

Oracle9i

Quick Installation Procedure

Release 1 (9.0.1) for Sun SPARC Solaris

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Part No. A90354-01

Purpose of this Procedure

The following procedure describes basic requirements your system needs to meet, and the minimum tasks you need to perform to install an Oracle9i Database. It is not intended to replace *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*. If you are an experienced DBA, use this procedure as a guide to complete a quick installation of an Oracle9i Database.

If you want to install Oracle9i Management and Integration or Oracle9i Client, or if you need to complete complex installation configurations, including those with Legato Storage Manager and Oracle Real Application Clusters, then you must follow the complete installation procedure described in *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*.

If you have not installed Oracle products before, use this document to become familiar with the installation procedure.

Requirements

The requirements in this procedure are current as of the release date for Oracle9i. For the most current information, refer to the release notes for your platform, which are located at the following site:

<http://docs.oracle.com>

If you need assistance with navigating the Oracle Documentation site, refer to the following site:

<http://docs.oracle.com/instructions.html>

The following requirements must be met in order to perform a typical Oracle9i software installation and to create a simple prototype database.

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- **Memory:** A minimum of 256 MB of RAM is required to install Oracle9i Server. Use the following command to verify the amount of memory installed on your system:

```
$ /usr/sbin/prtconf | grep "Memory size"
```

- **Swap Space:** An amount of disk space equal to twice the amount of RAM or at least 400 MB, whichever is greater. Use the following command to determine the amount of swap space installed on your system:

```
$ /usr/sbin/swap -l
```

and multiply the value in the BLOCKS column by two.

- **CD-ROM:** A CD-ROM drive capable of reading CD-ROM disks in the ISO 9660 format with RockRidge extensions.
- **Disk Space:** 2.5 GB for database software, and an additional 1 GB for a seed database.
- **Temporary Disk Space:** The Oracle Universal Installer requires up to 400 MB of free space in the /tmp directory. If 400 MB or more is not available in /tmp, you can create a tmp directory in another filesystem, then set the environment variables TEMP (used by Oracle) and TMPDIR (used by operating system programs like the linker "ld" and library archiver "ar") to point to this location. For example:

Bourne (sh) / Korn (ksh) Shell

```
$ mkdir /u03/tmp
$ TEMP=/u03/tmp ; export TEMP
$ TMPDIR=/u03/tmp ; export TMPDIR
```

C (csh) shell

```
% mkdir /u03/tmp
% setenv TEMP /u03/tmp
% setenv TMPDIR /u03/tmp
```

- **Operating System--Solaris 2.6 (5.6), 7 (5.7) or 8 (5.8):** To determine your current operating system information, enter the following command:

```
$ uname -a
```

- **Operating System Patches:** The following table lists the operating patches required to run Oracle programs and databases.

Solaris Operating System Patches	Status
Use the latest security and recommended patch cluster from Sun Microsystems. Sun provides patch clusters and individual patches at the following location: http://sunsolve.sun.com	Required
Solaris 2.6 (5.6) requires at least kernel patch revision #105181-15 to successfully install Oracle9i.	Required
Solaris 2.6 (5.6) requires shared library patch for C++ #105591-09 for Enterprise Edition installations.	Required for an OLAP database
Solaris 7 (5.7) requires shared library patch for C++ #106327-08 for Enterprise Edition installations.	Required for an OLAP database
Solaris 8 (5.8) requires shared library patch for 64-bit C++ #108435-01 for Enterprise Edition installations.	Recommended for an OLAP database

To determine which operating system patches are installed, enter the following command:

```
$ showrev -p
```

- **JRE Patches:** Oracle applications use JRE 1.1.8_12. The following table lists the JRE patches are required or recommended to run Oracle9i for Sun SPARC Solaris 2.6 (5.6).

Solaris 2.6 (5.6) Patches for JRE 1.1.8_12	Status
106040-11 X Input and Output Method patch	Required
105181-15 Kernel patch	Required
105284-25 Motif Runtime liberty patch	Recommended
105490-07 Dynamic Linker patch	Recommended
106409-01 Chinese TrueType fonts patch (1)	Recommended
105633-21 OpenWindows 3.6: Xdun patch (1)	Recommended
105568-13 Libthread patch	Recommended
105210-19 LibC patch	Recommended
105669-07 CDE 1.2: libDTSvc patch (dtmail)	Recommended

The following table lists the JRE patches for Sun SPARC Solaris7 (5.7):

Solaris 7 (5.7) Patches for JRE 1.1.8_12	Status
107636-01 X Input and Output Method patch	Required

Solaris 7 (5.7) Patches for JRE 1.1.8_12	Status
106980-05 Libthread patch	Recommended
107607-01 Motif fontlist, fontset, libxm	Recommended
107078-10 Open Windows 3.6.1 Xsun patch (1)	Recommended

- JDK Patches: Oracle HTTP Server Powered by Apache uses JDK 1.2.2.0005. The following table lists the JDK patches for Sun SPARC Solaris 2.6 (5.6):

Solaris 2.6 (5.6) Patches for JDK 1.2.2_07	Status
105490-07 Linker patch	Required
105568-16 Libthread patch	Required
105210-27 Libc patch	Required
106040-13 X Input and Output Method patch	Required
105633-36 OpenWindows 3.6 Xsun patch	Required
106409-01 Fixes the Chinese TrueType fonts	Required
108091-03 SunOS 5.6: ssJDK 1.2.1_03 fails with fatal error in ISO8859-01 Locales	Required
105181-19 Kernel Update (socket close/hang)	Recommended
105669-10 CDE 1.2: LibDTSvc patch (dtmail)	Recommended
105284-31 Motif 1.2.7 Runtime library patch	Recommended

The following table lists the JDK patches for Sun SPARC Solaris7 (5.7):

Solaris 7 (5.7) Patches for JDK 1.2.2_07	Status
106980-10 Libthread patch	Required
107636-03 X Input & Output Method Patch	Required
107081-11 Motif 1.2.7 and 2.1.1: Runtime library patch for Solaris 7	Required
108376-3 OpenWindows 3.6.1 Xsun Patch	Required

There are no JRE or JDK patches required for Sun SPARC Solaris8 (5.8).

- Operating System Software Requirements: To use Oracle9i, you must ensure that several operating system software packages are installed on

your operating system. Determine whether they are installed with the following command:

```
pkginfo -i package name
```

For example, to determine if the SUNWarc package is installed, type:

```
pkginfo -i SUNWarc
```

The following table lists the operating system software requirements:

OS Software	Requirements
Operating System Packages	SUNWarc, SUNWbtool, SUNWhea, SUNWlibm, SUNWlibms, SUNWsprot and SUNWtoo.
X Server and Window Manager	<p>Use any X server supported by your UNIX operating system vendor. Use any Sun-supported window manager supported by your UNIX operating system vendor.</p> <p>For Hummingbird eXceed, use native window manager.</p> <p>For WRQ Reflections, allow remote window manager.</p> <p>To determine if your X windows system is working properly on your local system, enter the following command:</p> <pre>\$ xclock</pre>
Required Executables	The following executables must be present in the /usr/ccs/bin directory: make, ar, ld, nm.

Note: Non-interactive installation can be done using a response file. Response file templates are located on the Oracle9i CD-ROM Disk 1 in the response directory. It is not possible to install Oracle9i non-interactively without X Window System or an X Window emulator.

See Also: For more information on non-interactive installation, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Non-Interactive Installation and Configuration" in Chapter 3.

If you are an Oracle Support customer, register for MetaLink to obtain access to more information about response files and additional templates and examples. MetaLink is at the following site:

<http://metalink.oracle.com/>

Pre-Installation Tasks

Complete the following pre-installation tasks in order to ensure that Oracle9i is properly installed and that you can use the database after installation.

Determine Shell File Size Limit

Oracle9i includes native support for files greater than 2 GB. However, your operating system shell may impose a file size limit.

To determine if your shell will impose a file size limit, use the following command:

Bourne (sh) / Korn (ksh) shell

```
$ ulimit -f
```

Multiply the file (blocks) value by 512 to obtain the maximum file size in bytes imposed by the shell. For example, if file (blocks) is set to 2097148, the maximum size of the file that you can fully access will be 1 GB.

C (csh) shell

```
% limit filesize
```

This will return the file size limit in kilobytes.

The value of `unlimited` generally is 1 TB. If you need assistance changing the value for the shell file size limit, contact your operating system vendor or your system administrator.

Review Kernel Parameters

Oracle9i uses UNIX resources such as shared memory, swap space, and semaphores extensively for interprocess communication. If your kernel parameter settings are insufficient for Oracle9i, you will experience problems during installation and instance startup. The greater the amount of data you can store in memory, the faster your database will operate. In

addition, by maintaining data in memory, the UNIX kernel reduces disk I/O activity.

Use a text editor such as vi to change kernel parameter settings in the `/etc/system` file after making a backup copy. If you have previously changed your kernel for another program to levels equal to or higher than the levels Oracle9i requires, do not change the settings. If they are too low, change them to levels at least as high as those in the table. If you change the settings, then save the `/etc/system` file and restart the system. Refer to the following table to determine if your system shared memory and semaphore kernel parameters are set high enough for Oracle9i.

Use the `ipcs` command to obtain a list of the system's current shared memory and semaphore segments, and their identification number and owner.

The parameters in the following table are the minimum values required to run Oracle9i with a single database instance.

Kernel Parameter	Setting	Purpose
SEMMNI	100	Defines the maximum number of semaphore sets in the entire system.
SEMMNS	256	Defines the maximum semaphores on the system. This setting is a minimum recommended value, for initial installation only. The SEMMNS parameter should be set to the sum of the PROCESSES parameter for each Oracle database, adding the largest one twice, and then adding an additional 10 for each database.
SEMMSL	256	Defines the minimum recommended value, for initial installation only.
SHMMAX	4294967295	Defines the maximum allowable size of one shared memory segment. 4 GB = 4294967295
SHMMIN	1	Defines the minimum allowable size of a single shared memory segment.
SHMMNI	100	Defines the maximum number of shared memory segments in the entire system.
SHMSEG	10	Defines the maximum number of shared memory segments one process can attach.

Kernel Parameter	Setting	Purpose
Note: These are minimum kernel requirements for Oracle9i. If you have previously tuned your kernel parameters to levels equal to or higher than these values, continue to use the higher values. A system restart is necessary for kernel changes to take effect.		

Complete root user set-up tasks:

1. Log in as the `root` user.
2. Create database administrator groups by using the `admintool` or `groupadd` utility.

- The OSDBA group, typically `dba`
- The optional OSOPER, group, typically `oper`.
- The optional ORAINVENTORY group, typically `oinstall`.

See Also: For more information about system privileges, the OSDBA and OSOPER privileges, and how they may be used for Oracle9i administration, refer to *Oracle9i Database Administrator's Guide*.

For more information about system privileges and roles, refer to the GRANT command in the *Oracle9i SQL Reference Manual*.

For more information about the ORAINVENTORY group, the `oraInventory` directory, and sharing Oracle repository information while preserving separate DBA access to databases, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Create UNIX Groups for Database Administrators" in Chapter 2.

3. Create the `oracle` and `APACHE` accounts using the `admintool` or `useradd` utility.
 - The `oracle` account should have the following characteristics:

The primary group is the ORAINVENTORY group.

The secondary group is the OSDBA group.

The account is only used to install and update Oracle software.
 - The `APACHE` account should have the following characteristics:

The primary group is the ORAINVENTORY group.

The secondary group is a group in which only `APACHE` is a member.

The account has minimum privileges.

See Also: For more information on security and ownership of Apache processes, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*.

Oracle Corporation has updates on maintaining security with Oracle products and Apache at the following site:

<http://www.oracle.com/support>

For more information on Apache configuration and examples, refer to *Apache version 1.3 User's Guide*.

4. Create mount points for the Oracle software and database.
 - Basic installation requires at least two mount points: one for the software and at least one for the database files. At a minimum, allow 850 MB for the software mount point and 450 MB for the database mount point.
 - Optimal Flexible Architecture (OFA)-Compliant installation requires at least four mount points: one for the software and at least three for database files.

Note: For more information on issues to consider in creating mount points, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*.

5. Set system environment variables.
 - If it does not already exist, create a local `bin` directory, such as `/usr/local/bin` or `/opt/bin`. Set and verify that this directory is included in each user's `PATH` statement, and that users have execute permissions on the directory.
 - Determine if your X Window system is working properly on your local system. On the system where you will run the Oracle Universal Installer, set `DISPLAY` to that system's name, or the IP address, X server, and screen.

Use the database server's name, or the IP address, X server, and screen only if you are performing the installation from your database server's X Window console. If you are not sure what the X server and screen should be set to, use 0 (zero) for both.

Note: If you receive an error similar to "Failed to connect to server," "Connection refused by server," or "Can't open display" when starting the installer, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Setup Tasks to Perform as the oracle User" in chapter 2.

- Set a temporary directory path for the TMPDIR variable with at least 20 MB of free space where the installer has write permission. Example: `/var/tmp`

See Also: For more information about required and optional environmental variables, PATH settings and OFA settings, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Set Environment Variables" in Chapter 2.

Additional pre-installation tasks must be completed for Oracle tools, precompilers, networking and other products. For information about required setup tasks for additional Oracle components, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Precompilers and Tools" in Chapter 2.

Oracle9i Real Application Clusters Pre-Installation Tasks

There is an additional pre-installation task required for Oracle9i Real Application Clusters for Sun SPARC Solaris. Refer to the Oracle9i Real Application Clusters README file for instructions on completing this task, and for further information that affects installation of Real Application Clusters on your system.

Installation Tasks

Complete these tasks to perform a standard Oracle9i Database installation on your server and create a seed database. Oracle Corporation strongly recommends that you install a seed database to use as a prototype for configuring databases that conform to your needs.

1. Mount the Oracle9i CD-ROM.

There are multiple CD-ROMs included with Oracle9i. Mount Disk 1 to begin installation. Mount subsequent disks when prompted to do so. Place the Oracle9i CD-ROM Disk 1 in the CD-ROM drive. You must have `root` privileges to mount or unmount the CD-ROM manually. Be sure to unmount the CD-ROM before removing it from the drive by using the `umount` command.

If volume management is available the CD-ROM will mount automatically to the `/cdrom/orcl901_1` directory when you insert it

into the CD-ROM drive. To check if volume management is available use the following command:

```
% ps -e | grep vold
```

This should return a line similar to:

```
404 ?          16:03 vold
```

If no lines are returned, then volume management is not running and CD-ROM will need to be mounted manually.

Follow these steps to mount the Oracle9i CD-ROM manually:

- a. Place the Oracle9i CD-ROM in the CD-ROM drive.
- b. Log in as the `root` user and create a CD-ROM mount point if one does not already exist:

```
% su root
# mkdir cdrom_mount_point_directory
```

- c. Mount the CD-ROM drive on the mount point directory, then exit the `root` account by using the following commands.

```
# mount options device_name cdrom_mount_point_directory
# exit
```

If you are unsure of the correct *device_name*, consult with your system administrator.

Note: If you inadvertently run the installer while the current working directory is in the CD-ROM, follow these steps to mount the next CD-ROM:

- a. Change directory to the root directory of your system and log in as the `root` user by using the following commands:

```
$ cd /  
$ su root
```

- b. Unmount and remove the CD-ROM from the CD-ROM drive using the following command:

```
# umount cdrom_mount_point_directory
```

- c. Insert and mount the next CD-ROM into the CD-ROM drive by using the following command:

```
# mount options device_name cdrom_mount_point_  
directory
```

- d. Enter the correct mount point in the *Installation* dialog box.
 - e. Click OK to continue.
-
-

2. Run the Oracle Universal Installer.

- a. Log in as the `oracle` account.
- b. Start the installer by typing in the path where the installer executable is located. Do not try to run the installer executable from within the `oracle9i` directory. If you do, installation will fail. The following is an example of the correct command syntax:

```
/cdrom/oracle9i/runInstaller
```

In order to ensure that you do not have problems with your installation, Oracle Corporation strongly recommends that you review *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Installation" in Chapter 3.

- c. The *Welcome* window appears. Click Next.
- d. If this is the first installation of any Oracle9i products on the database server, the *Inventory Location* window appears. Specify a base directory where you want to install the files, and click OK.

- e. The *UNIX Group Name* window appears. Specify the group that will have permission to update Oracle software on the system. Enter the ORAINVENTORY group, or the OSDBA group if you chose not to create ORAINVENTORY. Click Next.
- f. If pre-installation tasks were not completed, a window opens prompting you to run the `orainstRoot.sh` script. Oracle Corporation does not recommend this procedure, but running this script will allow you to complete the installation.
- g. The *File Locations* window appears. Do not change text in the Source field. The Destination field will have the Oracle home directory path setting you defined during pre-installation.

Specify the group that has permission to update Oracle software on your system, which should be ORAINVENTORY. If you have previously installed Oracle9i products on your system, the installer obtains the UNIX group name information from its records, which are stored in the `/var/opt/oracle/oraInst.loc` file.

- h. Click Next. The *Available Products* window appears.
Select Oracle9i Database and click Next.
- i. The *Installation Types* window appears. Select Oracle9i Enterprise Edition or Standard Edition Installation. For information about installation types, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Oracle9i Installation Planning" in Chapter 1.
- j. The *Component Locations* window appears. Click Next.
- k. If you assigned the OSDBA group to a group with a different name than `dba`, then you are prompted to confirm the OSDBA group name. Confirm that the name is correct, and click Next.
- l. The *Database Configuration* window appears. Select General Purpose and click Next.
- m. If you have existing Oracle databases on your server prior to Oracle9i, then the installer prompts you to indicate if you want to run the Oracle Data Migration Assistant immediately after installation is complete. Make your selection, and click Next.
- n. The *Database Identification* window appears.

Enter the Global Database Name and SID (system identifier) name in the provided fields for the seed database that will be created. Give your database a global name that is the same as the SID, with your domain name appended.

For example, if your domain is `acme.com`, and your database is to be used for sales, a suitable Global Database Name is `sales.acme.com`, with the SID name `sales`.

Note: As the SID is incorporated into many file names, Oracle Corporation recommends restricting it to no more than four characters to avoid file name problems on different operating systems.

- o. Click Next. The *Database File Location* window appears.
Enter the name of one of the mount points you chose for holding a database. The seed database will be installed in one directory under this mount point. Use the Browse... button to navigate to the mount point if necessary.
- p. Click Next. The *Database Character Set* window appears. Choose the database character set to be used. Click Next.
- q. The *Summary* window appears. Review your selections to confirm they are correct.
- r. Click Install. The *Install* window appears. Wait for the products you have selected to be installed.

You will be prompted to insert the subsequent CD-ROMs.

- s. The *Setup Privileges* window appears, and prompts you to run the `root.sh` script.

The installer creates the `root.sh` script during installation in the `$ORACLE_HOME` directory, and prompts you to run the script after products are installed in order to set necessary file permissions for Oracle products, and to perform other `root`-related configuration activities. At this point, if you choose, you may review the script before running it.

Open another window, log in to the database server as `root` user, and enter the following commands:

```
# cd $ORACLE_HOME
# ./root.sh
```

When prompted, specify the local `bin` directory. This is the directory you created in pre-installation step 5. If you neglected to do this step, the `root.sh` script creates one for you.

- t. The *Configuration Tools*, *Apache Web Server Configuration Assistant*, and *Oracle Net Configuration Assistant* windows open after you run the `root.sh` script. These configuration assistants help to create

and configure your database and network environments. The *Configuration Tools* window displays the results of running these assistants. No information needs to be provided for these installation steps.

- u. The *Database Configuration Assistant* window opens. A *Progress* window opens and indicates actions the installer performs as it creates the seed database.

See Also: For more information on database environment types, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Oracle9i Database Configurations" in Chapter 1.

- v. Upon completing seed database configuration, the Database Configuration Assistant opens an alert window and shows the initial passwords for the SYS and SYSTEM database roles. Make a note of these passwords. Click the Password Management button to change the passwords for increased security. Click OK.
- w. The *End of Installation* window appears. Click Exit to exit the installer. Click Exit to exit the installer, or click Next Install to install additional products.

Post-Installation Tasks

Post-installation tasks vary according to product installation types and according to individual preferences for database configuration.

See Also: For more information about post-installation tasks, commands to unlock system administration roles, and additional product installation or configuration tasks, refer to *Oracle9i Installation Guide Release 1 (9.0.1) for UNIX Systems*, "Post-Installation" in Chapter 4.

Using the Seed Database to Learn About Oracle9i

The Oracle9i seed database is running after installation is complete. If you have not used Oracle products before, use the seed database to familiarize yourself with the products. Oracle Corporation recommends that you begin by looking at the following guides:

- Oracle9i Database Concepts Guide
- Oracle9i Database Administrator's Guide
- SQL*Plus User's Guide and Reference

These books outline the fundamentals of database use and administration. The documentation can be found online at the following site:

<http://docs.oracle.com>

Shutting Down the Seed Database

To shut down the database enter the following commands:

```
$ sqlplus "/ as sysdba"  
SQL> shutdown immediate  
SQL> exit
```