xserver emulators. If you are having a problem with an emulator on a PC, try to duplicate the problem on your server's console.

Relocating the Key Definition File

When installation is complete, the `XKeysymDB` X11 key symbol file is in the `$ORACLE_HOME/guicommon6/tk60/admin` directory. You must move the `XKeysymDB` file to the `/usr/lib/X11` directory on every machine on which Oracle Forms Developer and Reports Developer is running. To move the file, perform the following steps:

1. As the `root` user, change to the `$ORACLE_HOME/guicommon6/tk60/admin` directory by entering:

```
# cd $ORACLE_HOME/guicommon6/tk60/admin
```

If the directory `/usr/lib/X11` does not exist, create it by entering:

```
# mkdir /usr/lib/X11
```

2. Set up the `XKeysymDB` file.

If you have a version of `XKeysymDB` in `/usr/lib/X11`, decide whether to use the new file as is or merge it with the old file. If you decide to use the new file, you may want to rename the old file to preserve it.

- To preserve the original file, enter:

```
# cd /usr/lib/X11
# mv XKeysymDB XKeysymDB.OLD
# cd $ORACLE_HOME/guicommon6/tk60/admin
```

- To merge the new file with the existing file, add the old material you want to keep into the new file using your system editor.
- To install the new file, enter:

```
# cp XKeysymDB /usr/lib/X11
```

Note: The application code reads the `XKeysymDB` file at startup time. If the application code cannot find the file, or if it does not contain all of the relevant OSF `keysym` values, some function keys may not function properly. In this case you may receive warning messages similar to the following:

```
Warning: translation table syntax error: Unknown
keysym
name: osfUp
Warning: ...found while parsing ` <Key>osfUp:
ManagerGadgetTraverseUp ()'
```

3. Exit the `root` user account.

Oracle Motif applications running in an X11R4 environment do not have the capability of locating National Language Support (NLS) data files. Except for this limitation, Oracle Motif applications running in an X11R4 environment have the same capability as applications running in an X11R5 environment.

Setting Up the X Window System and Motif Environments

This section describes the following topics:

- Setting Up the `DISPLAY` Environment Variable
- Controlling Display Access with the `xhost` Utility

Setting Up the `DISPLAY` Environment Variable

If you run Oracle Forms Developer and Reports Developer on a machine that is not your local workstation, set the `DISPLAY` environment variable on the remote machine to the name of your X Windows screen. This tells the application which machine, server, and screen to display its windows.

The format for the name of the X Windows screen is:

```
machine_name : server.screen
```

where:

```
machine_name        specifies the name of the machine you will be using
```

<code>server</code>	specifies the sequential code number for the server
<code>screen</code>	specifies the sequential code number for the screen (optional)

For example, assume your workstation is named `bambi`, and you want to run Motif Forms from a larger machine named `godzilla`.

For the Bourne and Korn shell, enter the following from `godzilla`:

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

For the C shell, enter the following from `godzilla`:

```
% setenv DISPLAY bambi:0.0
```

The first zero in this example refers to the first server running on `bambi`. The second zero refers to the first screen managed by that server. Typically, there is just one server and one screen per workstation or X terminal. In such cases you can omit the screen specification.

Controlling Display Access with the `xhost` Utility

Most X servers prevent users on other machines from displaying windows on your screen, unless you explicitly give them permission. This is done by an access file `/etc/Xn.hosts`, where `n` is the number of the display. The `xhost` utility allows you to interactively grant or deny systems access to the server.

To grant access to a remote system, run `xhost` and specify the name with an optional leading plus sign (+). To deny access, use a leading minus sign (-). A plus sign without a host name gives access to all available systems, even if they are not listed in `/etc/Xn.hosts`. A minus sign without a host name restricts access to systems listed in the `/etc/Xn.hosts` file.

Running `xhost` without arguments prints the list of hosts in the `/etc/Xn.hosts` file, and tells you whether they have current access to your display.

For example, assume your workstation is named `bambi` and you want to grant access to `godzilla`, a remote machine. Enter the following on `bambi`:

```
$ xhost +godzilla
```

To allow unlimited, unspecified access, enter:

```
$ xhost +
```

Attention: When you grant another machine access, all users of that machine have access to your machine's X server. For example, if you grant machine `godzilla` access to `bambi`, all users of `godzilla` have access to the `bambi` X server.

Enabling the Use of Other Languages

This section explains how to set up your environment so that you can run the tools using various languages.

Perform the following tasks to enable Oracle Forms Developer and Reports Developer to run in languages other than the default language (English):

- Setting Up `NLS_LANG`
- Set the `Tk2Motif*fontMapCs` File

Note: Oracle Forms and Oracle Graphics Runtime files may need to be regenerated if they were previously generated with a different `NLS_LANG` setting.

Setting Up `NLS_LANG`

Oracle Forms Developer and Reports Developer products use the `NLS_LANG` environment variable to determine which language territory and terminal character set to use. To set `NLS_LANG`, use the following procedure.

For the Bourne and Korn shell:

```
$ NLS_LANG=language_territory.character_set
$ export NLS_LANG
```

For the C shell:

```
% setenv NLS_LANG language_territory.character_set
```

where:

language is a supported language

territory is a supported territory

character_set is a character set supported by the user's terminal

Note: If NLS_LANG is not set, the default setting is us7ascii.

Table 4–2 lists values supported by Oracle Forms Developer and Reports Developer products for NLS_LANG.

Table 4–2 Settings for NLS_LANG

Language Name	<i>language</i> Value	<i>territory</i> Value	<i>character_set</i> Value
American	american	america	us7ascii
Dutch	dutch	“the netherlands”	we8dec
Finnish	finish	finland	we8dec
French	french	france	we8dec
German	german	germany	we8dec
Italian	italian	italy	we8dec
Japanese	japanese	japan	ja16euc
Korean	korean	korea	ko16ksc5601
Spanish	spanish	spain	we8dec
Simplified Chinese	“simplified chinese”	china	zhs32eus
Traditional Chinese	“traditional chinese”	taiwan	zht32euc

Set the Tk2Motif*fontMapCs File

This section explains how to add an entry to the Tk6Motif file so that the Toolkit can match Oracle character sets with X character sets. The setting is called Tk6Motif*fontMapCs. Add the following line to the file to set Tk6Motif*fontMapCs:

```
Tk2Motif*fontMapCs: xset=character_set
```

where:

xset is the name of an X character set.

character_set is the name of an Oracle character set.

To list the character sets available on your X Server, enter:

```
$ xlsfonts | awk -F- '{print $14 "-" $15}' | sort -u
```

Setting Up the Post-Install Environment

To define the environment variables for Oracle Forms Developer and Reports Developer, use the script files that the installer creates. For Oracle Forms, use either the `forms60.csh` or the `forms60.sh` script file. For Oracle Reports, use the `reports60.csh` or the `reports60.sh` script file. You can add lines at the end of the script files to customize them.

Configuring Oracle Forms

This chapter explains how to configure and use the Motif and character mode versions of Oracle Forms Release 6i for AIX.

This chapter describes the following topics:

- Finding Product Documentation
- Administering Oracle Forms
- Using Oracle Forms

Finding Product Documentation

For information on the general use of Oracle Forms, see the following documents:

- *Oracle Forms online help*
- *Oracle Forms Quick Tour*
- *Oracle Forms Cue Cards*
- *Oracle Forms Reference Manual*

Online Help

Online help is available from the Help menu when running executables.

Release Notes File

The `relnotef.txt` file is located in the `$ORACLE_HOME/doc60/admin/manuals/US` directory. This file describes changes that were made too late to be included in the documentation and known product limitations.

Administering Oracle Forms

Executables

Table 5–1 lists the Oracle Forms executable names. The executables are in the `$ORACLE_HOME/bin` directory.

Table 5–1 Oracle Forms Executables

Component	Motif Executable	Character Mode Executable
Oracle Forms Builder	f60desm	n/a
Oracle Forms Compiler	f60genm	f60gen
Oracle Forms Runform	f60runm	f60run
Oracle Forms Runform with debugger	f60runmd	n/a

Edit Preferences

Options is a menu item on the Oracle Forms Tools menu. It displays the Options dialog box, in which you specify Builder and Runtime options.

Source File Locations

Oracle Forms searches for its product files in the following locations in this order:

1. the current directory
2. directories specified by `FORMS60_PATH`
3. directories specified by `ORACLE_PATH`
4. directories specified by `PATH`

Setting Environment Variables

This section describes the environment variables you need to use Forms:

- `FORMS60_PATH`
- `FORMS60_TERMINAL`
- `ORACLE_TERM`
- `TK60_ICON`
- `TMPDIR`

FORMS60_PATH

`FORMS60_PATH` specifies the search path for image files, Oracle Forms files, and menus.

FORMS60_TERMINAL

`FORMS60_TERMINAL` points to the directory where the terminal files for Oracle Forms reside.

ORACLE_TERM

If the `TERM` environment variable is not already set to a supported device name, you must set `ORACLE_TERM` before logging into Oracle Forms to use the character mode implementation of the Runform component. The `ORACLE_TERM` environment variable setting overrides the `TERM` environment variable setting.

Set the `ORACLE_TERM` environment variable to the appropriate terminal type. Table 5-2 lists supported device names. The supported environment settings and the terminal files located in the `forms60/admin/terminal/US` directory.

Table 5-2 Supported Terminals for Character Mode Forms

Terminal	Device Name	Terminal Description	Terminal File Name
vt220	vt220	vt220 terminal	fmrvt220.res

You can also override the `TERM` and `ORACLE_TERM` environment variable settings from the command line by entering:

```
$ runform60 TERM=terminal:device
```

TK60_ICON

`TK60_ICON` points to the path where the icon files for your application reside.

TMPDIR

The `TMPDIR` environment variable establishes the directory in which you store Oracle Forms temporary files. The default directory is `/tmp`.

Remove the `TMPDIR` environment variable if you will use `Run_Product` to run a report and will display the output in the browser window.

Using Oracle Forms

This section describes using Oracle Forms.

Starting Oracle Forms

Oracle Forms allows you to run applications created in Oracle Forms Designer.

To start the Motif mode version of Oracle Runform, enter:

```
$ f60runm filename
```

To start the debug Motif version of Oracle Runform, enter:

```
$ f60runmd filename
```

where *filename* is the name of your form. If you do not enter the name of a file, a main menu appears from which you can open a form.

See Also: The *Forms* online help and the *Forms Reference* for more information on the debug Oracle Runform and a description of available command line parameters.

To start the character mode version of Oracle Forms Runtime, enter:

```
$ f60runm filename
```

where *filename* is the name of your form.

Note: There is no debug Forms Runtime in character mode.

Starting Oracle Forms Builder

Oracle Forms Builder allows the application developer to build dynamic forms applications using graphs, reports, images, and PL/SQL programs to interpret database information. To start Oracle Builder, enter:

```
$ f60desm
```

Moving Motif Windows

Under Motif, all windows are movable. This is true even if you do not set the movable hint in the windows property sheet.

User Exits

See Chapter 12, "Creating User Exits" for information about how to create user exits in Oracle Forms.

Relinking Oracle Forms

To relink Oracle Forms Developer, enter:

```
$ cd $ORACLE_HOME/forms60/lib
$ make -f ins_forms60w.mk install
```

Configuring Oracle Reports

This chapter explains how to configure and use the character mode and Motif versions of Oracle Reports Release 6i on your AIX system.

This chapter describes:

- Finding Product Documentation
- Administering Oracle Reports
- Using Oracle Reports
- Using Oracle Express with Oracle Reports

Finding Product Documentation

For information on the general use of Oracle Reports, see the following documents:

- *Reports Enhancements Manual*
- *Building Reports Manual*
- *Reports Reference Manual*
- *Reports Messages and Codes Manual*
- *Reports Runtime Manual*
- *Reports Migration Manual*
- *Reports Documentation Addendum*

Release Notes File

The `relnoter.txt` file is located in the `$ORACLE_HOME/doc60/admin/manuals/US` directory. This file describes changes that were made too late to be included in the documentation and known product limitations.

Administering Oracle Reports

Executables

The Oracle Reports executables, listed in the Table 6–1, are installed in the `$ORACLE_HOME/bin` subdirectory.

Table 6–1 Oracle Reports Executables

Component	Executable Name
Oracle Reports Converter	<code>rwcon60</code>
Oracle Reports Runtime	<code>rwrun60</code> <code>rwrun60c</code>
Oracle Reports Builder (not available in character mode)	<code>rwbl60</code>

Note: The executable for converting reports (`rwcon60`) is available in Motif mode only. If you need to run these executables in a character mode environment, you must set the `BATCH` parameter to `YES`. See the *Reports Reference Manual* for more information on executables.

Relinking Reports

In Oracle Reports Release 6*i*, Oracle Graphics is linked into the Oracle Reports executables automatically. There is no longer an option to relink Oracle Reports without Oracle Graphics.

To relink Oracle Reports, enter:

```
$ cd $ORACLE_HOME/reports60/lib
$ make -f ins_reports60w.mk install
```

Edit Preferences

Tools Options is a menu item on the Tools menu. This menu item sets options for your Oracle Reports session. It displays the Tools Options dialog box, in which you specify, design, and run preferences.

Use `Save Preferences` to store the user preferences you defined using Tools Options. The preferences are merged with those that existed when you started Oracle Reports. They are stored in `prefs.ora` in your home directory.

Text Format File Name Extension

When a report definition is saved in text format, a `.rex` file name extension is appended to the file name. For example, if you saved the `emp.rdf` report definition in ASCII format, the file would be named `emp.rex`.

Call Interface

Using the information in the *Reports Reference Manual*, and the supplied `$ORACLE_HOME/reports60/lib/ins_reports60w.mk` makefile, you can generate executable programs that contain Oracle Reports calls. Perform the following steps:

1. Create a program that contains a call to a function in the Oracle Reports call interface, such as `rwcccon()`, `rw2con()`, `rwcmov()`, `rw2mov()`, `rwcerrb()`, `rw2rrb()`, `rwcrun()`, `rw2run()`, `rwcsrb()`, or `rw2srb()`.
2. Compile the program and generate the object code.
3. To link the call interface demonstrations for Oracle Reports, enter the following commands:

```
cd $ORACLE_HOME/reports60/lib
```

- For character mode runtime, enter:

```
$ make -f ins_reports60w.mk rwr60c
```

- For motif runtime, enter:

```
$ make -f ins_reports60w.mk rwr60
```

- For motif designer, enter:

```
$ make -f ins_reports60w.mk rwbld60
```

4. To link your own call interface executables, enter the following commands.

For character mode Runtime, enter:

```
$ make -f ins_reports60w.mk rwr60c RXOCIQA="ociobj1.o ociobj2.o..."
```

For motif Runtime, enter:

```
$ make -f ins_reports60w.mk rwr60 RXOCIQA="ociobj1.o ociobj2.o..."
```

For motif designer, enter:

```
$ make -f ins_reports60w.mk rwbld60 RXOCIQA="ociobj1.o ociobj2.o..."
```

File Name Extensions

The files you create with Reports have the following extensions:

<code>.pll</code>	a PL/SQL library
<code>.prt</code>	contains an ASCII readable report definition which cannot be executed
<code>.rdf</code>	contains a complete report definition which can be executed

.rep	contains a binary, non-editable report definition
.rex	a printer definition file

These file extensions are case-sensitive and must be specified in lowercase.

See Also: The *Reports* online help for a description of each file extension.

Online Tools for Administration

Oracle Reports is shipped with several SQL scripts with which you can quickly perform certain database administration tasks, such as adding reports tables to your database and controlling privileges.

See Also: The *Reports* online help for a complete list.

Printer Definitions

These printer and terminal definitions are used for character mode reports.

The printer definition files are in the `$ORACLE_HOME/reports60/admin/printer` directory. Table 6-2 lists the set of printer definitions that are shipped for your AIX system.

Table 6-2 *Printer Definition Files*

Definition File	Use
<code>bold.prt</code>	a generic printer file that supports bold attributes and a 66x80 page size
<code>dec.prt</code>	a generic printer file for most DEC printers; it supports 66x80 page sizes for the LN03, LPS40, LP05, and LA50 printers
<code>decl80.prt</code>	same as <code>decland.prt</code> , but supports a 66x180 page size
<code>decland.prt</code>	a generic printer file that prints in landscape mode and supports 66x132 page sizes
<code>decwide.prt</code>	same as <code>dec.prt</code> , but supports a 66x132 page size
<code>dflt.prt</code>	a generic printer file that ignores highlighting attributes and supports a 66x80 page size
<code>hpl.prt</code>	a generic printer file for the HP LaserJet printer that supports a 66x80 page size

Table 6–2 Printer Definition Files

Definition File	Use
hplwide.prt	same as hpl.prt, but supports 66x80 page sizes
no_ff.prt	a generic printer file with no formfeed between pages and supports a 66x80 page size
psl132.prt	character mode PostScript printer file that prints in landscape mode and supports a 66x132 page size
psl180.prt	character mode PostScript printer file that prints in landscape mode and supports a 66x180 page size
ps2page.prt	character mode PostScript printer file that prints two 66x80 portrait pages on one landscape page

Modifying the Tk6Motif File

Enter the following in your `Tk6Motif.rgb` file to ensure proper font sizing regardless of the display resolution setting:

```
Oracle Reports Designer*fontUseDpi: True
Oracle Reports Runtime*fontUseDpi: True
```

Setting Environment Variables

This section describes the environment variables you need to use Oracle Reports:

- LIBPATH
- ORACLE_TERM
- REPORTS60_CLASSPATH
- REPORTS60_JNI_LIB
- REPORTS60_NO_DUMMY_PRINTER
- REPORTS60_CLASSPATH
- REPORTS60_TMP
- TK60_ICON
- TK60_TERMINAL

A *directory* specifies the directory where a file resides. A *path* specifies the colon-delimited list of directories where a file can reside.

See Also: The complete list of generic environment variables in "Setting Up Environment Variables" on page 2-5.

LIBPATH

To run reports, add the following to LIBPATH:

```
$ORACLE_HOME/network/jrell/lib/aix/native_threads
```

ORACLE_TERM

To use the character mode implementation, you must set ORACLE_TERM before logging into Reports.

You can also override the ORACLE_TERM environment variable setting from the command line by entering:

```
$ rwrunc60c TERM=device
```

You can find the Reports terminal file for your UNIX-based system in the \$ORACLE_HOME/reports60/admin/terminal/US directory. The Reports terminal file you need is used with the Toolkit terminal file.

For example, if your terminal is a vt100, the rwcvt100.res Oracle Reports terminal file works together with the tk2cvt100.res. Oracle Toolkit terminal file.

Set the ORACLE_TERM environment variable to the appropriate terminal type. Table 6-3 lists the device names to which you can set the ORACLE_TERM environment variable. The terminal files are located in the reports60/admin/terminal directory.

Table 6-3 Supported Terminals for Character Mode Reports

ORACLE_TERM (Device)	Terminal	Terminal File Name
sun4	Sun Type 4 console (cmdtool)	rwcsun4.res
sun5	Sun Type 5 console (cmdtool)	rwcsun5.res
sun10	Sun Type 10 console	rwcsun10.res
vt100	vt100 (or emulator, including xterm)	rwcvt100.res

Table 6–3 Supported Terminals for Character Mode Reports

ORACLE_TERM (Device)	Terminal	Terminal File Name
vt220	vt220 (or emulator, including xterm)	rwcv220.res
xsun	Sun Type 4 xterm (xterm using SUN keyboard)	rwcxsun.res
xsun5	Sun Type 5 xterm (xterm using SUN keyboard)	rwcxsun5.res

REPORTS60_CLASSPATH

REPORTS60_CLASSPATH searches the directories in the path you specify and lists the required Java classes.

To set REPORTS60_CLASSPATH for the Bourne or Korn shell, enter:

```
export
REPORTS60_CLASSPATH=$ORACLE_HOME/network/jrell/lib/rt.jar:$ORACLE_HOME\
/reports60/java/myreports60.jar/$ORACLE_HOME/reports60/java/xmlparser.jar
```

To set REPORTS60_CLASSPATH for the C shell, enter:

```
setenv REPORTS60_CLASSPATH
$ORACLE_HOME/network/jrell/lib/rt.jar:$ORACLE_HOME\
/reports60/java/myreports60.jar/$ORACLE_HOME/reports60/java/xmlparser.jar
```

REPORTS60_JNI_LIB

REPORTS60_JNI_LIB is the location of the libjava.a library file in the Java Runtime environment.

To set REPORTS60_JNI_LIB for the Bourne or Korn shell, enter:

```
export
REPORTS60_JNI_LIB=$ORACLE_HOME/network/jrell/lib/aix/native_threads\
/libjava.a
```

To set REPORTS60_JNI_LIB for the C shell, enter:

```
setenv REPORTS60_JNI_LIB
$ORACLE_HOME/network/jrell/lib/aix/native_threads/libjava.a
```

REPORTS60_NO_DUMMY_PRINTER

To run Oracle Reports Server with a printer, do not set `REPORTS60_NO_DUMMY_PRINTER` to any value.

For the Bourne or Korn shell, to run Oracle Reports Server without setting up a printer, enter:

```
export REPORTS60_NO_DUMMY_PRINTER
```

For the C shell, to run Oracle Reports Server without setting up a printer, enter:

```
setenv REPORTS60_NO_DUMMY_PRINTER
```

REPORTS60_PATH

`REPORTS60_PATH` locates external objects that you use in your reports.

REPORTS60_TMP

`REPORTS60_TMP` establishes the directory where Oracle Reports will store Oracle Reports temporary files. The default directory is `/tmp`.

TK60_ICON

`TK60_ICON` points to the path of icons which you use in your Oracle Reports.

TK60_TERMINAL

`TK60_TERMINAL` points to the directory of the terminal definition file for the terminal type you are using.

Specifying Printers and Queues

The script `$ORACLE_HOME/reports60/admin/printer/spoolcmd.sh` is called when you send a file to the printer. By default, the script uses `lpr` to print if `/usr/ucb/lpr` has been installed on your system; otherwise, the script uses `lp`. If your printer setup is different, or if you want to always use `lp`, you may need to modify this file.

Using Oracle Reports

Starting Oracle Reports Runtime

Oracle Reports Runtime allows you to run reports created with the Oracle Reports Builder.

To start the Motif mode version of Oracle Reports Runtime, enter:

```
$ rwrun60 filename
```

where *filename* is the name of your report.

If you do not enter the name of a file, you can specify a report name and database connect string.

To start the character mode version of Oracle Reports Runtime, enter:

```
$ rwrun60c filename
```

where *filename* is the name of your report.

Starting Oracle Reports Builder

To start Oracle Reports Builder, enter:

```
$ rwbld60
```

Printing Oracle Reports

Choosing a Printer

To choose a printer from Oracle Reports:

1. Select [File]—>[Choose Printer] to display the Printer Chooser dialog box.
2. Select the printer and specify any other desired options by choosing [File]—>[Page Setup].

Your specifications override any DESNAME parameter used when invoking reports from the command line.

See Also: "Setting Printer Configuration Files" on page 4-2.

Sending Oracle Reports to Printers

Before printing your report, you should select the appropriate printer and any applicable options.

To send reports to a printer:

1. [Choose File]—>[Run].
The Runtime Parameter Form is displayed.
2. Set the DESTYPE to Printer.
3. Choose [Run Report].
The Print dialog box is displayed.
4. Specify the print range and the number of copies.
5. Select *OK*.

Note: No bit-mapped printer definition files are shipped with Reports. Printer definition files are used with character-mode reports only.

Sending Oracle Reports to Files

Before printing your reports to a file, you should select the appropriate printer driver and any applicable options.

To print to a file, complete the steps below:

1. Select the applicable printer driver via [File]—>[Print Setup].
2. Select [File]—>[Run] or [File]—>[Print].
The Runtime Parameter Form is displayed.
3. Select [File] for DESTYPE.
4. Specify the complete path and file name in the DESNAME field.
5. Select [Run Report].

If you do not specify a value for DESNAME, Oracle Reports uses the default name *report_name.LIS*. If you do not specify a directory path, Oracle Reports saves the report output to the current directory.

The Print dialog box is displayed with Print to File checked.

6. Select [OK].

Sending Oracle Reports through Mail

To send reports through mail:

1. Select [Mail] from the Destination Type pop-up menu.
2. Enter the user ID of the recipient in the text field.
3. Select [Run Report].

The default mail type is UNIX mail. You can send reports through a different mail system, such as Oracle InterOffice, by editing the `r60mail.sh` file, located in `$ORACLE_HOME/reports60/admin/mail`. The `r60mail.sh` file provides instructions and examples of how to set up Oracle Reports to send reports through different mail systems.

Creating ASCII Output

You can print reports to an ASCII file or a non-PostScript printer.

To create ASCII output, complete the following steps:

1. If `MODE=CHARACTER` for the report, go to Step 5.
2. Select [File]—>[Choose Printer] to display the Printer Chooser dialog box.
3. Select the Reports ASCII Driver.
4. Select [OK].
5. Select [File]—>[Print].

To print to a file, perform the following steps:

1. Change the `DESTYPE` to [File].
2. Specify the name of the ASCII file in the `DESNAME` field.
3. Select [Run Report].

Note: To send the report output directly to the printer, go to the Printers dialog in the File menu. Select the Reports ASCII Driver, then select [Connect]. Select the printer port for your machine and accept the dialogs. When running the report, change the `DESTYPE` to [Printer] and select [Run Report]. Then, select [OK] from the Print dialog box.

Motif Compliance

All menu elements in the GUI mode version of Oracle Reports are Motif-compliant on all UNIX-based systems.

Escape to Host

To specify the UNIX shell which is used when using the Escaping to a Host prompt, make certain your UNIX SHELL environment variable is set to the name of the appropriate shell command interpreter.

To set SHELL for the Bourne shell, enter:

```
$ SHELL=/bin/sh
$ export SHELL
```

To set SHELL for the C shell, enter:

```
% setenv SHELL /bin/csh
```

User Exits

See Chapter 12, "Creating User Exits" for information about creating user exits in Oracle Reports.

Using Oracle Express with Oracle Reports

This section describes how to integrate Oracle Express with Oracle Reports. The section describes the following topics:

- Configuring Reports for Oracle Express
- Specifying a Buffer Size
- Specifying a Character Set
- Specifying Number Ranges
- Processing Indents in Hierarchical Data

Configuring Reports for Oracle Express

To create reports against Oracle Express Server, configure your system as follows:

- On the server, install an Oracle8 Server with the necessary PL/SQL packages.

- On the client, install the Reports Express Support component and the Oracle Express Connection Editor.

The system requirements to run reports against Oracle Express are the following:

- Oracle Express Server Release 6.2 or later on any supported platform
- Oracle8 Release 8.0.6 on a UNIX platform
- Reports Release 6i

Note: For individual product requirements, see the Oracle Express Server and Oracle8 installation information for your platform. If Oracle8 is running on a different platform, you may need to download the reports Oracle Express component from the Oracle Technology Network at <http://technet.oracle.com/products/reports/>. Creating reports that use Oracle Express data is supported only on Windows 95, Windows 98, and Windows NT.

Oracle Corporation recommends that you use only Oracle Express databases that have been configured with Oracle Express Administrator. See the *Oracle Express Database Administration Guide* for information about configuring databases with Oracle Express Administrator.

You cannot access an Oracle Express database (.DB) file that requires a password from Reports.

Personal Express is not supported by Reports in this release.

Perform the following steps to configure the server side:

1. Install Oracle8 Server Release 8.0.6 as described in the Oracle8 installation guide for your platform.
2. Install Oracle Reports Express.
 - a. Insert the CD that contains Oracle Reports.
 - b. Start the Oracle Installer.

The `Installation Type` dialog box appears.
 - c. Select `Default Install`.
 - d. Click `OK`.

The Software Asset Manager dialog box appears.

- e. Select Oracle Reports Express Support.
 - f. Click Install.
3. Configure SNAPI on the system running Oracle8 Server Release 8.0.6 to set up a connection to the Oracle Express Server. See the Oracle Express Server documentation for information about configuring SNAPI.
 4. Create an Oracle Express Support administrator account.

Only one Oracle Express Support administrator account is required for each Oracle8 instance. If the account and the required schema objects already exist, skip this step and go to Step 5.

- a. Log into SQL*Plus as the SYSTEM user and create and grant the administrator account CREATE LIBRARY, CREATE PUBLIC SYNONYM, and CREATE SEQUENCE privileges.

For example, if the administrator was named `expadmin`, the following commands would set up the necessary privileges:

```
SQL> create user expadmin identified by expadmin default tablespace
user_data temporary tablespace temporary_data quota unlimited on
user_data quota unlimited on temporary_data;
SQL> grant connect,resource to expadmin;
SQL> grant create library, create public synonym, create sequence to
expadmin;
```

- b. Log into SQL*Plus as the administrator (for example, `expadmin`) and run the SQL script that installs the administrator schema objects:

```
SQL> @ ORACLE_HOME/olap/xrb60/xrb_admin.sql;
```

5. Prepare user accounts with Express Support schema objects.

Create Express Support schema objects for any schema that uses Express Support. Using existing Express Support schema objects installed on another schema is not supported.

- a. If you do not have a user account, create one.
- b. Log on to SQL*Plus as the SYSTEM user and grant the user account CREATE TYPE and CREATE PROCEDURE privileges. For example, if the user was named `expuser`, the following command sets up the necessary privileges:

```
SQL> grant create type, create procedure to expuser;
```

- c. Log on to SQL*Plus as the user and run the SQL script that installs the Express Support schema objects by entering:

```
SQL> @ ORACLE_HOME/olap/xrb60/xrb_user.sql;
```

6. Define runtime parameter requirements.

If you are deploying a report built against Oracle Express with Oracle Reports (for example, for running on the Web), the following runtime parameter is required in addition to the user ID, server, and desformat parameters that you would also specify:

```
express_server="server=ncacn_ip_tcp:my_express_server/s1=1/st=1/ct=0/sv=1/"
```

where `my_express_server` is the host name of the computer running Oracle Express Server.

Specifying a Buffer Size

When you create a report that contains Oracle Express data, the data is fetched from Oracle Express and stored in a memory buffer before it is displayed. The default buffer size is generally sufficient. If you generate many small reports, reduce the buffer size. If you generate very large reports, increase the size. However, when specifying the buffer size, make sure it fits the needs of all the users who are accessing Oracle Express data. The size should be large enough to allow users to fetch the data for their reports while ensuring that the server has sufficient memory.

Typical buffer sizes are:

- 64 KB

This value is the minimum buffer size. If you specify a smaller size, the buffer will have a size of 64 KB.

- 2 MB

This value is the default buffer size. If you do not specify a different size, the buffer will have a size of 2 MB.

- 50 MB

This value is the maximum buffer size. If you specify a larger size, the buffer will have a size of 50 MB. Ensure that the Oracle8 server has a very large amount of memory before specifying a large buffer size.

To specify the buffer size, perform the following steps:

1. On the computer on which Oracle Reports is running, look for the `$_ORACLE_HOME/bin/xrb.ini` file.
2. If the file does not exist, use a text editor to create `xrb.ini`.
3. In a text editor, scroll to the `[Options]` section of the file, or create this section label if it does not exist.
4. Edit the value of the `FetchAlloc` setting if it exists; otherwise, create the setting. Enter an integer value, such as 100000 or 6000000.
5. Save your changes and close the file.

Following is an example that sets the buffer size to 4 MB:

```
[Options]
FetchAlloc = 4000000
```

Specifying a Character Set

If you have changed the default single-byte character set in Oracle Express, you must create or modify the `xrb.ini` file for Oracle Reports Developer so it can handle data from the Oracle Express database. The `xrb.ini` file is used to specify information about the character set that the database is using.

To specify the character set, perform the following steps:

1. On the computer on which Oracle Reports is running, look for the `$_ORACLE_HOME/bin/xrb.ini` file.
2. If the file does not exist, use a text editor to create `xrb.ini`.
3. In a text editor, scroll to the `[XPCharSet]` section of the file, or create this section label if it does not exist.
4. Edit the value of the `XPCharSet` setting if it exists; otherwise, create the setting. Use the following format for the value:

```
language_territory.charset
```

where:

language is a language specified in Table 6-4 on page 6-18

territory is a territory specified in Table 6-5 on page 6-20

`charset` is a storage character set specified in Table 6–6 on page 6-22

5. Save your changes and close the file.

Following is an example of setting the character set:

```
[XPCharSet]
XPCharSet = AMERICAN_AMERICA.US8PC437
```

Specifying a Language

Table 6–4 lists the values to enter for `language` in the `XPCharSet` setting. If the value has more than one word, include a space between each word, as shown in the following example:

```
[XPCharSet]
XPCharSet = BRAZILIAN PORTUGUESE_BRAZIL.WE8PC850
```

Table 6–4 Language Values

Language

AMERICAN
ARABIC
BENGALI
BRAZILIAN PORTUGUESE
BULGARIAN
CANADIAN FRENCH
CATALAN
CROATION
CZECH
DANISH
DUTCH
EGYPTIAN
ENGLISH
ESTONIAN
FINNISH

Table 6–4 Language Values**Language**

FRENCH

GERMAN

GERMAN DIN

GREEK

HEBREW

HUNGARIAN

ICELANDIC

ITALIAN

JAPANESE

KOREAN

LATIN AMERICAN SPANISH

LATVIAN

LITHUANIAN

MALAY

MEXICAN SPANISH

NORWEGIAN

POLISH

PORTUGUESE

ROMANIAN

RUSSIAN

SIMPLIFIED CHINESE

SLOVAK

SLOVENIAN

SPANISH

SWEDISH

THAI

TRADITIONAL CHINESE

Table 6–4 Language Values

Language
TURKISH
UKRAINIAN
VIETNAMESE

Selecting a Territory

Table 6–5 lists the values to enter for `territory` in the `XPCharSet` setting.

Table 6–5 Territory Values

Territory
ALGERIA
AMERICA
AUSTRIA
BAHRAIN
BANGLADESH
BRAZIL
BULGARIA
CANADA
CATALONIA
CHINA
CIS
CROATIA
CZECH REPUBLIC
CZECHOSLOVAKIA
DENMARK
DJIBOUTI
EGYPT
ESTONIA
FINLAND

Table 6–5 Territory Values**Territory**

FRANCE

GERMANY

GREECE

HONG KONG

HUNGARY

ICELAND

IRAQ

ISRAEL

ITALY

JAPAN

JORDAN

KOREA

KUWAIT

LATVIA

LEBANON

LIBYA

LITHUANIA

MALAYSIA

MAURITANIA

MEXICO

MOROCCO

NORWAY

OMAN

POLAND

PORTUGAL

QATAR

ROMANIA

Table 6–5 Territory Values

Territory
SAUDI ARABIA
SLOVAKIA
SLOVENIA
SOMALIA
SPAIN
SUDAN
SWEDEN
SWITZERLAND
SYRIA
TAIWAN
THAILAND
THE NETHERLANDS
TUNISIA
TURKEY
UKRAINE
UNITED ARAB EMIRATES
UNITED KINGDOM
VIETNAM
YEMEN

Selecting a Storage Character Set

Table 6–6 lists the values to enter for `charset` in the `XPCharSet` setting. The value is specified in the `Name` column.

Table 6–6 Storage Character Set Values

ID	Name	Description
1	US7ASCII	ASCII 7-bit American
2	WE8DEC	DEC 8-bit West European

Table 6–6 Storage Character Set Values

ID	Name	Description
3	WE8HP	HP LaserJet 8-bit West European
4	US8PC437	IBM-PC Code Page 437 8-bit American
5	WE8EBCDIC37	EDCDIC Code Page 37 8-bit West European
6	WE8EBCDIC500	EDCDIC Code Page 500 8-bit West European
8	WE8EBCDIC285	EDCDIC Code Page 285 8-bit West European
10	WE8PC850	IBM-PC Code Page 850 8-bit West European
11	D7DEC	DEC VT100 7-bit German
12	F7DEC	DEC VT100 7-bit French
13	S7DEC	DEC VT100 7-bit Swedish
14	E7DEC	DEC VT100 7-bit Spanish
15	SF7ASCII	ASCII 7-bit Finnish
16	NDK7DEC	DEC VT100 7-bit Norwegian/Danish
17	I7DEC	DEC VT100 7-bit Italian
18	NL7DEC	DEC VT100 7-bit Dutch
19	CH7DEC	DEC VT100 7-bit Swiss (German/French)
20	YUG7ASCII	ASCII 7-bit Yugoslavian
21	SF7DEC	DEC VT100 7-bit Finnish
22	TR7DEC	DEC VT100 7-bit Turkish
23	IW7IS960	Israeli Standard 960 7-bit Latin/Hebrew
25	IN8ISCII	Multiple-Script Indian Standard 8-bit Latin/Indian Languages
31	WE8ISO8859P1	ISO 8859-1 West European
32	EE8ISO8859P2	ISO 8859-2 East European
33	SE8ISO8859P3	ISO 8859-3 South European
34	NEE8ISO8859P4	ISO 8859-4 North and North-East European
35	CL8ISO8859P5	ISO 8859-5 Latin/Cyrillic
36	AR8ISO8859P6	ISO 8859-6 Latin/Arabic

Table 6–6 Storage Character Set Values

ID	Name	Description
37	EL8ISO8859P7	ISO 8859-7 Latin/Greek
38	IW8ISO8859P8	ISO 8859-8 Latin/Hebrew
39	WE8ISO8859P9	ISO 8859-9 West European & Turkish
40	NE8ISO8859P10	ISO 8859-10 North European
41	TH8TISASCII	Thai Industrial Standard 620-2533 - ASCII 8-bit
42	TH8TISEBCDIC	Thai Industrial Standard 620-2533 - EBCDIC 8-bit
43	BN8BSCII	Bangladesh National Code 8-bit BSCII
44	VN8VN3	VN3 8-bit Vietnamese
50	WE8NEXTSTEP	NeXTSTEP PostScript 8-bit West European
70	AR8EBCDICX	EBCDIC X BASIC Server 8-bit Latin/Arabic
81	EL8DEC	DEC 8-bit Latin/Greek
82	TR8DEC	DEC 8-bit Turkish
90	WE8EBCDIC37C	EBCDIC Code Page 37 8-bit Oracle/c
91	WE8EBCDIC500C	EBCDIC Code Page 500 8-bit Oracle/c
92	IW8EBCDIC424	EBCDIC Code Page 424 8-bit Latin/Hebrew
93	TR8EBCDIC1026	EBCDIC Code Page 1026 8-bit Turkish
94	WE8EBCDIC871	EBCDIC Code Page 871 8-bit Icelandic
95	WE8EBCDIC284	EBCDIC Code Page 284 8-bit Latin American/Spanish
110	EEC8EUROASCII	EEC Targon 35 ASCII West European/Greek
113	EEC8EUROPA3	EEC EUROPA3 8-bit West European/Greek
114	LA8PASSPORT	German Government Printer 8-bit All-European Latin
140	BG8PC437S	IBM PC Code Page 437 8-bit (Bulgarian Modification)
150	EE8PC852	IBM PC Code Page 852 8-bit East European
152	RU8PC866	IBM PC Code Page 866 8-bit Latin/Cyrillic
153	RU8BESTA	BESTA 8-bit Latin/Cyrillic
154	IW8PC1507	IBM PC Code Page 1507/862 8-bit Latin/Hebrew
155	RU8PC855	IBM PC Code Page 855 8-bit Latin/Cyrillic

Table 6–6 Storage Character Set Values

ID	Name	Description
156	TR8PC857	IBM PC Code Page 857 8-bit Turkish
158	CL8MACCYRILLIC	Mac Client 8-bit Latin/Cyrillic
159	CL8MACCYRILLICS	Mac Server 8-bit Latin/Cyrillic
160	WE8PC860	IBM PC Code Page 860 8-bit West European
161	IS8PC861	IBM PC Code Page 861 8-bit Icelandic
162	EE8MACCES	Mac Server 8-bit Central European
163	EE8MACCROATIANS	Mac Server 8-bit Croatian
164	TR8MACTURKISHS	Mac Server 8-bit Turkish
165	IS8MACICELANDICS	Mac Server 8-bit Icelandic
166	EL8MACGREEKS	Mac Server 8-bit Greek
167	IW8MACHEBREWS	Mac Server 8-bit Hebrew
170	EE8MSWIN1250	MS Windows Code Page 1250 8-bit East European
171	CL8MSWIN1251	MS Windows Code Page 1251 8-bit Latin/Cyrillic
172	ET8MSWIN923	MS Windows Code Page 923 8-bit Estonian
173	BG8MSWIN	MS Windows 8-bit Bulgarian Cyrillic
174	EL8MSWIN1253	MS Windows Code Page 1253 8-bit Latin/Greek
175	IW8MSWIN1255	MS Windows Code Page 1255 8-bit Latin/Hebrew
176	LT8MSWIN921	MS Windows Code Page 921 8-bit Lithuanian
177	TR8MSWIN1254	MS Windows Code Page 1254 8-bit Turkish
178	WE8MSWIN1252	MS Windows Code Page 1252 8-bit West European
179	BLT8MSWIN1257	MS Windows Code Page 1257 8-bit Baltic
180	D8EBCDIC273	EBCDIC Code Page 273/1 8-bit Austrian German
181	I8EBCDIC280	EBCDIC Code Page 280/1 8-bit Italian
182	DK8EBCDIC277	EBCDIC Code Page 277/1 8-bit Danish
183	S8EBCDIC278	EBCDIC Code Page 278/1 8-bit Swedish
184	EE8EBCDIC870	EBCDIC Code Page 870 8-bit East European
185	CL8EBCDIC1025	EBCDIC Code Page 1025 8-bit Cyrillic

Table 6–6 Storage Character Set Values

ID	Name	Description
186	F8EBCDIC297	EBCDIC Code Page 297 8-bit French
187	IW8EBCDIC1086	EBCDIC Code Page 1086 8-bit Hebrew
188	CL8EBCDIC1025X	EBCDIC Code Page 1025 (Modified) 8-bit Cyrillic
190	N8PC865	IBM-PC Code Page 865 8-bit Norwegian
191	BLT8CP921	Latvian Standard LVS8-92(1) Windows/Unix 8-bit Baltic
192	LV8PC1117	IBM-PC Code Page 1117 8-bit Latvian
193	LV8PC8LR	Latvian Version IBM-PC Code Page 866 8-bit Latin/Cyrillic
194	BLT8EBCDIC1112	EBCDIC Code Page 1112 8-bit Baltic Multilingual
195	LV8RST104090	IBM-PC Alternative Code Page 8-bit Latvian (Latin/Cyrillic)
196	CL8KOI8R	RELCOM Internet Standard 8-bit Latin/Cyrillic
197	BLT8PC775	IBM-PC code Page 775 8-bit Baltic
201	F7SIEMENS9780X	Siemens 97801/97808 7-bit French
202	E7SIEMENS9780X	Siemens 97801/97808 7-bit Spanish
203	S7SIEMENS9780X	Siemens 97801/97808 7-bit Swedish
204	DK7SIEMENS9780X	Siemens 97801/97808 7-bit Danish
205	N7SIEMENS9780X	Siemens 97801/97808 7-bit Norwegian
206	I7SIEMENS9780X	Siemens 97801/97808 7-bit Italian
207	D7SIEMENS9780X	Siemens 97801/97808 7-bit German
210	WE8GCOS7	Bull EBCDIC GCOS7 8-bit West European
211	EL8GCOS7	Bull EBCDIC GCOS7 8-bit Greek
221	US8BS2000	Siemens 9750-62 EBCDIC 8-bit American
222	D8BS2000	Siemens 9750-62 EBCDIC 8-bit German
223	F8BS2000	Siemens 9750-62 EBCDIC 8-bit French
224	E8BS2000	Siemens 9750-62 EBCDIC 8-bit Spanish
225	DK8BS2000	Siemens 9750-62 EBCDIC 8-bit Danish
231	WE8BS2000	Siemens EBCDIC.DF.04 8-bit West European

Table 6–6 Storage Character Set Values

ID	Name	Description
235	CL8BS2000	Siemens EBCDIC.EHC.LC 8-bit Cyrillic
239	WE8BS2000L5	Siemens EBCDIC.DF.04.L5 8-bit West European/Turkish
241	WE8DG	DG 8-bit West European
251	WE8NCR4970	NCR 4970 8-bit West European
261	WE8ROMAN8	HP Roman8 8-bit West European
262	EE8MACCE	Mac Client 8-bit Central European
263	EE8MACCROATIAN	Mac Client 8-bit Croatian
264	TR8MACTURKISH	Mac Client 8-bit Turkish
265	IS8MACICELANDIC	Mac Client 8-bit Icelandic
266	EL8MACGREEK	Mac Client 8-bit Greek
267	IW8MACHEBREW	Mac Client 8-bit Hebrew
277	US8ICL	ICL EBCDIC 8-bit American
278	WE8ICL	ICL EBCDIC 8-bit West European
279	WE8ISOICLUK	ICL special version ISO8859-1
351	WE8MACROMAN8	Mac Client 8-bit Extended Roman8 West European
352	WE8MACROMAN8S	Mac Server 8-bit Extended Roman8 West European
353	TH8MACTHAI	Mac Client 8-bit Latin/Thai
354	TH8MACTHAIS	Mac Server 8-bit Latin/Thai
368	HU8CWI2	Hungarian 8-bit CWI-2
380	EL8PC437S	IBM-PC Code Page 437 8-bit (Greek modification)
381	EL8EBCDIC875	EBCDIC Code Page 875 8-bit Greek
382	EL8PC737	IBM-PC Code Page 737 8-bit Greek/Latin
383	LT8PC772	IBM-PC Code Page 772 8-bit Lithuanian (Latin/Cyrillic)
384	LT8PC774	IBM-PC Code Page 774 8-bit Lithuanian (Latin)
385	EL8PC869	IBM-PC Code Page 869 8-bit Greek/Latin
386	EL8PC851	IBM-PC Code Page 851 8-bit Greek/Latin
390	CDN8PC863	IBM-PC Code Page 863 8-bit Canadian French

Table 6–6 Storage Character Set Values

ID	Name	Description
401	HU8ABMOD	Hungarian 8-bit Special AB Mod
500	AR8ASMO8X	ASMO Extended 708 8-bit Latin/Arabic
554	AR8NAFITHA711	Nafitha Enhanced 711 Server 8-bit Latin/Arabic
555	AR8SAKHR707	SAKHR 707 Server 8-bit Latin/Arabic
556	AR8MUSSAD768	Mussa'd Alarabi/2 768 Server 8-bit Latin/Arabic
557	AR8ADOS710	Arabic MS-DOS 710 Server 8-bit Latin/Arabic
558	AR8ADOS720	Arabic MS-DOS 720 Server 8-bit Latin/Arabic
559	AR8APTEC715	APTEC 715 Server 8-bit Latin/Arabic
560	AR8MSAWIN	MS Windows Code Page 1256 8-Bit Latin/Arabic
560	AR8MSWIN1256	MS Windows Code Page 1256 8-Bit Latin/Arabic
561	AR8NAFITHA721	Nafitha International 721 Server 8-bit Latin/Arabic
563	AR8SAKHR706	SAKHR 706 Server 8-bit Latin/Arabic
565	AR8ARABICMAC	Mac Client 8-bit Latin/Arabic
566	AR8ARABICMACS	Mac Server 8-bit Latin/Arabic
590	LA8ISO6937	ISO 6937 8-bit Coded Character Set for Text Communication
797	US8NOOP	No-op character set prohibiting conversions
829	JA16VMS	JVMS 16-bit Japanese
830	JA16EUC	EUC 16-bit Japanese
832	JA16SJIS	Shift-JIS 16-bit Japanese
833	JA16DBCS	IBM DBCS 16-bit Japanese
835	JA16EBCDIC930	IBM DBCS Code Page 290 16-bit Japanese
836	JA16MACSJIS	Mac client Shift-JIS 16-bit Japanese
840	KO16KSC5601	KSC5601 16-bit Korean
842	KO16DBCS	IBM DBCS 16-bit Korean
845	KO16KSCCS	KSCCS 16-bit Korean
850	ZHS16CGB231280	CGB2313-80 16-bit Simplified Chinese
851	ZHS16MACCGB231280	Mac client CGB2313-80 16-bit Simplified Chinese

To specify a setting for rounding, perform the following steps:

1. On the computer on which Oracle Reports is running, look for the `$ORACLE_HOME/bin/xrb.ini` file.
2. If the file does not exist, use a text editor to create `xrb.ini`.
3. With a text editor, scroll to the `[Options]` section of the file, or create this section label if it does not exist.
4. Edit the value of the `ZeroSmallNumbers` setting if it exists; otherwise, create the setting. Specify one of the following values:

Value	Description
0	displays an error message rather than displaying very small numbers in reports
1	rounds very small numbers up to zero and displays them in reports (Default)

5. Save your changes and close the file.

Following is an example of a rounding setting:

```
[Options]
ZeroSmallNumbers = 0
```

Processing Indents in Hierarchical Data

Oracle Express data may be stored in hierarchies, or levels. By default, hierarchies appear in reports with indents of two single-byte spaces. You may change the type of characters used to fill indents and the size of indents between levels of data by editing the `xpdata.ini` file by performing the following steps:

1. On the computer on which Oracle Reports is running, look for the `$ORACLE_HOME/bin/xpdata.ini` file.
2. If the file does not exist, use a text editor to create `xpdata.ini`.
3. Scroll to `HierChar=`. This setting is located in the `XRU` section of the file.

`HierChar=` defines the indent character as a single-byte space. You may edit this setting for any keystroke character, such as asterisk (*) or dash (-). When editing, use quotation marks around the characters you select, for example:

```
HierChar="*"
```

4. Scroll to `HierIndent=2`.

This setting may be any integer from 0 though 10. A value of 0 turns off indenting. Values of 1 through 10 specify the number of single-byte characters to include in the indent. The default setting is 2.

5. Save your changes and close the file.

For example, you might enter the following settings in the `xpdata.ini` file:

```
HierChar="+ "  
HierIndent=4
```

Following is an example of a report generated using these settings:

```
Great Britain  
+ + + England  
+ + + + + London  
+ + + + + Salisbury  
+ + + Scotland  
+ + + + + Edinburgh  
+ + + + + Glasgow  
United States  
+ + + California  
+ + + + + Los Angeles  
+ + + + + San Francisco  
+ + + + + San Jose  
+ + + Pennsylvania  
+ + + + + Philadelphia  
+ + + + + Pittsburgh
```

Configuring Oracle Graphics

This chapter explains how to configure and use the Motif and character mode versions of Oracle Graphics Release 6i on your AIX system.

This chapter describes:

- Finding Product Documentation
- Administering Oracle Graphics
- Using Oracle Graphics

Finding Product Documentation

The information in this chapter supplements the information provided in:

- Graphics Online Help
- *Graphics Reference*

Online Help

Online help is available from the Help menu when running executables.

Administering Oracle Graphics

The following sections describe using executable files and editing preferences.

Using Executable Files

Table 7-1 lists the Oracle Graphics executables. The executables are installed in the `$ORACLE_HOME/bin` subdirectory.

Table 7-1 Oracle Graphics Executables

Component	Executable Name
Oracle Graphics Designer	g60desm
Oracle Graphics Runtime	g60runm
Oracle Graphics Batch	g60batm

If the `g60batm` executable fails, make sure that:

- The `uiprint.txt` file located in `$ORACLE_HOME/guicommon6/tk60/admin/` contains a valid printer entry or the `PRINTER` environment variable is set to a valid printer.
- If either `/dev/audio` or `/dev/audioctl` are present, these files are writable.

Note: Oracle Graphics attempts to initialize sound system at startup (including batch).

Editing Preferences

Tools Option is a selection on the Tools menu that sets options for your Oracle Graphics session. It displays the Tools Option dialog box, in which you specify Oracle Graphics Designtime and Oracle Graphics Runtime preferences.

Using Oracle Graphics

The following sections describe setting environment variables, starting Oracle Graphics Runtime, starting Oracle Graphics Designer, creating user edits, and relinking Oracle Graphics.

Setting Environment Variables

This section describes the environment variables you need to use Oracle Graphics:

- GRAPHICS60_PATH
- ORACLE_PATH
- SQLLIB_PATH

A *path* specifies the colon-delimited list of directories where your Oracle Graphics applications reside.

GRAPHICS60_PATH

GRAPHICS60_PATH specifies where Oracle Graphics searches for .ogd files, PL/SQL libraries (.p11 files), SQL queries (.sql files), and imported files.

ORACLE_PATH

ORACLE_PATH specifies where Oracle tools search for files.

SQLLIB_PATH

SQLLIB_PATH specifies the path for PL/SQL libraries.

Starting Oracle Graphics Runtime

Oracle Graphics Runtime allows you to run applications created in the designer. To start Oracle Graphics Runtime, enter:

```
$ g60runm filename userid/password
```

where *filename* is the name of your application.

If you do not enter the name of a file, a main menu appears from which you can select an application or file.

Starting Oracle Graphics Designer

Oracle Graphics Designer allows the application developer to build dynamic graphical displays using charts, graphics, images, sounds, and PL/SQL programs to interpret database information.

To start Oracle Graphics Designer, enter:

```
$ g60desm
```

Creating User Exits

See Chapter 12, "Creating User Exits" for information about how to create user exits in Oracle Graphics.

Relinking Oracle Graphics

To relink Oracle Graphics, enter:

```
$ cd $ORACLE_HOME/graphics60/lib  
$ make -f ins_graphics60w.mk install
```

Configuring Oracle Procedure Builder

This chapter explains how to configure Oracle Procedure Builder Release 6*i* on your AIX system.

This chapter describes:

- Finding Product Documentation
- Administering Oracle Procedure Builder
- Using Oracle Procedure Builder

Finding Product Documentation

The information in this chapter supplements the information provided in the Oracle Procedure Builder online help.

Administering Oracle Procedure Builder

The following sections describe using the executable and setting a UNIX environment variable.

Using the Executable

Table 8–1 lists the Oracle Procedure Builder executable. The executable is in the `$ORACLE_HOME/bin` subdirectory.

Table 8–1 Oracle Procedure Builder Executable

Component	Executable Name
Oracle Procedure Runtime	de60desm

Setting a UNIX Environment Variable

ORAPLSQLLOADPATH

The `ORAPLSQLLOADPATH` environment variable specifies the path to PL/SQL files used by Oracle Procedure Developer. The path is a colon-delimited list of directories.

Using Oracle Procedure Builder

The following sections describe starting Oracle Procedure Builder Runtime and relinking Oracle Procedure Builder.

Starting Oracle Procedure Builder Runtime

To start the Motif mode version of Oracle Procedure Builder Runtime, enter:

```
$ de60desm filename
```

To start the line mode version of Oracle Procedure Builder Runtime, enter:

```
$ de60desm filename mode=line
```

Relinking Oracle Procedure Builder

To relink Oracle Procedure Builder, enter:

```
$ cd $ORACLE_HOME/procbuilder60/lib  
$ make -f ins_procbuilder.mk install
```

Configuring Oracle Browser

This chapter explains how to configure Oracle Browser Release 6i on your AIX system.

This chapter describes:

- Finding Product Documentation
- Installing the Oracle Browser Client
- Installing Oracle Browser Database Tables

Note: Oracle Browser is a graphical client, and only runs on AIX under the Motif graphical user interface.

Finding Product Documentation

The information provided in this chapter supplements the following Oracle Browser Release 6*i* documentation:

- *Browser User's Guide*
- *Browser Reference Manual*
- *Browser System Administrator's Guide*

Online Help and Documentation

Online Help is available from the Help menu when running executables.

Installing the Oracle Browser Client

The following sections describe using the executable files and using default font and color.

Using Executable Files

Table 9-1 lists the Oracle Browser executables. The executables are in the `$ORACLE_HOME/bin` subdirectory.

Table 9-1 Oracle Browser Executables

Component	Executable Name
Oracle Query Builder	obe60
Oracle Schema Builder	obs60

Using Default Font and Color

Oracle Browser uses the standard OSF/Motif Toolkit2 conventions for font and color. See Appendix A, "Configuring Toolkit Resources", for information about font and color.

Installing Oracle Browser Database Tables

This section describes installing upgrade scripts, building demonstration tables, and dropping demonstration tables.

Running the SQL Upgrade and Installation Scripts Manually

Note: Before running any scripts, particularly the End User Layer (EUL) scripts, make sure the working directory is set to `$ORACLE_HOME/browser60`.

As the SYSTEM user, you can run the following Oracle Browser SQL scripts on the server:

<code>brwupg60.sql</code>	upgrades Oracle Browser 2.5 system file tables to Oracle Browser 6.0
<code>brwins60.sql</code>	creates the tables that enable you to save queries in the database
<code>brwdr60.sql</code>	drops the Query Builder tables

Which script you run depends on whether you are upgrading from Oracle Browser 2.5 or intend to use the Query and Schema Builders.

Note: If you are upgrading from Oracle Browser 2.5, run the `brwupg60.sql` script instead of running the `brwins60.sql` script.

Upgrading from Oracle Browser 2.5 to 6i

Run the `brwupg60.sql` script, located in the `$ORACLE_HOME/browser60/admin/sql` directory, to upgrade from Oracle Browser 2.5 to 6i. It creates the `BROWSER_DOCS_SQL` table and other new Oracle Browser 6i tables. It does not change the `BROWSER_DOCS` table.

Run this script if you are upgrading from Oracle Browser 2.5 to 6i. Oracle Browser 6i can read Oracle Browser 2.5 queries regardless of whether you run this scrip. The script builds the tables that enable you to save queries in the database.

Allowing Users to Save Queries in the Database

Run the `brwins60.sql` script as the SYSTEM user to create the tables to save queries in the database. There are two main tables: `BROWSER_DOCS_`, which

stores all the information about a query, and `BROWSER_GRANTS_`, which stores security information (privileges).

Attention: If you are upgrading from Oracle Browser 2.5, run the `brwupg60.sql` script instead of running the `brwins60.sql` script.

Run this script only if you plan to allow users to save queries to the database. This script does not effect any other Oracle Browser functions.

If you allow users to save queries to the database, these queries can be made available to other users. Oracle Browser creates a view based on any query saved in the database, which can be queried just like a table. For detailed information, see *Performing Administration Tasks* section in Chapter 1 of the *Browser System Administrator's Guide*.

Building Demonstration Tables Manually

If you used the Installer to install the demonstration tables automatically, skip this section.

The tutorial in the *Browser User's Guide* uses sample data that resides in your Oracle8 Server database. Depending on your system, the syntax may vary slightly from that described here.

You only need to build the demonstration tables once.

If you did not build the demonstration tables, perform the following steps to build the demonstration tables manually:

1. Create a new account in the database with the `browser` username and the `browser` password.
2. Build the sample tables using the `brwbld60.sql` script. Enter the following commands at the system prompt:

```
$ cd $ORACLE_HOME/browser60/demo
$ sqlplus browser/browser @brwbld60.sql
```

where `browser` is the user name and also the password. Do not try to use a different user name or password. If you are a remote user, append your network connect string to the `browser` user name.

Dropping Demonstration Tables

To drop the demonstration tables, use the `brwdr60.sql` script. Enter the following at the system prompt:

```
$ cd $ORACLE_HOME/browser60/demo  
$ sqlplus browser/browser @brwdr60.sql
```

Configuring Oracle Project Builder

This chapter explains how to configure Oracle Project Builder Release 6i on your AIX system.

This chapter describes:

- Finding Product Documentation
- Administering Oracle Project Builder
- Using Oracle Project Builder

Finding Product Documentation

The information in this chapter supplements the information provided in “Oracle Forms Developer and Reports Developer Guidelines for Building Applications”, at `$ORACLE_HOME/doc60/admin/manuals/US/guide60/atgtoc.htm`.

Administering Oracle Project Builder

The following sections describe finding the executable and setting up a UNIX environment variable.

Finding the Executable

Table 10–1 lists the Oracle Project Builder executable. The executable is in the `$ORACLE_HOME/bin` subdirectory.

Table 10–1 Project Builder Executable

Component	Executable Name
Project Builder User Interface	<code>pj60</code>

Setting a UNIX Environment Variable

The UNIX SHELL environment variable sets the default UNIX shell.

You can define their own environment variables and use them in PJ macros. For example, enter:

```
"lpr -P {Printers} {n}"
```

This statement prints a file to the printer defined by the PRINTER environment variable.

Using Oracle Project Builder

The following sections describe starting the Oracle Project Builder user interface and relinking the Oracle Project Builder.

Starting Oracle Project Builder User Interface

To start the Oracle Project Builder user interface, enter:

```
$ pj60 filename
```

Relinking Oracle Project Builder

To relink Oracle Project Builder with the Oracle Forms Developer and Reports Developer Client/Server release, enter:

```
$ cd $ORACLE_HOME/pj60/lib  
$ make -f ins_pj60.mk install
```

Installing and Running the Demos

The demos for Oracle Forms Developer and Reports Developer illustrate how to use Oracle Forms and Oracle Reports.

You must have installed both Oracle Forms and Oracle Reports to run the demos.

Note: The demo runs in English only.

This chapter describes:

- Installing the Demos
- Running the Demos

Installing the Demos

Installing the Oracle Forms and Oracle Reports demos is very much like installing the Oracle Reports or Oracle Forms products, but it takes less time. This section describes the following tasks:

- Mounting the Product Installation CD-ROM
- Starting the Installer
- Setting Up the Installer Options
- Confirming Environment Variable and Log File Settings
- Setting Up National Language Support
- Choosing A Demo to Install
- Setting Up Connections

Mounting the Product Installation CD-ROM

Mount the Oracle Forms and Reports 6i Demos CD-ROM, as described in "Mounting the Product Installation CD-ROM" on page 3-2.

Starting the Installer

Start the Oracle Installer, as described in "Starting the Installer" on page 3-3.

Setting Up the Installer Options

This section describes Installer prompts you see when installing the demo. (Depending on your installation type, the prompts may vary slightly from those described here.)

WARNING: Do not run the Installer as the `root` user.

After you complete the "Starting the Installer" section on page 3-3, the `Install Type` dialog box appears.

Perform the following steps to set up the installer options:

1. Select one of the following installation methods:
 - Default Install

Select this option if the Installer default values are appropriate for your installation. If, after selecting `Default Install`, you decide the default options are not appropriate for your installation, you can select the `Back` button to return to this dialog box.

- **Custom Install**

If you select this option, the Installer displays dialog boxes prompting you for the information it requires.

The `preamble.txt` dialog box appears.

2. Read the Preamble and README files for additional product information.

The `Installation Activity Choice` dialog box appears.

3. Select one of the following installation activities:

- **Install, Upgrade, or De-Install Software**

Choose this option when you are installing the demos. Select this option to install or upgrade Oracle Forms Developer and Reports Developer software. When you select this option, you have the choice to create or upgrade database objects during this session.

- **Create/Upgrade Database Objects**

This option creates database objects in an existing database without installing any new products.

- **Perform Administrative Tasks**

This option relinks product executables in an existing Oracle Forms Developer and Reports Developer installation.

The `Installation Options` dialog box appears.

4. Select one of the following options:

- **Install New Product - Create DB Objects**

Select this option to create or upgrade database objects during the installation or to install the DB Software without modifying your database.

Note: To create DB Objects, set `TWO_TASK` and `TNS_ADMIN` before starting the installer. See Chapter 2, "Setting Up the Environment".

- **Install New Product - Do Not Create DB Objects**

Select this option for a new installation of a product. This option creates a new `$ORACLE_HOME`. Also, choose this option if you have an existing Oracle database or plan to create database objects later. (Note that if you select this option when you are running the demo, the Installer does not load database objects.)

- **Build Staging Area**

Select this option to create a staging area. For example, if you will be performing more than one installation of the demos.

A staging area allows you to load your demo software into a designated directory, independent of the actual installation. You can complete the installation at a later time.

- **De-Install Software**

Select this option to de-install old products before upgrading products using the existing `$ORACLE_HOME`.

Confirming Environment Variable and Log File Settings

After you complete the "Setting Up the Installer Options" section, the `Environment Variables` dialog box appears. It displays the directory path names set for `ORACLE_HOME` and `ORACLE_BASE`, and the name of the `ORACLE_SID`.

Perform the following steps to confirm that the environment variables and log file settings are correct:

1. If a displayed environment variable is incorrect, enter the correct value.
2. Click `OK` to accept the environment variables.

For a description of the environment variables required by Oracle Forms Developer and Reports Developer, see "Setting Up Environment Variables" on page 2-5.

The Installer lists the default settings of your environment variables and installation log files.

3. The Installer writes installation log information to the following files in the `$ORACLE_HOME/orainst` directory:
 - `install.log`

- `sql.log`
- `make.log`
- `os.log`

If log files already exist in the default location, the Installer renames the existing files. Storing log files from multiple installations in the same files hinders any subsequent debugging.

You can change the values displayed in the `Defaults` file by clicking the `Back` button.

Setting Up National Language Support

If you selected `Custom Install`, the `National Language Support (NLS)` dialog box appears. Select `OK` to ignore this option since demos are only supported in American English.

Choosing A Demo to Install

After you complete the "Confirming Environment Variable and Log File Settings" section (or the "Setting Up National Language Support" section), the `Software Asset Manager` dialog box appears.

Perform the following steps to choose which demo to install:

1. To choose which demo to install, select:
 - `Oracle Forms Demos`
Use this option to install the Oracle Forms Demo.
 - `Oracle Reports Demos`
Use this option to install the Oracle Reports Demo.
 - `Oracle Forms Demos and Oracle Reports Demos`
Use both options to install both the Oracle Forms Demo and the Oracle Reports Demo.

The `Software Asset Manager` tracks the size of the distribution you selected and the space available in the destination directory.

The `Options` button brings up a dialog window that allows you to choose the dialogs you will see during installation and if you want to log the Installer actions.

Note: Because the `Options/Log Installer Action` option generates a lot of data, you should not select this option unless you are requested to do so by an Oracle Support Services analyst.

2. After you select which demos you want to install, click the `Install` button.
3. Respond to miscellaneous installation dialog boxes.

The installer may prompt you for additional installation information with further dialogs. This information may include the location of your X Windows library or the location of your Motif library. Respond to the dialogs as appropriate.

Setting Up Connections

After you complete the "Choosing A Demo to Install" section, the `Database Connection` dialog box appears.

Perform the following steps to set up the connections:

1. Enter the Oracle user name and password that will be used to connect to the Oracle database when you run the demos.
2. Display Configuration Instructions.

As part of the demo installation, the Installer creates a configuration file for the Oracle Forms demo and Oracle Reports demo. Toward the end of the installation process, the Installer asks if you would like to display this configuration file.

3. Click `Yes` to display the `config.txt` dialog box.

The `config.txt` dialog box lists the following information from configuration file:

- `[info]` steps

The `[info]` steps are configuration steps performed by the Installer when installing the demos.

- `[action]`

The [action] steps are configuration steps that you need to perform manually.

- The URL of a Web site from which you can run the Oracle Forms or Oracle Reports demo.

Running the Demos

The Oracle Forms demo configuration files are at
\$ORACLE_HOME/orainst/forms6iconfig.txt.

The Oracle Reports demo configuration files are at
\$ORACLE_HOME/orainst/reports6iconfig.txt.

To run the demo:

1. Open the configuration file, and scroll down to find the URL of the demo Web site.
2. Start your browser, and follow your browser's instructions for navigating to the URL.

Note: You can run the Oracle Reports demo from any client. You can only run the Oracle Forms demo from a certified platform client with Oracle Jinitiator or Oracle Appletviewer installed.

Creating User Exits

User exits are subroutines that contain embedded SQL commands. You can create user exits by modifying the sample source file.

This chapter describes:

- Creating User Exits
- Linking to Oracle Forms
- Linking to Oracle Reports
- Linking to Oracle Graphics
- Linking to Your User Exits

Creating User Exits

The `iapxtb.c` and `ue_xtb.c` sample files each declare a `iapxtb[]` user exit array. The following files describe the file that is used to define exit tables:

- Oracle Forms uses `$ORACLE_HOME/forms60/lib/ue_xtb.c`.
- Oracle Reports uses `$ORACLE_HOME/reports60/lib/*.c`.
- Oracle Graphics uses `$ORACLE_HOME/graphics60/lib/iapxtb.c`.

To create user exits:

1. Add entries to the sample source file for each user exit. Following is a sample source file:

```
/* Define the user exit table */
extern exitr iapxtb[] = { /* Holds exit routine pointers */
"UE_OK",          ue_ok, XITCC,
"UE_ERR",         ue_err, XITCC,
"UE_MB",          ue_mb, XITCC,
"UE_EMP_PLAN",   ue_emp_plan, XITCC,
(char *) 0, 0, 0 /* zero entry marks the end */};
/* end iapxtb */
```

The first item in the entry is the name (inside double quotes) used by the tool to reference the user exit. The second item is the name of the user exit routine. Names of user exits cannot be more than 60 alphanumeric characters in length, and must begin with a letter. The last item (XITCC) indicates that the user exit is called using C calling conventions. For other languages, use one of the following:

- XITCOB /* COBOL */
 - XITFOR /* FORTRAN */
 - XITPLI /* PL/I */
 - XITPAS /* Pascal */
 - XITAda /* Ada */
2. After modifying the source file, compile it along with your user exit program. Next, link the resulting IAPXTB object file with the product executables.

Linking to Oracle Forms

To link the user exit sample file for Oracle Forms, enter the following.

For Motif:

```
$ cd $ORACLE_HOME/forms60/lib  
$ make -f ins_forms60w.mk f60runmx
```

For character mode:

```
$ cd $ORACLE_HOME/forms60/lib  
$ make -f ins_forms60w.mk f60runx
```

Note: If you have the Oracle Forms Developer and Reports Developer for the Web, replace `ins_forms60d.mk` with `ins_forms60w.mk`.

Linking to Oracle Reports

To link the user exit sample for Oracle Reports, enter the following.

For Motif:

```
$ cd $ORACLE_HOME/reports60/lib  
$ make -f ins_reports60w.mk rwr60x
```

For character mode:

```
$ cd $ORACLE_HOME/reports60/lib  
$ make -f ins_reports60w.mk rwr60cx
```

Note: If you have the Oracle Forms Developer and Reports Developer for the Web only release, replace `ins_reports60d.mk` with `ins_reports60w.mk`.

Linking to Oracle Graphics

To link the user exit sample for Oracle Graphics, enter the following.

```
$ cd $ORACLE_HOME/graphics60/lib  
$ make -f ins_graphics60w.mk g60runmx
```

Note: If you have the Oracle Forms Developer and Reports Developer for the Web, replace `ins_graphics60d.mk` with `ins_graphics60w.mk`.

Linking to Your User Exits

To link to your user exits:

1. Override the EXITS make file macro on the command line with the user exit table file and user exits you created.

For example, enter:

```
$ cd $ORACLE_HOME/reports60/lib
$ make -f ins_reports60d.mk \
EXITS="my_iapxtb.o userexit1.o userexit2.o ..." rwr60x
```

2. Replace the default Reports Runtime engine with your newly relinked executable by entering:

```
$ mv rwr60x $ORACLE_HOME/bin/rwr60
```

Configuring Toolkit Resources

This appendix describes:

- Using the Resource Database
- Configuring Your Environment for Motif

Using the Resource Database

The resource database is automatically constructed by the function `XtDisplayInitialize()`. The function is called by the execution of the Motif products. The following information is provided as an explanation of the process that takes place when the resource database is constructed. This database is loaded from several sources, in the following order:

1. The tool specific user resource file, `Tk2Motif`, is loaded. By convention, keep the per-user settings in the `$HOME/Tk2Motif` file.

WARNING: Do not move the `Tk2Motif` file to the `/usr/lib/app-defaults` directory, as this may override critical internal Oracle Toolkit resources.

2. The resource database is loaded with resources that were loaded into the `Resource_Manager` property of the root window of the X display using `xrdb`.
If this property is not set, the resources are loaded from the file `.Xdefaults` in the user's home directory.
3. Any file named in the `XENVIRONMENT` environment variable is loaded if the variable is set and the file exists.
It is also loaded with any file named `$HOME/.Xdefaults-hostname`, where `hostname` is the name of the machine where the client application is running.
4. The resource database is loaded with any resources corresponding to standard X command line arguments such as `-fg` or `-bg`.
5. After the resource database is created by `XtDisplayInitialize()`, `Tk2Motif.distype` files are read and merged into the database. However, values already in the database are not overridden.

Resources specified in these files begin with the application class name rather than the application name. The naming convention for the file names is as follows:

```
$ORACLE_HOME/guicommon6/tk60/admin/Tk2Motif.distype
```

where `distype` is the display type suffix (`.rgb`, `.gs`, or `.bw`)

These files are the only ones that have the display type suffix. Although they are read last, their resource values are merged in as if they were loaded first, because the display type is unknown until after `XtDisplayInitialize()` is

called. Setting color resources when running applications on some monochrome displays can terminate the application. The `XtDisplayInitialize()` function does *not* provide a means of automatically selecting resource files based on the display type.

See Also: The *X Window System* documentation set.

Setting the Font Search Path with the `xset` Utility

Use the `xset` utility to specify preferences for the display and keyboard. For example, you can use the `xset` utility to set the server's font path.

Font Directories: On a workstation, fonts are loaded into the server from files stored in different directories, usually in subdirectories of `/usr/lib/X11/fonts`. When an application requests a font, the server searches a subset of these directories in a certain order. The font path determines which directories are searched, and in what order.

Font paths are system-dependent. Later in this section you will see how to query your current setting.

Each font directory contains font files, a `fonts.dir` file, and a `fonts.alias` file. When the X server searches directories in the font path, it uses these two files to find the fonts it needs:

<code>fonts.dir</code>	This file contains a list of all fonts in the directory with their associated font names, in two-column format. The first column gives font file names; the second gives font names.
<code>fonts.alias</code>	This file lists available aliases for fonts in the directory in a two-column format. The first column gives the aliases, the second gives font names.

Screen Resolution: Many vendors provide different sets of fonts for different screen resolutions. These are kept in directories with names that indicate resolutions, such as 75 dots per inch (dpi) and 100 dpi. The order of these two directories in the search path is important. For example, if your screen has 75 dpi, but the 100 dpi directory of a font is in front of its 75 dpi directory in the font path, there may be unexpected results when you use this font.

To query current settings, enter:

```
$ xset q
```

If your paths are in the wrong order, use `xset` to correct them. Use the following syntax to override the current font path and set it to new directories:

```
xset fp directory[, directory...]
```

Use the `fp` option to specify the font path. There must be at least one directory. Multiple directories are separated by commas.

To restore the font path to the server's default setting, enter:

```
$ xset fp default
```

The simplest way to find available font names for font specification is to use the `xfonset` utility, which is an interactive program that lists names of all the fonts and displays them. This utility is not available on all systems.

Managing Resources with the `xrdb` Utility

The appearance and behavior of most X and Motif applications can be customized to an almost limitless degree. Many users maintain a `.Xdefaults` file in their home directory for default settings of colors, fonts, and other aspects of application behavior. You can use the `xrdb` utility to load the contents of this file into the X server's memory, which is called the *X resource database*.

The advantage of using `xrdb` is that these resource settings are used by tools running on all the different client machines you use, not just on the one containing the `.Xdefaults` file.

Controlling Windows with a Window Manager

The window manager is a utility that gives you control over windows on your display. It provides an interface for moving, resizing, iconifying, de-iconifying, and changing the stacking order of windows. (Note that all windows at all times are movable under Motif.) Use the Motif Window Manager (`mwm`), OPEN LOOK Window Manager (`olwm`), or Desktop Window Manager (`dwm`) with Oracle Motif tools.

Configuring Your Environment for Motif

This section presents the following information:

- Overview of Resource Files
- Using X Resource Files

- Setting Oracle Toolkit/Motif Resources in the Tk2Motif File
- Overlapping Motif and Oracle Terminal (Motif) Key Mappings

Overview of Resource Files

Oracle tools using the Motif interface employ two types of resource files: X resource files and Oracle Toolkit resource files.

Resource files:

- simplify customization of applications designed on one platform (such as Microsoft Windows) to run on another platform (such as Motif)
- can adapt applications for different screens and keyboards
- allow users to set preferences such as fonts and colors

Oracle tools are built on top of a layer called Oracle Toolkit, which provides a uniform programming interface to objects in the underlying user interface such as Motif, Microsoft Windows, or the Macintosh Toolbox. In Motif, Oracle Toolkit presents an interface to the Oracle Motif application user, made up of familiar Motif *widgets*.

Resources in the `Tk2Motif` files are directed at Motif widgets. There are dozens of resources that may be set for each type of Motif widget. Most of these resources should not be modified. You may want to experiment, however, with color and font resources.

Resources in the `.res` files describe attributes of Oracle Toolkit objects. In many cases there is a direct correspondence between an attribute of a Toolkit object, and a resource of an underlying Motif widget. In these cases, the Toolkit attribute takes precedence. For example, most Toolkit controls, or views, have a `bgcolor` attribute that determines the background color. If this is set in the `.res` file, the value set overrides any setting of the `background` resource for the corresponding widget class in the `Tk2Motif` file.

In some cases, a widget resource may have no Toolkit counterpart. For example, Oracle Toolkit provides no means of setting the font in an alert dialog box. Therefore, if you want to draw extra attention to your alerts, you can display their warning messages in a 24-point boldface font by entering the following into your `Tk2Motif` file:

```
Tk2Motif*alert*FontList: -*-medium-b-normal-*240-
```

Using X Resource Files

The X Resource Files contain a listing of the Motif resource settings and the Widgets which are supported by the Toolkit and used by Oracle Forms Developer and Reports Developer tools. The relevant X resource files are as follows:

```
$ORACLE_HOME/guicommon6/tk60/admin/Tk2Motif.[bw|gs|rgb]
```

Each of these files contains one of the following file name extensions:

bw	is for monochrome (black and white) display
gs	is for grayscale displays
rgb	is for color displays. (The color scheme defaults to sky blue.)

The alternate color displays are as follows:

rose	sets windows to a rose color
steel	sets windows to a steel blue color
gray	sets windows to a gray color

Note: Oracle Corporation recommends gray for Oracle Browser.

The `Tk2Motif.rgb` file, that sets your Oracle Forms Developer and Reports Developer windows to sky blue, is opened by Oracle Terminal to initialize color display resources. If you want to set your Oracle Forms Developer and Reports Developer windows to something other than sky blue, you must rename the `gray`, `rose`, or `steel` files to be `Tk2Motif.rgb`. For example, if you want rose-colored Oracle Forms Developer and Reports Developer windows, enter:

```
$ cd $ORACLE_HOME/guicommon6/tk60/admin
$ mv Tk2Motif.rgb Tk2Motif.skyblue
$ cp Tk2Motif.rose Tk2Motif.rgb
```

When you restart the application, Oracle Forms Developer and Reports Developer windows will be rose-colored.

If you want to change a single user's environment to rose-colored windows, enter:

```
$ cp Tk2Motif.rose $HOME/Tk2MotifOracle Toolkit Resource Files
```

The Oracle Toolkit resource file `$HOME/Tk2Motif` contains resource settings customized for the individual user. (HOME is a user's home directory.)

The files under `ORACLE_HOME` are provided by Oracle. These files usually are modified only by a system administrator, because these resource settings affect all users of the system. To customize these resources, copy one of these files to a file named `Tk2Motif` in your home directory and edit it there.

Setting Oracle Toolkit/Motif Resources in the Tk2Motif File

This section explains briefly how to set resources in the `Tk2Motif` file. The `Tk2Motif` file contains important information and comments. Read these comments carefully before modifying the file. You should also have a thorough understanding of X and OSF/Motif resources before you attempt to modify this file.

Example 1

The following example shows how specifications in a `$HOME/Tk2Motif` file override specifications in the

`$ORACLE_HOME/guicommon6/tk60/admin/TK2Motif.rgb` file.

In this example, the `$ORACLE_HOME/guicommon6/tk60/admin/Tk2Motif.rgb` file contains the following:

```
Tk2Motif*fontList: -*helvetica-medium-r-normal-*120*
Tk2Motif*drawn.background: lightblue
Tk2Motif*pushb.background: salmon
```

A `$HOME/Tk2Motif` file contains:

```
browserm*pushb.background: steelblue
browserm*fontList: -*times-medium-r-normal-*120-*31
```

In this example, buttons in a Oracle Browser window would be drawn in Times font with a steel blue background, surrounded by a light blue drawn view. The Helvetica font setting and salmon pushbutton background for the `Tk2Motif` application class would be ignored.

Example 2

To set the font for labels in all top menus to 12-point Helvetica, make sure that this font is supplied on your system (using `xlsfonts` or `xfontsel`). Make an entry similar to the following in the `Tk2Motif` file:

```
Tk2Motif*menubar*fontList: -*helvetica-medium-r-normal-*120-*1
```

Note: The previous example should be entered on *one* line in the `Tk2Motif` file.

Example 3

To set the background and foreground colors in all Alert boxes, first check the `rgb.txt` file for the list of possible colors. If you prefer orange and yellow, and these colors are available, enter the following lines in your `Tk2Motif` file:

```
Tk2Motif*alert*background: orange
Tk2Motif*alert*foreground: yellow
```

Example 4

With any X resource, you can restrict values to apply only to widgets belonging to a hierarchy. For example, you can set the scroll bar trough color to red when the scroll bar is part of a file dialog window, but black in all other cases, by entering the following lines in your `Tk2Motif` file:

```
Tk2Motif*scrollBar*troughColor: black
Tk2Motif*filedialog*scrollBar*troughColor: red
```

Overlapping Motif and Oracle Terminal (Motif) Key Mappings

The Oracle Toolkit/Motif key mappings are stored in the `.res` Oracle Terminal file. You can customize a key map with the Oracle Terminal interactive interface.

If you want to change any of the default key definitions, you must take into consideration two important factors:

- Motif and Oracle key definitions may overlap.

Many OSF/Motif widgets have internal translation tables that map function keys to widget actions. For example, the [Tab] key is mapped to the Next Field action.

When these actions overlap with the functions of Oracle Toolkit Motif tools (as is the case with the [Tab] key), both mappings *must* agree. Do not override such mappings.

- Motif has reserved key mappings.

There are some key mappings that are reserved for OSF/Motif. Do not override these key mappings.

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