



Image Services

Update Procedure for the Solaris® Operating Environment

Release 4.0.0

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1

Getting Started

This procedure describes how to update a Sun Microsystems SPARC- or UltraSPARC server from:

- IDMIS 3.5.0 with Oracle 8.0.6
- IS 3.6 with Oracle 8.1.7

to release 4.0.0 of the FileNet Image Services for the Solaris[®] Operating Environment and Oracle 9i Version 2 (9.2.0) 32-bit or 64-bit software.

The Sun server must also be running version 8 of the Solaris[®] Operating Environment.

This document is intended for the System Administrator responsible for installing, configuring, and updating the Solaris Operating Environment (and related software) on Sun stations and servers.

Required Skills

The procedures included in this document assumes that you have the following knowledge:

- An understanding of UNIX and the Solaris operating environment
- An understanding of the Solaris **admintool** and **swmtool** utilities
- An understanding of the Solaris disk and file system configuration (and logical volume management concepts)
- An understanding of peripheral device (such as printers and optical disk systems) configuration methods

Please read this entire document from start to finish before performing the update so you'll know what to expect as you go along. This procedure assumes you are familiar with these topics:

- UNIX and Solaris Operating Environment commands
- A text editor such as **vi**
- Oracle Database Administration

Documentation Conventions

We have tried to make this procedure easy to follow, whether you're a new or experienced technician. The organization and format of this procedure are designed to clarify the tasks you are about to perform.

To familiarize yourself with the conventions used in this document and for other general information, link to the [**Doc Conventions**](#) file on the Image Services documentation CD.

New Features of the Image Services 4.0.0 Update

This release of Image Services software includes many improvements.

MSAR Storage Library

The Magnetic Storage and Retrieval (MSAR) storage library is a new feature that has been added to FileNet Image Services in this release. It provides high speed and high capacity storage libraries on magnetic disk media instead of using optical media or large magnetic disk caches (Cache-only systems). For information, refer to the [**MSAR Procedures and Guidelines**](#) document.

Oracle9i RDBMS Software

Oracle9i Release 2 Standard or Enterprise Edition (32-bit or 64-bit) is the only supported Oracle version for this release. The Oracle9i software is supplied on three CD-ROMS, which require **3.5 GB** of free space for installation.

Note The Oracle9i CD-ROM media are not supplied by FileNet.

In addition to the base release of Oracle9i Release 2 (9.2.0.1.0), you must also install Oracle Service Pack 2 (9.2.0.2.0) and Oracle Interim Patch 2645455.

Update Paths

Because of the wide variety of possible system configurations, the following update starting points have been tested and approved to simplify the update process.

- **IDMIS 3.5.0/Oracle 8.0.6**
- **IS 3.6/Oracle 8.1.7**

Make sure the server you're updating is at one of these starting points before you begin this update to Image Services 4.0.0/Oracle 9.2.0.

Important!

If the server has a release of FileNet Image Services software prior to IMS 3.5.0 (such as IMS 3.4.2), you need to update to the most recent

version of either IDMIS 3.5.0 or IS 3.6 before continuing with this procedure.

If the server has an Oracle release prior to 8.0.6, you must upgrade to Oracle 8.0.6 before continuing with this procedure.

CSS Worldwide Customer Support

The following sub-sections describe various support documents and tables that will give you additional, up-to-the-minute information concerning your update. These are all available on the FileNet Web site at <http://www.css.filenet.com>. Login to Worldwide Customer Support to review these topics.

Release Notes for Image Services 4.0.0

The **Release Notes** file is available in two places.

The latest Release Notes file can be retrieved at any time from the FileNet Web site.

The Release Notes are also located on the CD-ROM **FileNet Image Services 4.0.0 for Sun Solaris** in two formats: **/relnote.html** and **/relnotes.txt**.

The Release Notes contain valuable information you need to install and configure Image Services software. Do not start the update without first reading the Release Notes.

Pay special attention to the “**Patches**” mentioned in the Release Notes. (Search for the keywords **PRE-UPDATE** and **REQUIRED** to locate information about Solaris, Oracle, and Image Services patches that need to be applied before starting this update.) Image Services patches are located on the FileNet Web site.

Release Dependency Spreadsheet

Review the Image Services Release Dependency spreadsheet for information that might be pertinent to the entire system configuration. The Release Dependency spreadsheet contains software compatibility information for client workstations, fax servers, and printer servers.

You may see this spreadsheet referred to as the Support Matrix or the Compatibility/Dependency Matrix.

Note

If the Image Services Toolkit (formerly known as WAL) is installed on the same server as Image Services, the Toolkit must be version 3.6 or higher. Make sure any IS Toolkit SCRs listed in the Release Dependency spreadsheet have been downloaded and installed.

Operating System Notes

Review the Operating System Notes for your current version of the Solaris Operating Environment to determine if any patches need to be installed prior to this Image Services update. The System Administrator is responsible for obtaining and installing these patches. The Operating System Notes are available on the FileNet Web site.

Update Prerequisites

The prerequisites for updating Image Services software are included in the following sections. It is very important that you complete all prerequisite steps and gather all pertinent information. If you do not gather this information now, you will not be able to complete this update procedure correctly.

CAUTION

The Sun/Solaris operating system will not allow an underscore (“_”) as part of the server name. However, the FileNet Image Services software will accept the underscore as part of the domain name. The FileNet domain name does not necessarily have to be the same as the server name.

Minimum Hardware Requirements

Note

These requirements have changed from previous Image Services releases and from previous versions of this document.

Server Hardware

- SUN Microsystems SPARC- or UltraSPARC server (32-bit or 64-bit processors).

Note Oracle9i software is compatible with both 32-bit and 64-bit Sun/Solaris servers.

- A CD-ROM drive installed and configured for use on your SUN server.

Server Memory

- Root/Index and Application Servers with Oracle:
512 MB memory for each processor in the server.
- Storage Library and Application Servers without Oracle:
256 MB memory for each processor in the server.

To determine the total amount of installed memory, enter on each server:

prtconf | grep Memory

Total Swap Space

Oracle recommends that swap space be **2 times** the amount of server memory. For example, a server with 512 MB of memory should have at least 1 GB of swap space.

However, if the server has more than 1 GB of server memory, Oracle recommends that swap space be **1.5 to 2 times** that amount.

Total Disk Space

For FileNet software, minimum datasets, and Oracle software only:

- At least **4.5 GB**

These sizes include a 30% growth factor, but do not include space required for the Solaris Operating Environment.

Available Free Disk Space for Oracle Software

Within the total disk space shown on the previous page, Oracle software requires the following amounts of free disk space:

- At least **3.0 GB** usable free space for Oracle **server** software, or at least **500 MB** usable free space for Oracle **client** software. Additional Oracle products will require additional space.
- **400 MB** of temporary free space for Oracle files in /tmp or another user-defined directory. (Steps for creating a temporary /oratmp file system are included in Chapter 2.)
- **50 MB** of temporary free space for Oracle installation and inventory files in the parent directory of ORACLE_HOME. If you use /usr/ora/920 as the ORACLE_HOME directory, you need 50 MB free in /usr. (Steps for increasing the size of /usr, if necessary, are also included in Chapter 2.)

Available File System Space for Image Services Software

The FileNet Image Services software needs the minimum amounts of free disk space in the file systems shown here:

- **350 MB** total space in /fnsw.
- **200 MB** total space in /fnsw/local.

Note If /fnsw/local is not a separate file system, the update requires **500 MB** total space in /fnsw.

Solaris Operating Environment

The Image Services 4.0.0 software is compatible with:

- Solaris® version 8 Operating Environment (32-bit or 64-bit).

If an earlier version of Solaris is currently installed on the server, the System Administrator must upgrade to Solaris 8 at the appropriate time (described in Chapter 2 of this procedure).

Tip Be sure to check the FileNet Web site for any operating system patches that may be required for compatible operation with Image Services 4.0.0.

Common Desktop Environment (CDE)

The Common Desktop Environment is a graphical user interface that runs in conjunction with the X Windows System. Much like X Windows, CDE automatically opens an Error Log window and a FileNet DT term window when you logon.

Note To disable CDE and use X Windows instead, refer to your operating environment documentation. If you want to re-enable CDE in the future, you can run the following script as **root** user:

/fnsw/etc/DTwindows

Non-GUI commands can be performed at either the GUI terminal or the ACSII terminal.

Note If you are using an international keyboard, remember to select the keyboard language when you first logon to CDE.

At the logon box, select Options, Language. Then choose the appropriate keyboard language from the pull-down menu.

Software Requirements

To perform the update to Oracle 9.2.0 and Image Services 4.0.0, you'll need these media:

Image Services Media

FileNet Image Services & COLD™ 4.0.0 for Solaris (CD-ROM). This media contains the Image Services 4.0.0 software including COLD 4.0.0 software.

Oracle RDBMS Media

- Oracle9i Database Release 2 Enterprise/Standard Edition for Sun SPARC Solaris (32-bit)*

- or -

- Oracle9i Database Release 2 Enterprise Edition for Sun SPARC Solaris (64-bit)

* 32-bit software can be installed on a 64-bit operating system, but 64-bit software cannot be installed on a 32-bit operating system.

Note The Oracle9i software media are not supplied by FileNet.

- Oracle Patch Set 2 (9.2.0.2) and
- Oracle Interim Patch 2645455*

*This Interim Patch corrects a problem with the US7ASCII character set. If you plan to use a different character set, such as WE8ISO8859P1, this patch is not required.

Note **At the time this document was published, Oracle Patch Set 3 (9.2.0.3) did not include the fix for the US7ASCII problem, and no equivalent Interim Patch for Patch Set 3 was available. However, Oracle may include this patch in subsequent Patch Sets. Check**

the Image Services 4.0.0 Release Notes on FileNet's Web site <http://www.css.filenet.com> for the latest news.

The patch set and interim patch are available for download from the Oracle MetaLink Web site.

The patch set and interim patch are available for download from the Oracle MetaLink Web site. For Patch Set installation instructions, see [“Appendix B – Installing Oracle Patch Set 9.2.0.2” on page 214](#). For Interim Patch installation instructions, see [“Appendix C – Installing Oracle9i Data Server Interim Patch 2645455” on page 227](#).

Note If the **database administrator** or **system administrator** wants to install Oracle9i before the FileNet Technical Consultant arrives to update the Image Services software see [Guidelines for Installing and Updating Oracle Software for UNIX Servers](#). Use these guidelines to update the Oracle RDBMS.

Solaris Operating Environment Media

- Solaris version 8 Operating Environment software installation (3 CD-ROMs). If the server is a stand-alone system, the server must be configured as a networked, stand-alone system. In addition, you must have at least the Developer System Support packages installed.
- FileNet Image Services software requires that the server have a static IP address. Verify that a specific IP address has been assigned to the server. Use of a dynamic IP address (DHCP) is not supported.

Volume Management Software

Volume management software is included with several Sun/Solaris products or it may be purchased separately.

- VERITAS Volume Manager 3.x for Solaris - available from Sun or directly from Veritas. Included with Sun StorEdge disk arrays.

Update Prerequisites

The following table lists the documents, media, and server resources required to successfully update your Image Services software to release 4.0.0. Each requirement is described in detail later in this document.

Table 1-1: Update Prerequisites

Prerequisites	Comments
Read FileNet Release Notes.	Available on the Image Services update CD at /relnotes.html and at CSS Worldwide Customer Support on FileNet's Web site at www.css.filenet.com .
Install Solaris patches, if needed.	Check Customer Support on the FileNet Web site for patches that may be required prior to this update.
Install the Pre-Update Show Stopper fixes that were identified in the Release Notes.	<p>It is mandatory to have the appropriate show stopper fixes installed when you start your update. Otherwise, your update will fail.</p> <p>The fixes are available at www.css.filenet.com and on the Tech Info CD, which is distributed to FileNet Technical Consultants.</p>

Table 1-1: Update Prerequisites, Continued

Prerequisites	Comments
Back up the entire system.	Include FileNet datasets, cache, and Solaris OE.
Obtain proper CD-ROMs for Image Services and Oracle software	Refer to the section, “Software Requirements” on page 28
For Servers With Oracle:	
Create a new file system for Oracle 9.2.0.	Do not use your current Oracle file system for Oracle 9.2.0. (Must have at least 3.5 GB free space)
Create a home directory for the oracle user, if necessary	It can't be /usr/oracle or the same directory where Oracle software is stored.
Verify/Add sufficient contiguous Oracle System tablespace.	Do this immediately prior to running the Update.

Related Documents

As you read this procedure, you may see references to other documents you may need to review. You may want to keep these documents handy in case you need to use them during this update.

The following documents are contained on the *Image Services 4.0.0 Documentation CD-ROM*:

- ***Image Services System Administrator's Handbook***
- ***Image Services System Administrator's Companion for UNIX***
- ***Enterprise Backup and Restore User's Guide***
- ***Third-Party Backup/Restore Guidelines***

2

Preparing for the Update

At least four weeks prior to the update, the FileNet Technical Consultant or the ValueNet Partner **must** do these things:

- Schedule the update with the FileNet Upgrade/Install Assurance Team and access the team's latest list of current scheduling procedures.
- Copy the Image Services CDB file. Send it to the FileNet Upgrade/Install Assurance Team at upgrade@filenet.com.
- Run `spacerpt`. Send the results to the FileNet Upgrade/Install Assurance Team, and keep a printed copy for comparison after the update is complete.

When you are instructed to send a file or output to the FileNet Upgrade/Install Assurance Team, you can either:

- a FTP the file from the server to a client PC so you can easily copy the file to a floppy disk and send it to the FileNet Upgrade/Install Assurance Team, or...
- b Send the file to the FileNet Upgrade/Install Assurance Team via e-mail at upgrade@filenet.com.

Copy the Image Services .CDB File

The FileNet Upgrade/Install Assurance Team will need to inspect your Image Services CDB file before you begin the update. This file allows your service provider to check the configuration for database integrity.

The CDB file is built by the configuration editor (`fn_edit`) and is stored in the `/fnsw/local/sd/conf_db` directory. The naming convention is **IMS_n.cdb** where 'n' is a sequentially assigned number that is incremented each time the CDB file is rebuilt. You will likely find several versions of the CDB file.

Copy the most recent CDB file (the one with the highest “n” number) and send it to your FileNet Upgrade/Install Assurance Team at upgrade@filenet.com.

Copy the MasterSnmpd_start File

Make a backup copy the `/fnsw/bin/MasterSnmpd_start` file. SNMP is the Simple Network Management Protocol. See the [***SNMP Reference Manual***](#) for more information.

Installing the new version of Image Services software overwrites the current version of this file. At the end of this update procedures, you'll compare the newly installed version against this saved version.

For example, as **fnsw** user, save the current file by entering:

```
cp /fnsw/bin/MasterSnmpd_start /fnsw/bin/MasterSnmpd_save
```

Run spacerpt

The FileNet Upgrade/Install Assurance Team will need to inspect your database configuration to make sure the Oracle RDBMS objects are correct.

You need to know the f_maint password to run spacerpt.

- 1 As **fns** user, make sure Oracle is up by entering:

```
ps -ef | grep ora
```

You should see at least four Oracle processes. If not, you need to start the Oracle software.

- If Oracle is Site-controlled, ask the DBA to start Oracle.
- If Oracle is FileNet-controlled and If there are no Oracle processes running, you can start Oracle by entering:

```
fn_util startbdb
```

- 2 As **fns** user, run spacerpt and send the output to an output file by entering:

```
spacerpt > <output_file_name>
```

where <output_file_name> can be any name you choose.

- 3 If you want to stop Oracle:

- For Site-controlled Oracle, ask the DBA to stop Oracle.
- For FileNet-controlled Oracle, enter:

```
fn_util stoprdb
```

- 4 Send the output file to the FileNet Upgrade/Install Assurance Team at upgrade@filenet.com. Also print a copy of this file and keep it in a safe place. You will need to compare this copy with the spacerpt run at the end of this update procedure.

Backup the /fnsw/etc/serverConfig File

- 1 Logon as **fnsw** user.
- 2 Make a copy of the /fnsw/etc/serverConfig file by entering commands similar to the following:

```
cd /fnsw/etc  
cp serverConfig serverConfig.save
```

After the update procedure is complete, you can verify that the server configuration parameters are unchanged by checking the saved file.

Disable FileNet-Related Cron Jobs

There may be some FileNet-related cron jobs that access the FileNet databases. You will need to disable these cron jobs for the duration of the update. You will re-enable the cron jobs after the update is complete.

The crontab files are located in /usr/spool/cron/crontabs.

Shutdown FileNet Software

Notify all other users on the system to logout before you continue with the update procedure. Warn them you are about to shutdown the FileNet software and kill all processes.

Exit IS Toolkit (WAL) Applications

Exit from any Image Services Toolkit (formerly known as WAL) applications currently running on the server. (Later in this procedure you will run the `killfnsw` command, which clears the Image Services shared memory.)

As **root** user, enter:

```
/fnsw/client/bin/wal_purge
```

Stop FileNet Software

Note In a multi-server system, you must stop the FileNet software in the following order:

- 1 - the application server(s)
- 2 - the storage library server(s)
- 3 - the root server

Startup should be in the opposite order with the root server first, followed by the storage library server(s), and finally the application server(s).

- 1 As **fns** user, shut down the FileNet Image Services software by entering:

```
initfns -y stop
```

- 2 To check what FileNet processes are currently running, enter:

```
whatsup
```

Note Running the **whatsup** command causes the **TM_daemon** to start.

- 3 Kill all remaining FileNet processes displayed by entering:

```
killfns -DAy
```

- 4 To check that all the Image Services processes have been killed, enter:

```
ps -ef | grep fnsw
```

Note You can also use the `grep` command to check for the `COR_Listen` processes.

- 5 If any `fnsw` processes remain active, including `TM_daemon`, kill each one explicitly by entering:

```
kill <process_id>
```

where `<process_id>` is the process number shown in the display in Step 4.

Verify the System Serial Number

Use the `ssn` command to display the system serial number. As `root` user, enter:

ssn

Important!

The 10-digit ssn, which is assigned by FileNet, is written onto all storage media and **must** be unique for each Image Services system. If you have more than one Image Services system (domain), each **must** use its own unique ssn to prevent potential problems if media are ever transferred from one IS system to another.

Modify the /etc/inittab File

You must edit the /etc/inittab file to prevent the network protocol configuration process from broadcasting error messages during the configuration process.

- 1 As **root** user, change to the /etc directory by entering the following command:

```
cd /etc
```

- 2 Using a preferred editor (for example, **vi**), open and edit the inittab file.

- 3 Locate and comment out (by adding a `:` before) the following line:

```
fn:3wait:/bin/sh /etc/rc.inifnsw </dev/console> /dev/console2 >&1
```

Install/Update Volume Management Software

Before you can modify or create file systems and volumes for the FileNet Image Services software, the **System Administrator** must install volume management software on each server:

- VERITAS Volume Manager 3.x for Solaris - available from Sun or directly from Veritas. Included with Sun StorEdge disk arrays.

The system must meet the requirements specified in the volume manager documentation.

For information on installing Veritas Volume Manager documentation and software, see [“Appendix A – Installing Veritas Volume Manager” on page 209](#).

Verify File Systems and Volumes

Use the volume manager to make sure the following file systems and volumes have been created and are the appropriate sizes:

Note **For Sites with Disk Arrays ONLY:** Disk arrays managed by the Veritas volume management software, do not always “grow” to an even MB boundary. You should verify the new size, after “growing” a volume, by displaying the volume information. The new volume size will display in Kilobytes if it did not “grow” to an even Megabyte boundary. Previous installations with a disk array (configured for RAID-5) have determined that the correct procedure for accurately “growing” a volume to an even Megabyte boundary is to make the new volume size evenly divisible by seven. It is uncertain if the suggestion is applicable for all disk arrays.

(Check the most current version of the Release Notes for more information.)

Table 2-1 FileNet and Oracle Volumes

Volume Name	Mount Point	Minimum Size	User	Group	Mode
fnsww	/fnsww	300m	fnsww	fnusr	775
local	/fnsww/local	200m	fnsww	fnusr	775
ora920 * (Server) (Client)	/usr/ora/920	3000m 500m	oracle	dba	755
arch920 **	/usr/ora/ arch920	100m	oracle	dba	755
oratmp ***	/oratmp	400m	oracle	dba	755

* If Oracle Client software is going to be installed on the FileNet server for a remote Oracle instance, the minimum size is 500m.

** The minimum size for arch920 is arbitrary. If archive logging will be used, the size of this file system will depend on the amount of database activity and the frequency of backups.

***The oratmp file system is used for temporary space during the Oracle software installation. It can be removed at the end of this update procedure.

Verify FileNet and RDBMS Groups and Users

Note The group name **dba** and the user name **oracle** are suggested but not required. (All references to either **dba** or **oracle** in this section should be treated as examples only.)

Verify Passwords for RDBMS and fnswh Users (if applicable)

If you have not previously established passwords for **fnswh** and the RDBMS user, create the passwords now before proceeding with the software update.

- 1 To set up the password for Oracle, at the system prompt enter:

passwd oracle

- 2 You are then prompted New password:.
- 3 After you enter the password, you are then prompted Re-enter new password:.
- 4 After you enter the password a second time, you return to the system prompt.
- 5 To set up the **fns** password, at the system prompt enter:

passwd fns
- 6 You are then prompted New password:.
- 7 After you enter the password, you are then prompted Re-enter new password:.
- 8 After you enter the password a second time, you return to the system prompt.

Check FileNet Logical Volume Sizes

Server Types

Perform the steps in this section on **all servers**.

Make sure that the **fns**, **local**, and **oracle** file systems are not being accessed by anyone. Otherwise, the following steps will fail.

The steps in this section ensure that the **fns** and **local** logical volumes have enough disk space.

- 1 As **fns** user, make sure the Image Services software is stopped.
Enter:

```
initfns stop
```

- 2 Make sure that all processes have been stopped by entering:

```
whatsup
```

If the resulting display shows that any processes, such as **TM_** daemon, are still active, enter the appropriate command:

killfnsw -DAy

The -D option kills FileNet daemons (e.g. Task Manager). It can be specified if the TM_daemon process is to be terminated. Normally, this process stays running across initfnsw stop cycles, but on occasion, it is necessary to terminate TM_daemon as well.

The -A option removes all IPC segments.

The -y option automatically answers Yes to subsequent **killfnsw** prompts.

- 3 As **root** user, launch the volume management software by entering the appropriate command.
- 4 Select the appropriate disk group icon (for example, fndg).
- 5 Select the **/fnsw** volume.
- 6 Compare the logical volume sizes displayed with sizes shown in the following table. Your logical volume sizes should be equal or greater

than the sizes in the table. (If any of your logical volumes are larger than the sizes shown, you do not need to decrease them.)

Table 2-2: Logical Volume Sizes for /fnsw and /fnsw/local

Logical Volume Names	New Logical Volume Sizes	Free Space	Mount Points
fnsw	300MB	50MB	/fnsw
local	200MB	40MB	/fnsw/local

If you need to increase the size of either of these logical volumes to match the sizes shown in the table, you'll have that opportunity when you update the Image Services software later in this procedure.

Verify/Change the Operating System Kernel Limits

Both the FileNet and the RDBMS system software are very resource intensive. To satisfy the resource needs of the software, you may need to modify some default operating system parameters.

Note Make a copy of the `/etc/system` file (with a new name) before performing the procedure contained in this section. To copy the `/etc/system` file, enter a command similar to the following:

```
cp /etc/system /etc/system.save
```

- 1 As **root** user, edit the `/etc/system` file, using your preferred editor (for example, **vi**), by entering a command similar to the following:

```
vi /etc/system
```

- 2 Verify that the settings match the values shown. (If your values are higher, enter the higher values appropriate for your system. Do not enter values lower than those shown below.) If no changes are needed, exit the file and skip to the next section, [**“Verify/Change File System and Volume Settings” on page 57.**](#)

Modify the `/etc/system` file by entering the parameter lines listed below, if necessary.

CAUTION

Use extreme care when entering the commands shown below. Entering values incorrectly may cause general system errors. Before rebooting the server, verify the accuracy of each of the lines added to the `/etc/system` file.

```
set semsys:seminfo_semmap=50
set semsys:seminfo_semmni=2000
set semsys:seminfo_semmns=2000
set semsys:seminfo_semmnu=500
set semsys:seminfo_semmsl=512
set semsys:seminfo_semopm=256
set semsys:seminfo_semume=500
set semsys:seminfo_sevmx=32767
set semsys:seminfo_semaem=16384
set shmsys:shminfo_shmmax=20971520
set shmsys:shminfo_shmmin=0
set shmsys:shminfo_shmmni=2000
set shmsys:shminfo_shmseg=100
set msgsys:msginfo_msgmni=2048
set max_nprocs=1000
```

```
set fnsod:sod_Debug=0
set rlim_fd_max=1024
set rlim_fd_cur=256
```

Note The **shmmax** setting (maximum amount of shared memory) you choose should not be larger than the amount of swap space you configured earlier. The swap space must be at least 1.5 to 2 times the amount of server memory. The minimum **shmmax** value shown above (20971520) is equivalent to only 20 MB.

Note The **set rlim_...** lines above are intended to maximize system performance by setting the file limit descriptor values to appropriate levels.

- 3 Save your changes.
- 4 Check the `/etc/logindevperm` file:

```
more /etc/logindevperm
```

- 5 Verify that the following line has been added to the file:

```
/dev/console 0666 /dev/console
```

Note This line changes the login-based permissions of the console, and will prevent console warning messages from being logged in the error log file.

- 6 If the line does not exist in the file, use your preferred text editor, such as **vi**, to add it at the end of the file.
- 7 If no changes were necessary, skip to the section, **[“Verify/Change File System and Volume Settings” on page 57.](#)**

Otherwise, if you did make changes, continue with the next step.

- 8 Rebuild the kernel by entering the following commands:

```
shutdown -i6 -g0 -y
```

The system displays several status messages and reboots automatically.

- 9 When the system restarts, logon as **root** user.

Verify/Change File System and Volume Settings

The System Administrator must perform the following sections in the CDE or X Window System environment.

/fnsw File System Settings

The System Administrator must configure the /fnsw file system with the proper owner and permissions.

Note If you have just finished creating missing volumes and you have not exited the volume manager application, skip Steps 1 through 3 in the procedure below. Do not exit the volume manager application until instructed to do so later in this section.

- 1 Verify that you're logged on as **root** user.
- 2 Open an X window, and launch the Volume Manager

- 3 Select the appropriate disk group icon (for example, fndg).
- 4 Select the **/fnsw** volume.
- 5 A new menu displays. From the new menu change the following settings:

Parameter	Setting
User	fnsw
Group	fnusr
Mode	775

- 6 Click on **Apply**. (Do not exit the Volume Manager application until instructed to do so later in this section.)

Verify Image Services/RDBMS Volumes Settings

After creating or modifying the appropriate volumes, the System Administrator must configure all of the volumes for proper operation. Use the instructions below when configuring the volumes.

- 1 Still in the volume management software, select the appropriate disk group icon (for example, fndg).
- 2 Select the volume you wish to configure (for example, fn_cache, fn_permanent_db, fn_transient_db, fn_sec_db, etc).
- 3 A new dialog box displays. From the new dialog box change the following settings:

Parameter	Setting
User	fnsw
Group	fnusr
Mode	664

Note Use the settings shown above for all volumes, including the Oracle related volumes.

- 4 Select **Apply** to save and exit the dialog box.
- 5 Repeat Steps 2 through 4 for each volume that needs to be changed.

Exit the Volume Manager

After you've finished modifying the Image Services and RDBMS volumes, exit the volume manager.

Update Solaris Operating Environment (if necessary)

If necessary, the System Administrator must upgrade the server to Solaris 8 OE before installing Image Services 4.0.0. DO NOT install the Image Services 4.0.0 software until the Solaris Operating Environment has been successfully upgraded.

Note Before updating the Solaris Operating System, the **System Administrator** must run the Volume Manager update script in order for the Solaris OS update to complete successfully. The Administrator should refer to the *Sun Enterprise Volume Manager 2.5 Installation Guide*.

Important!

Be sure to check the FileNet Web site <http://www.css.filenet.com> for any operating system patches that may be required for compatible operation with Image Services 4.0.0.

Debugging Software

Debugging software is required for Image Services 4.0.0 and must be installed on each Image Services server. A debugger enables FileNet support personnel to troubleshoot both FileNet and Solaris-related problems.

To determine if the debugger is already installed, enter the following command on each server:

```
pkginfo | grep SPROdbg
```

If this file is present, the debugger is installed. If this file is **not** present, and if the media and license are available, you must install it. Otherwise, contact your Sun representative for complete ordering information.

Note A command-line debugger is included with Sun ONE Studio 7, Compiler Collection, which includes C, C++ and Fortran compilers “for the creation of high-performance, high-quality applications for the Solaris SPARC system.”

Or you may wish to consider installing the **gdb 5.0** debugger, which is included with Solaris 8 as freeware on the *Solaris 8 2/02 Companion Software*, which is available for download from [Sun](#).

Contact your Sun representative for other options that may be available.

3

Updating RDBMS Software

This chapter explains how to update Oracle software for a FileNet-controlled RDBMS on a server running the Solaris 8 Operating Environment.

Server Types

Perform the sections in this chapter only on the:

Root/Index server during a DUAL server update.

Root/Index/Storage Library server during a Combined or Entry server update.

Application server running WorkFlo Queue Services or SQL Services.

If you are configuring a Storage Library server or an Application server that does not require Oracle, skip to [Chapter 4, “Updating Image Services Software,” on page 139](#).

This chapter may be printed separately from the rest of the document so the **Database Administrator** can update or migrate the Oracle RDBMS before the FileNet **Technical Consultant** arrives to update the Image Services software.

Tip The procedures in this section require that you enter commands as **root**, **fns**, and **oracle** user. To simplify this, open three terminal windows and logon as a different user in each window.

Note Throughout this chapter, you may see references using **/usr/ora/920** as a file system home directory, **oracle** as a user (and also as a directory), and **dba** as a group. This chapter uses **/usr/ora/920**, **oracle**, and **dba** only as examples. You can, and should, use file systems, groups, directories, and users on your system in place of the examples.

Site-Controlled Installation

If the Oracle RDBMS is Site-controlled, the **Database Administrator** is responsible for updating the Oracle software and the Oracle database objects. The Database Administrator may, however, use the instructions in this chapter as a guide.

For Site-controlled Oracle guidelines, refer to Chapter 4 of the *[FileNet Guidelines for Installing and Updating Oracle for UNIX Servers](#)*.

Note When updating a Site-controlled Oracle RDBMS, some FileNet tools may be ineffective. For example, the FileNet System Configuration Editor cannot be used to disable archive logging. This must be done manually.

After the DBA has installed the Oracle RDBMS software, and has given you the following information requested in the appendix, skip to **[Chapter 4, “Updating Image Services Software,” on page 139](#)**.

Site-Controlled \$ORACLE_SID: _____
(instance identifier) (e.g., IDB)

Name of DBA Group: _____
(for database administration) (e.g., dba)

FileNet-Controlled Installation

If your Oracle RDBMS is FileNet-controlled, the Database Administrator or the FileNet Technical Consultant is responsible for updating the Oracle RDBMS software and the Oracle database objects.

Update Prerequisites

- 1 Verify that you have the following software installation media:
 - Oracle9i Database Release 2 Enterprise/Standard Edition for Sun SPARC Solaris (32-bit)*
 - or -
 - Oracle9i Database Release 2 Enterprise Edition for Sun SPARC Solaris (64-bit)

* 32-bit software can be installed on a 64-bit operating system, but 64-bit software cannot be installed on a 32-bit operating system.

Note The Oracle media are not supplied by FileNet.

- Oracle Patch Set 2 (9.2.0.2) and
- Oracle Interim Patch 2645455*

*This Interim Patch corrects a problem with the US7ASCII character set. If you plan to use a different character set, such as WE8ISO8859P1, this patch is not required.

Note **At the time this document was published, Oracle Patch Set 3 (9.2.0.3) did not include the fix for the US7ASCII problem, and no equivalent Interim Patch for Patch Set 3 was available. However, Oracle may include this patch in subsequent Patch Sets. Check the Image Services 4.0.0 Release Notes on FileNet's Web site <http://www.css.filenet.com> for the latest news.**

The patch set and interim patch are available for download from the Oracle MetaLink Web site. For Patch Set installation instructions, see

“Appendix B – Installing Oracle Patch Set 9.2.0.2” on page 214.

For Interim Patch installation instructions, see **“Appendix C – Installing Oracle9i Data Server Interim Patch 2645455” on page 227.**

- 2 A minimum release of the Solaris 8 Operating Environment software must be installed on the server.
- 3 You need to make sure that the server meets the following prerequisites:
 - a A server with a CD-ROM drive capable of handling the installation media.
 - b A server with enough free space in the file system where Oracle is to be installed, to accommodate the Oracle software.

Note If you are planning to install all of the products on the Oracle media, consult the Oracle documentation for further information.

- 4 You need to know the passwords for the following users (if passwords exist for the users):

fnsw: _____

root: _____

oracle: _____

Note Throughout this chapter, you may see references using `/usr` as a file system, **oracle** as a group (and also as a directory), and **dba** as a user. This chapter uses `/usr`, **oracle**, and **dba** only as examples. You can use file systems, groups, directories, and users on your system in place of the examples.

Back Up the Oracle Initialization File

To prepare for the migration from Oracle8 to Oracle9i, make a backup copy of the `init.ora` file. As **fnsw** user, enter:

```
cp /fnsw/local/oracle/init.ora /fnsw/local/tmp
```

Back Up Oracle Databases

Make sure you have a full and complete backup of Oracle before continuing. Refer to these documents for complete information on performing a system backup:

- [*Image Services System Administrator's Companion for UNIX*](#)
- [*Image Services Enterprise Backup and Restore User's Guide*](#)
- [*Image Services Third-Party Backup/Restore Guidelines*](#)
- [*Third-Party Backup/Restore Guidelines*](#)

Disable Archive Logging

If Archive Logging is enabled on the server, you must disable it before you update the Oracle RDBMS software. You can disable the Oracle archive logging by following these steps:

- 1 As **fns** user, launch the FileNet System Configuration Editor by entering:

fn_edit &

- 2 Click **OK** in the initial dialog box.
- 3 When the main System Configuration Editor window displays, click the Relational Databases tab.

The Oracle sub-tab should be on top. If not, click the Oracle sub-tab to bring it to the front.

- 4 On the Oracle sub-tab, locate the Log Archive Start field. If an **X** appears in this field, Archive logging is turned off. A check mark indicates that Archive logging is turned on.

Click the field to place an **X** in the field.

- 5 Now you can exit **fn_edit** by selecting Exit from the File pulldown menu. Be sure to save your changes to the configuration database when you are prompted.

- 6 Rebuild the Oracle configuration files by entering:

```
fn_build -a  
fn_util updatertdb
```

Check Existing Dataset File Names and Tablespace Sizes

Use this procedure to check the existing Oracle dataset and file name, and verify that there's enough space to update the database to Oracle 9.2.0.

It's important to know if your Oracle database is in **coexistence mode** or **non-coexistence mode**. This will determine how much SYSTEM tablespace expansion is required.

Coexistence mode means the Oracle SYSTEM tablespace is in the oracle_sys0 datafile. Non-coexistence mode means the Oracle SYSTEM tablespace is in the oracle_db0 datafile.

- 1 When you ran the `spacerpt` command in the previous chapter, you saved the output to a file. (See [“Run spacerpt” on page 38.](#)) View that file or examine the copy you printed for later reference.
- 2 Output for **coexistence mode** should appear similar to this:

Tablespace	File#	Size(KB)	NAME
FNSYS_TS	2	1966074	/fnsw/dev/1/oracle_db0
	3	1966074	/fnsw/dev/1/oracle_db1
	4	1966074	/fnsw/dev/1/oracle_db2
	5	1966074	/fnsw/dev/1/oracle_db3
FNTMP_TS	6	393210	/fnsw/dev/1/oracle_tr0
SYSTEM	1	65530	/fnsw/dev/1/ oracle_sys0

		8323036	

Notice that SYSTEM tablespace is in a dedicated file (oracle_sys0) in this example. This means that the database is in **coexistence mode**.

Tablespace	Free space (KB)	Largest free extent (KB)
-----	-----	-----
FNSYS_TS	1488586	1428472
FNTMP_TS	229368	229368
SYSTEM	18590	13490

For systems running in **coexistence mode**, the upgrade to Oracle 9.2.0 requires that the SYSTEM tablespace have a **total of at least 200 MB** of free space configured. If the total of the oracle_sys partitions is not 200 MB or greater, add an additional **oracle_sys** partition as described in the next section, **“Expand the SYSTEM Tablespace” on page 76.**

3 Output for **non-coexistence** mode would appear similar to this:

Tablespace	File#	Size(KB)	NAME

SYSTEM	1	204798	/fnsw/dev/1/ oracle_db0
	2	204798	/fnsw/dev/1/oracle_db1
	3	204798	/fnsw/dev/1/oracle_db2
TS1	4	20478	/fnsw/dev/1/oracle_tr0

		624872	

Notice that SYSTEM tablespace is in oracle_db0 for **non-coexistence mode**.

Tablespace	Free space(KB)	Largest free extent (KB)

SYSTEM	103892	35586
TS1	10236	512

For systems running in **non-coexistence mode**, the update to Oracle9i requires that the SYSTEM tablespace have at least **200 MB**

of free space available. If the Free space (KB) column on the spac-
erpt output shows that SYSTEM tablespace does not have at least 200
MB (200000 KB) free, add an additional **oracle_db** partition as
described in the next section, [“Expand the SYSTEM Tablespace.”](#)

Expand the SYSTEM Tablespace

Perform the following steps to add more space to the SYSTEM
tablespace. First create a new volume and then configure the volume
properties.

Create New Volume

- 1 Logon as **root** user, and start X Windows (if you have not already done so).
- 2 Launch the volume manager by entering the appropriate command.
- 3 Expand the disk groups icon and locate the appropriate disk group (for example, **fndg**).

- 4 For example, if you're using Veritas, right-click the disk group (**fn_{dg}**, for example), and the Disk Groups pop-up menu displays.
- 5 Click **New Volume...** and then select **Create**.
- 6 Depending on the hardware available on your system, select either Simple, Striped, or RAID. (A pop-up window appears.)
- 7 From the pop-up window, enter the following settings for the corresponding options for one of the following partitions:

Note The Volume Size for **fn_oracle_sys(n)** must be entered in multiples of the default value, **at least 200MB**.

The Volume Size for **fn_oracle_db(n)** must be entered in multiples of **at least 200MB**.

For fn_oracle_sys(n) Partitions (Co-existence Mode):

Configuration Option	Configuration Setting
Volume Name	fn_oracle_sys1 (*example)
Volume Size	200m
Create Filesystem	no

* fn_oracle_sys1 is an example in the table above. Refer to the procedure **“Check Existing Dataset File Names and Tablespace Sizes” on page 72** for the file names of the current Oracle system tablespace. If more than one datafile exists for the system tablespace, use the highest number. Then enter the next higher number in the pop-up window above. For example, if the existing file name is fn_oracle_sys0, you would enter fn_oracle_sys1.

For fn_oracle_db(n) Partitions (Non-Coexistence Mode):

Configuration Option	Configuration Setting
Volume Name	fn_oracle_db1 (*example)
Volume Size	200m
Create Filesystem	no

- 8 Click on **Apply**.

Configure the New Volume

After you have created the new volume, you must configure it.

- 1 Select the volume you wish to configure (for example, fn_oracle_sys1 or fn_oracle_db1).

The Volume Properties dialog box displays.

- 2 In the Volume Properties dialog box change the following settings:

Parameter	Setting
User	oracle
Group	dba
Mode	664

- 3 Click on **Apply**.
- 4 From the File menu, select **Exit** to quit the volume manager.
- 5 Click **Yes** at the confirmation prompt to confirm your decision to exit.
- 6 Enter commands similar to the following. For example:

```
cd /fnsw/dev/1
```

```
In -s /dev/vx/rdisk/<disk_group>/fn_oracle_sys1 oracle_sys1  
or  
In -s /dev/vx/rdisk/<disk_group>/fn_oracle_db1 oracle_db1
```


where <disk_group> is the name of the appropriate disk group, such as **fn_dg**. Be sure to use the correct disk group name for your server.

- 7 Make sure the current ORACLE_HOME is still temporarily set to the location of the Oracle8 software:

```
echo $ORACLE_HOME
```

- 8 If you need to configure a tablespace dataset partition for **fn_oracle_sys(n)**, continue with the next section.

If you need to configure a tablespace dataset partition for **fn_oracle_db(n)**, skip to the section, [**“Configure Tablespace Dataset Partition for fn_oracle_db\(n\)” on page 86.**](#)

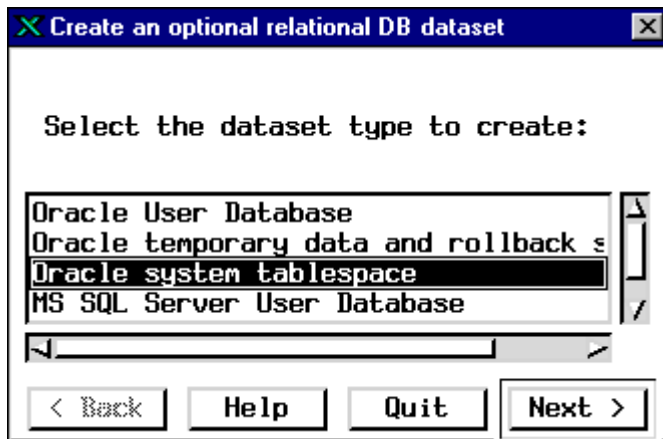
Configure Tablespace Dataset Partition for fn_oracle_sys(n)

- 1 As **fns** user, start the Configuration Editor by entering:

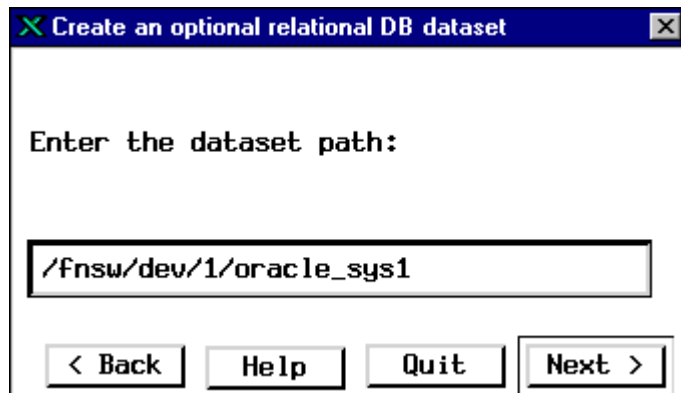
```
fn_edit &
```

The System Configuration Editor window opens.

- 2 On the Procedures tab, select the Create an optional relational DB dataset procedure and click **Run**. The following dialog box appears.

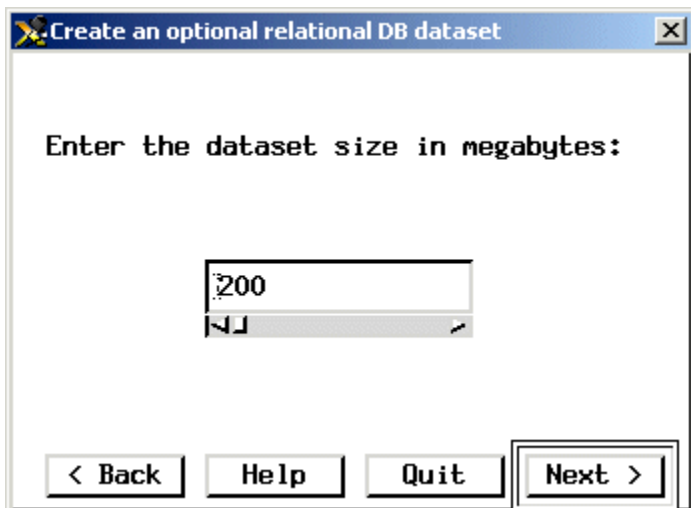


- 3 Select Oracle system tablespace for the dataset type, and click **Next**. The following dialog box appears.



- 4 Accept (or change if necessary) the default dataset path and click **Next**.

The following dialog box appears.



- 5 Select the size you configured for the dataset and click **Next**.
The following message displays.

If you added a dataset for a relational database, you will need to create its logical volume and run **fn_util updatertdb** on the server housing the database.

- 6 Read the information on this screen and click **Next**. We'll remind you to run the `fn_util updatertdb` command at the appropriate time.
- 7 Exit the System Configuration Editor and save the changes you made.
- 8 Skip to the section, **[“Rebuild Configuration Files” on page 87.](#)**

Configure Tablespace Dataset Partition for fn_oracle_db(n)

- 1 As **fns** user, start the Configuration Editor by entering:

fn_edit &

The IMS System Configuration Editor window opens.

- 2 On the Procedures tab, select the Add an additional dataset procedure and click **Run**.
- 3 In the dialog box that appears, select Oracle database for the dataset type, and click **Next**.
- 4 Accept (or change if necessary) the default dataset path and click **Next**.
- 5 Select the size you configured for the dataset and click **Next**.

The following message displays.

```
If you added a dataset for a relational database,  
you will need to create its logical volume and run  
fn_util updatertdb on the server housing the  
database.
```

- 6 Read the information on this screen and click **Next**. We'll remind you to run the `fn_util updatertdb` command at the appropriate time.
- 7 Exit the System Configuration Editor and save the changes you made.

Rebuild Configuration Files

Enter the following commands to make the changes to your RDBMS:

```
fn_build -a
```

```
fn_util updatertdb
```

Verify New SYSTEM Tablespace Size

- 1 As **fns** user, start the Oracle software.
 - If Oracle is Site-controlled, ask the DBA to start Oracle.
 - If Oracle is FileNet-controlled and if there are no Oracle processes running, you can start Oracle by entering:

```
fn_util startbdb
```

- 2 Make sure the `f_maint` password has been exported.
 - In the Bourne or Korn shell, enter:

```
export F_MAINT_PW=<your f_maint_pw>
```

- In the C shell, enter:

```
setenv F_MAINT_PW <your f_maint_pw>
```

- 3 As **fns** user, run `spacerpt` by entering:

spacerpt

- 4 Check the list of data files displayed to make sure a new SYSTEM tablespace dataset has been created; for example, **oracle_sys1** or **oracle_db1**.
- 5 To stop Oracle:
 - For Site-controlled Oracle, ask the DBA to stop Oracle.
 - For FileNet-controlled Oracle, enter:

fn_util stoprdb

Check Oracle_TR Dataset Allocation

The Oracle_TR dataset is used for Oracle temporary data and rollback segments. If the TS1 or FNTMP_TS tablespaces do not exist, we highly recommend that you add one. Additional datasets may also be added at this time if the existing tablespace is not large enough.

Important!

FileNet recommends that you have at least **400 MB** of space for temporary data and rollback segments. Your system may require more.

If you wish to add more space for temporary data and rollback segments, perform the following steps to add an additional Oracle_TR dataset . First, create a new volume, and then configure the volume properties.

Create New Volume

- 1 Logon as **root** user, and start X Windows (if you have not already done so).
- 2 Launch the volume manager by entering the appropriate command.
- 3 For example, if you're using Veritas, expand the disk groups icon and locate the appropriate disk group (for example, **fndg**).
- 4 Right-click the disk group (**fndg**, for example), and the Disk Groups pop-up menu displays.

- 5 Click **New Volume...** and then select **Create**.
- 6 Depending on the hardware available on your system, select either Simple, Striped, or RAID. (A pop-up window appears.)
- 7 From the pop-up window, enter the following settings for the corresponding options for one of the following partitions:

For fn_oracle_tr(n) Partitions:

Configuration Option	Configuration Setting
Volume Name	fn_oracle_tr1 (*example)
Volume Size	200m (the amount you need to bring the total up to 400m)
Create Filesystem	no

* fn_oracle_tr1 is an example in the table above. Refer to the procedure **“Check Existing Dataset File Names and Tablespace Sizes” on page 72** for the file name of the current Oracle_tr dataset. If more than one Oracle dataset exists, use the highest number. Then enter

the next higher number in the pop-up window above. For example, if the existing file name is `fn_oracle_tr0`, you would enter `fn_oracle_tr1`.

- 8 Click **Apply**.

Configure the New Volume

After you have created the new volume, you must configure it.

- 1 Select the volume you wish to configure (for example, `fn_oracle_tr1`).

The Volume Properties dialog box displays.

- 2 In the Volume Properties dialog box change the following settings:

Parameter	Setting
User	oracle
Group	dba
Mode	664

- 3 Click on **Apply**.

- 4 From the File menu, select **Exit** to quit the volume manager.
- 5 Click **Yes** at the confirmation prompt to confirm your decision to exit.
- 6 Enter commands similar to the following. For example:

```
cd /fnsw/dev/1
```

```
ln -s /dev/vx/rdisk/<disk_group>/fn_oracle_tr1 oracle_tr1
```

where <disk_group> is the name of the appropriate disk group, such as **fn dg**. Be sure to use the correct disk group name for your server.

- 7 Make sure the current ORACLE_HOME is still temporarily set to the location of the Oracle7 software:

```
echo $ORACLE_HOME
```

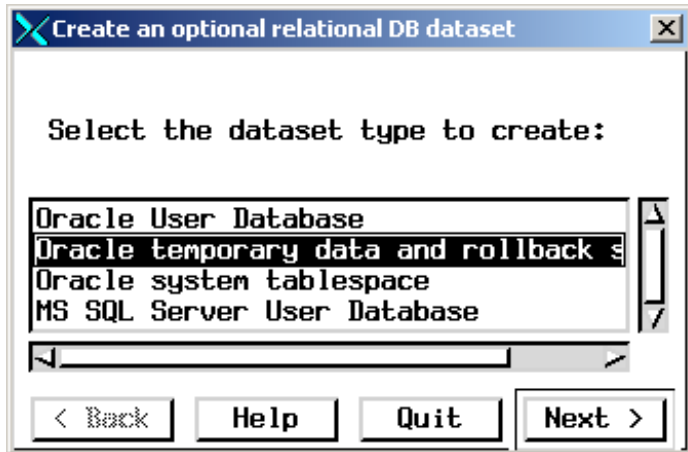
Configure Dataset Partition for fn_oracle_tr(n)

- 1 As **fns w** user, start the Configuration Editor by entering:

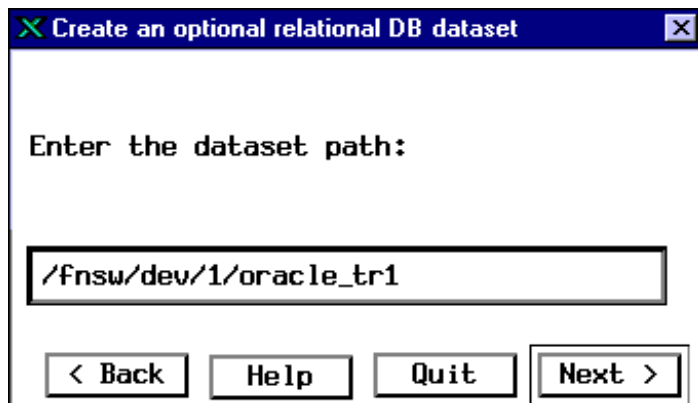
fn_edit &

The System Configuration Editor window opens.

- 2 On the Procedures tab, select the Create an optional relational DB dataset procedure and click **Run**. The following dialog box appears.

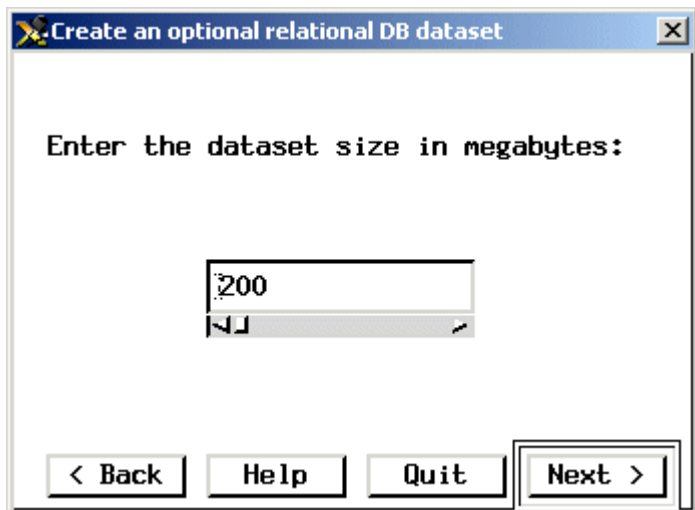


- 3 Select Oracle system tablespace for the dataset type, and click **Next**. The following dialog box appears.



- 4 Accept (or change if necessary) the default dataset path and click **Next**.

The following dialog box appears:



- 5 Select the size you configured for the dataset (200 MB, for example) and click **Next**. An informational message displays.
- 6 Read the information on this screen and click **Next**. We'll remind you to run the `fn_util updatertdb` command at the appropriate time.
- 7 Check the Datasets tab to make sure the new Oracle_tr dataset appears with the correct size.
- 8 Exit the System Configuration Editor and save the changes you made.

Rebuild Configuration Files

Enter the following commands to make the changes to your RDBMS:

```
fn_build -a
```

```
fn_util updatertdb
```

Verify New Oracle_TR Dataset Size

- 1 As **fns** user, start the Oracle software.
 - If Oracle is Site-controlled, ask the DBA to start Oracle.
 - If Oracle is FileNet-controlled and if there are no Oracle processes running, you can start Oracle by entering:

fn_util startbdb

- 2 As **fns** user, run spacerpt by entering:

spacerpt

- 3 Check the list of data files displayed to make sure a new Oracle_TR dataset has been created; for example, **oracle_tr1**.
- 4 To stop Oracle:
 - For Site-controlled Oracle, ask the DBA to stop Oracle.
 - For FileNet-controlled Oracle, enter:

fn_util stopbdb

Update Rollback Segments

Note If you have a Site-controlled Oracle system, the DBA should consult the Oracle documentation for information on updating rollback segments.

Before updating the Oracle software to Oracle9i, the rollback segments need to be expanded. The Oracle9i software installation will not be successful if the rollback segments have not been updated. FileNet provides software to do this automatically for FileNet-controlled Oracle systems.

If your current release of Image Services software is:

IDMIS 3.5.0 SP3 or IS 3.6 SP2

the necessary files are already on your server. Skip to step 2.

Otherwise, continue with the next step.

- 1 The two files needed to automatically expand the rollback segments are located on the Image Services 4.0.0 software CD.
 - Copy **oraaltrbs8** into the **/fnsw/bin** directory.
 - Copy **fn_oraaltrbs8.sql** into the **/fnsw/oracle** directory.
- 2 Use the **chmod** command to set the permissions for each of these files to **755**.
- 3 As **oracle** user, start the Oracle software by entering:

```
fn_util startbdb
```

- 4 Make sure all FileNet production rollback segments are online. (If they're listed in the init.ora file, they will be.)

Use **svrmgrl** to execute the following select statement to report the status of the rollback segments:

```
select segment_name, owner, status from dba_rollback_segs;
```

The expected output will be similar to this:

SEGMENT_NAME	OWNER	STATUS
SYSTEM	SYS	ONLINE
RSYS	SYS	OFFLINE
RS0	PUBLIC	ONLINE
RS1	PUBLIC	ONLINE
RS2	PUBLIC	ONLINE
RS3	PUBLIC	ONLINE

The FileNet production rollback segments should be owned by PUBLIC or SYS, and will usually have names such as RS0, RS1, and so on. (All rollback segments should be listed in the init.ora file.) A secondary SYSTEM rollback segment, usually called RSYS, may be present. It's all right if this segment is offline.

If a production rollback segment is not online, the fn_oraaltrbs.sql script will fail and will produce an error message. An offline production rollback segment indicates a problem.

Tip Use your preferred text editor, such as **vi**, to examine the `init.ora` file and verify that all the rollback segments displayed by the `select` statement are also specified there. For example:

```
rollback_segment = rs0, rs1, rs2, rs3
```

If necessary, add any missing rollback segments to this line, and restart Oracle.

5 Then update the rollback segments by entering:

```
/fnsw/bin/oraaltrbs8
```

`Oraaltrbs8` calls the `fn_oraaltrbs8.sql` script to update the rollback segments. The script runs quickly and when it's finished, the Oracle9i installation will be successful.

Create Volumes for Oracle9i (if necessary)

Note If `/usr/ora/920`, `/arch920`, and `/oratmp` have already been created, skip to **[“Verify Oracle User’s Home Directory” on page 108.](#)**

In this section you will create file systems for Oracle (if your site has not already done so). We strongly recommend that your file system be named `/usr/ora/920` to differentiate it from file systems you may create for future Oracle releases; however, you can name it anything you wish. For consistency, we use `/usr/ora/920` throughout this chapter.

Oracle9i software requires a minimum of 3.0 GB. (Refer to Oracle documentation for information about disk space requirements.)

Table 3-1 FileNet Volumes

Volume Name	Mount Point	Minimum Size	User	Group	Mode
ora920	/usr/ora/920	3000m	oracle	dba	775

Table 3-1 FileNet Volumes, Continued

Volume Name	Mount Point	Minimum Size	User	Group	Mode
arch920 **	/usr/ora/ arch920	100m	oracle	dba	775
oratmp	/oratmp	400m	oracle	dba	775

** The minimum size for arch920 is arbitrary. If archive logging will be used, the size of this volume will depend on the amount of database activity and the frequency of backups.

Use the Volume Manager to create and configure the three volumes listed in Table 3-1. (After the Oracle software has been installed successfully, you'll be able to remove the oratmp volume.)

Table 3-2: Oracle Volumes

Configuration Option	Configuration Setting		
Volume Name	ora920	arch920	oratmp
Volume Size	3000m *	100m **	400m

Table 3-2: Oracle Volumes, Continued

Configuration Option	Configuration Setting		
Create Filesystem	yes	yes	yes
Mount FS	yes	yes	yes
Mount Point	/usr/ora/920	/usr/ora/ arch920	/oratmp
Mount Automatically	yes	yes	yes

* If you are planning to install **all** of the RDBMS products, increase the size of the file system to whatever the Oracle documentation suggests.

** The minimum size for arch920 is arbitrary. If archive logging will be used, the size of this volume will depend on the amount of database activity and the frequency of backups.

Configure the New Volume

After you've created the new volume, you need to set the volume properties. In the Volume Properties dialog box of each volume, change the following settings:

Parameter	Setting
User	oracle
Group	dba
Mode	775

Change Owner and Group of the New Volume

As **root** user, change the owner, group, and permissions by entering:

```
chown oracle:dba /usr/ora/920  
chmod 775 /usr/ora/920  
chmod 777 /oratmp
```

Verify Free Space for Oracle Installer and Inventory Files

Server Types

Perform the steps in this chapter on these servers:

Root/Index - (Multi-server installation)

Root/Index/Storage Library - (Combined or Entry server installation)

Application - (Running WorkFlo Queue Services, or SQL Services)

Oracle needs **50 MB** of space in the directory above ORACLE_HOME for the Oracle Installer and Inventory files. This procedure assumes that the ORACLE_HOME (the location of the Oracle software) will be **/usr/ora/920**, so you need to make sure the **/usr** directory has at least 50 MB free.

Enter the following command to display the file system space:

```
df -k
```

If you need to add more space to /usr, for example, use the Volume Manager to increase the file system.

Verify Oracle User's Home Directory

In the past the **oracle** user's home directory may have been located in the same directory path as the Oracle RDBMS software.

We now recommend that the **oracle** user's home directory be located outside the directory path of the Oracle software. By placing the **oracle** user's home directory and the Oracle software home directory in different locations, there will be less confusion during future updates when a prior release of Oracle software needs to be deleted, but the **oracle** user information needs to be kept.

Make Additional Backups, If Necessary

This is your last opportunity to make a full system backup before the update begins. You should consider performing a backup if the system has been placed in production mode during or after the preparation

steps, or if you've made any changes to the Oracle configuration. You should also consider clearing cache objects as much as possible.

Refer to the [*Image Services System Administrator's Companion for UNIX*](#) for complete information on performing a system backup.

Disable FileNet-Related Cron Jobs

There may be some FileNet-related cron jobs that access the FileNet databases. You will need to disable these cron jobs for the duration of the update. You will re-enable the cron jobs after the update is complete.

The crontab files are located in `/usr/spool/cron/crontabs`.

Reboot the Server

Prior to starting the update, you should reboot the server. This will ensure that all logical volumes are synchronized and any residual errors are identified.

- 1 As **root** user, move to the root directory and reboot the server by entering:

```
cd /  
shutdown -i6 -g0 -y
```

- 2 If Image Services is not configured to start automatically when the server reboots, wait until the server is finished booting, then start Image Services manually by entering:

```
initfnsw start
```

- 3 Read the messages in the Image Services event log after the server and the Image Services software are up. Correct any error conditions before proceeding. You can't proceed with the update if the base version of Image Services has errors.

Exit from FileNet Programs

Exit IS Toolkit (WAL) Applications

Exit from any Image Services Toolkit (formerly known as WAL) applications currently running on the server. (Later in this procedure you will run the `killfns` command, which clears the Image Services shared memory.)

As **root** user, enter:

```
/fns/client/bin/wal_purge
```

Stop FileNet Software

Note In a multi-server system, you must stop the FileNet software in the following order:

- 1 - the application server(s)
- 2 - the storage library server(s)
- 3 - the root server

Startup should be in the opposite order with the root server first, followed by the storage library server(s), and finally the application server(s).

- 1 As **fns** user, shut down the Image Services software by entering:

```
initfns -y stop
```

- 2 To check what FileNet processes are currently running, enter:

```
whatsup
```

- 3 Kill all remaining FileNet processes displayed by entering:

```
killfns -DAy
```

- 4 To check that all the Image Services processes have been killed, enter:

```
ps -ef | grep fns
```


Note Running the `whatsup` command causes the `TM_daemon` to start up.

- 5 If any `fnsw` processes remain active, including `TM_daemon`, kill each one explicitly by entering:

kill <process_id>

where `<process_id>` is the process number shown in the PID column of the display in step 4.

Set Oracle Environment Variables

You can make sure the Oracle environment variables are set for the **oracle** user by following these steps.

- 1 Logon as **oracle** user, and start CDE or X Windows (if you haven't done so already).
- 2 Temporarily modify the **oracle** user's environment settings by editing either the `.profile` or `.cshrc` file. You only need to edit one of these files at this time.

In the Bourne or Korn shell, add the following lines to the **.profile** file:

```
DISPLAY=<server_name>:0  
ORACLE_HOME=/usr/ora/920  
ORACLE_TERM=<terminal_type>  
ORACLE_SID=<system_identifier>  
TMP=/oratmp  
TMPDIR=/oratmp  
export DISPLAY ORACLE_HOME ORACLE_TERM ORACLE_SID TMP TMPDIR
```

where: <server_name> is the name of the server

<terminal_type> is the type of display terminal, e.g., xsun5

<system_identifier> is the oracle system ID, e.g., IDB

In the C shell, add the following lines to the **.cshrc** file:

```
setenv DISPLAY <server_name>:0  
setenv ORACLE_HOME /usr/ora/920  
setenv ORACLE_TERM <terminal_type>  
setenv ORACLE_SID <system_identifier>  
setenv TMP /oratmp  
setenv TMPDIR /oratmp
```

where: <server_name> is the name of the server

<terminal_type> is the type of display terminal, e.g., xsun5

<system_identifier> is the oracle system ID, e.g., IDB

- 3 Log out and log back in as **oracle** user to put the new environment settings into effect.
- 4 Make sure the Oracle TWO_TASK variable is **not** set.

Note The TWO_TASK variable is only used with Site-controlled Oracle9i databases located on remote Oracle servers. See Chapter 4 of the [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#) for information on updating systems with Site-controlled Oracle databases.

Enter:

```
echo $TWO_TASK
```

If this variable is set, you need to turn it off.

- For Bourne or Korn shell, enter:

```
export TWO_TASK=""
```

- For C shell, enter:

```
setenv TWO_TASK
```

5 As **oracle** user, set the TMP environment variable.

- In the Bourne or Korn shell, enter:

```
export TMP=<location of oratmp>/oratmp
```

- In the C shell, enter:

```
setenv TMP <location of oratmp>/oratmp
```

Open an xhost Window

As the same user you were when you logged onto CDE (usually, the **root** user), open a separate window and enter:

```
xhost +
```

The xhost + command allows clients to connect to X windows.

Minimize this window and leave it running during the remainder of this procedure.

Update the Oracle RDBMS Software

This section provides information on updating the Oracle software to Oracle9i Enterprise Edition, version 9.2.0.1.0. The Oracle9i media is composed of three CD-ROMs.

CAUTION

Before continuing, make sure the Image Services software has been stopped.

Note

If you have set up your own Oracle User ID (default=**oracle**) and Oracle group ID (default=**dba**) (or wish to do so), you need to make sure the Oracle Group you have set up is a member of the **fnsw** User's Group Set and the fnsw Group (**fnsur**) is a member of your Oracle's User Group Set.

Load the Oracle9i Software

- 1 Insert the first **Oracle9i Enterprise Edition, Release 9.2.0.1.0** CD, disk 1 of 3, into the CD-ROM drive.
- 2 As **oracle** user, log into the root directory and launch the Oracle Universal Installer by entering:

```
cd /  
/cdrom/cdrom0/runInstaller
```

Important!

DO NOT change directories to /cdrom/cdrom0 and then run the Oracle installer! If you're logged onto the CD, you won't be able to change disks when requested.

- 3 At the Welcome screen, read the information and click **Next** to continue.

Welcome

The Oracle Universal Installer guides you through the installation and configuration of your Oracle products.

Click "Installed Products..." to see all installed products.

Deinstall Products...

- 4 At the File Locations screen, verify the destination directory is correct (e.g., /usr/ora/920) and click **Next** to continue.

File Locations

Source...

Enter the full path of the file representing the product(s) you want to install:

Path:

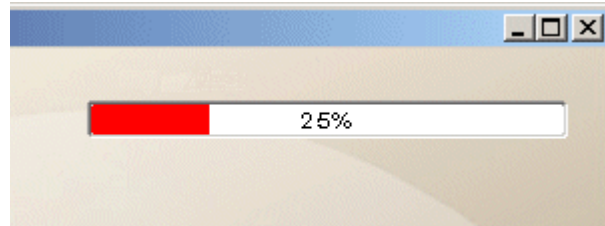
Destination...

Enter or select an Oracle Home name and its full path:

Name:

Path:

- 5 The Loading Product Information progress bar displays on top of the File Locations screen. Please wait while the list of products loads.



- 6 The next screen is the Available Products screen. Select Oracle9i Database 9.2.0.1.0 and click **Next**.

Available Products

Select a product to install.

Oracle9i Database 9.2.0.1.0

Installs an optional pre-configured starter database, product options, management tools, networking services, utilities and basic client software for an Oracle database server.

Oracle9i Client 9.2.0.1.0

Installs enterprise management tools, networking services, utilities, development tools and precompilers and basic client software.

Oracle9i Management and Integration 9.2.0.1.0

Installs the management server, management tools, Oracle Internet Directory, Oracle Integration Server, networking services, utilities and basic client software.

- 7 The Installation Types screen appears. Select Custom and click **Next**.

Installation Types

Oracle9i Database 9.2.0.1.0

What type of installation do you want?

- Enterprise Edition (3.09GB)

Provides data management for high-end applications such as high volume on-line transaction processing (OLTP) environments, query-intensive data warehouse and demanding Internet applications. Delivers tools and functionality to meet the availability and scalability requirements of mission-critical applications.

- Standard Edition (3.01GB)

Targeted for workgroup or department-level applications. Includes an integrated set of management tools, full distribution, replication, web features and facilities for building business-critical applications.

- Custom

Enables you to choose individual components to install.

8 The next screen displays Available Product Components.

Available Product Components

Oracle9i Database

The following are components that you can install as part of Oracle9i Database. Which of these components do you want to install?

Components	Install Status
<input checked="" type="checkbox"/> Oracle9i Database 9.2.0.1.0	New Install
<input checked="" type="checkbox"/> Oracle9i 9.2.0.1.0	New Install
<input type="checkbox"/> Enterprise Edition Options 9.2.0.1.0	Not Installed
<input type="checkbox"/> Oracle Advanced Security 9.2.0.1.0	Not Installed
<input type="checkbox"/> Oracle Partitioning 9.2.0.1.0	Not Installed
<input type="checkbox"/> Oracle Spatial 9.2.0.1.0	Not Installed
<input type="checkbox"/> Legato Networker Single Server 6.1.0.0.0	Not Installed
<input type="checkbox"/> Oracle Label Security 9.2.0.1.0	Not Installed
<input type="checkbox"/> Oracle OLAP 9.2.0.1.0	Not Installed

- 9 On the Available Product Components screen, click the Product Languages button. Make sure the language is set appropriately. (The default language is English.) Click **OK** or **Cancel**.
- 10 Back on the Available Product Components screen, select the Oracle products to install.

Tip Each listed item has an associated icon and checkbox. An icon with a plus sign indicates if there are additional subordinate items. You can list those additional items by clicking on the icon.

Placing a **check** in the checkbox indicates that you have selected the item. And be sure to **uncheck** any boxes that are not checked below.

Select the following products with checkmarks, and deselect all others:

- ✓ Oracle 9i Database 9.2.0.1.0
 - ✓ Oracle 9i 9.2.0.1.0

Enterprise Edition Options 9.2.0.1.0
Oracle Advanced Security 9.2.0.0.0

Oracle Partitioning 9.2.0.1.0
Oracle Spatial 9.2.0.1.0
Legato Networker Single Server 6.1.0.0.0
Oracle Label Security 9.2.0.1.0
Oracle OLAP 9.2.0.1.0
Oracle Data Mining 9.2.0.1.0

- ✓ Oracle Net Services 9.2.0.1.0
 - ✓ Oracle Net Listener 9.2.0.1.0
 - Oracle Connection Manager 9.2.0.1.0
 - Oracle Names 9.2.0.1.0

Oracle Enterprise Manager Products 9.2.0.1.0

- ✓ Oracle9i Development Kit 9.2.0.1.0
 - Oracle C++ Call Interface 9.2.0.1.0
 - ✓ Oracle Call Interface (OCI) 9.2.0.1.0
 - Oracle Programmer 9.2.0.1.0
 - Oracle XML Developer's Kit 9.2.0.0.0

(To remove the check from the Oracle XML Developer's Kit option,

you need to remove the check from the Oracle HTTP Server option first.)

Oracle9i for UNIX Documentation 9.2.0.1.0

Oracle HTTP Server 9.2.0.1.0

Oracle Transparent Gateways 9.2.0.1.0

iSQL*Plus 9.2.0.1.0

Oracle JDBC/OCI Interfaces 9.2.0.1.0

On the Available Product Components screen again, click **Next** to continue.

After several seconds you'll see a progress bar display at the top of the window.

- 11** The Component Locations screen allows you to determine if you have enough free disk space. Check the Available Disk Space tab for the correct Oracle Home location.

Tip If the full path does not display, hold the cursor over the button and a popup window will display the full path. (It should be set to /usr/ora/920.)

Check the Required Disk Space field on the bottom right hand side. If a red hand appears, you need to allocate more space for the file system. Click **Next** to continue.

Component Locations

Oracle9i Database 9.2.0.1.0

You can change the destination locations for Non OracleHome components:

Oracle Universal Installer 2.2.0.12.0
Java Runtime Environment 1.1.8.12.0
Java Runtime Environment 1.3.1.0.0a

Show all components to be installed

Destination Location for Oracle Universal Installer 2.2.0.12.0 :

/usr/ora/92

Change Location...

Available Disk Space on: / 798MB

Required Disk Space for /: 53M

Total Required Disk Space: 2.40G

Show all available volumes

- 12 The Privileged Operating System Groups screen displays. Make sure that **dba** is set in both fields. Click **Next**.

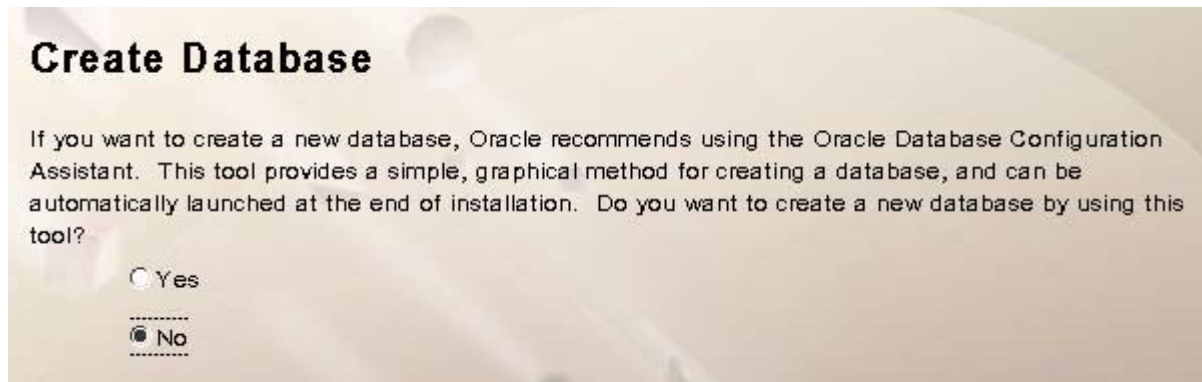
Privileged Operating System Groups

SYSDBA and SYSOPER privileges are required to create a database using operating system (OS) authentication. These are granted through membership in the UNIX groups OSDBA and OSOPER, respectively, and the dba group is usually used for this purpose. If you would like another group used, enter the names of the UNIX groups of which you are a member, to be used for OSDBA and OSOPER.

Database Administrator (OSDBA) Group

Database Operator (OSOPER) Group

- 13 If you see the Updating or Migrating an Existing Database screen, make sure the check box, Upgrade or Migrate an Existing Database is **not** checked, and click **Next** to continue.
- 14 The Create Database screen is next. Select **No** and click the **Next** button.



- 15 The final screen before the actual install is the Summary screen. Check the Global Settings and make sure the proper products are selected and click the **Install** button.

Summary

Oracle9i Database 9.2.0.1.0

Global Settings

- Source : /netims/oracle/sun/9.2i/64bit/Disk1/stage/products.jar
- Oracle Home : /usr/ora/920 (ora920)
- Installation Type : Custom

Product Languages

- English

Space Requirements

- /usr/ora/920/ Required 2.29GB : Available 3.37GB
- / Required 76MB : Available 799MB
- /tmp/ Required 43MB (only as temporary space) : Available 978MB

New Installations (127 products)

- 16 When the Oracle Installer is finished installing products from Disk 1, the Disk Location screen displays and prompts you to insert Disk 2.
 - a As **root** user, eject the current CD by entering:

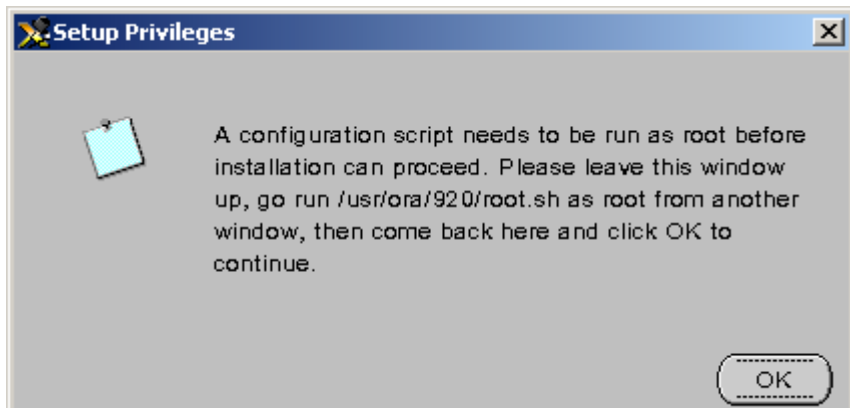
eject
 - b Remove Disk 1 and insert Disk 2 into the CD-ROM drive.
 - c As soon as the second CD is mounted, click **OK** on the Disk Location screen.

The Oracle Universal Installer continues installing products.

When you're prompted to insert Disk 3, follow the same steps.

- 17 After the software has finished loading, the Linking screen displays while the Oracle libraries are linked. This may take several minutes.

- 18 The Setup Privileges message box instructs you to run the root.sh program in a **root** user window.



Note When you run the root.sh script, you'll see a message that says:

IMPORTANT NOTE: Please delete any log and trace files previously created by the Oracle Enterprise Manager Intelligent Agent. These files may be found in the directories you use for storing other Net8 log and trace files.

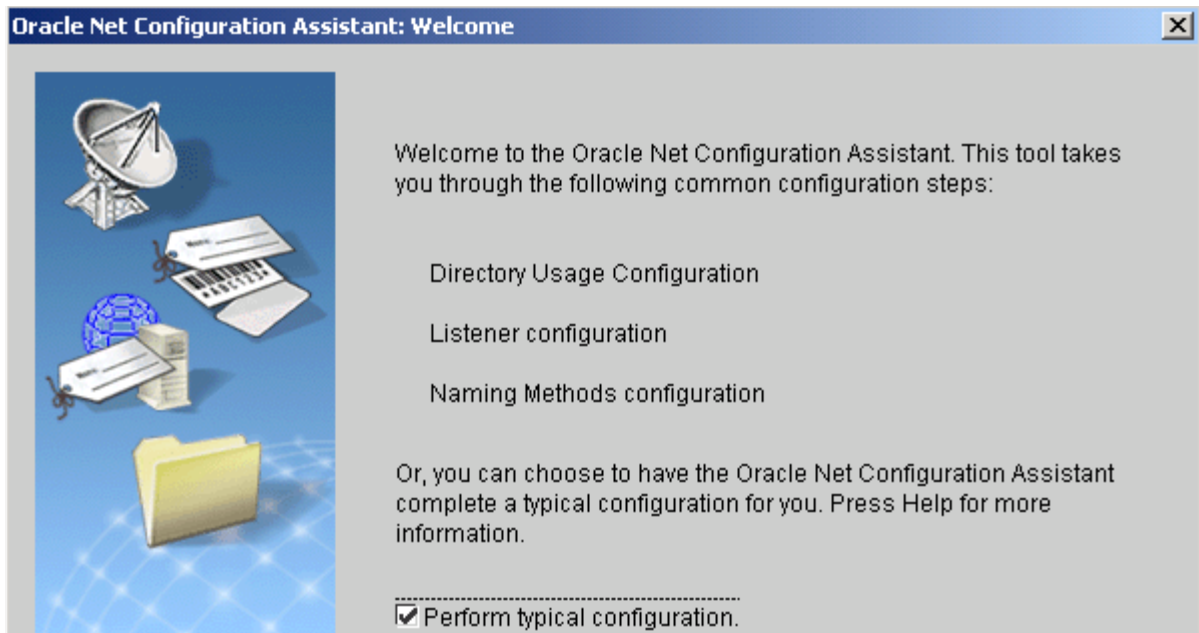
If such files exist, the OEM IA may not restart.

Delete the files as requested before you continue.

The root.sh also prompts you for the full path of the local bin directory. Accept the default. If that directory does not exist, the root.sh script creates it.

When the root.sh program is finished and you've deleted the requested files, click the **OK** button in the Setup Privileges box.

- 19 When the Oracle Net Configuration Assistant screen displays, make sure the “Perform typical configuration” box is checked, and click **Next**.



- 20 In the Configuration Tools window, click **Next**.
- 21 Finally, the End of Installation screen appears. Click the **Exit** button and click **Yes** at the prompt, "Do you really want to exit?"



- 22 When the Oracle software installation is successful, return to the **oracle** user's home directory and eject the final Oracle CD-ROM by entering:

eject

and store the CDs in a safe place.

Continue with the Image Services Update

After the Oracle RDBMS software has been successfully installed, you are ready to update the Image Services software.

CAUTION

DO NOT start the FileNet software until after the Image Services software has been updated and configured. We'll let you know when it's all right to start the Image Services software.

4

Updating Image Services Software

This chapter contains procedures to update the Image Services software. It also contains instructions for performing configuration tasks for both the Image Services software and the Oracle RDBMS software.

Server Types

Perform the steps in this chapter on **all servers**.

Update the Image Services Software

This section of the update procedure details the steps necessary for installing Image Services 4.0.0 on your system. It assumes that your system now has Solaris 8 and that Oracle9i software has been installed.

CAUTION The FileNet Image Services software should **not** be running!

Remove Current Image Services Software

Remove the currently installed Image Services software packages by following these steps.

- 1 As **root** user, make sure the Image Services software is shut down by entering:

```
killfnsw -DAy
```

- 2 Still as **root** user, remove all existing fnsw packages by entering:

```
pkginfo | grep fnsw | pkgrm -n `awk '{print $2}'`
```

Note If you see a message like this:

```
ERROR: no package associated with ...
```

Enter the following command to see if there are any more packages to remove:

```
pkginfo | grep fns | more
```

If there are no more packages to remove, continue with the next step. Otherwise, repeat Step 3.

Load the Image Services 4.0.0 Software

After the old software has been removed, you can load the new Image Services software.

- 1 As **root** user, start CDE or X Windows (if you have not already done so).
- 2 Insert the Image Services 4.0.0 for Solaris CD-ROM into the CD-ROM drive. If you're using CDE, the File Manager window displays automatically.

Note **COLD 4.0.0** is included on the FileNet Image Services CD-ROM. However, you must be licensed to use the COLD application.

- 3 You will use the **swmtool** utility to install the Image Services software from the CD-ROM to your server. (If necessary, refer to your Solaris documentation for detailed instructions on using **swmtool**.)

Open a window, and start the **swmtool** utility by entering the following command:

swmtool &

The Admintool:Software window displays. (This window lists all software packages currently installed on the system.)

- 4 From the Admintool:Software window, select the Properties menu option.
- 5 From the Properties pull-down menu, select Package Administration. (The Package Administration dialog box displays.)

- 6 From the Package Administration dialog box, select the following options and set them as shown below:

Administration Option	Setting
Existing Files	Overwrite
Existing Packages	Install Unique
Install Setuid/Setgid Scripts	Yes
Run Setuid/Setgid Scripts	Yes
Install/Remove Interactively	No

- 7 Click **OK**.
- 8 From the Admintool:Software window, select the Edit menu option.
- 9 From the Edit pull-down menu, select **Add**.

The Admintool:Set Source Media window displays. (Leave the Software Location setting on the default selection: CD with Volume Management selection.)

- 10** In the Admintool:Set Source Media window, enter the directory name (path) for the CD-ROM drive. For example, you might enter a directory name similar to the following:

`/cdrom/cdrom0/SunOS_5.8/IS`

Note The actual directory (path) is displayed in the File Manager.

- 11** Click **OK**.

The Admintool:Add Software window displays. (The window contains software packages available for installation.)

- 12** In the Admintool:Add Software window, click on **fnsw**. If you also want to install COLD software, click **COLD**, too. Then select **Add**.

Note While the optical device drivers are installing (`/fnsw/bin/fnsod.install`), you may see the following output, if the optical devices are not attached:

Beginning fnsod.install script

No match

Driver (fnsod) removed

```
-rwxr-xr-x 1 root sys 88915 Mar 26 10:03 /kernel/drv/fnsod
```

```
-rw-r--r-- 1 root sys 1726 Mar 26 10:03 /kernel/drv/fnsod.conf
```

Driver (fnsod) installation failed. Possible error in H/W setup

Please check using 'probe-scsi-all' command and correct problem. Driver will attempt to reload with each boot

Running /fnsw/bin/fnsod.install failed.

After you have configured and attached the optical devices, rebooting the system will put the drivers in place correctly.

An Admintool:Add Software message window displays. The Image Services software is loaded to directory **/fnsw**.

Each package name and description displays as it is being added to the system. (The installation should take approximately **10-15 minutes** to complete.)

Note If you are not using the CDE interface, you may see this message:

The OpenWindow environment may no longer be supported
in a future release>

You may want to migrate to CDE, the Common Desktop Environment.

For now, click **Continue**. You can select the Common Desktop Environment the next time you reboot the server.

After the Image Services software installation is complete, a message similar to the following displays:

Installation of <fnsf> or <fnsf-c2> was successful, press
<Return> to continue.

The Image Services software installation is complete. (The <fnsf-c2> message displays only if you reinstalled COLD.)

Note You may also see a message similar to this:

cannot create /fnsf/lib/shobj/liboracle.so: file exists

Since the file already exists, there is no problem. This will be resolved by `fn_setup` in a later section.

- 13 Press **Return**. (The `Admintool:Add Software` message window disappears automatically.)
- 14 Exit **`swmtool`**.

Remove the CD-ROM

When the Image Services software has been installed successfully, return to the user's home directory and eject the Image Services CD-ROM by entering:

```
cd  
eject
```

Remove the CD from the CD-ROM drive and store it in a safe place.

Configure the Image Services Software

Server Types

Perform the steps in this section on **all servers**.

The following sections describe the configuration tasks you need to perform after the Image Services 4.0.0 software has been installed.

Install the Required Pre-Startup Fixes

At this time, install only the fixes that directly relate to Image Services 4.0.0 initial configuration issues. Search through the Release Notes file for the key words **PRE-STARTUP** and **REQUIRED**.

Note

These are only the fixes required to start the Image Services software successfully. Install any other fixes after the update has been successfully completed.

You can retrieve these fixes from the FileNet Worldwide Support online Web site <http://www.css.filenet.com> or from the Tech Info CD.

Install User Environment Templates

In this section you will use the **inst_templates** script to set up profile and environment files that are customized for the Image Services installation. (You should run **inst_templates** as both **fns** user and **root** user.)

Note After you have set up the Image Services environment by running **inst_templates**, start CDE or X Windows.

The install templates program creates or modifies environment files (for example, `.cshrc`, `.login`, `.profile`, and others). You will be asked before each file is modified if you want to proceed with the change to the file.

- If you accept the change (by entering **y**), the existing file is renamed with a `old.n` extension (where `n` is incremental). A new file is created using the original file name. (You will be prompted for a response only if a file already exists.)
- If you decline the change (by entering **n**), the file will not be changed or moved.

Note If you already have customized the environment files in a particular user's directory, answer n (No) to each of the prompts. Instead, you should merge the settings in the templates with your customized environment files. The templates can be found in `/fnsw/etc/*.template`. (Oracle users should remove the `TWO_TASK` variable if it is included in the customized environment file. Refer to [“Remove TWO_TASK Variable \(FileNet-Controlled Only\)” on page 153.](#))

Set Up fnsw User Environment

- 1 Logon as **fnsw** user. (DO NOT **su** to **fnsw**.)

Note After you logon as **fnsw** user, verify that the home directory for **fnsw** exists. If the directory does not exist, create the directory manually before performing the steps in this section.

- 2 Enter the following command:

`/fnsw/etc/inst_templates`

- 3 Enter **y** (Yes) to confirm all prompts that display.
- 4 Verify that the `ORACLE_HOME` (for Oracle software) is set to `/usr/ora/817` and that the `ORACLE_SID` variable is set correctly in the `.profile` and `.cshrc` files.

Set Up root User Environment

- 1 Logon as **root** user.
- 2 Verify that the `ORACLE_HOME` (for RDBMS software) and the `ORACLE_SID` variables are set correctly in the `/etc/rc.inittfns` file.

Note Complete the remaining steps in this section only if you do not have a specialized root environment already established on your system (for example, a `.login` file with specific system-related entries). If you already have a **root** environment established, skip the rest of this section.

- 3 Enter the following command:

`/fnsw/etc/inst_templates`

- 4 Enter **y** (Yes) to confirm all prompts that display.

Set Up RDBMS (oracle) User Environment (if applicable)

If the Oracle RDBMS is FileNet-controlled, or if the Database Administrator wants the RDBMS user to use FileNet environment variable settings, complete the steps in this section. For example...

- 1 Logon as the RDBMS user, such as **oracle** user.
- 2 Enter the following command:

`/fnsw/etc/inst_templates`

- 3 Enter **y** (Yes) to confirm all prompts that display.

Reset the Environment Variables

If you initially logged in to CDE as one of the three users, **root**, **fns**, or **oracle**, you must log completely out of CDE and log back in again to reset the environment variables.

Otherwise, close all the current windows for **root**, **fns**, and **oracle** users and open new ones, which will have the new environment variable settings.

Remove TWO_TASK Variable (FileNet-Controlled Only)

Note The TWO_TASK variable is only used with Site-controlled Oracle9i databases located on remote Oracle servers.

If you answered **n** (No) to any of the **inst_templates** prompts to preserve the customized environment files (for example, `.cshrc`, `.login`, `.profile`, etc), the FileNet customized template files were not installed.

In the case of the templates not being installed automatically, you must manually edit the settings in your customized environment files. The template files are located in `/fnsw/etc/*.template`.

Users of FileNet-controlled Oracle should remove every occurrence of the `TWO_TASK` variable from each of your customized environment files. (

Set File Ownerships and Permissions

Use the **fn_setup** tool make sure permissions are set correctly for the FileNet Image Services software. The `fn_setup` tool also makes sure that all the necessary directories have been created, and sets the permissions for these directories and system files appropriately.

Tip The **fn_setup** program attempts to set the permissions for all files under `/fnsw` and `/fnsw/local` directories using a `permission_table` that is updated with each new Image Services release. If non-FileNet files are placed in the `/fnsw` directory structure, a `local_permission_table` needs to specify the appropriate permissions for these files. See

Chapter 3, “Directories and Files,” of the [***System Administrator’s Companion for UNIX***](#) for details.

Even though `fn_setup` runs as the **root** user, `fn_setup` may not be allowed to set permissions on some secured files. Contrary to popular belief, running `fn_setup` as **root** user does not make `fn_setup` omnipotent.

If `fn_setup` encounters a file on which it is not allowed to set permissions, it logs an error and continues.

`fn_setup` must be run the **first** time as **root** user so it can set itself to be owned by root. Thereafter, `fn_setup` can be run by any member of the **fnusr** group.

- 1 As **root** user, enter:

fn_setup

- 2 Reply to the prompts with the requested information. If the default value shown in brackets is correct, press **Return** to continue.

Note The Solaris Operating Environment allows an underscore character (“_”) as part of the domain name. However, the FileNet software does NOT allow the underscore character in the domain name. If the domain name contains an underscore, stop the update at this point, and contact the FileNet Response Center for assistance.

- a The NCH server is the generally the Root server. If you are updating a separate Storage Library server or an Application server, select 2=no.

```
Is this the NCH server (1=yes, 2=no) [1]:
```

- b The NCH server name is generally the name of the Root server. If you are updating a separate Storage Library server or an Application server, enter the name of the Root server.

```
Enter NCH server name [sunrise:FileNet]:
```

- c The system serial number should be the serial number of the server you specified in the previous step, generally the Root server.

```
Enter system serial number [11008016xx]:
```

Important!

The 10-digit ssn, which is assigned by FileNet, is written onto all storage media and **must** be unique for each Image Services system. If you have more than one Image Services system (domain), each **must** use its own unique ssn to prevent potential problems if media are ever transferred from one IS system to another.

- d Relational databases are only configured on servers with Index services, WorkFlo Queue Services (WQS), or SQL services. If you are updating a separate Storage Library server, or an Application server without one these services, select 0=none.

```
Enter the relational database type configured on this  
server (0=none, 1=Oracle) [1]:
```

- e If a relational database exists on the server, enter the full pathname of the directory where the rdbms software is located.

```
Enter the RDBMS home directory [/usr/ora/920]:
```

- f If a relational database exists on the server, enter the user and group IDs at the following prompts.

```
Enter the RDBMS user ID [oracle]:  
Enter the RDBMS group ID [dba]:
```

- 3 The `fn_setup` tool then displays the information you supplied so you can confirm your entries:

```
This is the setup configuration:
NCH server name:  sunrise:FileNet
SSN:  11008016xx
Relational database type:  oracle
Relational database home:  /usr/ora/920
Relational database user ID:  oracle
Relational database group ID:  dba
Do you want to continue (y/n) [y]:
```

Press **Return** to continue with the next step. If you type **n** for no, you exit to the system prompt; return to Step 1 and run `fn_setup` again.

- 4 As `fn_setup` creates files and changes permissions, a series of messages displays on your screen to indicate its progress.

For example:

```
fn_setup: Creating file /fnsw/local/setup/config
fn_setup: Creating file /fnsw/local/sd/root_station
fn_setup: Creating file /fnsw/local/ssn
fn_setup: Creating file /fnsw/local/sd/nch_domain
fn_setup: Running "nch_update sunrise:FileNet"
fn_setup: Changing permission on FileNet software and
databases
```

When `fn_setup` is finished, it exits automatically to the system prompt.

5 Review the `fn_setup` log file by entering:

```
less /fnsw/local/logs/fn_setup/fn_setup.log
```

- If `fn_setup` logged no errors, it finished successfully, you can skip to the next section, **[“Verify/Update the /etc/services File” on page 163.](#)**

- If **fn_setup** returns any errors that do not pertain to optical libraries, you need to troubleshoot the cause of the error and return to Step 1 to run **fn_setup** again.
- If **fn_setup** returned errors pertaining **only** to the optical libraries, as shown in this example, you need to remove the old device links.

```
fn-setup: Cannot set /fnsw/dev/1/osara to have permission mode: 0770
fn-setup: Cannot set /fnsw/dev/1/osara to have owner/group: 80/80
fn-setup: Cannot set /fnsw/dev/1/oddal to have permission mode: 0770
fn-setup: Cannot set /fnsw/dev/1/oddal to have owner/group: 80/80
fn-setup: Cannot set /fnsw/dev/1/osara to have permission mode: 0770
fn-setup: Cannot set /fnsw/dev/1/osara to have owner/group: 80/80
```

These errors are caused by a change in the optical library driver addressing formulas. New drivers were generated when you installed the Image Services software earlier.

- 6 Remove the old device links by following these steps:
 - a Change to the /dev directory and list the fnsod entries.

```
cd /dev  
ls -l fnsod*
```

- b Look at the dates of each of the entries. The dates of the newly installed fnsod device links will reflect the date that Image Services software was just updated. The old fnsod links will have dates reflecting the previous update, or older.
- c As **root** user, remove all the old fnsod device links. For example,

```
rm fnsod.0,1,2,0
```

Later in this chapter, you will be able to reconfigure the storage libraries to use the new device links. For now, continue with the next section.

Note The Image Services media should still be in the CD drive.

Verify/Update the `/etc/services` File

- 1 Verify that you're logged on as **root** user, and check the `/etc/services` file to make sure that the following parameters exist:

```
tms 32768/tcp
cor 32769/tcp
nch 32770/udp
fn_snmpd 161/udp
fn_trapd 35225/udp
```

Note If you have a separate NIS Server, check the `/etc/services` file on the NIS server to see if the **cor**, **nch** and **tms** parameters exist.

- 2 If necessary, add the parameters to the file and save your changes.

Modify TCP/IP Port Settings

In this section you will make your FileNet system run more efficiently by making changes to the `/etc/rc2.d/S69inet` file. The modification expands the number of available ephemeral ports and reduces the

time-out delay. These modifications are not required, but have been found to be optimal when running FileNet software. So unless you have set these options for other system reasons, we suggest you make these changes.

- Ephemeral ports are temporary ports assigned by a server's IP stack, and are assigned from a designated range of ports for this purpose. When network traffic is extremely heavy, it's possible to run out of ephemeral ports unless you specify a wider range of port numbers in `/etc/rc2.d/S69inet`.
 - The **tcp_close_wait_interval** parameter determines the length of time the server waits before reusing a closed ID socket. Although the default value is typically around 240000 milliseconds (four minutes), this parameter can safely be reduced to as little as 30000 milliseconds (30 seconds) on high-speed networks.
- 1 Make a backup copy of the **`/etc/rc2.d/S69inet`** file before you modify it.
 - 2 As **root** user, make sure you have write permission on the this file by entering:

chmod 754 /etc/rc2.d/S69inet

- 3 Use your preferred text editor (such as **vi**) to modify the **/etc/rc2.d/S69inet** file.
- 4 Add the following lines somewhere near the end of the file:

```
ndd -set /dev/udp udp_smallest_anon_port 42767
ndd -set /dev/udp udp_largest_anon_port 65535
ndd -set /dev/tcp tcp_smallest_anon_port 42767
ndd -set /dev/tcp tcp_largest_anon_port 65535
ndd -set /dev/tcp tcp_close_wait_interval 30000
```

- 5 Save your changes and exit from the file. These changes will go into effect when the server is rebooted in the next section.

Reboot the Server

As **root** user, reboot the root server by entering:

/etc/shutdown -i6 -g0 -y

After the server has restarted, log on as **root** user.

Update Configuration Database Format

Before you start the FileNet System Configuration Editor, you need to update the CDB file (the configuration database) to Image Services 4.0.0 format and force a global update of the Oracle version number.

- 1 As **fns** user, update the configuration database format by entering:

fn_migrate 4

The `fn_migrate` command also moves FileNet-related files from `/fns/local/tmp` to `fns/local/logs`.

- 2 Update the RDBMS version number by entering:

fn_oracle version

- 3 As **fns** user, relink the client shared library by entering:

```
cd /fnsw/lib/shobj
rm liboracle.so
ln -s liboracle_dummy.so liboracle.so
fn_util linkrdb
```

These commands remove the existing symbolic link to Oracle's client shared library and temporarily create a dummy link. The **fn_util** command detects the dummy link file (`liboracle_dummy.so`), automatically removes it, and creates the correct symbolic link to the correct 32-bit or 64-bit version of Oracle's client shared library.

Verify the Configuration Database

- 1 To start the FileNet System Configuration Editor, start CDE or X Windows.
- 2 Open a new X Window, and as **fns** user, enter:

```
fn_edit &
```

- 3 Verify that the two-part domain information is correct. (The two-part domain name is structured as follows: <Domain>:<Organization>.)
- 4 Be sure the Read Only box is NOT checked. Click **OK**.
- 5 When the Configuration Editor window displays, examine each tab in sequence to verify that the Configuration Database contains accurate information about your system.

Note The online help contains information on all of the available Configuration Editor settings and options. You can access the online information by selecting the Help menu option in the FileNet System Configuration Editor window.

Verify Oracle Version Number

Click the Relational Databases tab. The Oracle sub-tab should be on top. If not, click the Oracle sub-tab to bring it to the front.

Scroll to the right and locate the Version Number field. Verify that the Oracle version number is correct. This version number is updated

automatically for FileNet-controlled installations, but may not be updated for Site-controlled installations.

If necessary, change the version number to reflect the version of Oracle currently installed. For example, for a Site_controlled system on which Oracle Patch Set 2 and the Interim Patch have already been installed, you would enter:

9.2.0.2.0

Verify Image Services Version Number

Verify the Image Services version number listed in the System Configuration database matches the actual version number of the software currently installed.

- 1** From the main System Configuration Editor window, select the System Attributes tab.
- 2** Click on the Software Release field. The version number displays (for example, 4.0.0). If the correct number is not shown, return to the sec-

tion, **“Remove Current Image Services Software” on page 140**, and re-install Image Services 4.0.0.

Verify the Language and Character Set

- 1 On the Relational Databases tab, click on the Oracle subtab. Scroll to the right to see the Language and Character Set fields.
- 2 The default language is American (American English). Other valid languages are French and German. Choose the language in which you want FileNet system messages to appear.

CAUTION Do not change the character set unless you are sure that no Oracle index values will be affected.

- 3 The default character set is American, US7ASCII. Other valid character sets are:

Western European	WE8ISO8859P1
Eastern European	EE8ISO8859P2

South European	SE8ISO8859P3
Northern & Northeastern European	NEE8ISO8859P4
Latin/Cyrillic	CL8ISO8859P5
Latin/Arabic	AR8ISO8859P6
Latin/Greek	EL8ISO8859P7
Latin/Hebrew	IW8ISO8859P8
Western European & Turkish	WE8ISO8859P9
North European	NE8ISO8859P10

The character set should match the operating system character set and the NLS national language you chose during the Oracle installation. This is the character set that will be used for indexing.

Exit the Configuration Editor

Now you can exit `fn_edit` by selecting Exit from the File pulldown menu. If you haven't made any changes, it's not necessary to save the file as in past updates.

CAUTION **DO NOT** run `fn_build` at this time. Doing so would update the `init.ora` file, which would cause the `fn_oracle start_migrate` command in the next section to fail.

Configure Oracle RDBMS Software

Server Types Perform the steps in this section on these servers:

Root/Index server during a multi-server update.

Root/Index/Storage Library server during a Combined or Entry server update.

Application server running WorkFlo Queue Services, or SQL Services.

Run the Post-Installation Scripts

CAUTION **For Site-controlled Oracle instance only:** If Oracle is Site-controlled, skip this section.

The Database Administrator is responsible for post-installation procedures on Site-controlled Oracle instances. (The DBA may want to examine the contents of FileNet's post installation scripts to determine what additional steps may be needed.)

- 1 As **fns** user, start Oracle by entering:

fn_oracle start_migrate
- 2 Use the `oraupgrade` command to upgrade the database objects:
 - If you're upgrading from Oracle 8.0.6, enter:

```
oraupgrade 8.0.6 | tee /fnsw/local/oracle/conv920.err
```

- If you're upgrading from Oracle 8.1.7, enter:

```
oraupgrade 8.1.7 | tee /fnsw/local/oracle/conv920.err
```

The **oraupgrade** utility takes several minutes to run.

This script upgrades your Oracle datasets to the current Oracle release level. It also stores its output in `/fnsw/local/oracle/conv920.out` as it creates directories and updates Oracle dataset information.

Note

There is no progress indication on the screen. When the script finishes, the server returns to the system prompt.

To monitor the output of `oraupgrade`, you can open another X window and enter the following `tail` command:

```
tail -f /fnsw/local/oracle/conv920.out
```

When **oraupgrade** finishes, you can press **ctrl-c** to terminate the tail command.

You will see progress messages similar to these:

```
Starting oraupgrade
Upgrading the Oracle database from 8.1.7 to 9.2.0
oraupgrade complete
```

When **oraupgrade** is finished, you return to the system prompt.

- 3 As **fns** user, stop Oracle by entering:

```
fn_util stoprdb
```

Stopping Oracle at this point takes it out of migration mode.

Note If **oraupgrade** fails, review the output files **/fns/local/oracle/conv920.err** and **/fns/local/oracle/conv920.out** to determine the cause of the problem. The conv920.err file contains errors you need to look up in the conv920.out file.

You can ignore the following Oracle errors:

- ORA-00001: unique constraint (<table_name>) violated
- ORA-00604: error occurred at recursive SQL level <level_number>
- ORA-00904: <identifier> invalid identifier
- ORA-00942: table or view does not exist
- ORA-00943: cluster does not exist
- ORA-00944: insufficient number of clustered columns
- ORA-00955: name is already used by an existing object
- ORA-01418: specified index does not exist
- ORA-01430: column being added already exists in table
- ORA-01432: public synonym to be dropped does not exist
- ORA-01434: private synonym to be dropped does not exist
- ORA-01442: column to be modified to NOT NULL is already NOT NULL
- ORA-01451: column to be modified to NULL cannot be modified to NULL
- ORA-01452: cannot CREATE UNIQUE INDEX; duplicate keys found
- ORA-01918: user '<user_name>' does not exist
- ORA-01919: role '<role_name>' does not exist
- ORA-01921: role name '<role_name>' conflicts with another user or role name
- ORA-02264: name already used by an existing constraint

ORA-02275: such a referential constraint already exists in the table

ORA-02289: sequence does not exist

ORA-02443: Cannot drop constraint - nonexistent constraint

ORA-04043: object *<object_name>* does not exist

ORA-04080: trigger *<trigger_name>* does not exist

ORA-06512: at "*<table_name>*", line 2012

ORA-06550: line 8, column 47:

ORA-06554: package DBMS_STANDARD must be created before using
PL/SQL

ORA-24001: cannot create *<queue_name, table_name>* already exists

ORA-24002: QUEUE_TABLE *<queue_table_name>* does not exist

ORA-24010: QUEUE *<queue_name>* does not exist

ORA-24006: cannot create *<queue_name, table_name>* already exists

After you have corrected the problem, be sure to rename the output files so they're not overwritten. For example, you might enter a command similar to the following:

```
cp /fnsw/local/oracle/conv920.out /fnsw/local/oracle/conv920.sav
```

Then run **oraupgrade** again. (Saving the output files will make

problem resolution easier in case you need to contact the FileNet Upgrade/Install Assurance Team for support.)

Build System Configuration Files

- 1 Still as **fns** user, enter the following command to build the system configuration files:

fn_build -a

This will generate configuration files used by the components of the Image Services software. (**fn_build -a** also checks the validity of the software license.)

- 2 Make sure this command runs successfully by checking that no errors have occurred.

CAUTION

If errors were reported, identify and correct the cause of the errors before continuing with the next section.

Start the Oracle Software

On FileNet-controlled systems, enter:

```
fn_util startpdb
```

On site-controlled systems, ask the database administrator to start the Oracle software.

Note Stopping the database as you did in the previous section and then starting it again takes it out of migrate mode.

Add Stored Procedures to the Oracle Database

Image Services 4.0.0 requires that several new procedures be stored in the Oracle database. When Oracle is up and running, continue with the appropriate subsection:

On Servers with Local Oracle Databases

If the Oracle databases are located on the same server as the Image Services software, enter the following command as any user with database administration privileges, such as the Oracle Administrator user or the **fns** user:

oraupgrade_sp

The **oraupgrade_sp** utility runs very quickly. When the utility is finished, you return to the system prompt. Now skip to the section, **[“Enable Archive Logging \(if applicable\)” on page 183.](#)**

On Servers with Remote Oracle Databases

- a Copy these four scripts from the /fns/oracle directory on the Image Services server to the /fns/oracle directory on the Oracle server:

```
/fns/oracle/FileNet_site.sql  
/fns/oracle/fn_oraupgrade_sp.sql
```

```
/fnsw/oracle/fn_CreateStoredProcedures.sql  
/fnsw/oracle/fn_GrantSPPpermissions.sql
```

- b Ask the Database Administrator to run this script on the remote Oracle server:

fn_oraupgrade_sp.sql

(installs two stored procedures in the database)

(The `fn_oraupgrade_sp.sql` script calls the `fn_CreateStoredProcedures.sql` and `fn_GrantSPPpermissions.sql` scripts.)

When you're prompted to enter a password, you can enter any password you wish, such as "noganap". (This password is only temporary and you will reset it when the `fn_oraupgrade_sp.sql` script is finished.) Enter the same password when you're asked to confirm it.

The **fn_oraupgrade_sp.sql** utility runs very quickly. When the utility is finished, you return to the system prompt.

Important! Reset the password by entering:

```
fndba -s f_sw
```

Stop the Oracle Software

On FileNet-controlled systems, stop Oracle by entering:

```
fn_util stoprdb
```

On Site-controlled systems, ask the Database Administrator to stop Oracle.

Install Oracle Patch Set and Interim Patch

After you've installed Oracle9i from the release media, you also need to install:

- Oracle9i Patch Set 2 (9.2.0.2)

- Oracle9i Interim Patch 2645455

For Patch Set installation instructions, see [“Appendix B – Installing Oracle Patch Set 9.2.0.2” on page 214](#). For Interim Patch installation instructions, see [“Appendix C – Installing Oracle9i Data Server Interim Patch 2645455” on page 227](#).

Enable Archive Logging (if applicable)

Note If Oracle is Site-controlled, the Database Administrator is responsible for re-enabling Archive Logging.

If you disabled the archive logging feature earlier in this procedure, you can enable it again now.

- 1 As **fns** user, start the Configuration Editor by entering:

fn_edit &
- 2 Click on the Relational Database tab, then click on the Oracle sub-tab.

- 3 Click on Log Archive Start to remove the **X** in that field.
- 4 Exit and save the changes you made in **fn_edit**.
- 5 Run the following utilities to make the changes to the RDBMS:

```
fn_build -a  
fn_util updatertdb
```

Configure Optical Libraries (if necessary)

If you encountered **fn_setup** errors pertaining to the optical libraries earlier in this procedure, you can now reconfigure them automatically or manually. If **fn_setup** ran successfully, skip to the section, [**“Update NCH Database with New IS Version” on page 189.**](#)

Launch the Configuration Editor

As **fns** user, start the Configuration Editor by entering:

```
fn_edit &
```


Automatically Configure a Storage Library or ODU

Storage libraries can be configured automatically if they are physically connected to the server on which you're running **fn_edit**, and if they are fully powered on.

To configure a storage library automatically, follow these steps:

- a On the Procedures tab, scroll through the list of available procedures and select **Automatically Configure a Storage Library**.

fn_edit gets all the information it needs directly from the storage library or ODU, and does not display any messages unless it encounters an error.

- b After the storage library has been configured, skip to the section, **[“Verify Storage Library Information” on page 187.](#)**

Manually Configure a Storage Library or ODU

As an alternative, you can configure the storage library or ODU manually by following these steps:

- a On the Procedures tab, scroll through the list of available procedures and select **Manually Configure a Storage Library**.
- b Respond to the prompts with the appropriate information. You will be asked to supply the following details:
 - Library type
 - Library number
 - Number of optical drives in the library
 - Types of optical drives in the library
 - Position of the optical drives in the library
 - SCSI address of each optical drive and the library's robotic arm.

After you have answered all the prompts, **fn_edit** completes the configuration.

Verify Storage Library Information

To view the result of the procedure and to see information on other storage libraries already configured on the system, select the Storage Libraries tab.

Exit the Configuration Editor

Now you can exit `fn_edit` by selecting Exit from the File pulldown menu. If you haven't made any changes, it's not necessary to save the file as in past updates.

Build System Configuration Files

- 1 Still as `fns` user, rebuild the system configuration files by entering:

```
fn_build -a
```

- 2 Make sure this command runs successfully by checking that no errors have occurred.

CAUTION

If errors were reported, identify and correct the cause of the errors before continuing with the next section.

Create Links for Optical Drivers

If you reconfigured the Storage Libraries earlier in `fn_edit`, now you need to update the library links. If you did not reconfigure the storage libraries, you can skip this section.

- 1 As **fns** user, create the links by entering:

```
fn_util mk_links
```

- 2 Now you can run `fn_setup` again:

```
fn_setup
```

- 3 When you view the `fn_setup.log` file, there should be no errors.

```
less /fns/local/logs/fn_setup.log
```

Update NCH Database with New IS Version

Server Types

Perform the steps in this section on the **Root server** only.

As **fns** user, rebuild the NCH database and reset Image Services version number for the new release.

```
nch_tool -l -u /fns/local/sd/nch_dbinit
```

5

Completing the Update

In this chapter you will finish the Image Services software update procedures.

Verify the `/fnsw/etc/serverConfig` File

Server Types

Perform the steps in this section on **all servers**.

In the Image Services 4.0.0 release, the processes that use the server-Config file have been designed to search for a file named server-Config.custom first, and if it does not exist, to use the default serverConfig file.

At the beginning of this update procedure, you made a backup copy the **/fnsw/etc/serverConfig** file.

As **fnsw** user, compare the file you saved (/fnsw/etc/serverConfig.save, for example) with the newly installed serverConfig file by entering the following commands:

```
cd /fnsw/etc  
diff serverConfig serverConfig.save | more
```

- If the file serverConfig.save contains parameters that are different from the new serverConfig, use your preferred text editor, such as **vi**, to edit the serverConfig.save file.

If any values in the new serverConfig file are higher than those in the serverConfig.save file, **always keep the higher value.**

Rename the resulting file **serverConfig.custom**.

Verify the MasterSnmpd_start File

At the beginning of this update procedure, you made a backup copy of the `/fnsw/bin/MasterSnmpd_start` file.

View the file you saved (`/fnsw/bin/MasterSnmpd_save`, for example) and check the destination (IP address or server name) of the System Administrator's SNMP Management station.

In the newly installed `MasterSnmpd_start` file, the destination address is set to "local" by default, so you may need to edit this file to insert the correct destination. For example, you would change:

```
trap_host="local"
```

to either:

```
trap_host="135.10.0.44" -or-  
trap_host="solstice"
```

where "135.10.0.44" is the IP address of SNMP Management station
"solstice" is the DNS resolvable server name of the station.

If the destination address is not set correctly, the SNMP Management station will no longer receive event notifications (traps).

Reboot the Server

Reboot the system by entering the following commands:

```
shutdown -i6 -g0 -y
```

The system will shutdown and reboot automatically. When the server finishes booting, logon as **root** user.

Set the DISPLAY Variable (Optional)

The DISPLAY environment variable, normally set by the system, is lost when the following circumstances occur:

- A user switches user (**su**) from another logon (typically **root**).
- A user performs an **rlogin** from another system.

- A user resets the default host from an Xstation connected to another system.

If there appears to be no automatic way of correctly setting this variable, perform the following steps:

- 1 As **root** user, check the value of the DISPLAY variable by entering:

```
echo $DISPLAY
```

- 2 If the DISPLAY variable has a value, the value will display. If the variable has no value, or was never set, you'll either see an empty line (Korn shell) or an error message (C shell).

If you receive either an empty line or an error message, enter the following (depending on the shell you are using):

- For Bourne or Korn shell, enter:

```
export DISPLAY=<host_identifier>:0
```

- For C shell, enter:

```
setenv DISPLAY <host_identifier>:0
```

where <host_identifier> is the server identifier, either a name or IP address.

Note You should verify the value of the DISPLAY variable before attempting to use the COLD software.

If the DISPLAY environment variable is not set, Motif fails by displaying some non-understandable errors and then going away. What should happen is that COLD should verify that DISPLAY is set, and if not, log a clear error message, then stop.

Start the Image Services 4.0.0 Software

- 1 Logon as **fns** user, and enter the following command to stop all FileNet processes:

killfns -DAy

- 2 Start the updated FileNet application software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

- 3 After the TM_daemon.exe message displays in the Process table, select the Monitor menu.
- 4 From the Monitor menu, select the Event Logs option. (The Event Logs window displays.)
- 5 From the Event Logs window, select the DISPLAY menu. Select Dynamic. (The Dynamic option enables screen refreshes each time the messages are logged.) Switch to the FileNet Task Manager window.
- 6 From the FileNet Task Manager window, select START.

You will receive system messages in the Current Status window as the FileNet software starts. Once the FileNet software startup process finishes, the CLOSE button is highlighted.

- 7 Select the CLOSE button. (The Current Status window closes.)

- 8 Review the contents of the Event Log window to make sure that there are no error messages from the software startup.

Run Spacertp

On Servers with Local Oracle Databases

If the Oracle databases, either Site-controlled or FileNet-controlled, are on the same server as Image Services, you can run **spacertp** after the update and compare the results to the **spacertp** you ran before the update.

- 1 Test the f_maint password by running **spacertp**. At the system prompt, enter as **fns** user:
 - In the Bourne or Korn shell:

```
spacertp > <output_file_name> 2&1
```
 - In the C shell:

spacertpt > & <output_file_name> &

where <output_file_name> can be any name you choose.

Spacertpt verifies that:

- the FileNet logon and security are intact
 - the Advanced internal database structure is intact
 - the FileNet metadata are intact
- 2 If **spacertpt** does not run, make sure the f_maint password has been set and exported correctly. See [“Run spacertpt” on page 38](#).
 - 3 Send the output file to the FileNet Upgrade/Install Assurance Team at upgrade@filenet.com. Compare the **spacertpt** output to the **spacertpt** output you ran prior to updating Image Services.

On Servers with Remote Oracle Databases

If the Oracle databases are located on a remote Oracle server, you cannot run **spacertpt** directly because Oracle OS authentication pre-

vents it. Instead, you need to modify two script files and login to sqlplus to get space information.

- 1 Copy the following two files from the /fnsw/oracle Image Services server to the /fnsw/oracle directory on the remote Oracle server:

/fnsw/oracle/spacertpt_summary.sql

/fnsw/oracle/spacertpt_extended.sql

- 2 On the remote Oracle server, use your preferred text editor, such as **vi**, to modify these two files. The first line of each file is:

```
/ as sysdba
```

(There are no quotation marks around this statement in the file.)

- 3 Remove this line from each file. Exit and save your changes.

Now you can run the **spacertpt** scripts successfully on the remote Oracle server.

- 4 Login to sqlplus to run the scripts:

sqlplus

- 5 When you're prompted, enter the user name **f_maint** and the f_maint password. See [“Run spacerpt” on page 38](#).
- 6 To run **spacerpt**, enter the following command at the SQL> prompt:

@/fnsw/oracle/spacerpt_summary.sql
- 7 For a more detailed report, enter:

@/fnsw/oracle/spacerpt_extended.sql
- 8 Send the summary report to the FileNet Upgrade/Install Assurance Team at upgrade@filenet.com. Compare the **spacerpt** output to the **spacerpt** output you ran prior to updating Image Services.

Test the Updated Image Services and User Applications

Verify the updated Image Services software is running properly by testing the system in native mode. Native mode is when FileNet prod-

ucts are tested with customer and vendor-written APIs disabled. Scanning, indexing, committing, faxing, and printing are achieved through the manual selection of these processes through FileNet Capture Professional or Workforce Desktop.

Native mode is preferred in this case for two reasons:

- Only Image Services errors will be displayed. API-oriented errors can be tested after after Image Services processes have been tested.
- Image Services errors will display during their specific stage of document entry or retrieval. This reduces your troubleshooting time.

If the optional COLD software is installed, test it by running the COLD preview.

Also test any user applications on the server to make sure they run successfully, too.

Re-enable Cron Jobs

Re-enable cron jobs if you disabled them prior to starting the update.

Remove the oratmp Volume

The oratmp volume was used temporarily during the update of the Oracle software and it's no longer needed. Use the Volume Management software to remove this volume.

Configure the System Information Messenger

Server Types

Perform the steps in this section on **all servers**.

The System Information Messenger is a utility that automatically collects performance statistics, license usage data, system configuration data, and software registration information from the server and sends the data to FileNet.

Determine if SIM is enabled by checking for an active entry for **/fnsw/support/fnISSIM** in the root crontab file.

- If SIM is not enabled, follow the instructions in the [*System Information Messenger Manual*](#) to enable and configure the software.
- If SIM is already enabled, perform the following steps to update the configuration files to the latest release format:
 - As **root** user, enter:

ISRegstr

Follow the on-screen prompts to review and update all user settings. If user settings do not need modification, just press return to accept currently defined information.

At the end, answer **Y** to the prompt "Would you like to update this information?". Answer **Y** even if no user settings were modified.

- As **root** user, enter:

ISSIMcfg

Follow the on-screen prompts to update all user settings. If user settings do not need modification, just press return to accept currently defined information.

At the end, answer **Y** to the prompt "Would you like to update this information?". Answer **Y** even if no user settings were modified.

Install Remaining Fixes

Note Perform the steps in this section on **all servers**.

Now you can install the remaining fixes that apply to the Image Services 4.0.0 release. Be sure to read the README file on the Tech Info CD, which contains the fixes that were available when the CD was made. You can also retrieve the latest fixes from the FileNet Worldwide Customer Support Web site <http://www.css.filenet.com>.

Modify the /etc/inittab File

Note Perform the steps in this section on **all servers**.

You must edit again the /etc/inittab file to allow your server to broadcast system-wide messages.

- 1 Change to the /etc directory by entering the following command:

```
cd /etc
```

- 2 Using a preferred editor (for example, **vi**), open and edit the inittab file.
- 3 Locate and uncomment (by removing the **:** symbol) the following line:

```
fn:3wait:/bin/sh /etc/rc.inittabsw </dev/console>/dev/console2>& 1
```

Adapt System for Xstation Use (Optional)

If you plan to run Xapex from an Xstation, you must modify certain system parameters. (The modified parameters disable your access control option and allow you to run applications from an Xstation.)

- 1 To modify the appropriate parameters, enter commands similar to the following:

```
cd /usr/lib/X11
xset q
xset +fp /usr/lib/X11/fonts/100dpi
xset q
```

Note If you plan to run Xapex on an IBM Xstation, enter the additional line:

```
xhost +
```

MSAR Systems

The Magnetic Storage and Retrieval (MSAR) storage library is a new feature that has been added to FileNet Image Services in this release. It provides high speed and high capacity storage libraries on magnetic disk media instead of using optical media or large magnetic disk caches (Cache-only systems).

If you will be configuring and setting up an MSAR System, refer to the [***MSAR Procedures and Guidelines***](#) document for information.

Make System Backups

At this time, you should make a full system backup.

Server Types

Perform the steps in this section on **all servers**.

You need to make backups of your system configuration in case something unforeseen occurs. For complete information on making system backups, refer to:

- [*Image Services System Administrator's Handbook*](#)
- [*Image Services System Administrator's Companion for UNIX*](#)
- [*Image Services Enterprise Backup and Restore*](#)
- [*Image Services Third-Party Backup/Restore Guidelines*](#)

Return to Production Mode

You are now finished with the FileNet Image Services update procedure, and you can return the server to normal operation.

Remove Previous Oracle File System (Optional)

After the updated FileNet Image Services and Oracle RDBMS software have been running successfully for several months, the **Database Administrator** or **FileNet Technical Consultant** may consider removing the old version of Oracle as long as no other applications are using it.

Appendix A – Installing Veritas Volume Manager

Install Volume Manager On-line Documentation

Insert the Veritas or Sun Volume Manager CD-ROM into the CD-ROM drive.

Veritas Volume Manager and Sun StorEdge Volume Manager 3.x and Later

- 1 As **root** user, use the `pkgadd` command to install the documentation.
For example:

```
pkgadd -d /cdrom/cdrom0/<os_level>/pkgs VRTSvmdoc
```

- 2 Answer **yes** to the `setuid/setgid` product names confirmation.
- 3 Answer **yes** to all the remaining prompts.

- 4 The volume manager installation documentation and user guide are located under /opt/VRTSvxvm/docs.
- 5 Skip to the section, [“Install Volume Manager Software” on page 210.](#)

Sun Enterprise Volume Manager

- 1 Use the pkgadd command to install the documentation. For example:

```
pkgadd -d /cdrom/cdrom0/Product SUNWasevm
```
- 2 Answer **yes** to all the remaining prompts.
- 3 Go to Answerbook to access the installation documentation and the user's guide.

Install Volume Manager Software

Follow the steps in the Volume Manager installation documentation to install the volume manager and storage administrator.

Note The Volume Manager software requires that at least one disk be put into rootdg to complete the volume manager initialization.

When running vxinstall, select the following options:

- **Custom Installation**
- **Encapsulate the root disk** (accept the defaults for the diskname) or specify a different disk to be put into the rootdg.
- **Leave these disks alone** (leave remaining disk alone, these will be added later)

FileNet recommends a separate volume group, other than the rootdg, for the FileNet software. If Oracle is FileNet-controlled, the Oracle software should be in the separate volume group, too.

The name of the volume group can be anything the customer wishes, such as fndg or fnswdg.

You can use the command **vxdiskadm** to create the new volume group, or you can use the graphical virtual administrator (vxva) and storage administrator (vmsa) tools.

Use the volume manager to make sure the following file systems and volumes have been created and are the appropriate sizes:

Note **For Sites with Disk Arrays ONLY:** Disk arrays managed by the Veritas volume management software, do not always “grow” to an even MB boundary. You should verify the new size, after “growing” a volume, by displaying the volume information. The new volume size will display in Kilobytes if it did not “grow” to an even Megabyte boundary. Previous installations with a disk array (configured for RAID-5) have determined that the correct procedure for accurately “growing” a volume to an even Megabyte boundary is to make the new volume size evenly divisible by seven. It is uncertain if the suggestion is applicable for all disk arrays. (Check the most current version of the Release Notes for more information.)

Reboot the Server

- 1 After the volume management software is successfully installed, reboot the system by entering:

shutdown -i6 -g0 -y

When the system finishes booting, all encapsulated disks should be available for use.

- 2 Restart X Windows or CDE, and log on as **root** user.

Return to the Main Procedure

Now you can continue with the Oracle and Image Services update. Return to the section, **“Verify FileNet and RDBMS Groups and Users” on page 48** in Chapter 2.

Appendix B – Installing Oracle Patch Set 9.2.0.2

Note Oracle provides both 32-bit and 64-bit versions of its Database Software on the Sun SPARC Solaris platform.

The 32-bit version of the Oracle database software can be run on the 32-bit or 64-bit version of the Solaris Operating Environment. The 64-bit version of the database software can only be run on the 64-bit version of the Solaris OE.

The **32-bit** version of a Patch Set **MUST ONLY** be installed on the 32-bit version of the Oracle database software (regardless of whether the Solaris OE is 32-bit or 64-bit).

The **64-bit** version of a Patch Set **MUST ONLY** be installed on the 64-bit version of the Oracle database software (which will be running on the 64-bit Solaris OE).

Prepare to Install the Patch Set

- 1 Insert the appropriate CD (32-bit or 64-bit) for your server configuration containing the Oracle Patch Set 9.2.0.2 for the Solaris Operating Environment. The CD mounts automatically.
- 2 As **fns** user, make sure the Image Services and Oracle software is stopped. Enter:

```
initfns -y stop
```

- 3 Make sure that all processes have been stopped by entering:

```
whatsup
```

If the resulting display shows that any processes, such as TM_ daemon, are still active, enter:

```
killfns -DAy
```

-
- 4 As the **oracle** user, make sure the environment variables ORACLE_HOME and ORACLE_SID are set correctly.

```
echo $ORACLE_HOME  
echo $ORACLE_SID
```

ORACLE_HOME should point to the location of the Oracle 9.2.0 software, and ORACLE_SID should be unchanged, e.g., IDB.

- For Bourne or Korn shell, enter:

```
export ORACLE_HOME=<Oracle Home Directory>  
export ORACLE_SID=<Oracle Site Identifier>
```

- For C shell, enter:

```
setenv ORACLE_HOME <Oracle Home Directory>  
setenv ORACLE_SID <Oracle Site Identifier>
```

- 5 Cd to the \$ORACLE_HOME/bin directory where the Oracle Universal Installer is located.

For example:

```
cd /usr/ora/920/bin
```

6 Make sure the DISPLAY environment variable is set.

- For Bourne or Korn shell, enter:

```
export DISPLAY=<host_identifier>:0
```

- For C shell, enter:

```
setenv DISPLAY <host_identifier>:0
```

where <host_identifier> is the server identifier, either a name or IP address.

7 Use the Oracle Universal Installer to install the Patch Set as described in the next section.

Launch Oracle Installer

- 1 Start the installer from whichever of the above directories is appropriate on your installation:

`./runInstaller`

- 2 Follow the steps below within the installer:
- 3 On the **Welcome** screen, click the *Next* button to display the **File Locations** screen.

Welcome

The Oracle Universal Installer guides you through the installation and configuration of your Oracle products.

Click "Installed Products..." to see all installed products.

- 4 At the **Source...** entry field, click the *Browse* button and navigate to the *stage* directory located on the CD-ROM. (The *stage* directory is located under the Disk1/ sub-directory on the CD.)

File Locations

Source...

Enter the full path of the file representing the product(s) you want to install:

Path:

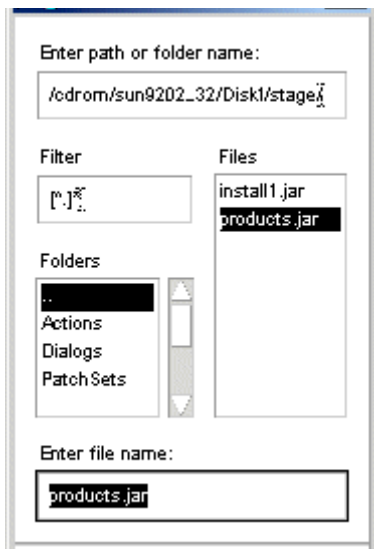
Destination...

Enter or select an Oracle Home name and its full path:

Name:

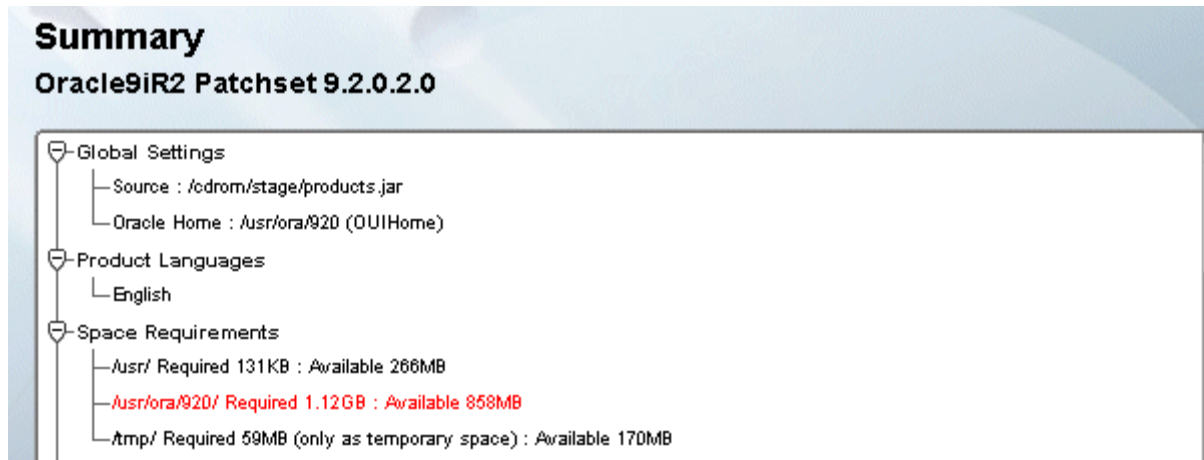
Path:

- 5 Select the products.jar file. Click the **Next** button
The products file will be read and the installer will load the product definitions. The products to be loaded will be displayed.

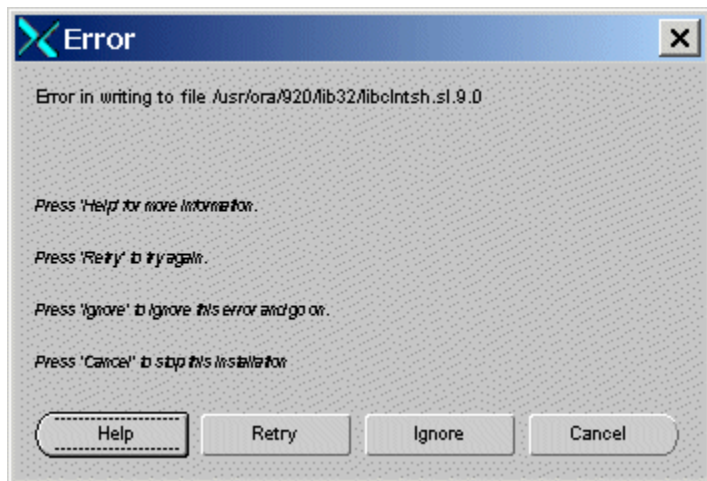


- 6 Verify the products listed on the Summary screen.

Note Disregard the amount of space shown as Required. It assumes that all products will be installed, and is **not** accurate for this update. The amount of space you actually need is much less.



- 7 On the Summary screen, click the **Install** button. Expect the installation to take about an hour.
- 8 If you encounter problems writing to a file during the installation process, as shown in the Error message below, change the permissions for the Oracle libraries and binaries.



You may need to take one of these actions:

- To add write permission for the owner of a file, enter:

chmod u+w <filename>

- To change the ownership of a file, enter:

chown oracle:dba <filename>

- To rename a file, enter:

cp <filename> <newfilename>

After you've made the appropriate change, click **Retry** on the Error screen to continue.

- 9** When the installer prompts you to run the root.sh script, open a new X window and log on as **root** user to run `$ORACLE_HOME/root.sh`.
- 10** After the installation has completed successfully, the installer displays:

End of Installation

Click **Exit** and confirm to exit the installer.

After Installing the Patch Set

After the Patch Set has been successfully installed, you need to run the following SQL*PLUS commands on each database associated with this Oracle 9.2.0.2 instance.

- 1 As the **oracle** user, launch SQL*PLUS by entering:

```
sqlplus "/ as sysdba"
```

- 2 Start the database in migrate mode.

```
SQL> startup migrate pfile = /fnsw/local/oracle/init.ora
```

- 3 Begin spooling the output to a log file, and execute the catpatch.sql script to update the database with the newly patched software. This step will also take about an hour.

```
SQL> spool patch.log
```

```
SQL> @$ORACLE_HOME/rdbms/admin/catpatch.sql
```

```
SQL> spool off
```


- 4 Review the patch.log file for errors and correct any problems. If necessary, run the catpatch script again until no errors are reported.
- 5 Shutdown the database and then restart it to take it out of migrate mode.

```
SQL> shutdown
```

```
SQL> startup pfile= /fnsw/local/oracle/init.ora
```

- 6 This step is optional. It recompiles all invalid PL/SQL packages now rather than when accessed for the first time. Expect this step to take just a minute or so.

```
SQL> @$ORACLE_HOME/rdbms/admin/utlrp.sql
```

- 7 Shutdown the database and exit from sqlplus by entering:

```
SQL> shutdown
```

```
SQL> exit
```

Important!

FileNet Image Services systems and Oracle that use the US7ASCII character set also need to install Oracle Interim Patch 2645455 as described in **“Appendix C – Installing Oracle9i Data Server Interim Patch 2645455” on page 227**. You may want to leave Oracle and Image Services shutdown until you’ve finished installing the interim patch.

Oracle Interim Patch 2645455 is not required for systems using a character set such as WE8ISO8859P1.

Appendix C – Installing Oracle9i Data Server Interim Patch 2645455

Oracle Interim Patch 2645455 corrects a problem with the US7ASCII character set. If you plan to use a different character set, such as WE8ISO8859P1, this patch is not required.

Note At the time this document was published, Oracle Patch Set 3 (9.2.0.3) did not include the fix for the US7ASCII problem, and no equivalent Interim Patch for Patch Set 3 was available. However, Oracle may include this patch in subsequent Patch Sets. Check the Image Services 4.0.0 Release Notes on FileNet's Web site <http://www.css.filenet.com> for the latest news.

Prepare to Install the Interim Patch

- 1 Make sure that Perl 5.5 (also known as Perl 5.00503 – Tar 3016460.999) or greater version of Perl is installed on the server.
Enter:

```
pkginfo | grep -i perl
```

Perl is supplied with the Solaris Operating Environment software.

- 2 Verify that Perl is in your directory path by entering:

```
which perl
```

If you need to add perl to your path, enter:

- In the Bourne or Korn shell:

```
export PATH=$PATH:<full path to the directory containing perl>
```

- In the C shell:

```
setenv PATH $PATH:<full path to the directory containing perl>
```

To verify the PATH variable is set correctly, enter:

```
echo $PATH
```

- 3 Make sure that Oracle Patch Set 2 (9.2.0.2) is correctly installed on the server. Refer to **“Appendix B – Installing Oracle Patch Set 9.2.0.2”** on page 214.

- 4 Create a temporary directory for the interim patch. (The directory name must contain the specific numbers shown.) For example, enter:
 - For Solaris 32-bit:
mkdir /2754401
 - For Solaris 64-bit:
mkdir /2754436
- 5 And then add this new directory to your path:
 - For Solaris 32-bit
 - In the Bourne or Korn shell:
export PATH=\$PATH:/2754401
 - In the C shell:
setenv PATH \$PATH:/2754401
 - For Solaris 64-bit:
 - In the Bourne or Korn shell:
export PATH=\$PATH:/2754436

- In the C shell:

```
setenv PATH $PATH:/2754436
```

To verify that the PATH variable is set correctly, enter:

```
echo $PATH
```

- 6 Have the FileNet CD for Oracle Interim Patch 2645455 available.
- 7 Make sure the Image Services and Oracle software is stopped. If the software is still shutdown after having installed Oracle Patch Set 9.2.0.2, skip to the next section, [**“Installing the Interim Patch” on page 232.**](#)

Otherwise, as **fns** user, enter:

```
initfns -y stop
```

- 8 Make sure that all processes have been stopped by entering:

```
whatsup
```

If the resulting display shows that any processes, such as TM_ daemon, are still active, enter:

```
killfns -DAy
```

Installing the Interim Patch

- 1 Insert the FileNet CD for Oracle Interim Patch 2645455 into the CD-ROM drive. The CD mounts automatically.
- 2 As **root** user, cd into the appropriate directory on the CD-ROM:
 - For Solaris 32-bit:
cd /cdrom/cdrom0/Solaris32/2754401
 - For Solaris 64-bit:
cd /cdrom/cdrom0/Solaris64/2754436
- 3 Copy the contents of the patch directory on the CD to the temporary directory on your server. Enter:
 - For Solaris 32-bit:
cp -r * /2754401
 - For Solaris 64-bit:
cp -r * /2754436
- 4 Give the new directory universal access privileges by entering:

- For Solaris 32-bit:
chmod -R 777 /2754401

- For Solaris 64-bit:
chmod -R 777 /2754436

- 5 Return to the root directory and eject the Interim Patch CD-ROM by entering:

```
cd /  
eject
```

Remove the CD from the CD-ROM drive and store it in a safe place.

- 6 Then change to the appropriate directory and apply the patch by entering:

- For Solaris 32-bit:
cd /2754401

- For Solaris 64-bit:
cd /2754436

- For Both:

```
perl OPatch/opatch.pl apply
```

After Installing the Interim Patch

Check to see if the patch has been successfully installed on the server. The following steps list what is currently installed on the server, including Interim Patch Id Numbers:

- For Solaris 32-bit:

```
cd /2754401
```

- For Solaris 64-bit:

```
cd /2754436
```

- For Both:

```
perl OPatch\opatch.pl lsinventory
```

The report lists all installed items in alphabetical order, along with the corresponding version number. The installed interim patches and their associated base-bug are listed at the end of the report. For example

The product names shown in the example are shown as an example only:

```
PRODUCT NAME                                VERSION
=====                                =====
Advanced Queueing (AQ) API                  9.2.0.1.0
Advanced Replication                        9.2.0.1.0
Agent Required Support Files                9.2.0.1.0
.
.
.
XML Transx                                  9.2.0.1.0
XSQL Servlet                                9.2.0.1.0

Installed Patch List:
[ Base Bug(s): 2645455 ] )
```

Restart your database instance to ensure that it comes up successfully.

Removing the Patch, if necessary

If you need to remove the patch for any reason, follow these steps:

- For Solaris 32-bit:

```
cd /2754401
```

- For Solaris 64-bit:

```
cd /2754436
```

- For Both:

```
perl OPatch/opatch.pl rollback -id 2645455
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