Oracle® Developer

Installation Guide

Release 6.0 for Intel UNIX (DG/UX Intel, SCO UnixWare, Sequent DYNIX/ptx, Solaris Intel)

June 1999
Part No. A70127-02

Topics Include:
Features and Requirements
Setting the Environment
Installation Tasks
Completing Oracle Developer Installation
Configuring Oracle Forms
Configuring Oracle Reports
Configuring Oracle Graphics
Configuring Oracle Procedure Builder
Configuring Oracle Browser
Configuring Oracle Project Builder
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Send Us Your Comments

Oracle Developer Installation Guide for Intel UNIX Release 6.0
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- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual?

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  Documentation Manager
  Oracle Corporation
  500 Oracle Parkway, Mailstop 10p2
  Redwood Shores, CA 94065
  USA

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

If you have problems with the software, please contact your local Oracle Support Services.
Preface

Purpose

The Oracle Developer Installation Guide for Intel UNIX provides Intel UNIX installation and configuration information for Oracle Developer Release 6.0. The topics covered in this preface are:

- 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

monospace Monospace type indicates UNIX commands, directory names, usernames, pathnames, and filenames.

brackets [ ] Words enclosed in brackets indicate key names (for example, Press [Return]). Note that brackets have a different meaning when used in command syntax.

italics 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:

```
dd if=/dev/rdsk/c0t1d0s6 of=/dev/rst0 bs=10b \ count=10000
```

braces {} Braces indicate required items: .DEFINE {macro1}

brackets [ ] Brackets indicate optional items: cvtcrt termname [outfile]

Note that brackets have a different meaning when used in regular text.

ellipses ... Ellipses indicate an arbitrary number of similar items:

```
CHKVAL fieldname value1 value2 ... valueN
```

italics Italic type indicates a variable. Substitute a value for the variable:

```
library_name
```

vertical line | A vertical line indicates a choice within braces or brackets:

```
SIZE filesize [K|M]
```
Related Documentation

For additional information on Oracle Developer, see the product documentation for Oracle Browser, Oracle Forms, Oracle Graphics, Oracle Procedure Builder, Oracle Reports, and Oracle Project Builder available in Oracle Developer: Guidelines for Building Applications. Use your Web browser to view this document in $ORACLE_HOME/doc60/admin/manuals/US/guide60/gd60toc.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.

Customer Service

Global Customer Service contacts are listed at http://support.oracle.com/client_relations.

Education and Training

Training information and worldwide schedules are available from http://education.oracle.com.

Oracle Technology Network

Register with the Oracle Technology Network (OTN) at http://technet.oracle.com. OTN delivers technical papers, code samples, product documentation, self-service developer support, and Oracle’s key developer products, to enable rapid development and deployment of applications built on Oracle technology.
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 Developer Release 6.0 on Intel UNIX. Verify that the system meets these requirements before starting the installation.

The following topics are covered in this chapter:

- Introduction
- Installation Overview
- Supported User Interfaces
- Online Documentation and Help
- System Requirements
- Disk Space and Memory Requirements
- Issues and Restrictions
Introduction

Oracle 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 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 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 Oracle Developer Installation" and Chapter 5 through Chapter 10 as appropriate to your installation.

5. **Create User Exits:** this optional step is described in Chapter 11, "Creating User Exits".


Oracle Developer tools are built using standard application programming interfaces (APIs), allowing organizations to supplement the Oracle Developer product set with tools from other vendors.
The following products are supported in Oracle Developer:

<table>
<thead>
<tr>
<th>Product</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Browser</td>
<td>Use Browser to query databases.</td>
</tr>
<tr>
<td>Oracle Forms</td>
<td>Use Forms to build interactive applications that access Oracle Server data. You can deploy Forms on the Web with Oracle Developer Server Release 6.0 as well as in Motif and character mode.</td>
</tr>
<tr>
<td>Oracle Graphics</td>
<td>Use Graphics to create multimedia graphical displays dynamically linked to a database. Your Web publications can be enhanced with data-driven graphic displays with Oracle Developer Server Release 6.0.</td>
</tr>
<tr>
<td>Oracle Procedure Builder</td>
<td>Use Procedure Builder to create, edit, and debug PL/SQL code.</td>
</tr>
<tr>
<td>Oracle Reports</td>
<td>Use Reports to build and generate reports that access Oracle Server data. You can deploy Reports on the Web with Oracle Developer Server Release 6.0 as well as in Motif and character mode.</td>
</tr>
<tr>
<td>Oracle Project Builder</td>
<td>Use Project Builder to administer and manage projects using Forms, Reports, Graphics, Procedure Builder, and Browser.</td>
</tr>
<tr>
<td>Oracle Developer Tuxedo</td>
<td>Developer Tuxedo is provided as a feature for Forms. It allows you to use Forms as a front end development tool to the Tuxedo (TP) Monitor.</td>
</tr>
</tbody>
</table>

**Installation Overview**

**Client-only and Server-based Installations**

**Client-only Installation**

You must install Oracle Developer tools in an ORACLE_HOME directory separate from the ORACLE_HOME directory containing the Oracle Server software that the tools access. If you plan to install Oracle Developer into an ORACLE_HOME containing software from previous Developer/2000 releases, you must first de-install the older software release. A client-only installation consists of Oracle Developer software, database objects, and Oracle Net8. Although you need to install the database objects only once for each server, Oracle 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 Developer is installed on client machines connecting to the database server with Oracle Net8.

Server-based Installation

In a server-based installation, Oracle Developer and the Oracle Server are installed in the same ORACLE_HOME directory and the Oracle Developer tools connect to the local database. This option is not available with this release. However, if you are installing Oracle Developer as part of an Oracle Applications installation, you may need to perform a server-based installation of Oracle Developer. Consult the Oracle Applications installation and configuration guidelines for information on the supported configurations of Oracle Applications.

Figure 1–1  Client-only Installation
Supported User Interfaces

Table 1–2 lists the Oracle Developer Release 6.0 tools and whether they support character mode, Motif, and Web interfaces on Intel UNIX.

Table 1–2  Oracle Developer Release 6.0 Tools

<table>
<thead>
<tr>
<th>Oracle Product</th>
<th>Character Mode Runtime</th>
<th>Motif (v1.2.3)</th>
<th>Web</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Browser</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Oracle Forms</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Oracle Graphics</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Oracle Reports</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Oracle Procedure Builder</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Oracle Project Builder</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: Web interfaces are only available in the Oracle Developer Server release, not in the Oracle Developer release.

Note: None of the Oracle Developer products listed have a character mode designer component.

Online Documentation and Help

Installation Guide

Oracle Developer for Intel UNIX documentation is included with this Oracle product distribution. To access the documentation, use your browser to open the /cdrom/unixdoc/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 /cdrom/orainst directory.

To start a browser:
System Requirements

$ cd /cdrom/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 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 that 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 on common tasks. To access cue cards, select the Help pull-down menu, then select Cue Cards.

System Requirements

This section describes the system requirements for installing Oracle Developer on Intel UNIX.

Hardware Requirements

Table 1–3 lists hardware requirements for installing and running Oracle Developer on Intel UNIX.

<table>
<thead>
<tr>
<th>Hardware Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>A DG AViiON Intel-based system</td>
</tr>
<tr>
<td>Memory</td>
<td>A minimum of 64 MB internal memory (RAM)</td>
</tr>
<tr>
<td>Swap Space</td>
<td>3-4 times the physical RAM</td>
</tr>
<tr>
<td>Media Device</td>
<td>A RockRidge format CD-ROM drive supported by Data General</td>
</tr>
</tbody>
</table>
**Table 1–3  Hardware Requirements for Data General**

<table>
<thead>
<tr>
<th>Hardware Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet Controller</td>
<td>To run SQL*Net drivers and adapters, an Ethernet card that supports Data General operating system is required.</td>
</tr>
<tr>
<td>Display Device for GUI Tools</td>
<td>X terminal or workstation</td>
</tr>
</tbody>
</table>

**Table 1–4  Hardware Requirements for Sequent**

<table>
<thead>
<tr>
<th>Hardware Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>A Sequent Symmetry (Intel 386/486 or Pentium-based) or NUMA-Q 2000 system</td>
</tr>
<tr>
<td>Media Device</td>
<td>A RockRidge format CD-ROM drive supported by Sequent</td>
</tr>
<tr>
<td>Display Device for GUI Tools</td>
<td>The following types are supported: vtxxx, ncd220</td>
</tr>
</tbody>
</table>
System Requirements

**Table 1–5  Hardware Requirements for Solaris Intel**

<table>
<thead>
<tr>
<th>Hardware Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>An Intel-based system. See your Solaris Intel documentation for a list of supported systems.</td>
</tr>
<tr>
<td>Memory</td>
<td>A minimum of 64 MB internal memory (RAM)</td>
</tr>
<tr>
<td>Swap Space</td>
<td>3-4 times the physical RAM</td>
</tr>
<tr>
<td>CD-ROM Device</td>
<td>A RockRidge format CD-ROM drive supported by Solaris Intel</td>
</tr>
<tr>
<td>Ethernet Controller</td>
<td>An Ethernet card supported by Solaris Intel</td>
</tr>
</tbody>
</table>

**Table 1–6  Hardware Requirements for UnixWare7**

<table>
<thead>
<tr>
<th>Hardware Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>An Intel-based system. See your UnixWare documentation for a list of supported systems.</td>
</tr>
<tr>
<td>Memory</td>
<td>A minimum of 64 MB internal memory (RAM)</td>
</tr>
<tr>
<td>Swap Space</td>
<td>3-4 times the physical RAM</td>
</tr>
<tr>
<td>CD-ROM Device</td>
<td>A RockRidge format CD-ROM drive supported by UnixWare</td>
</tr>
<tr>
<td>Ethernet Controller</td>
<td>An Ethernet card supported by UnixWare</td>
</tr>
</tbody>
</table>

Operating System Requirements

**Table 1–7  Operating System Requirements**

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>DG/UX R4.20 with SDK and ACO options</td>
</tr>
<tr>
<td>Networking Software</td>
<td>TCP/IP software as installed with DG/UX R4.20</td>
</tr>
</tbody>
</table>
System Requirements

### Table 1–8 Operating System Requirements for Sequent

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>DYNIX/ptx version 4.4</td>
</tr>
<tr>
<td>GUI Software</td>
<td>ptx/Windows installed</td>
</tr>
</tbody>
</table>

### Table 1–9 Operating System Requirements Solaris Intel

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Solaris 2.6 for Intel</td>
</tr>
</tbody>
</table>

### Table 1–10 Operating System Requirements for UnixWare7

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>UnixWare 7 Server, Enterprise Edition version 7.0.1. The Optimizing C compilation system is required.</td>
</tr>
<tr>
<td>Operating System Patches</td>
<td>ptf7002b, ptf7003c, ptf7005, ptf7010a, ptf7011, ptf7013c, ptf7014a, ptf7016c, ptf7017a, ptf7018, ptf7020a, ptf7021a, ptf7027a, ptf7033a, ptf7104.</td>
</tr>
</tbody>
</table>

**Note:** The ptf patches are available from the SCO ftp site.

| GUI Requirements   | X11R6 from the current system release. |

### User Interface Requirements

**Table 1–11** lists user interface requirements for installing and running Oracle Developer products on Intel UNIX.

### Table 1–11 User Interface Requirements

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window Manager</td>
<td>For Data General: Motif <em>mwm</em> Window Manager delivered with DG/UX R4.2</td>
</tr>
<tr>
<td></td>
<td>For Sequent: ptx/Windows installed.</td>
</tr>
</tbody>
</table>
Relinking Requirements

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

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

Disk Space and Memory Requirements

Table 1–12 lists disk space and database space for Oracle Developer. These are minimum, not approximate estimates.

Calculating Total Disk Space Required

Decide which products and options are required for your installation. Total the Distribution and Database 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 1–12  Space Requirements for Oracle Developer

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>X11 Server</td>
<td>For Data General: X11 and Motif 1.2.4</td>
</tr>
<tr>
<td></td>
<td>For Solaris Intel: X11 and Motif 1.2.6</td>
</tr>
<tr>
<td></td>
<td>For UnixWare7: X11 Motif 1.2.5</td>
</tr>
</tbody>
</table>

Table 1–11  User Interface Requirements

<table>
<thead>
<tr>
<th>Software Item</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUI Common Area</td>
<td>70.3 0.53</td>
</tr>
<tr>
<td>Oracle Forms</td>
<td>84.6 0.32</td>
</tr>
<tr>
<td>Designer</td>
<td>3.6 0</td>
</tr>
<tr>
<td>Generator (Char.)</td>
<td>3.6 0</td>
</tr>
<tr>
<td>Generator (Motif)</td>
<td>3.6 0</td>
</tr>
<tr>
<td>Runtime (Char.)</td>
<td>3.6 0</td>
</tr>
</tbody>
</table>
### Disk Storage Requirements

<table>
<thead>
<tr>
<th>Products and Options</th>
<th>Distribution (MB)</th>
<th>Database Space (MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runtime (Motif)</td>
<td>3.6</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Reports</td>
<td>82.2</td>
<td>0.39</td>
</tr>
<tr>
<td>Builder</td>
<td>3.8</td>
<td>0</td>
</tr>
<tr>
<td>Converter</td>
<td>3.8</td>
<td>0</td>
</tr>
<tr>
<td>Runtime (Char.)</td>
<td>3.8</td>
<td>0</td>
</tr>
<tr>
<td>Runtime (Motif)</td>
<td>4.0</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Graphics</td>
<td>41.0</td>
<td>0.12</td>
</tr>
<tr>
<td>Designer (Motif)</td>
<td>3.8</td>
<td>0</td>
</tr>
<tr>
<td>Runtime (Motif)</td>
<td>3.8</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Browser</td>
<td>20.2</td>
<td>0.04</td>
</tr>
<tr>
<td>Query Builder</td>
<td>0.26</td>
<td>0</td>
</tr>
<tr>
<td>Schema Builder</td>
<td>0.26</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Procedure Builder</td>
<td>22.0</td>
<td>0</td>
</tr>
<tr>
<td>Procedure Builder (Motif)</td>
<td>3.0</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Project Builder</td>
<td>8.9</td>
<td>0</td>
</tr>
<tr>
<td>Project Builder (Motif)</td>
<td>0.56</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Installer</td>
<td>40.0</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Common</td>
<td>138.0</td>
<td>0</td>
</tr>
<tr>
<td>Online Documentation Library</td>
<td>239.5</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Developer Features and Benefits Demos</td>
<td>35.8</td>
<td>0</td>
</tr>
<tr>
<td>Oracle Developer Tuxedo</td>
<td>2.6</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Distribution Space</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Database Space</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Issues and Restrictions**

**National Language Support for Oracle Developer**

Translations are available in the following languages for Oracle Developer runtime components. Languages marked with an asterisk also support the builder components:

- American English
- Brazilian Portuguese
- Traditional Chinese
- Simplified Chinese
- Czech
- Danish
- Dutch
- Finnish
- French
- German
- Greek
- Hungarian
- Italian
- Japanese
- Korean
- Latin American Spanish

---

**Table 1–12  Space Requirements for Oracle Developer**

<table>
<thead>
<tr>
<th>Products and Options</th>
<th>Distribution (MB)</th>
<th>Database Space (MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Required Disk Space</strong> = (Total Distribution Space + Total Database Space)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Norwegian*
- Polish
- Portuguese
- Romanian
- Russian
- Spanish*
- Turkish

**Arabic Language Support**

The current Oracle Developer products do not support Arabic languages on Motif.
Use this chapter to prepare your environment for installing Oracle Developer after you have verified the system meets the requirements described in Chapter 1, "Features and Requirements".

The following topic is covered in this chapter:

- Pre-Installation Tasks
Pre-Installation Tasks

- Create a UNIX Account to Own Oracle Software
- Decide Whether to Install or Upgrade Database Objects
- Set Up the tnsnames.ora File
- Set Required Environment Variables

Create a UNIX Account to Own Oracle Software

**Note:** You must have root access to your system to complete this step.

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

On Intel UNIX, login as root and use the operating system administration utility `useradd` to create an *oracle* account with the following properties:

**Login Name**
Any name, but this document refers to it as the *oracle* account.

**Default GID**
Corresponding to the OSDBA group.

**Home Directory**
Choose a home directory consistent with other user home directories. The home directory of the *oracle* account does not have to be the same as the ORACLE_HOME directory.

**Login Shell**
The default shell can be `/bin/sh`, `/bin/csh`, or `/bin/ksh`, but the examples in this document assume the Bourne shell (`/bin/sh`).

**Note:** 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 root (UNIX) account. Do not use root as the *oracle* account.

Decide Whether to Install or Upgrade Database Objects

Database objects are tables, views, and sequences that Oracle Developer uses to store Oracle Developer objects, such as Oracle Forms applications, in the database.
Database objects must exist in each database where you are storing Oracle Developer objects. If you have already installed the database objects on your database, do not install them again.

If you are upgrading to Oracle Developer Release 6.0, you may need to upgrade the database objects to Release 8.0.5.1.

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

**Table 2–1 Database Tables**

<table>
<thead>
<tr>
<th>Product</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Browser</td>
<td>BROWSER%</td>
</tr>
<tr>
<td>Oracle Forms</td>
<td>FRM50%</td>
</tr>
<tr>
<td>Oracle Graphics</td>
<td>GO%</td>
</tr>
<tr>
<td>Oracle Reports</td>
<td>SRW2%</td>
</tr>
</tbody>
</table>

**Set 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 Developer products installed in a client-only configuration.

A tnsnames.ora file contains the following:

```sql
alias =
  (DESCRIPTION =
    (ADDRESS =
      (PROTOCOL = tcp)
      (HOST = hostname)
      (PORT = service_number)
    )
    (CONNECT_DATA =
```

...
If you have the Oracle Network Manager, you can use it to update the file. Otherwise, you need to use a text editor to update the file with the information in Table 2–2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Replace with:</th>
</tr>
</thead>
<tbody>
<tr>
<td>alias</td>
<td>The aliased name of the service being described. This is the name that you will use to connect to the database.</td>
</tr>
<tr>
<td>hostname</td>
<td>The name of the remote host (server) where the database resides.</td>
</tr>
<tr>
<td>service_number</td>
<td>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 /etc/services file.</td>
</tr>
<tr>
<td>ORACLE_SID</td>
<td>The value of the system identifier (sid). This is the name of the instance on the hostname above to which you want to connect.</td>
</tr>
</tbody>
</table>

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

1. .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 Intel UNIX
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.

**TNS_ADMIN**

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.
**Set Required Environment Variables**

Oracle Corporation recommends that you set environment variables in the startup file of the user who will own the Oracle Developer installation. Log into the oracle account and set 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
```

**DISPLAY**

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=machinename:0.0
$ export DISPLAY
$ xhost +
```

For the C shell:

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

---

**Note:** Oracle does not support PC Xwindows emulators. If you are having a problem with an emulator on a PC, see if you can duplicate the problem on your server’s console.

For more information, see "Set the DISPLAY Environment Variable" on page 4-14.
LD_LIBRARY_PATH
LD_LIBRARY_PATH should be set to include directories where shared libraries are located. This variable should include $ORACLE_HOME/lib. See "Set LD_LIBRARY_PATH for Each User" on page 4-10.

ORACLE_BASE
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.

When 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 set ORACLE_BASE before starting the Installer session, the Installer takes its value from the environment.

ORACLE_HOME
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.

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

For example, to use a vt220 terminal, set ORACLE_TERM as follows:

For the Bourne or Korn shell:

$ set ORACLE_TERM=vt220; export ORACLE_TERM

For the C shell:

% setenv ORACLE_TERM vt220

If ORACLE_TERM is not set, the Installer uses the value of the UNIX environment variable TERM 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

<table>
<thead>
<tr>
<th>To Run:</th>
<th>Set ORACLE_TERM to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSI terminal for SCO</td>
<td>ansi</td>
</tr>
<tr>
<td>AT386 console</td>
<td>386</td>
</tr>
<tr>
<td>AT386 xterm</td>
<td>386x</td>
</tr>
<tr>
<td>UnixWare Terminal</td>
<td>386u</td>
</tr>
<tr>
<td>Intel UNIX Intel xterm</td>
<td>386s</td>
</tr>
<tr>
<td>Data General 200</td>
<td>dgd2</td>
</tr>
<tr>
<td>Data General 400</td>
<td>dgd4</td>
</tr>
<tr>
<td>IBM High Function Terminal and aixterm (monochrome)</td>
<td>hft</td>
</tr>
<tr>
<td>IBM High Function Terminal and aixterm (color)</td>
<td>hftc</td>
</tr>
<tr>
<td>hpterm terminal emulator and HP 700/9x terminal</td>
<td>hpterm</td>
</tr>
<tr>
<td>IBM 3151 terminal</td>
<td>3151 (for IBM)</td>
</tr>
<tr>
<td>NCD X Terminal with vt220 style keyboard</td>
<td>ncd220</td>
</tr>
<tr>
<td>Sun cmdtool/shelltool using a type 4 keyboard</td>
<td>sun</td>
</tr>
<tr>
<td>Sun cmdtool/shelltool using a type 5 keyboard</td>
<td>sun5</td>
</tr>
<tr>
<td>vt100 terminal</td>
<td>vt100</td>
</tr>
<tr>
<td>vt220 terminal</td>
<td>vt220</td>
</tr>
<tr>
<td>Wyse 50 or 60 terminal</td>
<td>wy50</td>
</tr>
<tr>
<td>Wyse 150 terminal</td>
<td>wy150</td>
</tr>
<tr>
<td>Sun xterm using a type 4 keyboard</td>
<td>xsun</td>
</tr>
<tr>
<td>Sun xterm using a type 5 keyboard</td>
<td>xsun5</td>
</tr>
</tbody>
</table>

**TWO_TASK**
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.

**ORA_NLS33**
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.
$ echo $ORA_NLS33

If the variable is set to any value, remove it.
For the Bourne and Korn shell:
$ unset ORA_NLS33

For the C shell:
% unsetenv ORA_NLS33
This chapter describes the installation of Oracle Developer. Before beginning this chapter, complete the tasks described in Chapter 2, "Setting the Environment".

The following topics are covered in this chapter:

- Using the Oracle Installer
- Software Upgrade
- Creating or Upgrading Database Objects
Using the Oracle Installer

The following tasks are covered in this section:

- Mount the Product Installation CD-ROM
- Start the Installer
- Respond to Installer Prompts

Mount the Product Installation CD-ROM

To mount your CD-ROM, perform the following steps:

1. Log in as root.
   
   $ su root

2. Create an empty CD-ROM directory (the “mount point directory”) for mounting the CD-ROM drive and set the permissions to make it accessible by all users.
   
   # mkdir /cdrom
   # chmod 777 /cdrom

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

   For Data General:
   
   # mount -t cdf /dev/cdrom /cdrom

   For Sequent:
   
   # /etc/mount -r -o showdot -f cdfs /dev/cdrom /cdrom
For Solaris Intel:

```
# /etc/mount -F hsfs -r device_name /cdrom
```

For UnixWare7:

```
# mount -F cdfs -oro device_name /cdrom
```

Where `device_name` is the block device name for your CD-ROM drive, for example, `/dev/dsk/c0t6d0p0`.

---

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

---

4. Exit the `root` account.

```
# exit
```
Using the Oracle Installer

Start the Installer

Perform the following steps to start the Oracle Installer:

1. Log in as oracle software owner.

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

2. Change to the /cdrom/orainst directory.

   $ cd /cdrom/orainst

3. Type the following command to invoke the Installer:
   For Motif mode, enter:

   $ ./orainst /m

   If you are using Motif mode, make sure you set the DISPLAY to your current
   workstation.
   For character mode, enter:

   $ ./orainst /c

Oracle Installation

The Oracle Installer installs Oracle executables (programs or software) on the
system 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.

Respond to Installer Prompts

The following section describes the main Installer prompts you see when installing
Oracle Developer. Depending on your installation type, the prompts described in
this section may not be an exact representation of what you see on the screen.

Install Type

- Default Install

   Select this option if the Installer default values are appropriate for your
   installation. The Installer uses default values for information it requires.
If at any time you decide that a Default Install is not adequate for your installation, you can select the Back button and return to this screen.

- **Custom Install**

If you select this option, the Installer displays screens prompting you for all of the information it requires. Selecting this option allows you much more control over your installation.

Note: If you will be using National Language Support, you **must** choose Custom Install. You will be prompted to choose a language during installation.

**Readme Files**

The Installer displays the `readme` files included with this release. Read the file for additional product information.

**Installation Activity Choice**

The Installer prompts you with three options:

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

  Select this option to install or upgrade Oracle 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 or upgrades database objects in an existing database without installing any new products.

- **Perform Administrative Tasks**

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

**Installation Options**

- **Install New Product - Create DB Objects**
Using the Oracle Installer

Select this option for a new installation and to create database objects during the installation.

Note: If you wish to create DB Objects, you must set TWO_TASK and TNS_ADMIN before starting the installer. See Chapter 2, “Setting the Environment”

- **Install New Product - Do Not Create DB Objects**
  If you have an existing Oracle database or plan to create database objects later, select this option for a new installation.

- **Add/Upgrade Software**
  Select this option to install or upgrade software in an existing $ORACLE_HOME.

- **Build Oracle Developer Staging Area**
  Select this option if you want to create a staging area. For example, you will be performing repeated installations 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.

Depending upon the Installation Option that you chose for your Installation type, you will be prompted, at some point, for Environment Variables, Installation Log Files, and Install Source described in the following sections.

**Environment Variables**
For a list of environment variables used by the Installer, see "Set Required Environment Variables" on page 2-5.

Confirm or change the directory pathnames shown for ORACLE_HOME and ORACLE_BASE.

3-6 Oracle Developer Installation Guide for Intel UNIX
Enter the ORACLE_BASE for your Oracle product directory structure. This
directory will contain the Oracle Developer software as well as associated
administration files. If you set ORACLE_BASE before starting the Installer, this field
defaults to the value you chose.

The Installer prompts you to complete the pathname 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).

Installation Log Files
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 information from multiple installations in the same files hinders
any subsequent debugging.

Install 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, the Installer converts the contents of the
staging area into the installed distribution during the Installer session.
A permanent staging area is neither removed nor converted during installation. You can, therefore, use it to perform multiple installations.

**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, then you must create a staging area for just the patch release.

**Note:** 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.

**National Language Support (NLS)**
This screen only appears if you select a Custom install.

Use the Installer to specify a language for screen messages from Oracle products with NLS support. Select either "All Languages" or a language from the displayed list. The Installer prompts and messages are always displayed in American English.

**Relink Executables**
Relinking regenerates a program from its component parts. The Installer automatically relinks products that require relinking. You can also relink products by using the Installer’s "Perform Administrative Tasks" Installation Activity.

You can relink products with the Installer for any of the following reasons:

- installing a new Oracle protocol adapter
- linking Oracle products
- installing patches or bug fixes

**Root Install 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 file rather than appending the new one.
Software Asset Manager

In this dialog, select the products you wish to install. The Software Asset Manager tracks the size of the distribution you selected and the space available in the destination directory (ORACLE_HOME). When choosing "Create/Upgrade Database Objects" from the "Installation Activity Choice" dialog, the "Software Asset Manager" screen is used to choose products on which to perform database actions. In this case, ignore the space calculations and select Install to create/upgrade the database options.

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

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

If you chose the Install Documentation Only option in the Installation Options screen, select the products corresponding to the documentation you are installing. Only the documentation is installed; the products themselves are not installed.

Remaining Installation Dialogs

The Installer may prompt you for additional installation information with further dialogs after you have clicked the Install button in the “Software Asset Manager” Dialog.

Software Upgrade

This section describes upgrading from Developer/2000 Release 2.1 to Oracle Developer Release 6.0. It is assumed that Developer/2000 Release 2.1 is installed in your ORACLE_HOME before you begin upgrading to Oracle Developer Release 6.0. You must de-install old versions of Developer/2000 Release 2.1 products.

Note: Upgrading Developer/2000 to Oracle Developer Release 6.0 does not require a Database Object upgrade.

1. Start the Release 2.1 Installer as described in “Start the Installer” on page 3-4.
Creating or Upgrading Database Objects

2. At the Installation Activity Choice screen, select the Install, Upgrade, or De-Install Software option. Refer to "Install Type" on page 3-4.

3. At the Installation Options screen, select the De-Install Software option. Refer to "Installation Options" on page 3-5.

4. Continue answering the Installer prompts.

5. At the Software Asset Manager screen, 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 Developer Release 6.0 products as described in the previous sections.

Creating or Upgrading Database Objects

To create or upgrade database objects, run the following script:

$ $ORACLE_HOME/bin/install_tables.sh

Note: Use the Installer provided with Developer/2000 Release 2.1 to de-install the old version of Developer/2000. You must de-install all Developer/2000 Release 2.1 products, not just those products you want to upgrade. Use only the new Installer to install the new version.
Completing Oracle Developer Installation

This chapter describes post-installation and configuration tasks.
The following topics are covered in this chapter:

- Verifying Your Installation
- Setting Printer Configuration Files
- Setting Up the Oracle Developer Environment
- Setting Up the Character Mode User Environment
- Setting Up the GUI Environment
- Setting Up Oracle Developer Tuxedo
- Enabling Use of Other Languages
Verifying Your Installation

If you have startup problems, use DEBUG_SLFIND to direct error messages to a file of your choice.

For the Korn or Bourne shell:

```
$ DEBUG_SLFIND=outfile; export DEBUG_SLFIND
```

For the C shell:

```
% setenv DEBUG_SLFIND outfile
```

Re-run the tool. Check for error messages in the file that indicate a necessary resource file may be missing.

Verify Audio

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, you must set your printer configuration files to prepare your system for printing. To do this, perform the following tasks:

- Locate and Install PPD and AFM Files for Your Printers
- Set Up the Default Printers
- Update the Toolkit Font Mapping File
- Set Printer Commands (Optional)
- Specify a Default Printer
- Information on Printing to HP PCL Printers
- Test Printing Capabilities and Fix Errors

Locate and Install 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 specific PostScript printer, since Intel UNIX 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 particular 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 that 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. You can also use the default printer definition file, default.ppd.

1. To find the PPD file for your printer, enter:
   
   ```
   $ cd $ORACLE_HOME/guicommon6/tk60/admin/PPD
   $ ls *.ppd | more
   ```

   This will list all of the PPD files which are included with the Oracle distribution.

2. To determine the fonts that are listed in the PPD file, enter:
   
   ```
   $ grep Font PPD_filename | more
   ```

3. To check whether all the necessary fonts are in $ORACLE_HOME/guicommon6/tk60/admin/AFM, 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 reflect the local default printer. When an invalid PPD file is specified for the current printer or no file is specified, the Oracle Toolkit uses default.ppd.

```
$ mv default.ppd default.ppd.old
$ cp another_PPD_file 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, you should also add entries for these fonts to the printer’s PPD file.

The format for a font entry is as follows:

*Font font_name: encoding "version" charset

Where:

- **font_name** specifies the Adobe font name as specified in PostScript.
- **encoding** specifies the PostScript encoding name.
- **version** specifies the font’s version number.
- **charset** specifies the Adobe character set name.

Set Up the Default Printers

To set up default printers for Oracle Developer products, you need to 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. Toolkit application users can now set their 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:

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

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

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

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 specific 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:

- face specifies the name of the font the Toolkit uses for printing. Common fonts include Palatino, Helvetica, Courier, and Times.
- size specifies the size of the font in points.
- style specifies the choice of style options, which are plain, italic, oblique, underline, outline, shadow, inverted, and overstrike. If there is more than one style, the list must be enclosed in parentheses, for example, (plain italic).
- weight specifies the choice of weight options, which are ultralight, extralight, light, demilight, medium, demibold, bold, extrabold, and ultrabold.
- width specifies the choice of width options, which are ultradense, extradense, dense, semidense, normal, semiexpand, expand, extraexpand, and ultraexpand.
- charset 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, if necessary, using the plus sign (+) to delimit parts of a style. For example:


  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:


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

Use the correct number of periods as placeholders if you choose not to define certain elements. 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

Set 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. For example:

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

which allows you to embed the following strings:

\%n the name of the printer.
\%c 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:

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

For the C shell, enter:

```
% setenv TK6_PRINT "print_string"
% setenv TK6_PRINT_STATUS "print_string"
```
Specify a Default Printer

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

- TK6_PRINTER
- ORACLE_PRINTER
- PRINTER
- 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 may be disabled.

Information on Printing to HP PCL Printers

With Oracle Developer, printing to HP PCL printers is fully supported, in addition to PostScript and ASCII. 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 under $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 under $ORACLE_HOME/guiCommon6/tk60/admin/TFM.

For any new font, you must specify these fields in the glue file:

```
FONT={fontname}
```

`{fontname}` is a descriptive name for the font.

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

`{tfm-filename}` is the base filename 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:

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

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

/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 Developer now 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, then the defaultpaper setting will be ignored and the defaultpaper will be set to LETTER. Also, if the papername specified in this field is incorrect, then the defaultpaper will be set to LETTER.

Test Printing Capabilities and Fix Errors

1. Test printing capability.
   Start up any Oracle 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. Users can choose a printer from the list of available printers.

   Users 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 different 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 the user to associate a PPD file with the printer through a file dialog. If the user does not want to associate a PPD file, the Toolkit uses default.ppd.
Setting Up the Oracle Developer Environment

This section describes how to set up the generic user environment for Oracle Developer. The environment variables below are required to run Oracle Developer, regardless of the chosen user interface (character mode, Motif, or Web).

**Configure the developer60 Shell Scripts**

Using a text editor, configure the scripts in the ORACLE_HOME directory named developer60.sh and developer60.csh. These files allow you to designate values for environment variables used by Oracle Developer. Once you have updated the contents of these files with information specific to your system, you will be able to quickly set your environment for Oracle Developer products.

After configuring the developer60.sh script, run it in the Bourne or Korn shell by entering:

```
$ . developer60.sh
```

After configuring the developer60.csh script, run it in the C shell by entering:

```
% source developer.csh
```

**Set LD_LIBRARY_PATH for Each User**

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

```
% echo $LD_LIBRARY_PATH
```

Set the LD_LIBRARY_PATH environment variable to `$ORACLE_HOME/lib`.

For the Bourne and Korn shell:

```
$ LD_LIBRARY_PATH=$ORACLE_HOME/lib:$LD_LIBRARY_PATH
$ export LD_LIBRARY_PATH
```

For the C shell:

```
% setenv LD_LIBRARY_PATH \n$ORACLE_HOME/lib:$(LD_LIBRARY_PATH)
```
Setting Up the Character Mode User Environment

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

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

- Determine Your Terminal Resources
- Set ORACLE_TERM

**Determine 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 either TERM or ORACLE_TERM, the Oracle Developer character mode tools cannot start up.

Check the value of TERM by entering:

```
$ echo $TERM
```

Refer to "Supported Terminals" on page 4-12 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 of the Oracle Developer character mode tools. See "Set ORACLE_TERM" on page 4-12 for instructions.

Set ORACLE_TERM
Select the device name for ORACLE_TERM from the list of device names provided in Table 4–1, "Supported Terminals for Character Mode Oracle Developer Tools".

Set the ORACLE_TERM environment variable for each user.

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

Supported Terminals
The following table lists device names to which you can set ORACLE_TERM and the corresponding terminal filenames that the character mode Oracle 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. Check the product-specific chapters for a list of these files.

Table 4–1 Supported Terminals for Character Mode Oracle Developer Tools

<table>
<thead>
<tr>
<th>Device Name</th>
<th>Terminal</th>
<th>Terminal File Names Used by Oracle Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>sun5</td>
<td>Sun cmdtool Type 5 keyboard</td>
<td>tk6csun5.res</td>
</tr>
<tr>
<td>vt100</td>
<td>DEC vt100 terminal (or emulator, including xterm)</td>
<td>tk6cvt100.res</td>
</tr>
<tr>
<td>vt220</td>
<td>DEC vt220 terminal (or emulator, including xterm)</td>
<td>tk6cvt220.res</td>
</tr>
<tr>
<td>xsun5</td>
<td>Sun xterm Type 5 keyboard</td>
<td>tk6cxsun5.res</td>
</tr>
</tbody>
</table>

Setting Up the GUI Environment
This section explains how to prepare the GUI environment for Oracle Developer:

- Getting Help with X and OSF/Motif
- Relocate Key Definition File
- Set 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.

---

**Note:** Oracle does not support PC Xserver emulators. If you are having a problem with an emulator on a PC, see if you can duplicate the problem on your server’s console.

---

**Relocate Key Definition File**

When installation is complete, the X11 key symbol file $XKeysymDB is in the $ORACLE_HOME/guicommon6/tk60/admin directory. You must move the $XKeysymDB file to the /usr/openwin/lib/X11 directory on every machine on which Oracle 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:
   ```
   # cd $ORACLE_HOME/guicommon6/tk60/admin
   ```
   If the directory /usr/openwin/lib/X11 does not exist, create it by entering:
   ```
   # mkdir /usr/openwin/lib/X11
   ```

2. Set up the $XKeysymDB file of your choice.
   If you have a version of $XKeysymDB in /usr/openwin/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/openwin/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/openwin/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.

### Set Up the X Window System and Motif Environments

This section describes the following topics:

- **Set the DISPLAY Environment Variable**
- **Control Display Access with the xhost Utility**

#### Set the DISPLAY Environment Variable

If you run Oracle 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.
server specifies the sequential code number for the server.
screen specifies the sequential code number for the screen (optional).

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

For the Bourne and Korn shell, enter:

$ DISPLAY=bambi:0.0; export DISPLAY

For the C shell, enter:

% 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.

**Control 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 means of 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, whether they are listed in /etc/Xn.hosts or not. 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, your workstation is named bambi and you want to grant access to godzilla, a remote machine. On bambi, enter:

$ 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.

### Setting Up Oracle Developer Tuxedo

Oracle Developer Tuxedo enables you to use Oracle Forms Release 6.0 as a front-end development tool to the Tuxedo transaction processing (TP) monitor. For information on how to set Developer Tuxedo up, please refer to Chapter 3 of *Using Oracle Developer with the Tuxedo TP Monitor* located at $ORACLE_HOME/d2tx/doc/d2tx60.doc.

### Enabling 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 Developer to run in languages other than the default language (English):

- Set NLS_LANG
- Set the Tk6Motif*fontMapCs File

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

#### Set NLS_LANG

Oracle 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:

```bash
$ NLS_LANG=language_territory.character_set
$ export NLS_LANG
```
Enabling Use of Other Languages

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 provides values supported by Oracle Developer products for NLS_LANG.

<table>
<thead>
<tr>
<th>Language Name</th>
<th><code>language</code> Value</th>
<th><code>territory</code> Value</th>
<th><code>character_set</code> Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatian</td>
<td>croatian</td>
<td>croatia</td>
<td>ee8iso</td>
</tr>
<tr>
<td>Czech</td>
<td>czech</td>
<td>&quot;czech republic&quot;</td>
<td>ee8iso</td>
</tr>
<tr>
<td>English</td>
<td>american</td>
<td>america</td>
<td><code>us7ascii</code></td>
</tr>
<tr>
<td>Danish</td>
<td>danish</td>
<td>denmark</td>
<td>we8iso</td>
</tr>
<tr>
<td>Dutch</td>
<td>dutch</td>
<td>&quot;the netherlands&quot;</td>
<td>we8dec</td>
</tr>
<tr>
<td>Finnish</td>
<td>finish</td>
<td>finland</td>
<td>we8dec</td>
</tr>
<tr>
<td>French</td>
<td>french</td>
<td>france</td>
<td>we8dec</td>
</tr>
<tr>
<td>German</td>
<td>german</td>
<td>germany</td>
<td>we8dec</td>
</tr>
<tr>
<td>Greek</td>
<td>greek</td>
<td>greece</td>
<td>el8iso</td>
</tr>
<tr>
<td>Hungarian</td>
<td>hungarian</td>
<td>hungary</td>
<td>ee8iso</td>
</tr>
<tr>
<td>Italian</td>
<td>italian</td>
<td>italy</td>
<td>we8dec</td>
</tr>
<tr>
<td>Japanese</td>
<td>japanese</td>
<td>japan</td>
<td>ja16euc</td>
</tr>
<tr>
<td>Korean</td>
<td>korean</td>
<td>korea</td>
<td><code>kol6ksc5601</code></td>
</tr>
<tr>
<td>Norwegian</td>
<td>norwegian</td>
<td>norway</td>
<td>we8iso</td>
</tr>
<tr>
<td>Portuguese</td>
<td>portuguese</td>
<td>portugal</td>
<td>we8iso</td>
</tr>
</tbody>
</table>
Enabling Use of Other Languages

**Table 4–2 Settings for NLS_LANG**

<table>
<thead>
<tr>
<th>Language Name</th>
<th>language Value</th>
<th>territory Value</th>
<th>character_set Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portuguese</td>
<td>&quot;brazilian portuguese&quot;</td>
<td>brazil</td>
<td>we8iso</td>
</tr>
<tr>
<td>Romanian</td>
<td>romanian</td>
<td>romania</td>
<td>ee8iso</td>
</tr>
<tr>
<td>Russian</td>
<td>russian</td>
<td>cis</td>
<td>cl8iso</td>
</tr>
<tr>
<td>Slovak</td>
<td>slovak</td>
<td>slovakia</td>
<td>ee8iso</td>
</tr>
<tr>
<td>Slovenian</td>
<td>slovenian</td>
<td>slovenia</td>
<td>ee8iso</td>
</tr>
<tr>
<td>Spanish</td>
<td>spanish</td>
<td>spain</td>
<td>we8dec</td>
</tr>
<tr>
<td>Spanish</td>
<td>&quot;latin american spanish&quot;</td>
<td>america</td>
<td>web8iso</td>
</tr>
<tr>
<td>Simplified Chinese</td>
<td>&quot;simplified chinese&quot;</td>
<td>china</td>
<td>zhs16cb</td>
</tr>
<tr>
<td>Traditional Chinese</td>
<td>&quot;traditional chinese&quot;</td>
<td>taiwan</td>
<td>zht16b165</td>
</tr>
<tr>
<td>Turkish</td>
<td>turkish</td>
<td>turkey</td>
<td>we8iso</td>
</tr>
</tbody>
</table>

**Set the Tk6Motif*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. To set Tk6Motif*fontMapCs add the following line to the file:

```
Tk6Motif*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 get a list of all character sets available on your X Server, enter:

```
$ xlsfonts | awk -F' ' '{print $14 "=" $15}' | sort -u
```
This chapter explains how to configure and use the Motif and character mode versions of Oracle Forms Release 6.0 for Intel UNIX.

The following topics are covered in this chapter:

- Product Documentation
- Administering Forms
- Using Forms
Product Documentation

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

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

Online Help

Online Help is available from the Help menu when you are running Forms.

Release Notes File

The relnotes.txt file is located in the $ORACLE_HOME/tools/doc directory. This document notes differences between Oracle Forms Release 6.0 and its documented functionality. This includes changes that were made too late to be included in the documentation, as well as any known limitations.

Administering Forms

Executables

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Motif Executable Name</th>
<th>Char Executable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Builder</td>
<td>f60desm</td>
<td>n/a</td>
</tr>
<tr>
<td>Compiler</td>
<td>f60genm</td>
<td>f60gen</td>
</tr>
<tr>
<td>Runform</td>
<td>f60runm</td>
<td>f60run</td>
</tr>
<tr>
<td>Runform with debugger</td>
<td>f60runmd</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note: Forms Builder and the Runform with debugger are not available in character mode.
Edit Preferences

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

Source File Locations

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

- the current directory
- directories specified by FORMS60_PATH
- directories specified by ORACLE_PATH
- directories specified by PATH

Setting Environment Variables

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

- FORMS60_PATH
- FORMS60_REPFORMAT
- FORMS60_TERMINAL
- ORACLE_TERM
- FORMS60_OUTPUT
- TK60_ICON

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

**FORMS60_REPFORMAT**
FORMS60_REPFORMAT specifies the format in which Forms will generate your reports. For example, html or rdf.

**FORMS60_TERMINAL**
FORMS60_TERMINAL points to the directory where the terminal files for 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 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. See Table 5–2 for a list of supported device names.

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

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

This table provides information on 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

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Device Name</th>
<th>Terminal Description</th>
<th>Terminal File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>vt220</td>
<td>vt220</td>
<td>vt220 terminal</td>
<td>fmrcvt220.res</td>
</tr>
</tbody>
</table>

**FORMS60_OUTPUT**

The FORMS60_OUTPUT environment variable establishes the directory in which you store Forms temporary files. The default directory is /tmp.

**TK60_ICON**

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

---

**Using Forms**

**Starting Forms**

Forms allows you to run applications created in Forms Designer.

To start the Motif mode version of Runform, enter:

```
$ f60runm filename
```

To start the debug Motif version of 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 Runform and a description of available command line parameters.

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

$ f60run filename

where filename is the name of your form.

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

Starting the Builder

The Builder component of Forms allows the application developer to build dynamic forms applications using graphs, reports, images, and PL/SQL programs to interpret database information. To start the 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 11, “Creating User Exits” for information on how to create user exits in Forms.

Relinking Forms

To relink Forms with Oracle Developer, enter:

$ cd $ORACLE_HOME/forms60/lib
$ make -f ins_forms60d.mk crinstall mrinstall dinstall

If you have the Oracle Developer Server release, use ins_forms60w.mk instead of ins_forms60d.mk.
This chapter explains how to configure and use the character mode and Motif versions of Oracle Reports Release 6.0 on your Intel UNIX system.

The following topics are covered in this chapter:

■ Product Documentation
■ Administering Reports
■ Using Reports
Product Documentation

For information on the general use of 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 *relnotes.txt* file is located in the `$ORACLE_HOME/tools/doc` directory. This document notes differences between Oracle Reports Release 6.0 and its documented functionality. This includes changes that were made too late to be included in the documentation, as well as any known limitations.

Administering Reports

Executables

The Reports executables, listed in the following table, are installed in the `$ORACLE_HOME/bin` subdirectory.

<table>
<thead>
<tr>
<th>Component</th>
<th>Executable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert Reports</td>
<td>rwcon60</td>
</tr>
<tr>
<td>Runtime</td>
<td>rwrun60</td>
</tr>
<tr>
<td></td>
<td>rwrun60c</td>
</tr>
<tr>
<td>Builder</td>
<td>rwbld60</td>
</tr>
</tbody>
</table>
Relinking Reports

In Oracle Reports Release 6.0, Graphics is linked into the Reports executables automatically. There is no longer an option to relink Reports without Graphics.

To relink Oracle Reports, enter:

```
$ cd $ORACLE_HOME/reports60/lib
$ make -f ins_reports60d.mk crinstall mrinstall dinstall
```

If you have Oracle Developer Server, use `ins_report60w.mk` instead of `ins_reports60d.mk`.

Edit Preferences

Tools Options is a menu item on the Tools menu. This menu item sets options for your 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 Reports. They are stored in `$ORACLE_HOME/tools/admin/prefs.ora`.

Text Format Filename Extension

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

Call Interface

Using the information in the `Reports Reference Manual`, and the supplied makefile, `$ORACLE_HOME/reports60/lib/ins_reports60d.mk`, you can generate executable programs that contain Reports calls. Perform the following steps:
1. Create a program that contains a call to a function in the Reports call interface, such as rwccon(), rw2con(), rwcmov(), rw2mov(), rwcrrb(), rw2rrb(), rwcrun(), rw2run(), rwcrsb(), rw2srb().

2. Compile the program and generate object code.

3. To link the call interface demonstrations for Reports, enter the following commands:
   
   cd $ORACLE_HOME/reports60/lib
   
   - For character mode runtime, enter:
     
     $ make -f ins_reports60d.mk rwrun60c
   
   - For motif runtime, enter:
     
     $ make -f ins_reports60d.mk rwrun60
   
   - For motif designer, enter:
     
     $ make -f ins_reports60d.mk rwbld60

4. To link your own call interface executables, enter the following commands:
   
   For character mode runtime, enter:
   
   $ make -f ins_reports60d.mk rwrun60c RXOCIQA="ociobj1.o ociobj2.o..."

   For motif runtime, enter:
   
   $ make -f ins_reports60d.mk rwrun60 RXOCIQA="ociobj1.o ociobj2.o..."

   For motif designer, enter:
   
   $ make -f ins_reports60d.mk rwbld60 RXOCIQA="ociobj1.o ociobj2.o..."

Filename Extensions

The files you create with Reports have the following extensions:

- .pll  a PL/SQL library
- .rex  contains an ASCII readable report definition which cannot be executed
- .rdf  contains a complete report definition which can be executed
These file extensions are case-sensitive and, therefore, must be specified in lowercase.

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

Online Tools for Administration

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. The following set of printer definitions is shipped for your Intel UNIX system:

Table 6–2  Printer Definition Files

<table>
<thead>
<tr>
<th>Definition File</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>bold.prt</td>
<td>a generic printer file that supports bold attributes and 66x80 page size</td>
</tr>
<tr>
<td>dec.prt</td>
<td>a generic printer file for most DEC printers; it supports 66x80 page sizes for the LN03, LPS40, LP05, and LA50 printers</td>
</tr>
<tr>
<td>dec180.prt</td>
<td>same as decland.prt, but supports 66x180 page size</td>
</tr>
<tr>
<td>decland.prt</td>
<td>a generic printer file that prints in landscape mode and supports 66x132 page sizes</td>
</tr>
<tr>
<td>decwide.prt</td>
<td>same as dec.prt, but supports 66x132 page size</td>
</tr>
<tr>
<td>dflt.prt</td>
<td>a generic printer file that ignores highlighting attributes and supports 66x80 page size</td>
</tr>
</tbody>
</table>
Modifying the Tk2Motif.rgb File

Enter the following in your Tk2Motif.rgb file to ensure proper font sizing regardless of the display resolution setting. The default location of the Tk2Motif.rgb is $ORACLE_HOME/guicommon6/tk60/admin/:

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

Setting Environment Variables

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

- **ORACLE_TERM**
- **REPORTS60_PATH**

---

**Table 6–2  Printer Definition Files**

<table>
<thead>
<tr>
<th>Definition File</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>hpl.prt</td>
<td>a generic printer file for the HP LaserJet printer that supports 66x80 page size</td>
</tr>
<tr>
<td>hplwide.prt</td>
<td>same as hpl.prt, but supports 66x80 page sizes</td>
</tr>
<tr>
<td>no_ff.prt</td>
<td>a generic printer file with no formfeed between pages and supports 66x80 page size</td>
</tr>
<tr>
<td>psl132.prt</td>
<td>character mode PostScript printer file that prints in landscape mode and supports 66x132 page size</td>
</tr>
<tr>
<td>psl180.prt</td>
<td>character mode PostScript printer file that prints in landscape mode and supports 66x180 page size</td>
</tr>
<tr>
<td>psland.prt</td>
<td>PostScript printer file that prints in a landscape mode and supports 110x51 page sizes</td>
</tr>
<tr>
<td>ps2page.prt</td>
<td>character mode PostScript printer file that prints two 66x80 portrait pages on one landscape page</td>
</tr>
<tr>
<td>psport.prt</td>
<td>PostScript printer file that prints in portrait mode and supports 85x66 page sizes</td>
</tr>
<tr>
<td>psp132.prt</td>
<td>PostScript printer file that prints in a portrait mode and supports 132x120 page sizes</td>
</tr>
<tr>
<td>wide.prt</td>
<td>a generic printer file that ignores highlighting attributes and supports 66x132 page sizes</td>
</tr>
<tr>
<td>wide180.prt</td>
<td>same as wide.prt, but supports 66x180 page sizes</td>
</tr>
</tbody>
</table>
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 list of environment variables in "Set Required Environment Variables" on page 2-5.

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:

$ rrun60 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 Reports terminal file, rwcvt100.res, works together with the corresponding Toolkit terminal file, tk6cvt100.res.

Set the ORACLE_TERM environment variable to the appropriate terminal type. See Table 6–3 for a list of device names to which you can set the ORACLE_TERM environment variable and the files located in the reports60/admin/terminal directory.

Table 6–3  Supported Terminals for Character Mode Reports

<table>
<thead>
<tr>
<th>ORACLE_TERM (Device)</th>
<th>Terminal</th>
<th>Terminal File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>sun10</td>
<td>Sun Type 10 console</td>
<td>rwcsun10.res</td>
</tr>
<tr>
<td>sun4</td>
<td>Sun Type 4 console (cmdtool)</td>
<td>rwcsun4.res</td>
</tr>
<tr>
<td>sun5</td>
<td>Sun Type 5 console (cmdtool)</td>
<td>rwcsun5.res</td>
</tr>
<tr>
<td>vt100</td>
<td>vt100 (or emulator, including xterm)</td>
<td>rwcvt100.res</td>
</tr>
</tbody>
</table>
REPORTS60_PATH
REPORTS60_PATH locates external objects that you use in your reports.

REPORTS60_TERMINAL
FORMS60_TERMINAL points to the directory where the terminal files for Forms reside.

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

TK60_TERMINAL
TK60_TERMINAL points to the directory where the terminal definition file for the terminal type you are using resides.

TK60_ICON
TK60_ICON points to the path where icons which you use in your Reports reside.

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 Reports

Starting Reports Runtime

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

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

```
$ rwrun60c filename
```

Where `filename` is the name of your report.

Starting Reports Builder

To start Reports Builder, enter:

```
$ rwbld60
```

Printing Reports

Choosing a Printer

To choose a printer from 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 here override any DESNAME parameter used when invoking reports from the command line.

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

Sending Reports to Printers

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

To send reports to a printer:
Using Reports

1. Choose File—>Run. The Runtime Parameter Form is displayed. Now set the DESTYPE to Printer.

2. Choose Run Report. The Print dialog box is displayed.

3. Specify the print range and the number of copies and select OK.

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

---

**Sending Reports to Files**

Before printing your report 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 filename in the DESNAME field, then select Run Report.

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

5. The Print dialog box is displayed with Print to File checked. Select OK.

---

**Sending 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.


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 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. Select File—>Choose Printer to display the Printer Chooser dialog box, select the Reports ASCII Driver, and select OK. If MODE=CHARACTER for the report, you can skip this step.
2. Select File—>Print.
3. To print to a file, change the DESTYPE to File, specify the name of the ASCII file in the DESNAME field, and 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 correct 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 Reports are Motif-compliant on all UNIX-based systems.

Escape to Host

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

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 11, "Creating User Exits" for information on creating user exits in Reports.
This chapter explains how to configure and use the Motif and character mode versions of Oracle Graphics Release 6.0 on your Intel UNIX system.

The following topics are covered in this chapter:

- Product Documentation
- Administering Graphics
- Using Graphics
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 you are running Graphics.

Release Notes File

The relnotes.txt file is located in the $ORACLE_HOME/tools/doc directory. This document notes differences between Oracle Developer Release 6.0 and its documented functionality. This includes changes that were made too late to be included in the documentation, as well as any known limitations.

Administering Graphics

Executable Files

The Graphics executables listed in Table 7–1 are installed in the $ORACLE_HOME/bin subdirectory.

<table>
<thead>
<tr>
<th>Component</th>
<th>Executable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designer</td>
<td>g60desm</td>
</tr>
<tr>
<td>Runtime</td>
<td>g60runm</td>
</tr>
<tr>
<td>Batch</td>
<td>g60batm</td>
</tr>
</tbody>
</table>

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

---

## Edit Preferences

Tools Option is a selection on the Tools menu that sets options for your Graphics session. It displays the Tools Option dialog box, in which you specify design-time and runtime preferences.

## Using Graphics

### Setting Environment Variables

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

- **GRAPHICS60_PATH**
- **ORACLE_PATH**
- **SQLLIB_PATH**

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

**GRAPHICS60_PATH**

GRAPHICS60_PATH specifies where Graphics searches for .ogd files and other files used by the .ogd, such as PL/SQL libraries (.pl1 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 Graphics Runtime

Graphics Runtime allows an end-user to run applications created in the designer. To start Graphics Runtime, enter:

```
$ g6orunm 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 Graphics Designer**

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 Graphics Designer, enter:

```
$ g60desm
```

**User Exits**

See Chapter 11, "Creating User Exits" for information on how to create user exits in Graphics.

**Relinking Graphics**

To relink Graphics with the Oracle Developer release, enter:

```
$ cd $ORACLE_HOME/graphics60/lib
$ make -f ins_graphics60d.mk install
```

If you have the Oracle Developer for the Web release, use `ins_graphics60w.mk` instead of `ins_graphics60d.mk`. 
This chapter explains how to configure Oracle Procedure Builder Release 6.0 on your Intel UNIX system.

The following topics are covered in this chapter:

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

Executables

The executables appear in the $ORACLE_HOME/bin subdirectory. The Procedure Builder executable is listed in Table 8–1.

Table 8–1  Procedure Builder Executables

<table>
<thead>
<tr>
<th>Component</th>
<th>Executable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runtime</td>
<td>de60desm</td>
</tr>
</tbody>
</table>

Setting Environment Variables

ORAPLSQLLOADPATH
The ORAPLSQLLOADPATH environment variable tells Procedure Builder the path to look for PL/SQL files. Procedure Builder supports, but does not require, this variable.

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

Using Procedure Builder

Starting Procedure Builder Runtime

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

$ de60desm filename

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

$ de60desm filename mode=line
Relinking Procedure Builder

To relink Procedure Builder with the Oracle Developer release, enter:

$ cd $ORACLE_HOME/procbuilder60/lib
$ make -f ins_procbuilder.mk install
This chapter explains how to configure Oracle Browser Release 6.0 on your Intel UNIX system.

The following topics are covered in this chapter:

- Product Documentation
- Installing the Browser Client

**Note:** Oracle Browser is a graphical client, and only runs on Intel UNIX under the Motif graphical user interface.
Product Documentation

The information provided in this chapter supplements the following Oracle Browser Release 6.0 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 you are running Oracle Browser.

Installing the Browser Client

Executable File

The Browser executables are installed in the $ORACLE_HOME/bin subdirectory. The Executable names are listed in the following table:

<table>
<thead>
<tr>
<th>Component</th>
<th>Executable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query Builder</td>
<td>obe60</td>
</tr>
<tr>
<td>Schema Builder</td>
<td>bre60</td>
</tr>
</tbody>
</table>

Default Font and Color

Browser uses the standard OSF/Motif Toolkit2 conventions for font and color. See Appendix A, "Configuring Toolkit Resources", for more information about font and color.
This chapter explains how to configure Oracle Project Builder Release 6.0 on your Intel UNIX system.

The following topics are covered in this chapter:

- Product Documentation
- Administering Project Builder
- Using Project Builder
Product Documentation

The information in this chapter supplements the information provided in "Oracle Developer Guidelines for Building Applications", at $ORACLE_HOME/doc60/admin/manuals/US/guide60/gd60toc.htm.

Administering Project Builder

Executables

The executable is in the $ORACLE_HOME/bin subdirectory. The Project Builder executable is listed in Table 10-1.

<table>
<thead>
<tr>
<th>Component</th>
<th>Executable Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Builder User Interface</td>
<td>pj60</td>
</tr>
</tbody>
</table>

Using Project Builder

Starting Project Builder User Interface

To start the Project Builder User Interface, enter:

$ pj60 filename

Relinking Project Builder

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

$ cd $ORACLE_HOME/pj60/lib
$ make -f ins_pj.mk install
Creating User Exits

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

The following topic is covered in this chapter:

- User Exits
User Exits

The sample files, iapxtb.c and ue_xtb.c, each declare a user exit array called iapxtb[]. The files below describe which files are used to define exit tables:

- Forms uses $ORACLE_HOME/forms60/lib/ue_xtb.c.
- Reports uses $ORACLE_HOME/reports60/lib/rweiap.c
- 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:

   ```c
   /* 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 actual 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, you would 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 executable(s).
Forms

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

For Motif:
$ cd $ORACLE_HOME/forms60/lib
$ make -f ins_forms60d.mk f60runmx EXITS="ue_xtb.o exit1.o ..."

For character mode:
$ cd $ORACLE_HOME/forms60/lib
$ make -f ins_forms60d.mk f60runx EXITS="ue_xtb.o exit1.o ...

---

Note: If you have the Oracle Developer Server, replace ins_forms60d.mk with ins_forms60w.mk.

Reports

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

For Motif:
$ cd $ORACLE_HOME/reports60/lib
$ make -f ins_reports60d.mk rwrun60x

For character mode:
$ cd $ORACLE_HOME/reports60/lib
$ make -f ins_reports60d.mk rwrun60cx

---

Note: If you have the Oracle Developer Server only release, replace ins_reports60d.mk with ins_reports60w.mk.

Graphics

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

$ cd $ORACLE_HOME/graphics60/lib
$ make -f ins_graphics60d.mk g60runmx

---

Note: If you have the Oracle Developer Server, replace ins_graphics60d.mk with ins_graphics60w.mk.
Linking in Your User Exits

To link in your own user exits, override the EXITS make file macro on the command line with the user exit table file and user exits you created. For example:

```bash
$ cd $ORACLE_HOME/reports60/lib
$ make -f ins_reports60d.mk \
    EXITS="my_iapxtb.o userexit1.o userexit2.o ..." rwrun60x
```

Now replace the default Reports Runtime engine with your newly relinked executable:

```bash
$ mv rwrun60x $ORACLE_HOME/bin/rwrun60
```
Configuring Toolkit Resources

The following topics are covered in this chapter:

- The Resource Database
- Configure Your Environment for Motif
The Resource Database

The resource database is automatically constructed by the function XtDisplayInitialize(). You do not need to take any steps, because the function XtDisplayInitialize() is called by the execution of the Motif products, rather than by the user. 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 first.

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

   By convention, keep the per-user settings in the $HOME/Tk2Motif file.

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, -bg, and so on.

5. After the resource database is created by XtDisplayInitialize(), Tk2Motif.disptype files are read and merged non-destructively into the database; i.e., values already in the database take precedence.

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

   $ORACLE_HOME/guicommon6/tk60/admin/Tk2Motif.disptype

   Where disptype 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 \texttt{XtDisplayInitialize()} is called. Setting color resources when running applications on some monochrome displays can crash the application. The \texttt{XtDisplayInitialize()} function does not provide a means of automatically selecting resource files based on the display type.

\textbf{See Also:} The \textit{X Window System} documentation set.

\section*{Set the Font Search Path with the \texttt{xset} Utility}

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

\subsection*{Font Directories}

On a workstation, fonts are loaded into the server from files stored in different directories, usually in subdirectories of /\texttt{usr/openwin/lib/X11/fonts}. When an application requests a particular 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 \texttt{fonts.dir} file, and a \texttt{fonts.alias} file. When the X server searches directories in the font path, it uses these two files to find the fonts it needs.

\begin{itemize}
  \item \texttt{fonts.dir} 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 actual font names.
  \item \texttt{fonts.alias} This file lists available aliases for fonts in the directory in a two-column format. The first column gives the aliases, the second gives actual font names.
\end{itemize}

\subsection*{Screen Resolution}

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

```bash
$ xset q
```

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

```bash
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:

```bash
$ xset fp default
```

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

### Manage 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 file called `.Xdefaults` 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.

### Control 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 (dt.wm) with Oracle Motif tools.
Configure Your Environment for Motif

This section is organized as follows:

- Overview of Resource Files
- X Resource Files
- Set 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 actual 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, but not always, 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 an attribute, bgcolor, which determines background color of the control. 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-*/
```

**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 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 filename extensions:

- **bw**: The *bw* extension is for monochrome (black and white) display.
- **gs**: The *gs* extension is for grayscale displays.
- **rgb**: The *rgb* extension is for color displays and the color scheme defaults to sky blue. The alternate color displays are as follows:

  - **rose**: The *rose* extension sets windows to a rose color.
  - **steel**: The *steel* extension sets windows to steel blue.
  - **gray**: The *gray* extension sets windows to gray.

**Note:** Oracle Corporation recommends *gray* for Oracle Browser.

The file *Tk2Motif.rgb*, which sets your Oracle Developer windows to sky blue, is opened by Oracle Terminal to initialize color display resources. If you want to set your Oracle 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 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 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
```
Oracle 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. Users who want to customize these resources should copy one of these files to a file named Tk2Motif in their home directory and edit it there.

Set 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 file $ORACLE_HOME/guicommon6/tk60/admin/Tk2Motif.rgb.

In this scenario, the file $ORACLE_HOME/guicommon6/tk60/admin/Tk2Motif.rgb 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 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
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 particular 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 particular function keys to particular 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.

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