



Image Services

Installation and Configuration Procedures for HP-UX

Release 4.0.0

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FileNet Corporation
3565 Harbor Boulevard
Costa Mesa, California 92626
800.FILENET (345.3638)
Outside the U.S., call:
1.714.327.3400
www.filenet.com

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Getting Started

This document explains how to install and configure FileNet Image Services 4.0.0 software and 64-bit Oracle9i RDBMS software on a 64-bit Hewlett-Packard 9000 Series 800 Business Server (HP 9000/800).

Overview

The procedures in this document can be used to configure an HP 9000 server as:

- a Combined server (Root/Index/Storage Library)
- a Dual server (Root/Index or Storage Library)
- an Entry server (Root/Index/Storage Library)
- an additional Storage Library Server

- an Application Server
- a WorkFlo Management Server

If you're going to be using **HP MC/ServiceGuard**, you also need to perform many sections in this document on your fail over server(s).

Required Skills

This procedure assumes you have knowledge of:

- UNIX, specifically, the HP-UX operating system
- a text editor such as **vi**, and the System Administration Manager tool (**SAM**).

Note This document includes information for installing the Image Services software on a system with an existing Oracle (site-controlled) instance. However, most of the procedures contained in this document assume that you are installing Oracle now. If you are planning to use an existing Oracle instance and you encounter a procedure related to

installing Oracle on your system, skip that procedure and continue with the next Image Services-related procedure.

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 FileNet Image Services documentation CD.

New Features of the Image Services 4.0.0 Installation

This release of FileNet Image Services includes some changes you need to be aware of when installing the new software.

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.

Cross-Committal and Multi-Committal System Support

A new document, [***Multi-Committal and Cross-Committal Configuration Handbook***](#), is included in this release. It supplements the section in this document that deals with configuring Image Services servers in a cross-committal or multi-committal environment. This new document focuses on the important planning and coordination that must occur prior to the installation and configuration of the software.

Please read the [***Multi-Committal and Cross-Committal Configuration Handbook***](#) for complete information on the concepts and prereq-

uisites for configuring both Source and Target servers in this environment.

Oracle9i RDBMS Software

Oracle9i Release 2 Enterprise/Standard Edition for HP-UX (64-bit) is the only supported Oracle version for this release. All installations of Oracle are Site-controlled. Also required are:

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

Remote Oracle Database Support

This installation procedure includes information for configuring Oracle RDBMS software and datasets on a separate server from the FileNet Image Services software. In this configuration, Oracle must be site-controlled. Oracle Server software is installed on the remote Oracle server and Oracle Client software is installed on the FileNet Root/Index or Combined server.

See [*Guidelines for Installing and Updating Oracle Software for UNIX Servers*](#) for more information.

Image Services and Content Services Collocation

Image Services and Content Services can both be installed on the same HP-UX server. See [**“Appendix C – IS and CS Collocation Requirements” on page 377**](#) for further details.

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 installation. These are all available on the FileNet CSS 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** are 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** 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-INSTALL** and **REQUIRED** to locate information about HP-UX, Oracle, and FileNet patches that need to be applied before starting this installation.)

Operating System Notes

Review the operating system Notes for your current version of HP-UX to determine if any patches need to be installed prior to this Image Services installation. The System Administrator is responsible for obtaining and installing these patches.

Go to the FileNet Web site <http://www.css.filenet.com> and log into Customer Service & Support. Click on:

Product Tech Info
Image Services
Compatibility & Dependency
IS 4.0.x

Select your operating system from the list, and review the patch recommendations and requirements. Make sure the most recent patch bundle has been installed.

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 When running Image Services and the Image Services Toolkit (formerly known as WAL) on the same server, the Image Services Toolkit must be version 3.6 or later.

Installation Prerequisites

The prerequisites for an installation are outlined in the following sections. You will be asked to gather specific information in the following sections. After you find each piece of information, enter it in the appropriate space in the [“FileNet TC Worksheet” on page 101](#).

Server Types

Perform the steps in this section on these servers:

Root/Index and **Storage Library** during a Dual server installation.

Root/Index/Storage Library server during a Combined server or Entry server installation)

Note If you are going to be using **HP ServiceGuard**, you also need to perform these steps on your fail over servers.

It is very important that you complete all prerequisite checks and gather all pertinent information now, or you will have difficulties later during the procedure.

Minimum Hardware Requirements

Note These requirements have changed from previous FileNet Image Services releases.

Server Architecture

Servers containing PA-RISC processors that support the HP-UX11i operating system are required. (Itanium processors are not supported.)

- **64-bit** processors for all servers with Oracle9i software including Root/Index servers and Application servers with either WorkFlo Queue Services, SQL Services, or VWServices.

Note Oracle9i software for HP-UX is not compatible with 32-bit hardware.

- **32-bit** or **64-bit** processors for servers without Oracle such as separate Storage Library servers and Application servers with only Batch, Print, and/or Cache Services.

Server Memory

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

Total Swap Space

Oracle recommends that swap space be **2 times** the amount of server memory.

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 Image Services software and minimum datasets only:
 - At least **1.0 GB**

This include a 30% growth factor, but does not include space required for the HP-UX operating system or for Oracle software.

The System Administrator and Database Administrator should refer to the HP-UX and Oracle documentation for space requirements for these products.

Note The system needs to have at least three magnetic disks -- one for the vg00 volume group and at least two for the “fnvg” volume group, or

whatever you name it, in which the master database resides. Mirroring this database will minimize downtime and avoid interruption of business in the event of a hardware failure.

Available File System Space for FileNet Software

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

- **500 MB** total space in /fnsw.
- **500 MB** total space in /fnsw/local.

Space for Oracle software

The amount of disk space required for Oracle software depends on whether Server or Client software is installed and the number of Oracle products selected.

Refer to Oracle documentation for additional information about space requirements for Oracle software products.

Refer to the [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#) for more information about space requirements for Oracle software products.

FileNet's SCoUT system configuration and output tool can help estimate the actual amount of disk space needed for FileNet and Oracle datasets on this Image Services system.

Graphics Monitor

You must use an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator to use FileNet's graphical user interface (GUI) capabilities to:

- Configure the system running the `fn_edit` tool to access the Configuration Editor.
- Run FileNet system administration programs, such as the Application Executive, Database Maintenance, and Storage Library Control (SLC).

When the documentation directs you to perform a command requiring any GUI capabilities on the Root/Index/Storage Library server, for

example, you need to be at the X-station or PC you have attached to your Root/Index/Storage Library server. ASCII commands can be performed at either the X-station or PC you have attached to your server(s) or at the server's terminal.

International Keyboard

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 pulldown menu.

Failover Server

If you are going to be using **HP ServiceGuard**, you are going to need a duplicate system of your main Image Services system as a fail over system and a disk array attached to both the production system and the fail over system.

Software Requirements

Software requirements described in this document are for the following:

- Operating system and related information
- FileNet Image Services (including COLD)
- Oracle9i Release 2 Relational DataBase Management Software
- Release Notes file
- Appropriate patches for your HP-UX operating system and RDBMS
- HP ServiceGuard installed and configured by HP

Server Naming Convention

Properly naming Image Services servers is an important step when setting up your Image Services system. Server domain names can have a maximum of 64 characters and should only contain ASCII alpha-numeric characters and hyphens.

Note Non-alphanumeric and underscore characters should not be used.

The reason for this convention is that when NCH (Network Clearing House) has to cross a router to find a server, it converts the domain name to an IP host name using specific criteria, one of which is dropping the underscore character. In fact, all non-alphanumeric and underscore characters are eliminated.

Operating System and Related Information

HP-UX Version

Determine the version of operating system software running on the server(s) and enter it on the [“FileNet TC Worksheet” on page 101](#).

Enter the **uname -a** command. If the version of HP-UX software is earlier than version B.11.11, or if no software has been installed on the system, refer to HP documentation.

Your server must already be running:

HP_UX 11.11 (64-bit) or later

Verify the character set used by the operating system and enter it on the worksheet.

HP-UX Patches

After installing 64-bit HP-UX 11i, go to the FileNet Web site <http://www.css.filenet.com> and log into Customer Service & Support. Click on:

Product Tech Info
Image Services
Compatibility & Dependency
IS 4.0.x

Select your operating system from the list, and review the patch recommendations and requirements.

HP-UX Bug

Due to a known HP bug (Doc. id: KBRC00003627), the default HP-UX (64-bit) operating system installation does not create a few required X library symbolic links. These links must be created manually before starting Oracle9i installation.

As **root** user, enter the following commands to create the required links:

```
cd /usr/lib
ln -s /usr/lib/libX11.3 libX11.sl
ln -s /usr/lib/libXIE.2 libXIE.sl
ln -s /usr/lib/libXext.3 libXext.sl
ln -s /usr/lib/libXhp11.3 libXhp11.sl
ln -s /usr/lib/libXi.3 libXi.sl
ln -s /usr/lib/libXm.4 libXm.sl
ln -s /usr/lib/libXp.2 libXp.sl
ln -s /usr/lib/libXt.3 libXt.sl
ln -s /usr/lib/libXtst.2 libXtst.sl
```

Font Server for COLD Preview

If you plan to run FileNet COLD Preview software from an Xstation, you must configure a Font Server to enable fonts to display and align correctly on the Xstation. The Font Server should be the same server on which the COLD software is installed, usually the Storage Library Server.

To configure the server on which you plan to run FileNet COLD software, go to [“Appendix E – Configuring a Font Server for COLD Preview” on page 391](#) now.

TCP/IP Address

FileNet Image Services software requires that the server have a static IP address. Use SAM to verify that a specific IP address has been assigned to the server. Use of a dynamic IP address (DHCP) is not supported.

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 HP-related problems.

WDB 3.1.x

The Hewlett-Packard **Wildebeest (WDB)** debugger is an HP-supported implementation of the GDB debugger. It supports source-level debugging of object files written in HP C, HP aC++, Fortran 90, and FORTRAN77 on HP-UX Release 11.0 and later.

HP WDB is the recommended debugger for HP-UX 11.0 and 11.11 systems. Other debuggers, such as xdb and HP DDE may not be available or may not support features in upcoming HP-UX releases.

You can download a version that's compatible with your current version of the HP-UX operating system for no charge by going to <http://www.hp.com/go/wdb/>. Documentation is also available for download.

SCSI Passthru Driver

You need to install the SCSI-Passthru software product that contains the SCSI Passthru driver. This software is required in order to be able to configure optical storage libraries on your system. To check to see if this driver has been installed, enter the following command:

```
/usr/sbin/swlist -l product | grep SCSI
```

If this command does not locate **SCSI-Passthru**, the System Administrator must install it from the HP-UX operating system release media.

Refer to the **man** page for `scsi_pt` for instructions on how to configure the driver as well as the optical devices.

Logical Volume Manager

You must have Logical Volume Manager software. Enter the following command:

```
/usr/sbin/swlist -l product | grep LVM
```

If this command does not locate an **LVM** line, the System Administrator must install it from the HP-UX operating system release media.

HP ServiceGuard

If you are going to be using HP ServiceGuard, you must have HP ServiceGuard installed on both the production and fail over system. You can determine if HP ServiceGuard software is installed with the following command at the system prompt:

```
/usr/sbin/swlist -l product | grep ServiceGuard
```

You should get output similar to the following:

```
ServiceGuard  A.10.06  Service Guard
```

Note

More information on HP MC/ServiceGuard is available at <http://www.software.hp.com>. The FileNet Web site has more ServiceGuard information available in the form of required HP-UX patches, Release Notes, and sample ServiceGuard scripts for FileNet.

FileNet Image Services Software

- **FileNet Image Services 4.0.0 for HP-UX 11.x** CD-ROM. This media contains the Image Services 4.0.0 software including COLD 4.0.0 software for HP-UX 11i and the four Universal SLAC Keys.

Oracle RDBMS Software

Note Oracle9i software media are not supplied by FileNet.

- **Oracle9i Database Release 2 Enterprise/Standard Edition for HP-UX (64-bit)** (4 CD-ROMs). These compact disks contain all the Oracle9i RDBMS software products, and are compatible with only the 64-bit version of HP-UX 11i.
- **Oracle9i Patch Set 2 (9.2.0.2)**
- **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.

Note The **Database Administrator** must install the appropriate version of Oracle and supply the information described in the FileNet [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#) to the System Administrator and the FileNet Technical Consultant before the FileNet Image Services software can be installed.

National Language Support

This release of Image Services provides additional information on using character sets other than US7ASCII and ISO 8859-1. It's

extremely important that the character set you select for one product matches the character sets you select for all the others.

For example, when you install the operating system, be sure to select the character set you plan to use with Image Services and Oracle. Likewise, when you install Oracle software, be sure to select the same character set as you did for the operating system.

And when you install the FileNet Image Services software, be sure to select the appropriate character set on both the System Attributes tab in the System Configuration Editor and on the Relational Databases/ Oracle tab.

Later, when you create indexes, document classes, and media families, you'll be able to use the appropriate alphanumeric characters for your locale.

Note

Folders are created and named using Desktop client software. Because the folders are stored in the index database, their names must also use the Windows code page character set that is the equiva-

lent of the character set used by Oracle and IS on the Image Services server.

For FileNet systems configured with Western European character sets, valid alphanumeric characters must be in the 7-bit ASCII range. For FileNet systems configured with non-Western European character sets, any valid 8-bit alphanumeric character is acceptable.

Both Western and non-Western 8-bit character sets (character values range from 0 to 255) have valid alphanumeric characters above the ASCII range. ASCII characters occupy the first half of all 8-bit character sets and range in value from 0 to 127. Non-ASCII characters have values ranging from 128 to 255.

The following table summarizes FileNet support for both ISO and MS single-byte character sets.

Table 1-1: Character Sets

Character Sets			Decimal Values	
ISO (International Organization for Standardization)		Microsoft Windows Code Page	ASCII (0 to 127)	Non-ASCII (128 to 255)
Western European	8859-1	CP 1252	Yes	No
Eastern European	8859-2	CP 1250	Yes	Yes
South European	8859-3	**	Yes	Yes
Northern and North- eastern European	8859-4	CP 1257	Yes	Yes
Latin/Cyrillic	8859-5	CP 1251	Yes	Yes
Latin/Arabic	8859-6	CP 1256	Yes	Yes
Latin/Greek	8859-7	CP 1253	Yes	Yes
Latin/Hebrew	8859-8	CP 1255	Yes	Yes

Table 1-1: Character Sets

Character Sets			Decimal Values	
ISO (International Organization for Standardization)		Microsoft Windows Code Page	ASCII (0 to 127)	Non-ASCII (128 to 255)
Western European and Turkish	8859-9	CP 1254	Yes	Yes
North European	8859-10	**	Yes	Yes

** Microsoft does not have character set code pages that correspond to ISO 8859-3 and ISO 8859-10. If your Image Services system configuration includes Microsoft Windows clients or workstations, be sure to choose an ISO character set for Oracle and Image Services that has a corresponding Windows code page.

Related Documentation

The following documents contain information related to the installation of FileNet Image Services on HP-UX. Locate these documents on the FileNet Image Services Documentation CD-ROM, and print or read them before you install the Image Services software.

- [*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*](#)

You will also see references to the on-line referencing tool. You may use this tool when you have any questions.

System Administrator Tasks

System Administrator Checklist

The following checklist summarizes the tasks detailed in this chapter which the **System Administrator** is responsible for completing.

1. Operating System Requirements
2. Check PERL Version
3. Check Kernel Parameters
4. Check Swap Space
5. Add Peer Systems to the /etc/hosts File
6. Configure a TTY Port for the Serial Robotic Arm of a FileNet OSAR Library
7. Extend the Root Volume Group (Optional)
8. Create the FileNet Volume Group (fnvg) (Optional)
9. Create fnadmin and fnop Groups
10. Create FileNet Users and fnusr Group
11. Create File Systems

Peer Server Name(s) and Address(es): _____

At the customer site, the **System Administrator** or the **FileNet Technical Consultant** needs to gather specific information about each server comprising the FileNet Image Service system.

Operating System Requirements

Server Types

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

Log on as **root** user to check and gather the information in this section.

- 1 You need to make sure that the system has the following hardware/software configuration:
 - A 64-bit HP 9000 Series 800 Business Server
 - 512 MB** or more memory for each processor on Root/Index servers or Application servers with Oracle.
 - 256 MB** or more memory for each processor on Storage Library servers or Application servers without Oracle.

To determine the amount of memory installed in a server, enter the **dmesg** command and look for the line “Memory Information”:
“Physical”

dmesg | more

```
Memory Information:
physical page size = 4096 bytes, logical page size = 4096 bytes
Physical: 524288 Kbytes, lockable : 37344 Kbytes, available: 46256 Kbytes
```

Note If you have, or are going to have, an X Station on your system, you need to make sure your X Station also has enough memory to run the necessary FileNet applications (for example, COLD).

Enter your system’s memory in the **“FileNet TC Worksheet” on page 101.**

- One or more Ethernet interface cards (Media Access Controller Type). Enter type(s) in the **“FileNet TC Worksheet” on page 101.** Refer to the back of the server for the card type.

- The appropriate Media device(s) for the software you are installing (for example, CD-ROM, DVD, etc.). FileNet Image Services software is available only on CD-ROM at this time.
- An X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator to use FileNet's graphical user interface (GUI) capabilities.

Verify HP-UX Patches

After installing 64-bit HP-UX 11i, go to the FileNet Web site <http://www.css.filenet.com> and log into Customer Service & Support. Click on:

Product Tech Info
Image Services
Compatibility & Dependency
IS 4.0.x

Select your operating system from the list, and review the patch recommendations and requirements. Make sure the most recent patch bundle has been installed.

Check PERL (Practical Extraction and Report Language) Version

Ensure that Perl 5.5 (also known as Perl 5.00503 – Tar 3016460.999) or greater version of Perl is installed on each server where you also plan to install Oracle software. PERL is included with the HP-UX 11i operating system software, and is required for installing Oracle9i patches.

Create Symbolic Links

Due to a known HP bug (Doc. id: KBRC00003627), the default HP-UX (64-bit) operating system installation does not create a few required X library symbolic links. These links must be created manually before starting Oracle9i installation.

As **root** user, enter the following commands to create the required links:

```
cd /usr/lib
ln -s /usr/lib/libX11.3 libX11.sl
ln -s /usr/lib/libXIE.2 libXIE.sl
```

```
In -s /usr/lib/libXext.3 libXext.sl
In -s /usr/lib/libXhp11.3 libXhp11.sl
In -s /usr/lib/libXi.3 libXi.sl
In -s /usr/lib/libXm.4 libXm.sl
In -s /usr/lib/libXp.2 libXp.sl
In -s /usr/lib/libXt.3 libXt.sl
In -s /usr/lib/libXtst.2 libXtst.sl
```

Check Kernel Parameters

- 1 Using SAM, check the **Pending Value** for the parameters shown below.
 - a As **root** user, enter:

sam &
 - b Select the Kernel Configuration option.
 - c Then select the Configurable Parameters option, and check the **Pending Value** for the kernel parameters in the following order:

Note If the kernel parameters on your server are larger than the minimum values shown in Table 2-1, **DO NOT** lower them!

However, if the values are smaller than any of these recommended minimum values, you **MUST** increase them.

Several new kernel parameters have been added to 64-bit HP-UX 11i, such as `maxdsiz_64bit`, `maxssiz_64bit`, `maxtsiz_64bit`, etc. Refer to `HP_UX` documentation for optimum settings for these parameters.

Table 2-1: FileNet Recommended Kernel Parameter Settings

Kernel Parameters	Recommended Minimum Settings
<code>maxdsiz</code>	268435456 (256 MB) 0x10000000 hex
<code>maxfiles</code>	512 (1024 for RES)
<code>nproc</code>	1005
<code>maxuprc</code>	400

Table 2-1: FileNet Recommended Kernel Parameter Settings, Continued

Kernel Parameters	Recommended Minimum Settings
nfile	1024 (2048 for RES) Although the minimum value for nfile is 1024, you may wish to set this value much higher. A value of 5000, for example, would be acceptable.
ninode	1085
semmns	2000
semmni	2000
semmap	2002
shmmax	536870912 (512 MB) 0x20000000 hex
shmseg	120
semmnu	1000

Table 2-1: FileNet Recommended Kernel Parameter Settings, Continued

Kernel Parameters	Recommended Minimum Settings
semume	500
msgmni	2048
msgseg	6640
msgtql	6640
msgmap	6642

Note These specific parameter values reflect FileNet requirements only. If you receive a “dependency error” when changing any of these parameters, change the dependent parameter mentioned in the error first.

Table 2-2: Oracle Recommended Kernel Parameter Settings

Kernel Parameters	Recommended Minimum Settings
bufpages	0
dbc_max_pct	1 to 10 **

Table 2-2: Oracle Recommended Kernel Parameter Settings, Continued

Kernel Parameters	Recommended Minimum Settings
dbc_min_pct	5
fs_async	0
maxfiles_lim	1024
nflocks	200
npty	60
o_sync_is_o_dsync	0

**The `dbc_max_pct` kernel parameter must be set to no higher than 10. A value of 7 would be acceptable. (The other FileNet and Oracle recommended kernel parameter settings are minimum values.

(For further information on Oracle-recommended kernel parameter settings, refer to the Oracle Server Release Notes for HP 9000.)

If the values displayed by SAM are **smaller** than any of the recommended values shown above, you must increase them.

You also need to verify the timezone setting for your location:

Table 2-3: Timezone Kernel Parameter Setting

Kernel Parameters	Default Setting
timezone	420*

*The default value is 420 minutes west of Greenwich Mean Time (GMT), which is the U.S. Mountain timezone.

Determine the number of minutes east or west of GMT for your location by multiplying the number of hours east or west of GMT by 60 minutes per hour. For example, the U.S. Pacific timezone is 8 hours west of GMT. Multiply 8 x 60 to get 480 minutes.

If your timezone location is east of GMT, you should use a negative number. For example, Middle European Time is one hour east of GMT. Multiply -1 x 60 to get -60 minutes for MET (Middle European Time).

Tip You can easily determine the number of minutes for the timezone kernel parameter by multiplying the number of hours in the TZ environment variable (discussed later) by 60 minutes.

- 2 If you do not need to make any changes to these kernel parameters, you can skip to Step 5 now. If you do need to make changes, continue with Step 3.
- 3 Change the kernel parameter values by following these sub-steps:
 - a Select (highlight) the parameter you wish to change (for example, **maxfiles**).
 - b From the Actions menu, select the Modify Configurable Parameter option and press **Return**.
 - c In the popup window that displays, the Specify New Formula/Value option should already be selected.
 - d In the Formula/Value field, type the new value.

- e Click **OK** and press **Return**. When the popup window disappears, you should see the new value in the Pending Value column.
 - f Repeat sub-steps a through f for each parameter you need to change.
- 4 If you changed any of the kernel parameters in the previous step, you need to rebuild the kernel by completing the following sub-steps:
- a From the Action menu, click the Process New Kernel option.
 - b Click **Yes** when you're asked if you want to process your kernel modification now.
 - c On the next screen, make sure the Move Kernel into Place and Shutdown/Reboot the System Now option is selected.

The Overwrite /stand/system option should also be selected, unless the System Administrator has a reason not to overwrite this file.

For example, on a HP9000 K-Class Server, the word “target” must be in front of the **spt** line in the system kernel configuration file (the default is /stand/system). This allows the system to successfully claim the optical devices connected to the server during the boot process.

Refer to HP's on-line Help for complete information.

d Click **OK** to reboot the server and put the new changes into effect.

5 Next, verify the TZ (timezone) environment variable. HP-UX has two timezone settings: the kernel parameter 'timezone' and the environment variable 'TZ'. Both timezone settings must agree so that Image Services utilities can report the time correctly. In Step 2, you verified that the 'timezone' kernel parameter is set correctly.

a Now you must make sure that the TZ environment variable is set correctly. As **root** user, enter:

/sbin/set_parms timezone

- b Choose the correct timezone from the menus displayed. (If you change the current setting, you will be prompted to reboot the server.)

If the HP-UX **set_parms** command is not available on your server, the System Administrator must check the documentation for the currently installed version of the HP-UX operating system for the appropriate way to set this variable.

Check Swap Space

Check to see if the total swap space size is set to at least **1000 MB**. Oracle recommends that swap space be **2 times** the amount of server memory. 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.

Note

If there is more than one swap space, make sure that the total of all of the swap spaces is greater than or equal to **1000 MB**.

- 1 On the Disk and File Systems menu of SAM, select (highlight) the Swap option.

Check the amount of Swap space available. If the total amount of Swap space is equal or greater than the minimum required, skip to Step 10.

If you need to add more Swap space, continue with the next step.

- 2 Return to the Disk and File Systems menu and select the Logical Volumes option. The Logical Volumes menu displays.
- 3 From the Action menu, select the Create option and then press **Return**.
- 4 Click the Select a Volume Group option, and then select the appropriate volume group (for example, **vg00**). Click **OK** and press **Return**.
- 5 Click the Define a New Logical Volumes option. In the LV Name field type the name of the additional swap space logical volume (for example, **swap2**).

- 6 In the LV Size (Mbyte): field type the size of your logical volume. For example, if the server has 256 MB of memory, you can determine what number to enter into this field by completing the following formula:

$$(<\text{current RAM}> \times \text{multiplier}) - <\text{current swap size}> = \# \text{ Mbytes}$$

where:

current RAM	is the amount of memory currently installed in the server
multiplier	is 2 (or 1.5 if <current RAM> is large than 1GB)
current swap size	is the amount of Swap space already configured on this server
# Mbytes	is the amount of Swap space you need to add

- 7 Click on the Usage: field and select Swap Device.

- 8 Click the Swap Priority: field and select **1**. Click the **Add** button and then click **OK**.
- 9 Click **OK** again to create the logical volume. The new Swap logical volume displays in the Define New LV window.
- 10 Return to the main System Administration Manager menu of SAM.

Add Peer Systems to the /etc/hosts File

Server Types

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

If this server uses DNS (Domain Name Service) or NIS (Network Information Service), the steps in this section are not needed. Contact the network administrator for further information. Skip to the section, **[“Configure a TTY Port for a FileNet Serial OSAR Arm” on page 67.](#)**

Using SAM, add server name(s) and address(es) to the /etc/hosts. For any server on your network that you want to remotely log in to, you must add the server to the /etc/hosts file of your HP 9000 server. Con-

versely, if you want that server to be able to communicate remotely with your HP 9000 server, you have to edit the /etc/hosts file on that server as well. If you don't want any server to be able to communicate remotely with any other server on the network, you can skip this section.

- 1 Select (highlight) the Networking and Communications option. When the option is highlighted, press **Return**.
- 2 Next, select the Internet Addresses option. When the entry is highlighted, press **Return**.
- 3 From the Action pulldown menu, click **Add**.
- 4 Enter the internet address and the remote system name of the server you want to be able to communicate with remotely into the appropriate fields. You can configure a total of 16 peer systems. Click **OK** to continue.
- 5 Return to the Add Internet Address screen and repeat Step 2 for any other servers you want to be able to communicate with remotely.

- 6 Return to the main System Administration Manager menu of SAM.

Configure a TTY Port for a FileNet Serial OSAR Arm

Note If the storage library devices in this system **do not** include a FileNet OSAR storage library, skip this section.

If you're connecting a FileNet OSAR storage library to the server, use SAM to set up a tty port for the OSAR's robotic arm. Within SAM you will have to **Add** a terminal and select the mux card as opposed to a Serial card. You will also need to enter the Port number of the OSAR arm. Also, make sure the mux card is installed on your system before proceeding with this step by looking at the back of your server and locating the card.

- 1 On the System Administration Manager menu, select the Peripheral Devices option.
- 2 Next, select the Terminals and Modems option.

- 3 From the Action pulldown menu, select the Add Terminal option.
- 4 In the Port Number field, type in the port number that the OSAR arm is going to be connected to.
- 5 In the Speed (Baud Rate). . . field type **9600** for your terminal.
- 6 Click **OK** to create device files.
- 7 Click **OK** at the Messages screen to return to the Terminals and Modems screen. Note the name of the device file created (for example, **/dev/tty1p0**).
- 8 Return to the main System Administration Manager menu of SAM.
- 9 Press **F8** to return to the system prompt.
- 10 Change the permission of the device file by entering the command below. Assuming the device file created is named **/dev/tty1p0**, you would enter:

```
chmod 777 /dev/tty1p0
```

- 11 Use a text editor to remove the **ao.2:respawn:/etc/getty -h <dev> 9600** entry from the `/etc/inittab` file (where `<dev>` is the name of the device file mentioned in Step 7).
- 12 Enter the following command to re-read the updated `/etc/inittab` file and kill the `getty` process you removed from the file in the previous step.

```
/etc/init q
```

System Configuration Issues

Server Types

Perform the steps in this section and its subsections on these servers:

Root/Index and **Storage Library** server during a Dual server installation.

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

Application server during an Application server installation.

For **HP ServiceGuard** users, this needs to be done on **both** the production server(s) and the fail over server(s).

At this point, you need to log on as **root** user and use SAM to verify several configuration issues.

Note Throughout this section, you will see the mention of **<volume group>**. You have to determine what you want to call your volume groups (e.g., vg00), how many you will have, and what software you will install on what **<volume group>**. The number of disk drives you have on your server will help determine your number of volume groups.

Extend the Root Volume Group (vg00) (Optional)

Important! This section is not an option for those using **HP ServiceGuard**. **HP ServiceGuard** users must create a new volume group on the disk array.

If you want to extend the Root <Volume Group> (**vg00**) by adding a second disk to the volume group, and you are not going to install FileNet software datasets in a new volume group, complete this section. If you want to create a volume group for your FileNet datasets (**fnvg**) on a separate disk(s), skip this section.

In this section you will extend the Root <Volume Group> (**vg00**) using SAM. To extend the Root volume group, you will have to complete the following steps:

- 1 You should already be at the System Administration Manager menu of SAM. Select the Disks and File Systems option.
- 2 From the Disk and File Systems Manager menu of SAM, select the Volume Groups option.
- 3 From the Action pulldown menu, select the Create or Extend. . . option.
 - Extend the Root <Volume Group> (**vg00**).
 - Select the disk to which you want to extend the volume group.

Create the FileNet Volume Group (fnvg) (Optional)

Important! **For HP ServiceGuard:**

The information in this section should be used only as a guideline. The actual configuration that may be required to support your system may require some customization in a manner that is not defined here. Please be aware that FileNet can only provide best effort support in these cases and may direct you to contact Hewlett Packard for additional support.

With HP ServiceGuard, all the components used to run Image Services must be available to both the production and fail over servers. The three major components are: Image Services software, Oracle software, and the datasets. To be available to both servers, these components need to be placed within volume groups on the disk array. Then, when the production server goes down, the volume groups on the disk array can be switched to the fail over server.

If the fail over server will be acting as a fail over server for more than one production server, the volume group names should be made

unique. For example, the volume group names for the root may be:

favg-root-sw	(Image Services software)
favg-root-data	(datasets)

When the volume groups are created on the shared disk array, a virtual disk must first be created and the volume group then created within the disk. The volume groups will be mounted and made available to the production server as any other volume group. The volume groups will be visible to the fail over server. However, the fail over server will not be able to attach the volume groups since they will be used exclusively by the production system.

If you want to create a volume group for your FileNet datasets (**favg**), complete this section. If you extended the Root <Volume Group> (**vg00**) in the previous section, and you are not going to install FileNet software and FileNet datasets in a new volume group, skip this section.

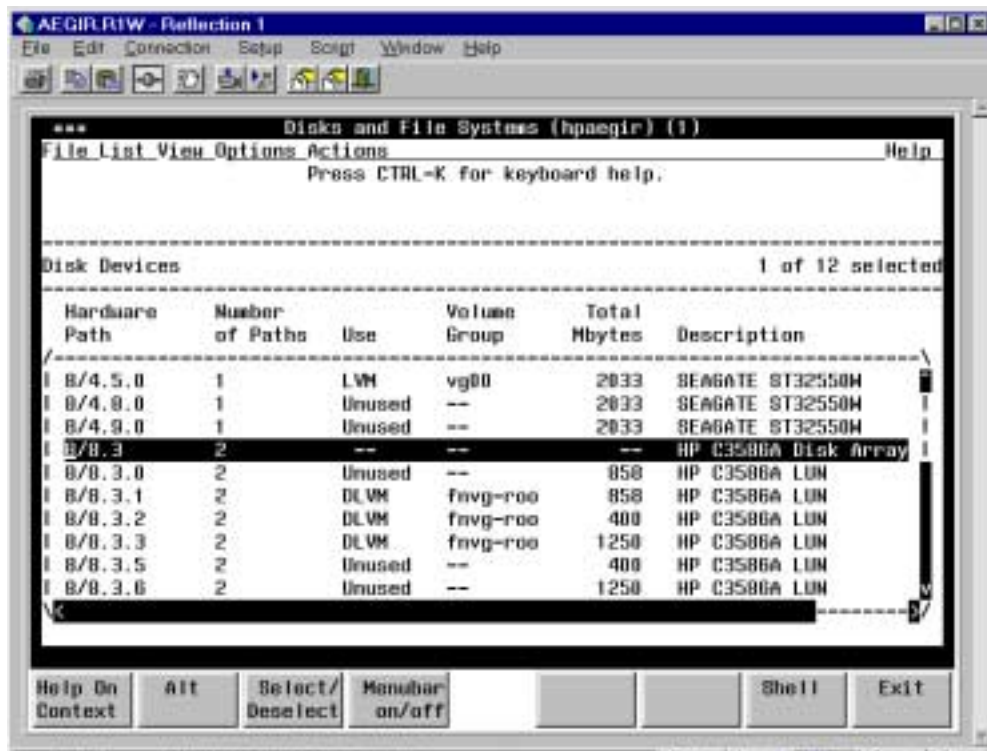
Note It is suggested that all software be installed on the root volume group Disk (e.g., **vg00**), and the FileNet datasets be installed on the other Disk(s) (e.g., **fnvg**).

In this section you will create the FileNet <Volume Group> and call it **fnvg**, using SAM. To create the FileNet volume group, complete the following steps:

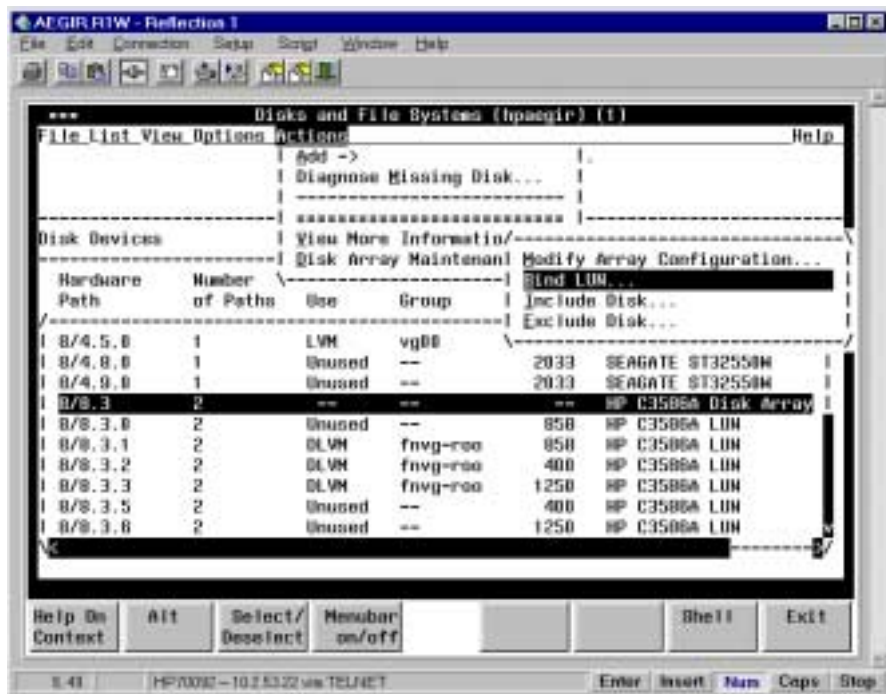
- 1 You should already be at the System Administration Manager menu of SAM. Select the Disks and File Systems option by pressing the Arrow Up or Arrow Down keys. When the option is highlighted, press **Return**.
- 2 **This step is for HP ServiceGuard users only.** If you are not using HP ServiceGuard, skip to Step 3.

The disk(s) must be located in the disk array. Creating a volume group on the disk array requires a separate first step of creating a LUN (logical unit number) on the array. A LUN is a virtual disk on the disk array that can be created to the user's specific size. The LUN is then used as any physical hard drive would be in creating a volume group.

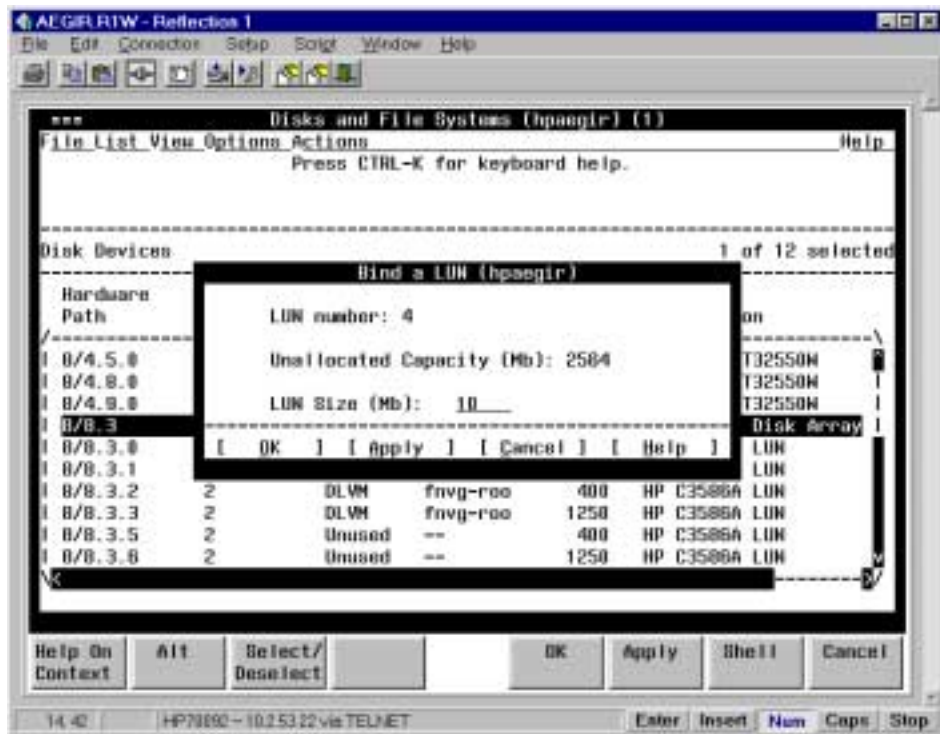
- a From the Disk and File Systems Manager menu of SAM, select the Disk Devices option. When the entry is highlighted press **Return**.
- b Select the disk array, note the array's hardware path (for example, 8/8.3), and press the **F4** key to access the menu bar.



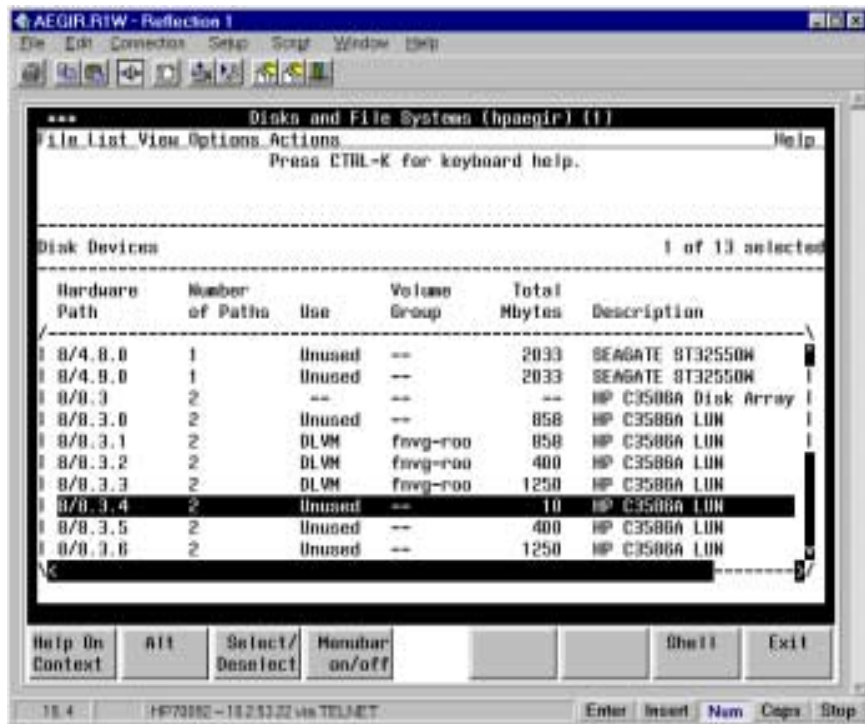
- c Type **A** to select the Action option. From the Action menu, select the Disk Array Maintenance option and then the Bind LUN ... option using the Arrow keys.



- d Note the LUN number displayed (for example, 4) and enter in the LUN (new disk) size in MB and click **OK**.

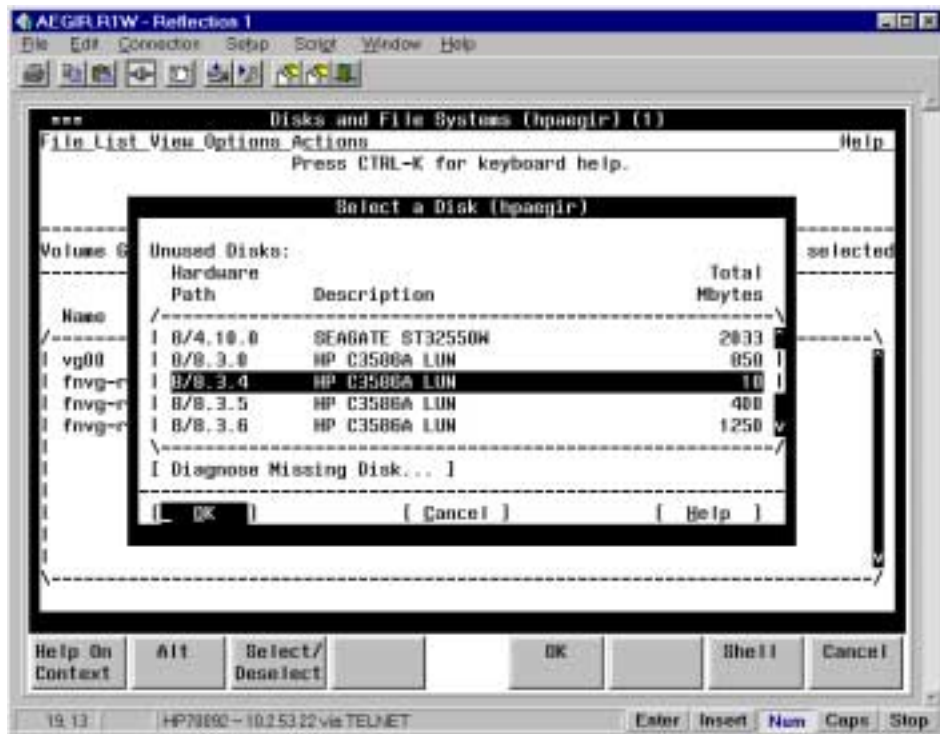


- e SAM will create the new LUN (disk) on the disk array with the LUN number displayed and the size specified. You will be returned to the Disk Devices screen where you should see the new disk with its hardware path (formed from the disk array path plus the new LUN number, for example, 8/8.3.4), the used column indicating unused and the Total Mbytes should be as you specified.

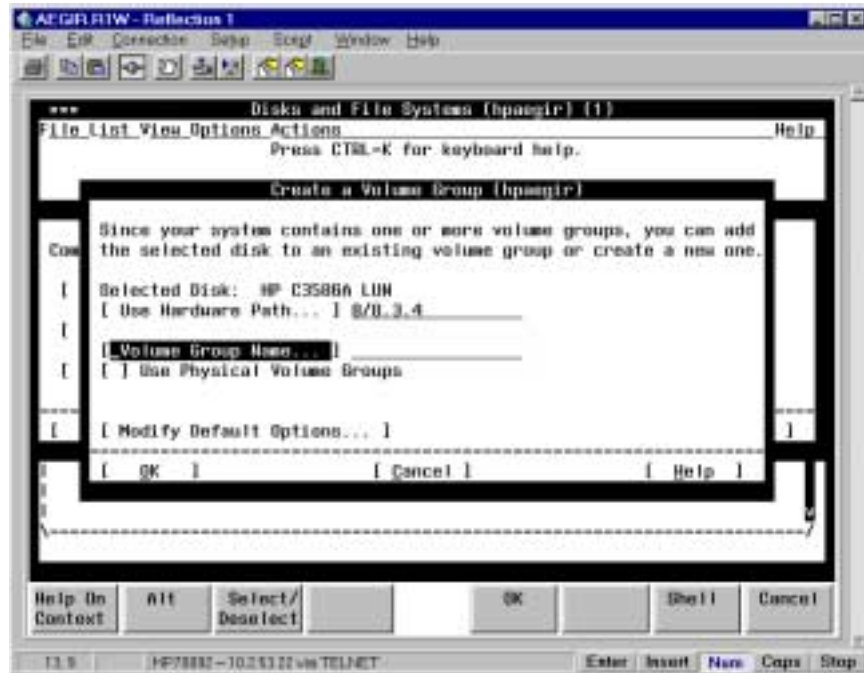


- f Return to the Disk and File Systems Manager menu.
- 3 From the Disk and File Systems Manager menu of SAM, select the Volumes Groups option.
- 4 You need to create a <Volume Group> for the FileNet software (**e.g.**, **fnvg**). From the Action pulldown menu, select the Create or Extend.
- 5 At the Select a Disk pop-up window, select the disk(s) you want to add within the volume group.

HP ServiceGuard users should select the disk (LUN) created in Step 2 above (for example, 8/8.3.4 HP C3586A LUN) and press **Return**.

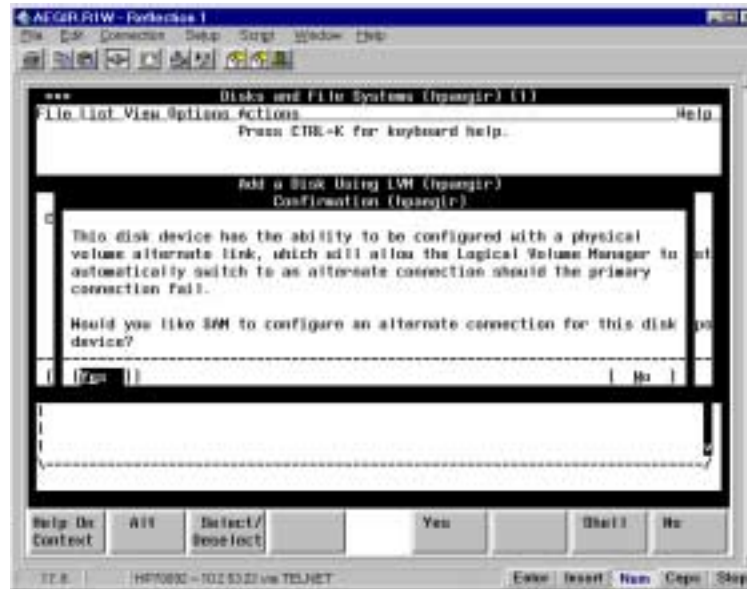


- 6 At the Add a Disk Using LVM screen, select the Create or Extend a Volume Group ... option.
- 7 At the Create a Volume Group screen, decide a name for the new <Volume Group> (for example, **fnvg**) and type this name in the Volume Group name field and click **OK**.



- 8 At the Add a Disk Using LVM screen, click **OK**.

For **HP ServiceGuard** users, SAM will detect that this volume group can be used by another server and will issue the following message:



- 9 Answer **Yes** to this prompt.
- 10 You will then see a Note saying the volume group has been successfully created/extended and you can click **OK**.
- 11 The new volume group (**fnvg**) will then display in the **Disk and File Systems** menu. This information can be viewed in more detail by using the **vgdisplay -v** command.

Create FileNet Users and Groups

Create **fnadmin** and **fnop** Groups

Use SAM to create three groups; first the **fnadmin** group, then the **fnop** group, and finally the **fnusr** group:

- Members of the **fnadmin** group have the highest privileges. This group is reserved for System Administrators who must be able to make configuration changes, run diagnostics, and restore backups. Members of this group can read, write, and execute the FileNet Image Services software.

- Members of the **fnop** group are FileNet Operators. They have privileges to start and stop the FileNet Image Services software, perform backups, and run other everyday operation activities. Members of this group also have access to diagnostic and hard-coded passwords, such as MKF_tool and CSM_tool. Members of fnadmin group should also be members of this group.
- Members of the **fnusr** group, which will be created when you add the **fnsu** user in the next section, can operate any FileNet software, including COLD. All administrators and operators must belong to this group.

Note Members of the fnadmin and fnop groups should also be members of the fnusr group and the dba group in the next section.

Use SAM to set up the fnadmin and fnop users and groups.

- 1 At the main System Administration Manager menu of SAM, select the Accounts for Users and Groups option.
- 2 Click the Groups option.

- 3 From the Action pulldown menu, select **Add**.
- 4 On the Add a new group screen, ...

In the Group Name field, type **fnadmin**

In the Users to Include in Group field, select **root**. (Also select the names of any other users you wish to include in this group.)
- 5 Click **OK** button to create the **fnadmin** group.
- 6 Click **OK** at the Message screen to return to the Groups menu.
- 7 Once again, from the Action menu, click **Add**.
- 8 On the Add a new group screen, ...

In the Group Name field, type **fnop**.

In the Users to Include in Group field, if you wish to include the names of any existing users in this group, click on those users to select them.

- 9 Click **OK** to create the **fnop** group.
- 10 Click **OK** at the Note screen.
- 11 Return to the Accounts for Users and Groups screen.

Create FileNet Users and fnusr Group

Note There are no RDBMS users and groups on a Storage Library Server.

For **HP ServiceGuard** users, this needs to be done on both the production server(s) and the fail over server(s).

Important! Although using SAM to create users and groups is the preferred method, SAM makes it difficult to assign a primary group to a user. If you encounter this difficulty, you can edit the `/etc/group` file instead.

- 1 You should already be at the Accounts for Users and Groups screen.
- 2 To create new users, click the Users icon. The Users window displays.

- 3 On the Action pulldown menu, click **Add**.
- 4 In the Add a User Account window, type **fnsw** in the Login Name field and make sure the Create Home Directory option is checked.
- 5 Click on the Primary Group Name... button and type the user's primary group (for example, **fnusr**). Since the fnusr group does not exist yet, this will create it. (When you're prompted to create a new group, click **Yes** to create it.) Click **OK** to continue.

Group Name	Members	Group Description
fnusr	fnsw, root, <dba user>	Members can operate any FileNet software (including COLD). All operators and administrators must belong to this group.
<dba group>	<dba user>, fnsw	The Database Administration group <dba group> and user <dba user> are created by the Database Administrator. The FileNet user, fnsw, needs to be a member of the <dba group>.

Group Name	Members	Group Description
fnadmin	fns, root	Members can perform administrative functions. Administrators must belong to this group to change configuration, perform diagnostics, or restore backups.
fnop	fns	Members can start and stop all FileNet software (including COLD). Administrators must also belong to this group.

- 6 Click the Start-Up Program... button and select the user's start-up program (shell) from the list. Click **OK** to continue.
- 7 Fill in the other optional fields as desired.
- 8 Click the Set Password Options... button and select the appropriate password behavior option from the drop-down list . Click **OK** to continue.
- 9 In the Set User Password window, type the user's password. Click **OK**.

- 10 Re-type the password and click **OK** again.
- 11 When the Note screen displays to let you know the user has been added to the system, click **OK** to continue.
- 12 Select the **fnadmin** group.
- 13 On the Action pulldown menu, select the Modify. Then in the Users not in Group field, select **fnsw**. Click **Add** to add the user, **fnsw**, to the **fnadmin** group.
- 14 Click the **OK** button to modify the **fnadmin** group. Also click **OK** at the message screen(s) until you return to the Accounts for Users and Groups screen.
- 15 Repeat Steps 17 through 19 for the **fnop** and **fnusr** groups (and <dba group>, if present on this server) and add the users as indicated above.
- 16 Exit the Groups screen and return to the System Administration Manager main menu.

- 17 Exit SAM and return to the system prompt.

Create File Systems

Server Types

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

If you're setting up a Dual server system, some file systems reside on the Root/Index server while others reside on both servers. Refer to Table 2-6 and Table 2-7 to see on which server you need to add which file system, and follow the steps in this section on the appropriate server.

If Oracle RDBMS has already been installed, do not perform the steps related to an Oracle file system in this section.

For **HP ServiceGuard** users, this needs to be done only on the production server(s), not the fail over server(s). During the fail over testing, the file systems will be reproduced on the fail over server.

Tip The Actual Size You Create each file system is determined by FileNet's SCouT planning tool.

You need to create all the necessary file systems for your RDBMS (if your site has not already done so) and Image Services. You need to create your /usr/<rdbms> (/usr/ora/817, or whatever you want to name it), /fns, and /fns/local file systems.

If you just created or extended a volume group, you may be able to skip to Step 6, depending on the version of the operating system software you are running.

- 1 Verify that you are logged on as **root** user, and start CDE or X Windows (if you have not already done so.)
- 2 Now you can use SAM to create the file systems and logical volumes for the Oracle software and archive redo logs. You should already be at the System Administration Manager menu of SAM.
- 3 On the System Administration Manager menu, select the Disks and File Systems option.

- 4 From the Disk and File Systems Manager menu, select the Logical Volumes option.
- 5 From the Action pulldown menu, select the Create option.
- 6 Select the appropriate volume group for logical volume you're going to create and click **OK**. (Refer to [“Table 3-3: FileNet Logical Volume Sizes” on page 107.](#))

MC/ServiceGuard users need to select the volume group you created in the disk array.

Press **Return** at the Define new Logical Volumes field. Refer to [“Table 3-3: FileNet Logical Volume Sizes” on page 107](#) to see the list of logical volumes.

- 7 Fill in the LV Name field with the Logical Volume Names (begin by typing in **fns** for the first Logical Volume entry listed in Figure 2-6 of the Configuration Worksheet). Add the logical volume names for all of the applicable logical volumes listed in Figure 2-6.

- 8 See the “Minimum Logical Volume Size (MB)” column of Figure 2-6 for the suggested logical volume sizes. Refer to the “Your Logical Volume Size (MB)” column for your selected logical volume and then type the **<Size in MB>** for the logical volume you are adding in the LV Size (Mbytes) field.
- 9 Select either **Hierarchical** or **VxFS** (Journaled) File System.
- 10 Click **Modify FS Defaults**.

Make sure the following When to Mount options are checked:
 - Now
 - Every System Boot
- 11 Also make sure Enable Set User ID Execution is checked.
- 12 Set the Usage: field to **File System**, and type in the file system mount directory. (Refer to **“Table 3-3: FileNet Logical Volume Sizes” on page 107.**) Then click **Add**.

- 13 Repeat Steps 3 - 11 for all the file systems you need to create. Refer to **“Table 3-3: FileNet Logical Volume Sizes” on page 107.**
- 14 When you are finished adding all the File Systems you need, click **OK**.
- 15 At the Create New Logical Volumes screen, click **OK**.
- 16 At the Logical Volumes screen, the new logical volumes are listed on the display.
- 17 Exit SAM and return to the system prompt.

Preparing for the Installation

This chapter describes how to modify your system environment before installing the Image Services software.

Server Types

Except where indicated, perform the procedures in this section on these servers:

Root/Index and **Storage Library** server during a Dual server installation.

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

Application server if adding an Application server to your system.

FileNet TC Worksheet

Use the following worksheet to help you gather the information needed to successfully complete this Image Services installation.

System Information

- 1 Version of operating system Software: _____
(needs to be version **HP-UX 11i (64-bit)** or later)
- 2 Character set used by the operating system: _____
(e.g., USASCII7, ISO8859-1, ISO8859-2, etc.)
- 3 Media Device Type(s) (e.g., CD-ROM, DAT Cartridge, 8mm, etc.):

Device Type(s): _____

Device Driver Name(s) (path): _____
(use **ioscan -fn**) (e.g., **/dev/dsk/c2t2d0** for CD-ROM)
(**/dev/rmt/0m** for tape)
- 4 Domain Name: _____ Organization Name: _____

5 System memory (in MB): _____

6 System Serial Number (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.

7 Media Access Controller Type (e.g., Ethernet, FDDI)

Peer System Information

The Domain name, System Serial Number (SSN), and IP address of each Image Services system (peer system) that is going to be communicating with this Image Services system. The serial number(s) should

contain 10 digits. The network address should contain four numbers separated by decimals (e.g., **197.0.0.146**).

Table 3-1: Peer System Information

Domain:Organization Name	System Serial Number (SSN)	Network Address

(You can configure a total of 16 peer systems.)

Printer Information

The NCH Name, Printer Type and Printer Server IP Address for all of the printers on the system. The address(es) should contain four numbers separated by decimals (for example, **197.0.0.146**).

Table 3-2: NCH Names, Printer Types, and Printer Server IP Addresses

NCH Name	Printer Type	Printer Server IP Address

Storage Library Information

You need to determine the number of storage library units that will be connected to the system (up to 8 per server/ 64 per system), (1-8): _____

- 1 Collect the following information for each Storage Library on your system:
 - Storage Library Type (e.g., ODU, HP Autochanger, FileNet OSAR Library, Philips RapidChanger, etc.):

 - Bus Device Location: _____
(Skip this if your system does not have a bus converter.)
 - SCSI Board Slot ID: _____
 - Number of Optical Drives: _____
 - If you have a FileNet OSAR Library and it has an RS-232 ARM device, collect the following information:
 - Logical Unit Number of RS-232 port: _____

- RS-232 of TTY port number (0-31): _____
- For each Optical Drive in the Storage Library, collect the following information:
 - SCSI Board Slot ID: _____
(This number is usually the same as the Library Slot ID above.)
 - Optical Drive Type: _____
(This can be Hitachi_II, C1716T, etc.)
 - Optical Drive SCSI ID: _____
(Refer to the storage library manual for instructions on how to obtain the SCSI ID for each library device.)
 - Optical Drive Logical Unit (LU) Number: _____
(This number is usually 0, unless you have a FileNet OSAR library, which is configured as "Master/Slave." Then the LU number of the Master drive would be 0 and the Slave drive would be 1.)

File System Sizes

Determine how large the file systems need to be, in Megabytes. A certain portion of disk space is lost during the creation of a file system, depending on the type of file system selected, so make sure the total amount of space in each file system is equal to or greater than these minimum sizes. (Minimum sizes are shown for both Hierarchical File System [HFS] and Journaled File System [VxFS] file types.)

Table 3-3: FileNet Logical Volume Sizes

FileNet Logical Volume Name	Usable File System Space (MB)	Minimum Logical Volume Size (MB)	Your Logical Volume Size (MB)	Mount Directory
fns (All servers)	500	580 HFS 540 VxFS		/fns
local (All servers)	500	580 HFS 540 VxFS		/fns/local

Dataset Sizes

Determine how large the datasets need to be, in Megabytes, and which volume group to install each dataset on.

The dataset names map to Logical Volume names as follows:

cache0	----	fn_cache0
permanent_db0	----	fn_perm_db0
permanent_r10	----	fn_perm_r10
transient_db0	----	fn_trans_db0
transient_r10	----	fn_trans_r10
sec_db0	----	fn_sec_db0
sec_r10	----	fn_sec_r10

FileNet recommends that the FileNet datasets reside in the **fnvg** volume group, unless you have a single disk drive. In the case of a single disk drive, you need to use the **vg00** volume group. Complete the following table appropriately for your system.

Note You should be aware that your system needs to have at least three magnetic disks (one for the vg00 volume group and at least two for the “fnvg” volume group, or whatever you name it, in which the master database resides). Mirroring this database will minimize customer downtime and avoid interruption of business in the event of a hardware failure.

Dataset	Minimum Size (MB)	Your Actual Size (MB)	Volume Group
cache0	100		
permanent_db0	100		
permanent_r10	40		
transient_db0	20		
transient_r10	40		
sec_db0	12		
sec_r10	4		

- 2 When you are setting up an Application server, logical volumes or file systems will be created so they apply to the services that are being configured as shown in the table below - (fs) - File System:

Logical Volume	Batch Entry/ Print/Cache	SQL/ WorkFlo Queue	Storage Library
Cache0	X		X
transient_db0	X		X
transient_rl0	X		X
permanent_db0			X
permanent_rl0			X

Cache Percentages

Determine the cache min./max. sizes (in%) for the following caches:

Cache Type	Min./Max. Size (%)	Min./Max. Def. Size (%)
Retrieval	/	20%/20%
System Print	/	10%/20%
Application Print	/	10%/30%
Batch	/	10%/60%

Most of this information can be retrieved from the SCouT program.

Reboot the Server

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

```
shutdown -ry 0
```

Install Oracle9i Software

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

Application server with WorkFlo Queue services or SQL services.

For **HP ServiceGuard** users, this needs to be done on **both** the production server(s) and the fail over server(s).

The Database Administrator is responsible for installing the appropriate version of Oracle.

If the Oracle software and datasets are going to reside on the local FileNet Image Services server, refer to Chapter 2 of the [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#).

The Database Administrator also has the option of installing Oracle software and datasets on a dedicated remote Oracle server. Refer to Chapter 3 of the [*Guidelines for Installing and Updating Oracle Software for UNIX Servers*](#) for further information.

This document may be printed and given to the Database Administrator.

After Oracle9i has been successfully installed, the Database Administrator needs to provide the following Oracle variables and tablespace names and sizes to the System Administrator and the FileNet Technical Consultant.

Oracle Variables

\$ORACLE_HOME: _____

\$ORACLE_SID: _____

<Oracle User ID>: _____

<DBA Group>: _____

Tablespace Names and Sizes

FileNet Recommended Tablespace Names	Tablespace Names Actually Assigned	Minimum Tablespace Size (MB)	Tablespace Size (MB) Actually Created
fnsys_ts		200	
fntmp_ts		400	
fnusr_ts (optional for eProcess)		200	

After you have this information, you're ready to install the FileNet Image Services software.

Installing FileNet Image Services Software

This chapter explains how to Install the Image Services software. It covers software installation issues that include:

- Installing FileNet Image Services software and fixes
- Installing the user environment templates
- Setting up FileNet passwords
- Setting file ownerships and permissions

Note

If you want to log in as a specific user and want to run the FileNet tools and software, you need to add this user into the fnadmin and fnop groups.

- Installing the Universal SLAC Key

Note For **HP ServiceGuard** users, the sections in this chapter need to be done only on the production server(s), not the fail over server(s).

Mount the IS CD-ROM

Server Types Perform the steps in this sub-section on **all servers**.

- 1 Make sure you're logged on as **root** user.
- 2 Load the appropriate media into the drive.
- 3 Mount the CD-ROM filesystem by doing the following sub-steps:
 - a Create a CD-ROM directory, if it doesn't already exist. Enter:

mkdir /cdrom

- b Determine the CD-ROM device file name.

ioscan -fnC disk

- c Locate the CD-ROM device file name on the **ioscan** display. For example:

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
=====						
.						
.						
disk	5	0/0/2/0.1.0	sdisk	CLAIMED	DEVICE	HP DVD-ROM 305
			/dev/dsk/c2t2d0		/dev/rdisk/c2t2d0	
.						
.						

In the display above, the device file name is `/dev/dsk/c0t2d0`.

- d Then mount the CD-ROM device on the `/cdrom` directory by entering a command similar to the following:

```
mount /dev/dsk/c2t2d0 /cdrom
```

where **`/dev/dsk/c2t2d0`** is the CD-ROM device file name shown on the `ioscan` display.

Install the IS Software

- 1 At the system prompt, launch the **swinstall** program to install the Image Services software from the mounted CD-ROM.

Note You may see a note about the default source. Select **OK** on the note. You will specify the source in the following step.

- 2 In the Specify Source window or screen, locate the Source Depot Path ... field and, depending on the version of the HP-UX operating system, type in:

`/cdrom/HP-UX_B.11.11/IS`

- 3 From the Software Selection window or screen, locate and highlight the **FileNet Image Services Software** product.
- 4 If you want to install COLD 4.0.0, select it too.

- 5 On the Actions pulldown menu, select the Mark for Install option. Again on the Action pulldown menu, select the Install (analysis) ... option to begin the installation process.
- 6 The system will analyze the product(s) you have selected to install and check your system to see if there is enough disk space to install the selected products. After this process is complete without generating any errors (Status of **Ready**), select **OK** and then **Yes** to confirm the installation.

Expect the installation to take from 10 minutes to an hour, depending on the server speed.

A faster processor may take considerably less time while a slower processor may take more time.

- 7 When the installation is complete, you will see a status message, **Completed**. Click **Done** in the Install window.
- 8 On the File pulldown menu, select Exit to quit the **swinstall** program.

- 9 Leave the Image Services CD in the CD-ROM drive while you complete the steps in the next several sections.

Verify/Update the `/etc/services` File

A customizing script is automatically run after the “sf” fileset has been successfully loaded. This script does the following:

- Adds **cor**, **nch** and **tms** entries to `/etc/services` if they are not there yet (See the paragraph below concerning Yellow Pages [YP]).
- Adds an **rcfn** entry to the `/etc/inittab` file to automatically start up FileNet software if an entry does not exist there yet.

If you just installed Image Services software and you have **NIS** (Network Information Service, formerly called Yellow Pages, a trademark of British Telecom) set-up on your system, you must enter the `ypcat` ser-

vices command on your “Master” server to check for the following entries at the bottom of the file:

```
tms      32768/tcp
cor      32769/tcp
nch      32770/udp
```

If the **cor**, **nch** and **tms** entries are present, you’re okay. If the entries are not present, add the above entries to the `/etc/services` file on the “Master” server. Then ask the System Administrator to enter the following `yppush` command to make the changes permanent.

`yppush -d <server domain name> /etc/services`

where `<server domain name>` is the domain name of the server onto which you have just installed Image Services software.

Install the Required Pre-Startup Fixes

Server Types

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

At this time, install only the fixes that directly relate to Image Services 4.0.0 initial configuration issues. (You'll install any general Image Services 4.0.0 patches in a later section.) Search through the Release Notes file for the key words **PRE-STARTUP** and **REQUIRED**.

Note

These are only the fixes required to start the FileNet 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 the User Environment Templates

Server Types

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

In this section, you will use the **inst_templates** script to set up profile and environment files that are pre-customized for the Image Services installation. The **inst_templates** command asks you, one by one, if you want to replace the existing files.

- If you enter **y** for yes in response to each prompt, the existing files are renamed with a .old extension and the new files are created using the original file name.
- If you enter **n** for no to any prompt, that file will not be installed.

Note

If you already have customized the environment settings files in a particular user's directory, answer **n** to each of the prompts. You should merge the settings in the templates with your customized files. The templates can be found in `/fnsw/etc/*.template`.

If you run `inst_templates` more than once, existing .old files are not

overwritten. The new .old files are given .old.0 extensions, and each time you run `inst_templates` after that, the last digit of the file name increases.

For example, if you've run `inst_templates` several times, you may see `.login`, `.login.old`, `.login.old.0`, `.login.old.1`, and `.login.old.2` files in the user's home directory. The `.login` file is the current file, while the `.login.old.2` is the most recent .old file.

Set Up the `fns` User Environment

The **`fns`** user must have its own FileNet environment variables set. Depending upon the shell you are using, an appropriate environmental setup can be installed by copying the corresponding template file from `/fns/etc`. Once copied, you can add your own preferences to these files.

- 1 In a CDE window, logon as **`fns`** user. You may be prompted to change the password again. You can type in the same password or a different one.

- 2 Enter the following command to copy all of the template files into the correct directory, setting up the **fns** user environment:

`/fns/etc/inst_templates`

- 3 Log out as **fns** user.

Set Up the root User Environment (Optional)

The **root** user might need its own FileNet environment variables set. You need to complete this section if you do not have a specialized root environment already established on your system (For example, a `.login` file with specific system-related entries). Otherwise, skip this section.

Depending upon the shell you're using, an appropriate environmental setup can be installed by copying the corresponding template file from `/fns/etc`. Once copied, you can add your own preferences to these files.

- 1 In a CDE window, log on as **root** user.

- 2 Enter the following command to copy all of the template files into the correct directory, setting up the **root** user environment:

`/fnsw/etc/inst_templates`

- 3 Log out to the system prompt and log back in as **root** user to put the templates into affect.

Set Up Passwords for the fnsw User (Optional)

Server Types

Perform the steps in this section on these servers:

Root/Index and **Storage Library server** (Multi-server installation)

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

If you have not previously established passwords for the RDBMS user and the fnsw user, you should do it now.

- 1 Log on as **root** user.
- 2 To set up the fnsw password, at the system prompt enter:

passwd fnsw
- 3 You are then prompted **New password:** .
- 4 After you enter the password, you are prompted **Re-enter new password:** .
- 5 When you enter the password a second time, you return to the system prompt.

Set File Ownerships and Permissions

Server Types

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

In this section, you create all directories needed for the installation using `fn_setup`. In addition, you will set the appropriate file ownerships

and permissions for the directories. You will be asked for system-specific information, refer to the [“FileNet TC Worksheet” on page 101](#) for the correct information.

Note 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 you must be **root** user to run **fn_setup**, **fn_setup** may not be allowed to set permissions on some secured files. If **fn_setup** encounters a file on which it is not allowed to set permissions, it logs an error and continues with the next file.

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 Make sure you're logged on as **root** user.

`/fns/bin/fn_setup`

- 2 Reply to the prompts with the requested information. If the default value shown in brackets is correct, press **Return** to continue.
 - a The NCH server is the generally the Root server. If you're 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 [hpvenice: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), VWServices, or SQL services. If you are configuring a separate Storage Library server,

or an Application server without one these services, select 0=none.
If the server has Oracle software installed on it, select 1=Oracle.

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

Note If you're planning to use an existing Oracle instance, accept the default RDBMS-related values listed at each prompt.

- e If Oracle software (either client or server software) exists on this server, enter the full pathname of the directory on this server where the Oracle software is located.

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

Note If you're configuring a FileNet system with a **remote Oracle server**, the RDBMS home directory is the location of the client software on the FileNet server.

- 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: hpvenice:FileNet  
SSN: 11008016xx  
Relational database type: oracle  
Relational database home: /usr/ora/920  
Relational database user ID: oracle  
Relational database group ID: dba  
Relational database ID: IDB  
Do you want to continue (y/n) [y]:
```

- 4 Determine whether or not you want to continue: y/n (default: yes).

You then receive messages similar to the following:

```
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: Calling fn_util initnch
fn_setup: Changing permission on FileNet software and
databases
```

On a new installation, you will see that the NCH_db0 is zeroed out as **fn_setup** initializes the nch_db the first time. (The **fn_setup** program modifies the **nch_update** after NCH_db initialization.)

- 5 When **fn_setup** is finished, it exits automatically to the system prompt.

Install Universal SLAC Key on the Root Server

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation

Root/Index/Storage Library server during a Combined server or Entry server installation)

The Universal SLAC Keys are located on the Image Services CD-ROM.

- 1 Choose the appropriate SLAC Key for your Image Services system:
 - **uisora.key** - Image Services with eProcess for Oracle
- 2 As **fns** user, create a directory for the SLAC Key on your root server, and copy the appropriate key. As an example, for an IS system with Oracle, you might enter:

```
mkdir /fnsw/local/SLAC
```

```
cp /cdrom/SLAC/uisora.key /fnsw/local/SLAC
```

- 3** To install the SLAC Key, enter the following command as **fnsw** user to start the Software License Manager:

```
/fnsw/bin/lic_admin -f /fnsw/local/SLAC/uisora.key
```

Note The SLAC key is stored in the NCH database, so if you reinitialize the NCH database (after the first initialization), you must reinstall the SLAC key.

Unmount the Image Services CD-ROM

Server Types

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

- 1 Unmount the CD-ROM by entering:

umount /cdrom

And remove the installation media from the drive.

- 2 Use the **more** command to check the **/var/adm/sw/swagent.log** file for information regarding the install status. Look for the header information for your Install. Information from other events may be in this file. The newest information is at the end of the file.

Modify the /etc/inittab File

Server Types

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

Edit the /etc/inittab file to prevent the FileNet Image Services software from starting automatically each time the server is rebooted. Later in this procedure you will have the opportunity to re-enable this feature.

- 1 Verify you are logged on as **root** and 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:

```
rcfn:234:wait:/bin/sh /etc/rc.inittfns w </dev/console> /dev/  
console2>&1
```

Additional Oracle Tasks

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

Application server with WorkFlo Queue services, SQL services, or VWServices.

For FileNet Systems with Remote Oracle Servers

Perform the steps in the following subsections only on FileNet servers that have Oracle **Client** software. These additional steps are only needed if the Oracle server software and datasets will reside on a remote Oracle server.

Link the Client Shared Library

The link from FileNet Image Services to Oracle is controlled by the file `/fnsw/lib/shobj/liboracle`.

- 1 As **fnsw** user, change to the `/fnsw/lib/shobj` directory:

```
cd /fnsw/lib/shobj
```

- 2 If a link from a previous installation exists, remove it by entering:

```
rm liboracle.sl
```

- 3 Set the symbolic link. For example, if the Oracle9i Client software is located in `/usr/ora/client_920`, you would enter this command:

```
ln -s /usr/ora/client_920/lib32/libclntsh.sl liboracle.sl
```

Verify the setup_config File

As **root** user, use your preferred text editor (such as **vi**) to view the `setup_config` file. Enter:

```
cd /fnsw/local  
vi setup_config
```

Make sure the value of RDBMS_HOME is set to the location of the Oracle Client software, such as /usr/ora/client_920. If not, change it to the correct value.

Exit from the file and save changes, if necessary.

Modify TCP/IP Port Setting (optional)

Server Types

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

You can make your FileNet system run more efficiently by making changes to the **/etc/rc.inittfnsw** file. The modification expands the number of available ephemeral ports. 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 recommend that 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 the `high_port_enable` option in `/etc/rc.inetd.conf`.

- 1 Backup the `/etc/rc.inetd.conf` file.
- 2 As **root** user, make sure you have write permission on the this file by entering:

```
chmod 754 /etc/rc.inetd.conf
```

- 3 Use your preferred text editor (such as **vi**) to modify the `/etc/rc.inetd.conf` file. Locate the following statement near the end of the file:

```
# Set up network options HPUX (parameters in half-seconds)
```

- 4 Add the following line somewhere after that statement:

```
/usr/contrib/bin/nettune -s tcp high_port_enable 1
```

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

Reboot the Server

Important!

All Oracle users should be logged off the server and the Oracle instance be shutdown before doing the following system 'shutdown' command. Failure to do so could result in a corrupted database!

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

```
shutdown -ry 0
```

You may see errors (for example, **.env :hostname not found**) as the system reboots because the software is not completely configured yet.

Continue with Server Configuration

For a Combined server or Dual server system, continue with the next chapter, **Chapter 5, “Configuring FileNet Image Services Software,” on page 144.**

If you're adding an Application server, skip to the section, **“Configure the Root Server” on page 246** in Appendix A.

If your adding a Storage Library server, skip to the section, **“Configure the Root Server” on page 301** in Appendix B.

Configuring FileNet Image Services Software

This chapter explains how to configure your Image Services software. It covers software configuration issues that include:

- Using the FileNet configuration editor tool (fn_edit) to initially set up a server type (such as, Combined, Dual, etc.)
- Using fn_edit to further configure the system by changing some of the default settings
- Verifying HP storage library drivers
- Creating optical device files
- Building and initializing the Root server
- Configuring RES or Multi-Committal systems

Note For **HP ServiceGuard** users, the sections in this chapter need to be done only on the production server(s), not the fail over server(s).

Logon to the Configuration Database

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

Root/Index server during a Dual server installation

Root/Index/Storage Library server during a Combined server or Entry server installation)

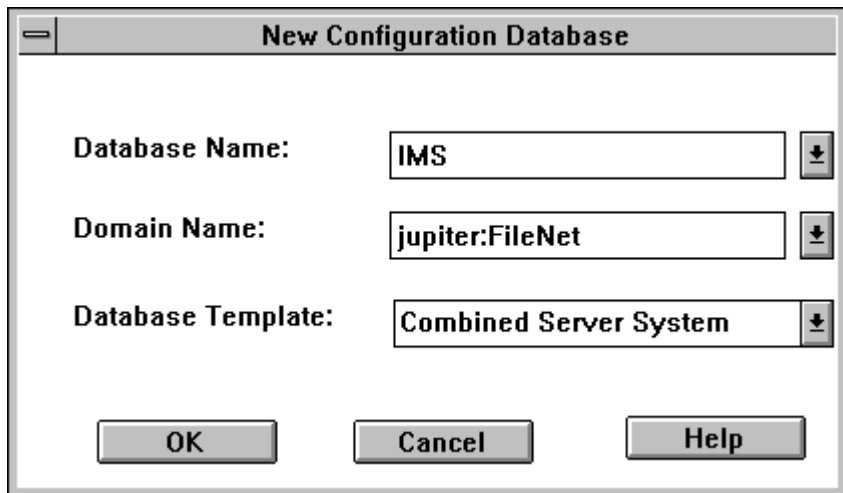
Application server running WorkFlo Queue Services or SQL Services.

Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server.

- 1 Logon as **fns**, and start X Windows (if you have not already done so).
- 2 Open a new X window, and enter the following command:

fn_edit &

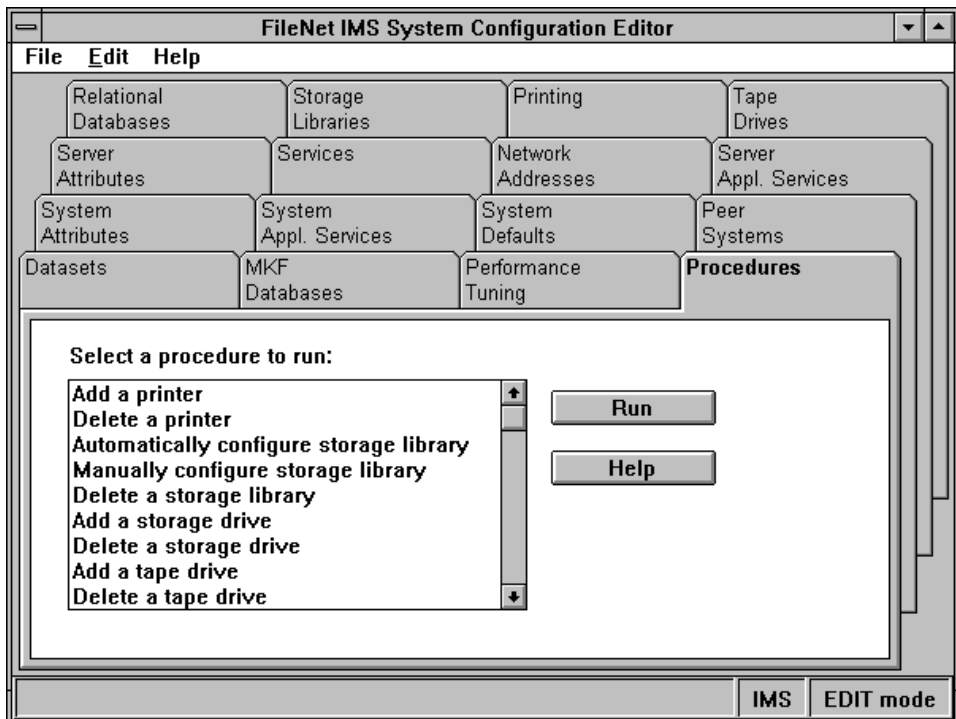
A dialog box similar to the following displays:

**CAUTION**

If the Open Configuration Database dialog box displays instead of the New Configuration Database dialog box, you have an existing Image Services configuration (cdb) file. You need to select **Cancel**. Then, from the File menu, select **New**.

If you are installing Image Services software on the system for the first time, the Configuration Editor program will detect that no databases exist and will open a New Configuration Database automatically. Otherwise, Configuration Editor will determine your database name and use it, along with your Domain Name.

- 3 Verify that the database and domain names are correct. (The two-part domain name is set up as follows: <Domain>:<Organization>.)
- 4 From the Database Template pull-down list, select a template type from the following template choices:
 - Combined server System
 - Dual servers System
 - Remote Entry System
 - WorkFlo Management System
- 5 After you have verified the domain information and selected the template type, click **OK**.



Depending on the template you select, you will be required to answer template-specific prompts. (Each template prompt displays in a new dialog box.)

Refer to the online template help for more information about answering the specific template prompts. (The online help contains information on all of the available template types. You can access the online template information by selecting the Help menu option in the Configuration Editor.)

After you have finished answering all template prompts, you can select any of the available tabs from the System Configuration Editor window to review or change the current configuration settings.

Note When using the various configuration tabs in the System Configuration Editor window, you will click on a tab, complete the fields as instructed, and immediately click on the next tab (without exiting), as directed.

Each screen and pop-up window has an on-line help button designed

to provide information you may need to complete the screen or window.

Select and Configure Oracle Instance (if applicable)

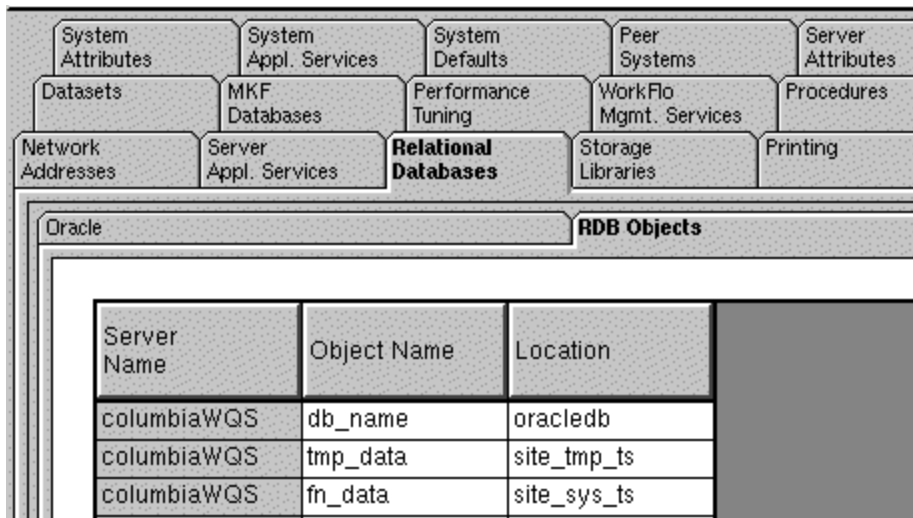
In this section you are defining the ownership and the names of the Oracle tablespaces that will be used with the FileNet software.

CAUTION

This procedure assumes that the tablespaces and devices that you specify in the System Configuration Editor either already exist or that you will create them before you initialize the FileNet databases. See the Tablespace table in the FileNet *[Guidelines for Installing and Updating Oracle Software for UNIX Servers](#)*. The Database Administrator has probably already supplied this information in the section, *[“Install Oracle9i Software” on page 112](#)* in Chapter 3.

Define the Tablespace Names

- 1 Click the Relational Databases tab, then click the RDB Objects subtab.



- 2 In the Location column of the RDB Objects window, click on a cell and replace the default FileNet tablespace names with the site-specific tablespace names. While replacing the tablespace names, use the following criteria:

- Change all occurrences of **fnsys_ts** to the name of your dedicated FileNet default tablespace.
- Change all occurrences of **fntmp_ts** to the name of your dedicated FileNet temporary tablespace.
- If an optional **fnusr_ts** was created for eProcess, change all occurrences of the name to your dedicated FileNet user tablespace

The Image Services software will use the tablespace names entered in the RDB Objects subtab.

Note

The tablespace names specified in the RDB Objects list must exist before you initialize the FileNet Image Services databases.

Verify the Image Services Character Set

On the System Attributes tab, scroll to the right and check the settings for **Default Character Set** and **Former Character Set**. On a new server, both are initially set to ISO 8859-1.

Change the Default Character Set to match the current operating system character set and the Oracle character set; for example, ISO 8859-2.

If the FileNet system has been converted from an older character set, such as FileNet International, set the Former Character Set appropriately. If the system has never been converted, set the Former Character Set to match the Default Character Set.

Modify Dataset File Sizes (Optional)

Click on the Datasets Tab to view a list of the datasets added by default. All of the dataset sizes are set by default by the system. If you want to change any of them, change them in their respective File Size (MB) spreadsheet cells.

Refer to the **[“Dataset Sizes” on page 108](#)** that were determined by the SCoUT planning tool. Your dataset sizes should match the sizes recorded in that table.

When creating larger datasets, note the following:

- The sizes of all of the datasets can be changed in this Datasets tab in the Dataset Size column.
- Maximum and minimum sizes in number of megabytes is checked by the Editor program.
- Maximum size is **16 GB** for cache datasets.

If you need a larger cache, you need to run the Add an Additional Dataset procedure on the Procedures tab.

You can add up to 254 more dataset partitions, each 16 GB in size.

Note This 16 GB/dataset caches function allows for terabyte caches. The maximum cache size is 4080 GB, or 4 TB (terabytes). The maximum partition size depends on two operating system features: 1) the host operating system must support 16 GB partitions, and 2) The host operating system must provide a mechanism which allows seeking to any offset up to 16 GB from the beginning of the partition. Due to memory requirements, you may need to use Cache Backup rather than CSM_exim to backup millions of cache objects.

Refer to the **“FileNet TC Worksheet” on page 101** for previously defined or calculated dataset sizes.

Configure Logical Cache (Optional)

- 1 Click on the Server Application Services Tab in the System Configuration Editor window.
- 2 Select the Cache sub-tab to view a list of caches configured on your server. Default values are automatically given to each of the caches.

Note Refer to the **“FileNet TC Worksheet” on page 101** for information concerning your cache percentages.

- 3 To modify the minimum or maximum allocation for each cache configured, click on the white box below the minimum or maximum column of each cache allocation you want to change, and enter the new value into the field.

- 4 The Locked, Daemon, and Write Threshold (%) values are set to default values. It is recommended that these values are left set to their default values.

The following sub-tabs in the Server Application Services Tab do not need to be configured unless you want to assign non-default values to them:

- Scheduling: sets up station document services parameters.
- Cache Duration: sets up the prefetch, migrate, and refresh duration for the System Cache.
- Batch: sets up station batch services parameters.

Configure System Document Services Parameters

- 1 Click on the System Application Services tab in the System Configuration Editor window.

- 2 Select the Document Services sub-tab if you want to change the values of any of the document services parameters. Document and surface id ranges can be changed from this menu.

Note Consult your Help Text if you have any questions on the parameter options.

- 3 If you want to change the way images are sent to the optical disk, select the Others sub-tab. These parameters are set to default values by the software. To change any of these parameters, click on the field of each parameter you want to change, and type in the new value.

Configure MKF Database Parameters (Optional)

Server Types Perform the steps in this section on servers with an MKF database.

- 1 Click on the MKF Databases Tab in the System Configuration Editor window.

- 2 The MKF database parameters are set to default values by the software. These parameters should be left at their default values unless changes are necessary.

Note The default MKF database block size in Image Services 4.0.0 is 8 KB. Other possible block sizes are 1 KB, 4 KB, or 16 KB. If you select 1 KB, the maximum size of the database is limited to 16 GB (eight 2 GB datafiles). The other block sizes enable you to have Permanent and Transient databases larger than 16 GB. Click Help if you have any questions on the parameter values.

Configure Network Parameters

This section assumes that you have already installed and configured the appropriate network protocol on the Root/Index server.

Before beginning the steps in this section, you must know the server's TCP/IP address. (Refer to the **[“FileNet TC Worksheet” on page 101](#)** for this information.)

To configure the network parameters, complete the following steps:

- 1 In the System Configuration Editor window, select the Network Addresses tab.
- 2 Enter the network address (if one is not already present).

For Multi-Homing support you can enter up to eight network addresses, one for each network card in the server. The format for a TCP/IP address is shown in the following example:

10.2.53.33

After the FileNet Image Services software restarts, `fn_build` will determine if any changes have occurred in the `fn_edit` configuration.

Modify the System and Server Parameters

Use this procedure to modify your system and server parameters.

Note Consult your Help Text if you have any questions on the parameter values.

- 1 Click on the Performance Tuning Tab in the System Configuration Editor window.
- 2 To modify the system processes parameters (for example, ds_notify, rmt_commit), click on the System Processes sub-tab and type in the new values in the fields of the system processes you want to change.
- 3 To modify the server processes parameters (for example, bes_commit, dtp, etc.), click on the Server Processes sub-tab and type in the new values in the fields of the system processes you want to change.
- 4 To modify other specific server processes parameters (e.g., Document Buffer Count, Document Buffer Size, etc.), click on the Server Memory sub-tab. The parameters should be left at default values unless changes are necessary.

Exit the System Configuration Editor

- 1 In the System Configuration Editor window, Click on the File pull down menu and select the **Exit** option.
- 2 You will then be asked if you want to save the changes you've just made to the current configuration database before you exit. Click on the **Yes** button to save the configuration and exit the System Configuration Editor.

Build and Initialize the Root Server

Server Types

Perform the steps in this section on these servers:

Root/Index - (Multi-server installation)

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

Build Configuration Files on the Root Server

Note The **fn_build** command checks the validity of the software license. You must have already installed the SLAC key successfully. If you have not installed the SLAC key, do it now before running the **fn_build** command.

- 1 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. Each file is produced in two steps:

- First, a temporary file is produced with a **.new** extension.
- Second, if there is a difference between the **.new** version and the existing version, the **.new** version of the file is copied over the existing version of the file.

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

- 2 Run the **fn_setup** tool to set file permissions by entering:

`/fnsw/bin/fn_setup`

Accept current value at each prompt.

Verify Oracle Variables on the Root Server

Use the procedures below to initialize the FileNet databases.

Ask the **Database Administrator** to start Oracle before initializing the FileNet databases.

Note This section applies to both local and remote Oracle instances.

- 1 Verify that the following Oracle variables are set to match the existing Oracle instance:

ORACLE_HOME (set for instance)
ORACLE_SID (set for System ID)
ORACLE_UID (set for Oracle database administrator user)
TWO_TASK (set if Oracle database is on a remote Oracle server)

As each user, enter the following commands:

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

- 2 Compare the output of the above command to the setting determined in **“Oracle Variables” on page 113**. If the ORACLE_SID and the ORACLE_HOME are not set correctly, see the Database Administrator for the system to have the settings changed.

CAUTION

In addition, the Database Administrator must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. Refer to the Tablespace table in **“Tablespace Names and Sizes” on page 114** for this information.

If the Oracle software is not running and if the new tablespaces haven't been created, the initialization process will fail.

3 Remote Oracle Servers Only:

Important!

Verify with the Database Administrator that the Oracle9i Client software has been successfully installed on the Image Services server.

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

```
/fnsw/oracle/FileNet_site.sql  
/fnsw/oracle/fn_oraupgrade_sp.sql  
/fnsw/oracle/fn_CreateStoredProcedures.sql  
/fnsw/oracle/fn_GrantSPPermissions.sql
```

- b Ask the Database Administrator to run these two scripts on the remote Oracle server:

FileNet_site.sql

(creates FileNet Image Services users)

fn_oraupgrade_sp.sql

(installs two stored procedures in the database)

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

When you're prompted to enter a password, enter "filenet". (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
```

Initialize FileNet and Oracle Databases on the Root Server

- To configure FileNet datasets **automatically**, using default logical volume values, continue with the next section, [“Configure FileNet Datasets Automatically on the Root Server” on page 168.](#)
- To configure datasets **manually**, skip to the section, [“Configure FileNet Datasets Manually on the Root Server” on page 171](#)

Configure FileNet Datasets Automatically on the Root Server

- 1 At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator), log on as **root** user (member of **fnadmin** group).
- 2 As **root** user, initialize the index database and all the MKF databases (includes permanent, transient, and security databases) by entering the following command:

```
fn_dataset_config -i
```


This process may take a while (sometimes up to 30 minutes without any feedback to the user); the larger the datasets, the longer the wait. After the initialization process finishes, the prompt returns.

Note View the `/fnsw/local/logs/fn_util/fn_util.log` file to make sure that there were no errors in the database initialization process.

- 3 When you receive the following prompt, Initialization will remove all FileNet logical volumes, type **Y** (Yes) and press **Return**.
- 4 In the FileNet Dataset Configuration Box window, verify that the datasets are shown correctly with accurate sizes. Refer to the **“FileNet TC Worksheet” on page 101** for your site-specific requirements. Click the up and down arrows in the Modified Size columns to adjust the dataset sizes, if necessary. Click the **OK** button to create and initialize the datasets. The initialization of the FileNet databases

on the server will take about 20 minutes. You should see a screen with information similar to the following when the tool is finished:

```
Increasing Mirror copies Phase
Initializing Databases
Initializing Transient Database

fn_dataset_config:Finished successfully Mon Apr 16
15:05:03 2003
```

- 5 Make sure this command runs successfully by checking the log file and other files in `/fnsw/local/logs` to see that no errors have occurred. Do not accept the “Finished successfully . . .” message alone. Also check the log files.
- 6 **Remote Oracle Only:** The `fn_dataset_config` command also generates this script:

```
/fnsw/local/oracle/ora_users.sql
```

If the Oracle database is located on a remote Oracle server, ask the Database Administrator to copy this script to the `/fnsw/oracle` directory on the remote server and run it from there.

- 7 If you determined that `fn_dataset_config` ran successfully go to [“Bring Up Image Services Software on the Root/Index or Combined Server” on page 187.](#)

If `fn_dataset_config` is not successful continue with the next section.

Configure FileNet Datasets Manually on the Root Server

- 1 On the Root server, log on as `fnsw` user and go to the proper directory. List the directory contents by entering the following commands:

```
cd /fnsw/dev/1
ls -l
```

The following types of entries should be listed (depending upon server type):

odda1 (one for each optical drive)
permanent_db
permanent_r10
transient_db0
transient_r10
sec_db0*
sec_r10*
cache0
osara (one for each optical library)

During a Dual server install, the Root/Index server commonly has device files marked with asterisks () only.

Note

If incorrect entries are present in the file, remove them and complete Step 2. Otherwise skip to Step 3.

- 2 Verify with the System Administrator that the logical volumes have already been created in the sizes determined by the SCouT tool.
- 3 You need to have device files for all of the logical volumes you have created. If some device files are missing from `/fnsw/dev/1`, this step will create these missing device files.
 - a If you haven't already, log on as **root** user.
 - b Display the major and minor numbers for each logical volume you've created and make note of them to complete this section.

To position to the `/dev/<volume group>` directory, enter:

```
cd /dev/<volume group> (for example, <volume group> is  
fngv or whatever you named it)
```

To list the contents of the directory, enter the following command:

```
ls -l rfn*
```

A directory list displays the major and minor numbers for each logical volume. Make a note of the numbers in the spaces below, because you are going to be using them on the next page. Do not create any character devices for file systems if any file systems happened to be made as part of your fnvg (for example, rfnsw). The following is a sample line from the listing: 64, is the major number; 0x01000a, the minor.

```
crw-rw---    1  root  sys  64  0x01000a  May 5 13:13 rfn_cache0.
```

rfn_cache0 _____

rfn_perm_db0 _____

rfn_perm_r10 _____

rfn_trans_db0 _____

rfn_trans_r10 _____

rfn_sec_db0 _____

rfn_sec_r10 _____

- c Enter the following command to go to the /fnsw/dev/1 directory:

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

Note The /dev and/or /1 directories may already exist. If you get a message similar to the following:

```
mkdir: cannot create dev: File exists
```

one or both of the directories already exist. Continue.

d Refer to the list of major and minor numbers you made earlier.

The general syntax for the command to create a missing character device is:

```
mkknod <dataset> c <major#> <minor#>
```

Note Do not mix up the name of the logical volume (e.g., fn_perm_db0) with the name needed for a device driver (e.g., permanent_db0). Also, when you enter the following commands, replace X with the appro-

appropriate major number; replace Y with the appropriate minor number for each dataset.

To create a character device for a missing dataset on the Combined or Root/Index server, enter one or more of the following, depending on which are missing:

```
mknod sec_db0 c <X> <Y>
```

```
mknod sec_r10 c <X> <Y>
```

To create a character device for a missing dataset on the Combined or Storage Library server, enter one or more of the following, depending on which are missing:

```
mknod cache0 c <X> <Y>
```

```
mknod permanent_db0 c <X> <Y>
```

```
mknod permanent_r10 c <X> <Y>
```

```
mknod transient_db0 c <X> <Y>
```

```
mknod transient_r10 c <X> <Y>
```


- 4 On the Root server itself, log on as **fns** user and enter the following command to kill all processes displayed:

killfns -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 initfns stop cycles, but on occasion, it is necessary to terminate TM_daemon as well.

The -A option removes all IPC segments.

The -y option answers yes to subsequent prompts.

- 5 Run **whatsup** again to make sure all the processes have been killed.

whatsup

The display now looks similar to this

User	PID	PPID	Start Time	Processes
fns	10306	1	06/24/00	TM_daemon -s

- 6 If any processes remain active, you may need to kill each one explicitly, except for **TM_daemon**:

kill -9 <process id>

where <process id> is the process number displayed in the PID column by **whatsup**.

- 7 Repeat steps 4 and 5 until **whatsup** displays no processes at all, except for **TM_daemon**.
- 8 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server as **root** user and make sure windows is running.

- 9 Enter the following command to initialize all databases configured on your server:

fn_util init

This command may take about 10 or 15 minutes to complete, so wait for the system prompt to return before continuing.

Note You may see the following error in the `/fnsw/local/logs/fn_util/fn_util.log` file, but it can be ignored:

Error 79000017 on drop table (continuing)

You may also see error similar to the following, and they can also be ignored:

Operating system error:

DB_LIBRARY error:

- 10** Check the `/fnsw/local/logs/fn_util/fn_util.log` file after the `fn_util` init command is complete. If you see any of the following message, you can ignore them:

```
ORA-00942: table or view does not exist.  
ORA-01432: public synonym to be dropped does not exist.  
ORA-01434: private synonym to be dropped does not exist.  
ORA-01919: role 'EXP_FULL_DATABASE' does not exist.  
ORA-01919: role 'IMP_FULL_DATABASE' does not exist.
```

These warning messages may result from the system trying to remove RDBMS tables when they have already been removed.

Note The message “MKF irrecoverable read error” may appear in the `fn_util.log` file. This is acceptable due to the current state of the system, and you can ignore this message.

- 11** Use the **fn_setup** tool to 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.

As **root** user, enter:

`/fnsw/bin/fn_setup`

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

- a The NCH server is the generally the Root server. Enter **1** for yes.

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

- b The NCH server name is generally the name of the Root server.
Enter the name of the Root server.

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

- c The system serial number should be the serial number of 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 configured on servers with Index Services, WorkFlo Queue Services (WQS), SQL Services, or VWServices. Select 1=Oracle.

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

Note If you plan to use an existing site-controlled Oracle instance, you must accept the default values offered as they relate to the RDBMS installed on this server.

- e Enter the full pathname of the directory where the Oracle software is located on this server.

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

- f Enter the user and group IDs at the following prompts.

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


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

```
This is the setup configuration:
NCH server name:  hpvenice: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 8 and run **fn_setup** again.

- 13 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 hpvenice:FileNet"
fn_setup: Changing permission on FileNet software and
databases
```

- 14 When `fn_setup` is finished, it exits automatically to the system prompt.
 - a If a problem occurs during `fn_setup`, check the `/fnsw/local/logs/fn_setup/fn_setup.log` file to determine what went wrong. After you have corrected the problem, go back to Step 8 and run `fn_setup` again.
 - b If there were no problems, continue with the next section.

Bring Up Image Services Software on the Root/Index or Combined Server

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual-server installation.

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

CAUTION

In this section the FileNet software is going to be restarted, which includes stopping and starting the Oracle instance. To verify that the Oracle Instance has the correct SID, as **root** user, enter:

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

You will receive output similar to the following where the SID appears at the end of process name. In this example, the SID is IDB.

```
<oracle user> 1127  1 0 Mar 11 ?    0:18 ora_pmon_IDB
<oracle user> 1129  1 0 Mar 11 ?    0:34 ora_dbwr_IDB
<oracle user> 1131  1 0 Mar 11 ?    0:18 ora_lgwr_IDB
<oracle user> 1133  1 0 Mar 11 ?    0:01 ora_smon_IDB
```

Make sure the Oracle SID is set appropriately for both **root** and **fns** users. As each user enter the following command to see how they are set:

```
echo $ORACLE_SID
```

Compare the output of the above command to the setting determined in **“Oracle Variables” on page 113**. If it is not set correctly, check with the System Database Administrator to have it reset.

- 1 From the command line prompt, log on as **fns** user and enter the following command to bring up the FileNet software:

```
initfns start
```

Note If you receive a **cfg_verify** error, go to the section **“Automatic HP-UX Kernel Parameter Checking” on page 189**

- 2 Verify that the FileNet software is up, and run the **dupip** script by entering the following:

```
nohup /fnsw/etc/dupip
```

Automatic HP-UX Kernel Parameter Checking

Server Types If you receive a **cfg_verify** error, perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

Every time you start the FileNet Image Services software, the software automatically runs the **cfg_verify** program which verifies the HP-UX kernel parameter settings.

If it detects an invalid kernel parameter, **cfg_verify** logs an error from each incorrect parameter. For example, you may see an error similar to this during Image Services startup:

Exec of 'cfg_verify' returned non-zero status of '0x1'.

To fix the error, read the system log to determine which kernel parameter is set incorrectly. Use the **vl** tool to find the **cfg_verify** assertion errors. From any directory, enter:

vl

The system log may contain an entry similar to this:

```
98/02/20 10:17:06.222 212,4,7 <root> cfg_verify (2958) ... [WARNING]
cfg_verify: HP.HPUX.MAXFILES (0x80 )
           must be greater than or equal to ( 0x200 )
```

In this case, the value of the maxfiles kernel parameter was set to an incorrect value of 0x80, the hexadecimal equivalent of 128 decimal. However, the value of the maxfiles parameter must be at least 512 decimal (200 hexadecimal). Note that FileNet recommends a minimum value of 1024 decimal (400 hexadecimal) for Remote Entry servers.

You would need to use SAM to modify the incorrect kernel parameter maxfiles to a recommended value of 0x200 (512 decimal), or 0x400 (1024 decimal) and reboot the server to make it take effect.

Note Even though SAM displays the kernel parameters in decimal, you can enter modified values in hexadecimal, e.g.: 0x200
SAM automatically translates the hex value to decimal for you.

Fix all invalid kernel parameters, reboot the server, and return to Step 1 of the previous section to try starting Image Services again.

If you're configuring a Root/Index server, skip to the section, **[“Modify the /etc/inittab File on the Root Server” on page 220.](#)**

Verify HP Storage Library Device Drivers on a Combined Server

Server Types

Perform the steps in this section on these servers:

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

If you're configuring a Root/Index server, skip to the section, [**"Modify the /etc/inittab File on the Root Server" on page 220.**](#)

If you're configuring a cache-only or MSAR system (no optical devices attached to the Storage Library server), skip to the section, [**"Configure Storage Library Device\(s\)" on page 210.**](#)

In this section, you need to verify that the HP optical disk drive software and the HP storage library system software have been configured correctly.

Tip

Even though an ODU (Optical Disk Unit) is technically not a storage library because it lacks a robotic arm, for the purposes of configuration

be sure to perform the same steps for an ODU that you would perform for a storage library.

To verify the new driver for the HP optical disk drive and the HP Storage Library system, follow these steps:

- 1 Make sure that the storage library devices are powered on and are active.
- 2 **Return to your server's terminal**, and as **root** user, use **ioscan** to determine the addresses of the HP optical drives and storage libraries.

ioscan -f | more

Look in the **ioscan** display for your storage libraries and drives. You can identify the storage drives by locating the vendor ID and the product ID in the Description column.

If necessary, refer to the documentation that accompanies your storage library to determine the vendor and product IDs to look for.

Note This sample display from a **D Class** server has been annotated for clarity. Lines beginning with “^^^^^^^^” are descriptive comments.)

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
bc	0		root	CLAIMED	BUS_NEXUS	
bc	1	8	bc	CLAIMED	BUS_NEXUS	Pseudo Bus Converter
bc	2	8/0	bc	CLAIMED	BUS_NEXUS	Bus Converter
tty	0	8/0/0	mux2	CLAIMED	INTERFACE	MUX
ext_bus	0	8/4	c720	CLAIMED	INTERFACE	GSC add-on Fast/Wide
SCSI Interface						
target	0	8/4.5	tgt	CLAIMED	DEVICE	
disk	0	8/4.5.0	sdisk	CLAIMED	DEVICE	SEAGATE ST32171W
target	1	8/4.7	tgt	CLAIMED	DEVICE	
ctl	0	8/4.7.0	sctl	CLAIMED	DEVICE	Initiator
target	2	8/4.8	tgt	CLAIMED	DEVICE	
disk	1	8/4.8.0	sdisk	CLAIMED	DEVICE	SEAGATE ST32171W
^^^^^^^^+++++ Everything on one SCSI bus (one FileNet and one HP library):						
ext_bus	4	8/8	c720	CLAIMED	INTERFACE	GSC add-on Fast/Wide
SCSI Interface						
(conintued on next page)						

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
=====						
(continued from previous page)						
target	3	8/8.0	tgt	CLAIMED	DEVICE	
disk	4	8/8.0.0	sdisk	CLAIMED	DEVICE	LMS LD 6100SER.
^++++ Philips drives (LMS) ^++++						
target	4	8/8.1	tgt	CLAIMED	DEVICE	
disk	5	8/8.1.0	sdisk	CLAIMED	DEVICE	LMS LD 6100SER.
^++++ Philips drives (LMS) ^++++						
target	5	8/8.3	tgt	CLAIMED	DEVICE	
unknown	-1	8/8.3.0		UNCLAIMED	UNKNOWN	FILENET 0155
^++++ FileNet SCSI Arm Library ^++++						
target	5	8/8.4	tgt	CLAIMED	DEVICE	
disk	-1	8/8.4.0	sdisk	CLAIMED	DEVICE	HP C1716T
^++++ HP drive ^++++						
target	5	8/8.5	tgt	CLAIMED	DEVICE	
disk	-1	8/8.5.0	sdisk	CLAIMED	DEVICE	HP C1716T
^++++ HP drive ^++++						
target	5	8/8.6	tgt	CLAIMED	DEVICE	
unknown	-1	8/8.6.0		UNCLAIMED	UNKNOWN	HP C1113F
^++++ HP Library ^++++						
(continued on next page)						

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
=====						
(continued from previous page)						
target	6	8/8.7	tgt	CLAIMED	DEVICE	
ctl	3	8/8.7.0	sctl	CLAIMED	DEVICE	Initiator
ba	0	8/16	bus_adapter	CLAIMED	BUS_NEXUS	Core I/O Adapter
ext_bus Interface	2	8/16/0	CentIf	CLAIMED	INTERFACE	Built-in Parallel
.						
.						
.						

Tip If you cannot locate the storage library devices in the **ioscan** display, you can try this method as a last resort:

- a. Shutdown the server and turn power off to all the storage library devices.
- b. Turn power back on only to the server and run the **ioscan** command, saving the output to a file. For example:

```
ioscan -f > /fnsw/local/tmp/ioscan_pwr.off
```

- c. Shutdown the server again and turn power back on to all the storage library devices.
- d. Turn power on to the server and run the **ioscan** command, saving the output to a different file. For example:

```
ioscan -f > /fnsw/local/tmp/ioscan_pwr.on
```

- e. Find the differences between the two files by entering:

```
diff /fnsw/local/tmp/ioscan_pwr.off /fnsw/local/tmp/ioscan_pwr.on
```

- f. The resulting display should contain only the lines pertaining to the storage library devices.
-

Write down the **full** H/W Paths (for example, **8/8.0.0**), the Class, and the Description (model numbers) of each storage library device shown on the display.

- 3 Perform the steps in whichever one of the two following subsections applies to your server. Verify that the optical device drivers have been updated successfully.
 - On HP 9000 servers that support the HP-PB bus, you need to verify both the `/fnsw/local/sd/sod.conf` file and the `/stand/system` file by completing both the section, **“Verify the `/fnsw/local/sd/sod.conf` File” on page 199** and the section, **“Verify the `/stand/system` File on Servers with HP-PB Bus SCSI Adapters” on page 203.**

- On all other HP 9000 servers, you need to verify only the `/fnsw/local/sd/sod.conf` file by completing the section, **“Verify the `/fnsw/local/sd/sod.conf` File” on page 199.**

Note The D-Class, R-Class, and V-Class servers are examples of servers that do **not** support the HP-PB bus.

The K-Class servers support **both** the HP-PB bus and the HSC bus, so be extremely careful to determine which type of SCSI adapter is used to connect the storage library.

Verify the `/fnsw/local/sd/sod.conf` File

Server Types Perform the steps in this subsection on all HP 9000 servers.

- 1 Change to the appropriate directory and display the contents of the file:

```
cd /fnsw/local/sd  
more sod.conf
```

(If the `sod.conf` file does not exist, use `vi` or your preferred text editor to create it.)

- 2 Look for a line for each of the storage library devices shown on the **ioscan** display. The `sod.conf` file should include lines for both optical devices and robotic arm devices, using the following format:

```
driver <H/W Path> <driver>
driver <H/W Path> <driver>
...
driver <H/W Path> <driver>
```

where:

The `<H/W Path>` is the entire H/W path field shown on the `ioscan` display line for each library device.

The <driver> is **spt** for HP-PB bus SCSI adapters and is **sctl** for all others.

Bus	Driver
HP-PB	spt
HSC	sctl
GSC	sctl
PCI	sctl

If necessary, consult the HP technical documentation to identify the bus used for your SCSI adapter.

- 3 The sod.conf file must specify a driver for each storage library device shown on the **ioscan** display. Your sod.conf file might have lines that look similar to this:

```
driver 8/8.0.0 spt
```

```
driver 8/8.1.0 spt
```

```
driver 8/8.3.0 spt
```

```
- or -
```

driver 8/8.4.0 sctl

driver 8/8.5.0 sctl

driver 8/8.6.0 sctl

- If lines similar to this already appear and are correct, the file has been updated successfully.
 - If you are not able to locate these lines or if they're inaccurate, you need to add or change them manually. Use your preferred text editor, such as **vi**, to edit the file.
- 4 Save your changes to the file, and exit the editor.
 - 5 If this server has **no** HP-PB bus SCSI adapters, skip to the section, **“Create Optical Device Files” on page 206**. (You do not have to rebuild the kernel or reboot the server at this point.)

Verify the /stand/system File on Servers with HP-PB Bus SCSI Adapters

Server Types

Perform the steps in this subsection on servers that have any SCSI adapter for the storage libraries on the HP-PB bus. For example, HP 28655A single-ended and HP 28696A differential adapters.

- 1 Change to the appropriate directory and display the contents of the file:

```
cd /stand
more system
```

- 2 In the **system** file, look for a line for each storage library device that is attached to an HP-PB bus SCSI adapter, as shown on the **ioscan** display. For example:

```
driver 8/8.0.0 spt
driver 8/8.1.0 spt
driver 8/8.3.0 spt
driver 8/8.4.0 spt
driver 8/8.5.0 spt
driver 8/8.6.0 spt
```

- If these lines already appear, the file has been updated successfully. Skip to **“Rebuild the Kernel” on page 205.**
 - If you are not able to locate these lines, you need to add them manually. Use your favorite text editor, such as **vi**, to edit the file.
 - There should be **no** **sctl** entries for library devices attached to HSC, GSC, or PCI SCSI adapters. Continue with the next step.
- 3** First look for an **spt** entry alphabetically toward the front of the file. If it is not there, add it where it would go alphabetically. Then add a line for each of the optical devices attached to single-ended SCSI adapters shown on the **ioscan** display. Include lines for both optical devices and robotic arm devices in the **Kernel** section toward the bottom of the file. Use the format:

```
driver <H/W Path> <driver>
driver <H/W Path> <driver>
...
driver <H/W Path> <driver>
```

Note The <driver> can only be **spt**. There should be **no** sctl entries for library devices attached to HSC, GSC, or PCI SCSI adapters.

- 4 Save your changes to the file, and exit the editor.

Rebuild the Kernel

Rebuild the Kernel by entering:

```
mk_kernel -o /stand/vmunix
```

Reboot Server

In this section, you need to reboot the server.

- 1 Verify that you are logged on as **root** user.
- 2 Reboot the server by entering:

```
shutdown -ry 0
```

Create Optical Device Files

Note If there are no optical devices attached to your server, skip this section.

Use the **FNPoll** command to create the optical device files. Make sure that the optical device is powered on and active. (You can use **ioscan** to check this.) If the optical device is not powered on, or needs to have a disk in the drive to be recognized, **FNPoll** will not find it. **FNPoll** will report No FileNet Device Found.

As **root** user, enter the following command at the system prompt:

```
/fnsw/bin/FNPoll
```

The FNPoll display is similar to this:

```
Found HPUX Version 11.11

Removing old device nodes and files used by FNPoll.

Determining model, series and device driver information.

This appears to be a(n) D-Series platform (D330).
Looking up driver and class information for this platform.

Expected driver-class for single-ended SCSI: sctl-ctl
Allowable single-ended controller(s): HWP0C80

Expected driver-class for differential SCSI: sctl-ctl
Allowable differential controller(s): GSC

HP SCSI Pass-Through Driver:
    Single-Ended Major # 203
    Differential Major # 203
```

If FNPoll is successful, you will also see:

```
Searching for FileNet Devices:
```

```
disk          4  8/8.0.0      sdisk        CLAIMED     DEVICE      LMS         LD 6100SER.
disk          5  8/8.1.0      sdisk        CLAIMED     DEVICE      LMS         LD 6100SER.
unknown      -1  8/8.3.0      UNCLAIMED   UNKNOWN     FILENET     0155
```

```
Building FileNet Devices, Wed May 28 14:45:04 PDT 2003
```

```
crw-rw-rw-   1  fnsw      fnusr      203 0x040000 May 28 14:45 /dev/fnsod.4,8,0,0
crw-rw-rw-   1  fnsw      fnusr      203 0x041000 May 28 14:45 /dev/fnsod.4,8,1,0
crw-rw-rw-   1  fnsw      fnusr      203 0x043000 May 28 14:45 /dev/fnsod.4,8,3,0
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major.DIFF
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major.DIFF1
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major.DIFF2
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major.SE
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major.SE1
-rw-rw-rw-   1  fnsw      fnusr           4 May 28 14:45 /dev/fnsod.major.SE2
```

After FNPoll has completed successfully, you can continue with the section **[“Configure Storage Library Device\(s\)” on page 210](#)**

However, if FNPoll is not able to locate the `/fnsw/local/sd/sod.conf` file, you will see:

```
Searching for FileNet Devices:
```

```
ERROR: /fnsw/local/sd/sod.conf must be created with the configuration
       information for your system.
```

```
The entries in /fnsw/local/sd/sod.conf are of the form:
```

```
spt 56/52.5.0 spt
      ^^^^^^^^^ This is the 'H/W Path' from the output of a call to
      'ioscan -f'. Put in a line for every device (library and disk
      drive) to be used by the FileNet Image Services.
```

```
ERROR: No devices created.
```

Make sure the `sod.conf` file is in the correct directory, and that it contains the appropriate entries for your system. Then return to the beginning of this section and run FNPoll again.

Configure Storage Library Device(s)

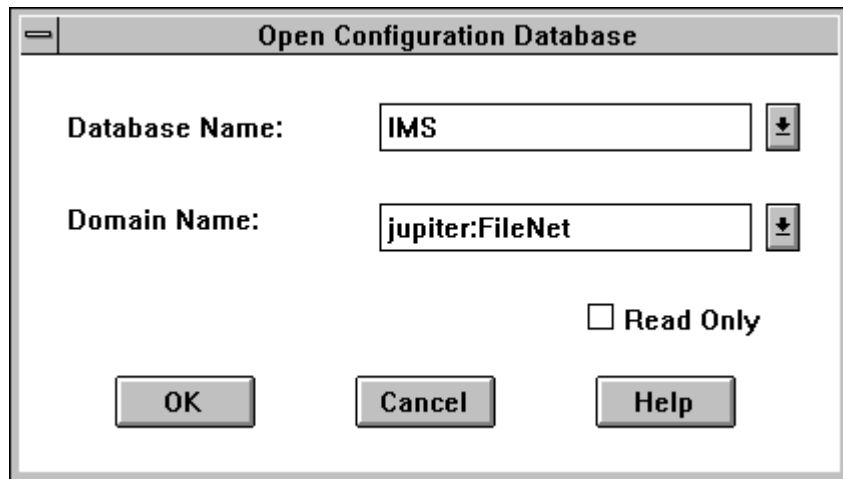
Note If there are no storage libraries on the server, skip to the next section, **“Modify the /etc/inittab File on the Root Server” on page 220.**

Tip Even though an ODU (Optical Disk Unit) is technically not a storage library because it lacks a robotic arm, for the purposes of configuration be sure to perform the same steps for an ODU that you would perform for a storage library.

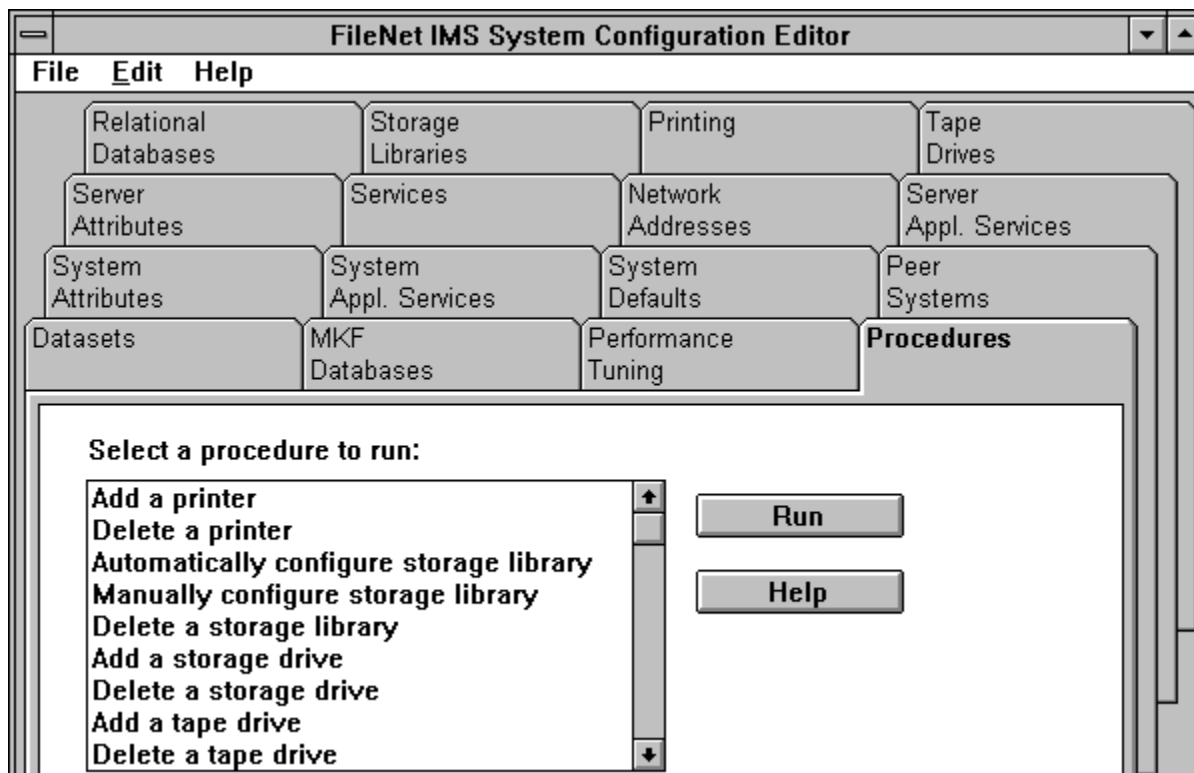
- 1 As **fns** user, launch the FileNet Configuration Editor by entering:

fn_edit &

A dialog box similar to the following displays.



- 2 Verify that the database and domain names are correct, and click **OK**. (The two-part domain name is set up as follows: <Domain>:<Organization>.) The System Configuration Editor window displays.



Note The online help contains information on all of the tabs. You can access the online template information by selecting the Help menu option in the System Configuration Editor window.

- 1 If you want to view the information concerning the storage library device(s) configured on your server, select the Storage Libraries tab from System Configuration Editor window.

Refer to the **[“FileNet TC Worksheet” on page 101](#)** for information concerning your optical library devices.

- 2 If you need to configure a storage library or an ODU you have two choices:

Automatically Configure Storage Library

Storage libraries can be configured automatically if they are attached correctly to the server, and if they are fully powered on.

To configure a storage library automatically, follow these steps:

- a Click on the Procedures tab.

- b Scroll through the list of available procedures and select Automatically Configure Storage Library.

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

- c 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.
- d After the storage library has been configured, skip to Step 3.

Manually Configure Storage Library

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

- a At the server to which the storage library is attached, log on as **root** user.

- b Make sure the storage library is cabled to the server correctly and that power is turned on.
- c Use **ioscan** to determine the addresses of the storage libraries:

ioscan -f | more

The **ioscan** display on a **K Class** server looks similar to this:

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
=====						
...						
ext_bus	2	10/4/8	scsil	CLAIMED	INTERFACE	HP 28655A - SE SCSI ID=7
target	3	10/4/8.2	target	CLAIMED	DEVICE	
spt	0	10/4/8.2.0	spt	CLAIMED	DEVICE	LMS LD 6100SER.
target	4	10/4/8.3	target	CLAIMED	DEVICE	
spt	1	10/4/8.3.0	spt	CLAIMED	DEVICE	LMS LD 6100SER.
unknown	-1	10/4/9		UNCLAIMED	UNKNOWN	HP 28655A - Parallel
Interface						
unknown	-1	10/4/12		UNCLAIMED	UNKNOWN	HP J2157A - FDDI
Interface						
graphics	0	10/8	graph3	CLAIMED	INTERFACE	Graphics
ba	0	10/12	bus_adapter	CLAIMED	BUS_NEXUS	Core I/O Adapter
ext_bus	4	10/12/0	CentIf	CLAIMED	INTERFACE	Built-in Parallel
Interface						
ext_bus	3	10/12/5	c700	CLAIMED	INTERFACE	Built-in SCSI
...						

- d Locate the lines that apply to the storage library you are going to configure. For example, in the previous display, locate the lines that contain **spt** in the Class and Driver columns.

- e Determine the Instance number for the storage library devices by locating **ext_bus** in the Class column above the storage library devices. Find the Instance number in the I column. (The Instance number in the example above is **2**.) Use the same Instance number for all devices in the storage library.

- f Now write down the last three numbers (separated by dots) of the hardware paths for each storage library device in the H/W Path column. Also write down the description (model number) of each device. The Configuration Editor **fn_edit** will ask you for this information in a later step.

Instance	H/W Path	Description
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- g Return to the server that is running **fn_edit**.

- h Click on the Procedures tab.

- i Scroll through the list of available procedures and select Manually Configure Storage Library.
- j 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.

Note The four part SCSI address values are taken from the information you wrote down from the **ioscan** display earlier. For example, you might enter:

2 8 2 0

where:

the first number is the SCSI adapter ID

(the number you copied from the **I** (Instance) column of the **ioscan** display)

the second number is the bus ID

(the first of the three numbers from the H/W Path column)

the third number is the target device ID

(the second of the three numbers from the H/W Path column)

the fourth number is the Logical Unit Number (LUN)

(the third number from the H/W Path column)

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

- k 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.

- l After the storage library has been configured, continue with Step 3.

- 3 Exit the Configuration Editor and save your changes.
- 4 To put your changes into effect, stop the FileNet software and rebuild the system files by entering the following commands as **root** user:

```
killfnsw -DAy  
fn_build -a
```

- 5 Restart the Configuration Editor by entering:

```
fn_edit &
```

Modify the `/etc/inittab` File on the Root Server

Edit the `/etc/inittab` file so the Image Services software will start automatically during a server/system restart.

Note If you do not know whether Oracle will be started when the Image Services software starts, you may choose not to uncomment the line in the `inittab` file.

If Oracle is not available when the Image Services software starts, the Image Services software generates error messages. If you receive error messages of this type, start the Oracle software, and then restart the Image Services software.

- 1 Log on as **root** user and change to the `/etc` directory by entering:

```
cd /etc
```

- 2 Using your preferred editor, such as **vi**, open and prepare to edit the `inittab` file.

Important!

If this command is re-enabled, the Database Administrator must ensure the Oracle Instance is up and running before the FileNet Image Services software restarts.

- 3 Locate and re-enable the following line by removing the comment character:

```
rcfn:234:wait:/bin/sh /etc/rc.inittfsw </dev/console >/dev/console  
2>&1
```

- 4 Save the file and then exit.
- 5 This completes the basic configuration of your Root/Index or Combined server.

Configure RES, Cross-Committal, or Multi-Committal Systems

This section presents a brief description of these systems; for detailed information, refer to the *[Image Services Multi-Committal and Cross-Committal Configuration Handbook](#)* .

Each of the FileNet systems in an RES configuration, Cross-Committal configuration, or a Multi-Committal System configuration is technically an independent system with a Root/Index server and is considered a **peer system** by all the others.

- A Cross-Committal System is composed of a **source** Image Services system and a **target** Image Services system. The source

system commits images to the target system, but does not retain the images locally.

- A Remote Entry Server (RES) is a specific type of Cross-Committal system that has no storage library and is used only for entering images for committal to another independent system (the target) that does have a storage library. The target system is also capable of entering and committing images, so in this situation the two systems must be “compatible,” that is, they must have non-overlapping document IDs and surface IDs.
- A Multi-Committal System is an independent FileNet system that contains a Storage Library server and commits images both to its own Storage Library and to the Storage Library of another independent FileNet system. Multi-Committal Systems may or may not be “compatible” systems with non-overlapping document IDs. If they aren’t compatible, new doc IDs are assigned on the target system, a minor performance consideration.

6

Completing the Installation

This chapter explains steps that need to be followed to complete the server installation. It covers several procedures including:

- Verifying the System Serial Number
- Verifying the Timezone
- Software tuning for COLD users
- Changing the F_Maint password
- Adapting the system for Xstation use
- Installing any remaining fixes
- Making system backups

Note For **HP ServiceGuard** users, the sections in this chapter need to be done only on the production server(s), not the fail over server(s), except where specifically noted.

Verify the System Serial Number

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

Root/Index server during a Dual server installation.

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

Application server running WorkFlo Queue services, SQL services, or VWServices.

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.

Verify the Time Zone

Server Types

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

HP-UX has two timezone settings: the kernel parameter 'timezone' and the environment variable 'TZ'. Both timezone settings must agree so Image Services utilities can report the time correctly.

Check the Timezone Kernel Parameter

Using SAM, check the **Pending Value** for the timezone parameter.

1 As **root** user, enter:

sam

2 Select the Kernel Configuration option.

3 Then select the Configurable Parameters option, and check the **Pending Value** for the timezone parameter.

Verify the timezone setting for your location:

Table 6-1: Timezone Kernel Parameter Setting

Kernel Parameters	Default Setting
timezone	420*

*The default value is 420 minutes west of Greenwich Mean Time (GMT), which is the U.S. Mountain timezone.

Determine the number of minutes east or west of GMT for your location by multiplying the number of hours east or west of GMT by

60 minutes per hour. For example, the U.S. Pacific time zone is 8 hours west of GMT. Multiply 8×60 to get 480 minutes.

If your time zone location is east of GMT, you should use a negative number. For example, Middle European Time is one hour east of GMT. Multiply -1×60 to get -60 minutes for MET (Middle European Time).

Tip You can easily determine the number of minutes for the time zone kernel parameter by multiplying the number of hours in the TZ environment variable (discussed later) by 60 minutes.

- 4 If you do not need to make any changes to these kernel parameters, you can skip to the section, **“Verify Timezone Environment Variable” on page 230** now. If you do need to make changes, continue with Step 5.
- 5 Change the kernel parameter values by following these sub-steps:
 - a Select the time zone parameter by pressing the **F3** key. The parameter will then be highlighted.

- b Select the Modify Configurable Parameter option from the Actions menu and press **Return**.
 - c In the popup window that displays, the Specify New Formula/Value option should already be selected.
 - d Tab to the Formula/Value field and type the new value.
 - e Tab to **OK** and press **Return**. When the popup window disappears, you should see the new value in the Pending Value column.
 - f Repeat sub-steps d through j for each parameter you need to change.
- 6** If you make any changes, you need to rebuild the kernel by completing the following sub-steps:
- a Press the **F4** key to access the menu bar.
 - b From the Action menu, select the Create a New Kernel option using the Arrow keys and press **Return**.

- c Answer **Yes** when prompted about creating the kernel now.
- d On the next screen, make sure the Move Kernel into Place and Shutdown/Reboot the System Now option is selected, tab to **OK** and press the **Return** key to reboot the system and make the new changes take affect.

Verify Timezone Environment Variable

Next, verify the TZ (timezone) environment variable. In the previous section, you verified that the 'timezone' kernel parameter is set correctly.

- 1 Now you must make sure that the TZ environment variable is set correctly. As **root** user, enter:

```
/sbin/set_parms timezone
```

- 2 Choose the correct timezone from the menus displayed. (If you change the current setting, you will be prompted to reboot the server.)

If the HP-UX **set_parms** command is not available on your server, the System Administrator must check the documentation for the currently installed version of the HP-UX operating system for the appropriate way to set this variable.

Software Tuning for COLD Users (Optional)

Server Types

Perform the steps in this section on the server that has COLD software installed on it, usually the **Storage Library server**.

When the following circumstances occur, the DISPLAY environment variable, normally set by the system, may change, and there appears to be no automatic way of correctly setting this variable:

- User switches user (su -) from another login (typically **root**).
- User performs an rlogin from another system.
- User resets the default host from an x-station hooked to another system.

The following work around exists:

- 1 Log on as **root** user. Before running COLD, you should check the value of DISPLAY. This can be done with the following UNIX command:

```
echo $DISPLAY
```

- 2 If it has a value, it will print. If it has no value, or was never set, you'll either see an empty line (Bourne/Korn shell) or an error message (C shell). In that case, you must provide a value, as follows:

- 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.

If the DISPLAY environment variable is not set, Motif fails by displaying errors and fails. What should happen instead is that COLD should verify that DISPLAY is set, and if not, log a clear error message, then cease.

Change the f_maint Password

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

Application server with WorkFlo Queue services, SQL services, or VWServices.

The FileNet and Oracle software must be up and running in order to change the f_maint password.

Change the default password of f_maint, so each site will have a site-specific password. The default setting for the f_maint password is:

```
change$this_obnoxioiu$_passwr.
```

- 1 Log on as **fns** user.
- 2 At the system prompt, enter the following command:

```
set_f_maint_pw
```

- 3 You need to press **Return** at the current password prompt.
- 4 When you are prompted to enter a new password:

```
Enter new password for f_maint:
```

... enter a new password, between 6 and 30 characters long.

- 5 When you are prompted:

```
Confirm (re-enter) new password:
```

... enter the same password a second time.

Note If you don't see an error message, the password was changed successfully.

6 You return to the system prompt.

Adapt the System for Xstation Use

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

Root/Index server during a Dual server installation.

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

Application server running WorkFlo Queue services, SQL services, or VWServices.

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

These settings disable your access control option and allow you to run applications from an Xstation.

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. Follow the instructions in the *[System Information Messenger Manual](#)* to enable and configure the software.

Install Any Remaining Fixes

Server Types

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 Support online Web site <http://www.css.filenet.com>.

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-less 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

Server Types

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

Regular backups of the system configuration and data are essential.

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server as **root** user.

- 2 Make a copy of the **inittab** file, and stop the FileNet software by entering the following series of commands:

```
cd /  
cp /etc/inittab /fnsw/etc/inittab.backup  
initfnsw -y stop
```

Note If you have a Dual server, shutdown the FileNet software on the Storage Library server before the Root/Index server.

- 3 Create a backup of your LVM configuration to protect the system from potential disk crashes. Refer to the **man** page for more information regarding the **vgcfsbackup** command. Complete the following bullets:

- If you have the root volume group (**vg00**) on your system, enter the following command:

```
vgcfsbackup /dev/vg00
```

- If you have the FileNet volume group (**fnvg**) (or some other <volume group>) on your system, also enter the following command:

vgcfgbackup /dev/fnvg

- This step will make restores easier if the system ever crashes. These LVM configuration backups are stored in an area that is automatically accessed during a restore.

Note

In the event of a disk crash, it will be beneficial to have copies of the following files or command output listings (hard copies at least) to help in the recovery:

system

fstab

vgdisplay -v vg00 (command output)

vgdisplay -v fnvg (if applicable) (command output)

ioscan -f (command output)

- 4 Next, make a system backup tape using the Backup and Recovery option in SAM. **This backup will take about 45 minutes.** Refer to the HP-UX System Administration Tasks for information about system backups and restores.
- 5 From the command line prompt, enter the following command to bring up the FileNet software:

initfnsw restart

- 6 Verify that the FileNet software is up, and run the **dupip** script by entering the following:

nohup /fnsw/etc/dupip

- 7 For information on developing the backup and restore scripts for the MKF databases using FileNet's EBR, refer to:
 - ***Image Services Enterprise Backup and Restore User's Guide***For additional information on making backups of your system configuration, refer to:

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

Begin Production Mode

This concludes the Image Services 4.0.0 Installation and Configuration Procedures for HP-UX. The FileNet Image Services system is now ready to put into production.

Appendix A – Adding an Application Server

This Appendix describes how to add an Application server on your Image Services system. All of the steps in this appendix should be done on the Application server unless specified otherwise.

In addition to installing and configuring a new Application server, you can also use this appendix for:

- Adding services to an existing server (for example, adding Batch Entry Services to an existing Application server). See the section, **[“Add Services” on page 251.](#)**
- Reconfiguring an old server because the functions it performs are no longer required. (Reconfiguring an old server should be handled the same as installing and configuring a new Application server.)

Before You Begin

This appendix assumes that FileNet Image Services 4.0.0 and Oracle software have already been installed and configured on a Combined or Dual server system. The Combined or Root/Index server will be the Root server for the Application server. If a Root server has not already been established, follow the procedures in this manual for installing and configuring the Root server, then return to this appendix to set up the Application server.

Installation Prerequisites

Make sure the server is ready for the software installation by completing the procedures and gathering the information for the worksheet in **Chapter 2, “System Administrator Tasks,” on page 48.**

When the server is ready, you can begin installing the necessary software:

- If you're configuring an Application server with only Batch, Print, and/or Cache Services, which do not require Oracle software, skip to **[“Install Image Services Software” on page 246.](#)**
- If Oracle9i Release 2 is already installed, you can also skip to **[“Install Image Services Software” on page 246](#)**
- If you're configuring an Application server with either WorkFlo Queue Services, SQL Services, or VWServices, continue with the next section.

Install Oracle9i Software

Server Types

Perform the steps in this section on the **Application** server.

For guidelines on installing the Oracle RDBMS software, refer to the **[Guidelines for Installing and Updating Oracle Software for UNIX Servers.](#)**

Install Image Services Software

Server Types Perform the steps in the section on the **Application** server.

Install the Image Services 4.0.0 software on the Application server by completing the the procedures in **Chapter 5, “Configuring FileNet Image Services Software,” on page 144.**

At the end of that chapter there is a link to return to this appendix. Continue with the next section, and perform the procedures only on the server indicated at the beginning of each section. (You may not need to perform some of the procedures included in this appendix.)

Configure the Root Server

Server Types Perform the steps in this section and its sub-sections on these servers:

Root/Index server during a Dual server installation

Root/Index/Storage Library server during a Combined server installation)

You must modify the configuration database on the Root server to allow for the presence of an Application server on your system.

Define the New Application Server

To create the new Application server complete the following steps:

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server.
- 2 With Windows running, verify you are logged on as **fns** user.
- 3 Open a new window, and enter the following command:

fn_edit &

- 4 Verify that the database and domain names are correct, and click **OK**. (The two-part domain name is structured as follows:<Domain>:<Organization>.)

The FileNet System Configuration Editor window displays.

- 5 Click on the **Procedures** Tab in the System Configuration Editor window.
- 6 Select the Add an Application Server option from the Procedure List Box, and then click Run.

Note Use online help when completing the following steps.

- 7 Enter the name of the Application server. The server name of the Application server is user defined. Click **Next**.
- 8 At the prompt, “Is this a Windows Application Server?”, answer **Yes** if the new Application server is a Windows server. The default is **No**.

- 9 Enter the network address of the Application server (refer to the [“FileNet TC Worksheet” on page 101](#)). Click **Next**.
- 10 If you want to add another Application server, click on the Procedure Tab in the System Configuration Editor window and repeat Steps 6 through 9.

Configure the Oracle Instance

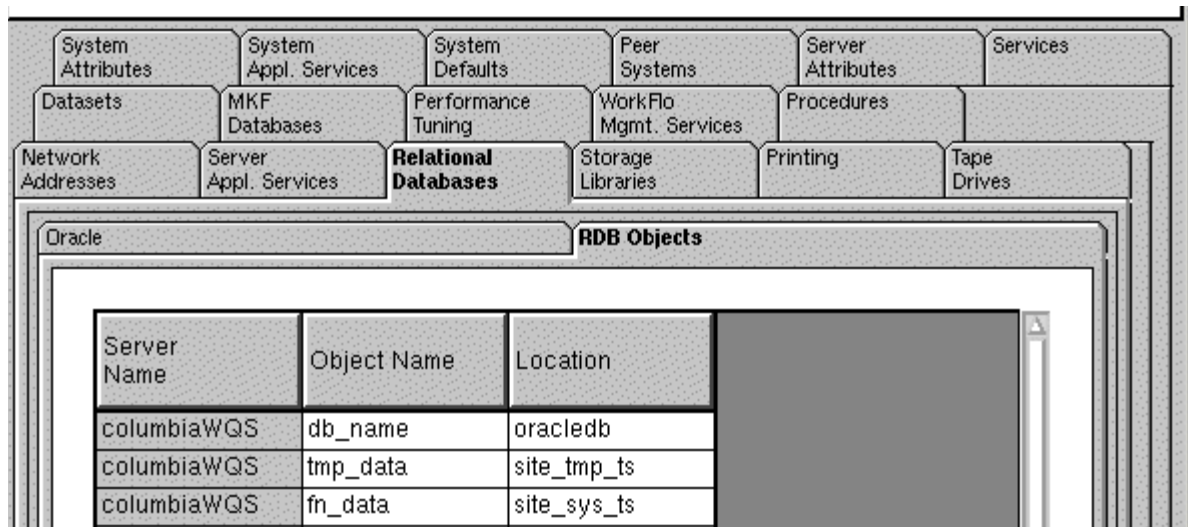
Important!

This procedure assumes that the tablespaces and devices that you specify in the System Configuration Editor either already exist or that you will create them before you initialize the FileNet databases. See the [Guidelines for Installing and Updating Oracle Software for UNIX Servers](#).

In this section you are defining the ownership and the names of the Oracle tablespaces that will be used with the Image Services software.

Define the Dataset Names

- 1 Click the Relational Databases tab, then click the RDB Objects sub-tab.



In the Location column of the RDB Objects window, click on a cell and replace the default FileNet table names with the site-specific table names. While replacing the table names, use the following criteria:

- Change all occurrences of **fnsys_ts** to the name of your dedicated FileNet default tablespace.
- Change all occurrences of **fntmp_ts** to the name of your dedicated FileNet temporary tablespace.

The Image Services software will use the tablespace names entered in the RDB Objects sub-type.

Note

The tablespace names specified in the RDB Objects list must exist before you initialize the FileNet Image Services software databases.

Add Services

Server Types

All services must be added on the **Root** server.

Now you will add the services you want to be able to use on the Application server. You can add the following services:

- Batch Entry services
- Print services
- Cache services
- Structured Query Language (SQL) services
- WorkFlo Queue Services (WQS)
- VWServices

If you will be adding VWServices to this Application server, use the procedures in the appendix to install and configure the Image Services and RDBMS software, and configure a SQL Service on this Application server. After completing those procedures, see the installation handbook for your Process Engine platform for instructions on adding VWServices to the server.

Add only the services you want. After you have added the desired services, go to the section **“Rebuild the Root Server’s Configuration Files” on page 260.**

- 1 Verify you are logged on to your server as **fns** user through an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, and enter the following command:

fn_edit &

- 2 Verify that the database and domain names are correct, and click **OK**. (The two-part domain name is set up as follows: <Domain>:<Org.>.)

The System Configuration Editor window displays.

Add Batch Entry Services

- 1 Click on the Procedures Tab in the System Configuration Editor window.
- 2 Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.
- 3 Click on the domain name of the Application server.

- 4 Choose Batch Entry Services.
- 5 Respond to the Do you want to use fast batch committal? prompt by clicking **yes** or **no**. (If you select yes, default settings are automatically entered into the system. You can change the settings later if necessary.)

Note If fast batch committal is configured, you cannot use cluster indexes. See the [***System Administrator's Handbook***](#) for more details on fast batch committal and clustering.

The maximum document size for remote committals using fast batch is 2.1 GB. See the [***Multi-Committal and Cross-Committal Configuration Handbook***](#) for more information on remote committal.

- 6 You are prompted for the number of BES commitment processes. Choose **2** (the default) or **4**.
- 7 If this is the last service you're adding to the Application server, skip to the section, [***Exit the Configuration Editor***](#) on page 260.

Add Print Services and a Printer

- 1 Click on the Procedures Tab in the System Configuration Editor window.
- 2 Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.
- 3 Click on the domain name of the Application server.
- 4 Choose Print Services. You will be asked if you want to add print services. Click **Yes**.
- 5 Click on the Procedures Tab in the System Configuration Editor window.
- 6 Choose Add Printer.
- 7 You will be asked if this is the default printer you are adding. If it is, click **Yes**. If you are not adding the default printer, click **No**.
- 8 Enter the printer name, which is user-defined.

- 9 Enter the NCH printer name (for example, LJ4M).
- 10 Enter the network address for the printer (for example, 125.0.85.245).
- 11 Select the paper printer size.
- 12 Select the printer eject tray.
- 13 You are prompted regarding adding additional printers. Add more printers as necessary.
- 14 If this is the last service you're adding to the Application server, skip to the section, **[“Exit the Configuration Editor” on page 260.](#)**

Add Cache Services

- 1 Click on the Procedures Tab in the System Configuration Editor window.
- 2 Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.

- 3 Click on the domain name of the Application server.
- 4 Choose Cache Services. Click **OK**.
- 5 If this is the last service you're adding to the Application server, skip to the section, **“Exit the Configuration Editor” on page 260.**

Add SQL Services

- 1 Click on the Procedures Tab in the System Configuration Editor window.
- 2 Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.
- 3 Click on the domain name of the Application server.
- 4 Choose SQL Services.
- 5 If this is the last service you're adding to the Application server, skip to the section, **“Exit the Configuration Editor” on page 260.**

Add WorkFlo Queue Services (WQS)

Follow these steps to add WorkFlo Queue Services (WQS).

Note If you add WorkFlo Queue Services to your system, you **MUST** install RDBMS software on the Application server, or a site-controlled remote Oracle server. Continue adding the necessary services to your system. After you have added all of the needed services, skip to **“Rebuild the Root Server’s Configuration Files” on page 260.**

- 1 Click on the Procedures Tab in the System Configuration Editor window.
- 2 Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.
- 3 Click on the domain name of the Application server.
- 4 Choose WorkFlo Queue Services.
- 5 If this is the last service you’re adding to the Application server, skip to the section, **“Exit the Configuration Editor” on page 260.**

Add VWServices

See the installation handbook for your Process Engine platform for instructions on adding a VWServices to the server.

Add Tape Drive (Optional)

If you wish, you may add a tape drive to your Application server. Make sure the tape drive is configured using the system configuration editor tool.

- 1 Click on the Tape Drives Tab in the System Configuration Editor window.
- 2 If no tape drive is shown in the Tape Drives tab, click the Procedures tab and run the procedure to Add a Tape Drive.
- 3 Select the Tape Drives tab again to verify that it was configured successfully.

Exit the Configuration Editor

- 1 From the System Configuration Editor window, click on the File pull down menu and click on the Exit option.
- 2 You will then be asked if you want to save the changes you have just made to the current configuration database before you exit. Click on the **Yes** button to save the configuration and exit the System Configuration Editor.

Rebuild the Root Server's Configuration Files

Server Types

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

- 1 Verify that the FileNet Image Services software is not running. If the software is running, enter the following command as the **fns** user:

initfns -y stop

- 2 Enter the following command to build the system configuration files:

fn_build -a

This will generate configuration files used by components of the Image Services software. Running **fn_build** automatically creates the Network Clearinghouse database file (/fnsw/local/NCH_db0) if the program does not find an existing file. **fn_build -a** also checks the validity of the software license.

- 3 Make sure this command runs successfully by checking that no errors have occurred. (Any errors that occurred must be corrected before running the command again.)
- 4 Start the Image Services software by entering:

initfnsw start

- 5 Verify that the FileNet Image Services software started successfully, and run the **dupip** script by entering the following:

nohup /fnsw/etc/dupip

Configure the Application Server

Server Types

This section and its sub-sections need to be performed on the **Application server**. FileNet Image Services software must be up and running on the Root server.

It is now necessary to build the Application server's configuration files and initialize the server. The same version of Image Services software must already be installed on the root/index server and the Application server. There must be no Oracle database or NCH database already existing on the Application server.

Note

Make sure FileNet Software is running on the Root server, and not on the Application server. (You can run **whatsup** on the Root server.) If FileNet is running on the Application server, run **killfnsw -DAY**.

Build Application Server Configuration

In this section, you create all directories needed for the installation using `fn_setup`. In addition, you will set the appropriate file ownerships

and permissions for the directories. You will be asked for system-specific information, refer to the [“FileNet TC Worksheet” on page 101](#) for the correct information.

- 1 Verify that you are logged on as **root** user (**the first time**).
- 2 Run `fn_setup` utility by entering the following command:

`/fns/bin/fn_setup`

Several prompts display. Answer the prompts with information related to your system.

- 3 Determine whether or not this is the NCH server, 1 = yes, 2 = no. Reply **no** for the Application server.
- 4 Enter the NCH server name (for example, `root/index_domain:FileNet`). Enter the domain of the **root** server.
- 5 Enter the system serial number (ssn). Enter the ssn of the root server (for example, `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.

- 6 Enter the RDBMS software configured on the server: 0 = None, 1 = Oracle.
- 7 Enter the RDBMS home directory (for example, /usr/ora/920).
- 8 Enter the RDBMS user ID (for example, oracle).
- 9 Enter the RDBMS group ID (for example, dba).

You receive a series of messages displaying the information you entered. An example of the output is displayed below:

```
This is the setup configuration:
NCH server name: hpvenice: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]:
```

- 10** Determine whether or not you want to continue: y/n (default: yes).

You then receive messages similar to the following:

```
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: Calling fn_util initnch
fn_setup: Changing permission on FileNet software and databases
```

When **fn_setup** is finished, you may receive a message indicating “exit status = 0 (success)(this is not an error.)” If necessary, press **Return** to go the system prompt.

Initialize Application Server Datasets

Server Types

Perform procedures in this section (and associated sub-sections) on the **Application server**.

Note If there is **NO** Oracle software, either server or client, installed on this Application server, skip to [“On Application Servers With or Without Oracle” on page 272.](#)

If Oracle software **IS** installed on this Application server, continue with the following steps.

Ask the **Database Administrator** to start Oracle before initializing the FileNet databases.

As **root** user, verify that the Oracle Instance has the correct SID by entering:

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

You will receive output similar to the following where the SID appears at the end of process name. (In this example, the SID is IDB.)

```
<oracle user> 1127 1 0 Mar 11 ? 0:18 ora_pmon_IDB
<oracle user> 1129 1 0 Mar 11 ? 0:34 ora_dbwr_IDB
<oracle user> 1131 1 0 Mar 11 ? 0:18 ora_lgwr_IDB
<oracle user> 1133 1 0 Mar 11 ? 0:01 ora_smon_IDB
```

In addition, make sure the Oracle ID is set appropriately for both **root** and **fns** users. As both users enter the following command to see how they are set:

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

Compare the output of the above command to the setting determined in the FileNet [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#). If it is not set correctly, check with the System Database Administrator to have it set.

In addition, if you have not already done so, you must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. See the FileNet [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#).

If you do not start the Oracle database and create the new tablespaces, the initialization process will fail.

Initialize the Databases on the Application Server

Use the procedures below to initialize the FileNet databases.

On Application Servers with Oracle

Note This section applies to both local and remote Oracle instances.

Ask the **Database Administrator** to start Oracle before initializing the FileNet databases.

- 1 Verify that the following Oracle variables are set to match the existing Oracle instance:

ORACLE_HOME (set for instance)

ORACLE_SID (set for System ID)

ORACLE_UID (set for Oracle database administrator user)

TWO_TASK (set if Oracle database is on a remote Oracle server)

Note These variables do not need to be the same as those specified on the Root server.

- 2 As each user, enter the following commands:

```
echo $ORACLE_SID
```

```
echo $ORACLE_HOME
```

- 3 Compare the output of the above command to the setting determined in the FileNet ***Guidelines for Installing and Updating Oracle Software for UNIX Servers***. If the ORACLE_SID and the ORACLE_HOME are not set correctly, ask the Database Administrator to have the settings changed.

CAUTION In addition, the Database Administrator must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. Refer to the Tablespace table in the FileNet [***Guidelines for Installing and Updating Oracle Software for UNIX Servers***](#) for this information.

If the Oracle software is not running and if the new tablespaces haven't been created, the initialization process will fail.

- 4 Remote Oracle Only:** If the Oracle database is located on a remote Oracle server:

Important! Verify with the Database Administrator that the Oracle9i Client software has been successfully installed on the Image Services server.

- a Copy these four scripts to the /fnsw/oracle directory on that server:

```
/fnsw/oracle/FileNet_site.sql  
/fnsw/oracle/fn_oraupgrade_sp.sql
```

```
/fnsw/oracle/fn_CreateStoredProcedures.sql  
/fnsw/oracle/fn_CreateSPPPermissions.sql
```

- b Ask the Database Administrator to run these two scripts on the remote Oracle server:

FileNet_site.sql

(creates FileNet IS users)

fn_oraupgrade_sp.sql

(installs two stored procedures in the database)

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

On Application Servers With or Without Oracle

At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login as **root** user (a member of the **fnadmin** group) (the first time).

As **root** user, enter the following command to build the system configuration files:

```
fn_dataset_config -i
```

The `fn_dataset_config` tool creates logical volumes, it creates the device files in `/fnsw/dev/1`, and it runs the appropriate tools to initialize the databases on the server.

Note View the `/fnsw/local/logs/fn_util/fn_util.log` file to make sure that there were no errors in the database initialization process.

- 5 When you receive the following prompt, Initialization will remove all FileNet logical volumes, type **Y** (Yes) and press **Return**.
- 6 In the FileNet Dataset Configuration Box window, verify that the datasets are shown correctly with accurate sizes. Refer to the **“FileNet TC Worksheet” on page 101** for your site-specific requirements. Click the up and down arrows in the Modified Size columns to adjust the dataset sizes, if necessary. Click the **OK** button to create and initialize the datasets. The initialization of the FileNet databases

on the server takes about 20 minutes. You should see a screen with information similar to the following when the tool is finished:

```
Increasing Mirror copies Phase
Initializing Databases
Initializing Transient Database

fn_dataset_config:Finished successfully Mon Apr 16
15:05:03 2003
```

- 7 Make sure this command runs successfully by checking the log file and other files in `/fnsw/local/logs` to see that no errors have occurred. Do not accept the “Finished successfully . . .” message alone. Also check the log files.
- 8 **Remote Oracle Only:** The `fn_dataset_config` command also generates this script:

```
/fnsw/local/oracle/ora_users.sql.
```

If Oracle client software is installed on this Application server, and if the Oracle database is located on a remote Oracle server, ask the Database Administrator to copy this script to the `/fns/oracle` directory on the remote server and run it from there.

- 9 If you determine that `fn_dataset_config` ran successfully, go to **“Reset File Ownerships and Permissions” on page 283.**

If `fn_dataset_config` is not successful, continue with the next section.

Add Logical Volumes for the FileNet Datasets

Note Perform the steps in this section only if the `fn_dataset_config` tool fails.

You are now going to manually add the logical volumes for all of the FileNet datasets used by the Application server.

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

sam

- 2 From the **System Administration Manager** menu of SAM, select the **Disks and File Systems** option by pressing the Arrow Up or Arrow Down keys. When the option is highlighted, press **Return**.
- 3 From the Disk and File Systems Manager menu of SAM, select the Logical Volumes option. When the entry is highlighted press **Return**.
- 4 Press the **F4** key to access the menu bar.
- 5 Type **A** to select the Action option.
- 6 From the Action menu, select the Create option using the Arrow keys and press **Return**.
- 7 Select the appropriate volume group for logical volume and Tab to **OK**. Press Return at the Add new Logical Volumes field. Refer to the **[“FileNet TC Worksheet” on page 101](#)** to see the listing of the volume groups.
- 8 Fill in the **LV Name** field with the Logical Volume Names (for example, type in **fn_trans_db0** for the first Logical Volume entry listed in Figure

A-1). Add logical volume names for all of the applicable logical volumes listed in Figure A-1.

- 9 See the “Minimum Size (in MB)...” column of Figure A-1 for the suggested logical volume sizes. Also refer to the [“FileNet TC Worksheet” on page 101](#) for your customer specific sizing requirements. Reference the “Size (MB)” column for your selected logical volume and then type the **<Size in MB>** for the logical volume you are adding in the **LV Size (Mbytes)** field.
- 10 Next, in the Usage field, press **Return** to display the options (File System, Swap, or None), Arrow Down to **None**, and press **Return**. Then Tab to Add, press **Return**.

- 11 Repeat Steps 8-10 for all of the logical volumes you need to create.

Table A-1. FileNet Datasets (Application Server)

Logical Volume Name	Minimum Size of Logical Volumes (in MB)	Increment
fn_trans_db0 (for BES/CS/PS)	20	20
fn_trans_r10 (for BES/CS/PS)	40	40
fn_cache0 (for BES/CS/PS)	100	100

- 12 **When you are finished adding all of the logical volumes**, tab to **OK** and press **Return** again. Finally, at the Create New Logical Volume screen tab to **OK** and press **Return** to create the logical volumes.
- 13 Return to the System Administration Manager menu and exit SAM.

Create Character Device for Each Dataset

Note Perform the steps in this section only if the **fn_dataset_config** tool fails.

The database programs used by FileNet require the use of raw partitions instead of normal HP-UX datafiles. This generally allows the programs to optimize speed and efficiency. This section creates device files for these partitions.

- 1 If you haven't already, logon as **root** user.
- 2 Now you need to display the major and minor numbers for each logical volume you've created and make note of them to complete this section.
 - a To position to the `/dev/<volume group>` directory, enter:

cd /dev/<volume group> (for example, `<volume group>` is **fnvg** or whatever you named it)
 - b To list the contents of the directory, enter the following command:

ls -l rfn*

- c A directory list displays the major and minor numbers for each logical volume. Make a note of the numbers in the spaces below. The following is a sample line from the listing: 64, is the **major** number; 0x01000a, the **minor**.

```
crw-rw---    1  root  sys  64  0x01000a  May 5 13:13 rfn_cache0
```

```
rfn_cache0
```

```
rfn_trans_db0
```

```
rfn_trans_rl0
```

- 3** Enter the following commands to create and go to the /fnsw/dev/1 directory:

```
mkdir -p /fnsw/dev/1
```

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


Note The /dev and/or /1 directories may already exist. If you get a message similar to the following:

```
mkdir: cannot create dev: File exists
```

one or both of the directories already exist. Continue.

4 Refer to the list of major and minor numbers you made earlier.

The general syntax for the command to create a character device is:

```
mknod <dataset> c <major#> <minor#>
```

Note Do not mix up the name of the logical volume (e.g., fn_trans_db0) with the name needed for a device driver (e.g., transient_db0). Also, when you enter the following commands, replace X with the appropriate major number; replace Y with the appropriate minor number for each dataset.

To create a character device for each dataset on the server, enter:

```
mknod cache0 c <X> <Y>  
mknod transient_db0 c <X> <Y>  
mknod transient_r10 c <X> <Y>
```

- 5 Enter the following command to initialize all FileNet databases configured on your server:

```
fn_util inittrans
```

- 6 Enter the following command to initialize all RDBMS databases configured on your server (only for servers with WQS or SQL services):

```
fn_util initrdb
```

This program may take about 10 or 15 minutes. A message displays as the new database partitions are initialized and zeroed out.

Reset File Ownerships and Permissions

- 1 Run `fn_setup` utility by entering the following command:

`/fnsb/bin/fn_setup`

Refer to information gathered in the [“FileNet TC Worksheet” on page 101](#) of this guide to respond to the following prompts.

- 2 Determine whether or not this is the NCH server, 1 = yes, 2 = no. Reply **no** for the Application server.
- 3 Enter the NCH server name (for example, `root/index_domain:FileNet`). Enter the domain of the root server.
- 4 Enter the system serial number (ssn). Enter the ssn of the root server.

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.

- 5 Enter the RDBMS software configured on the server: 0 = None, 1 = Oracle.
- 6 Enter the RDBMS software home directory (for example, /usr/ora/920).
- 7 Enter the RDBMS user ID (for example, oracle).
- 8 Enter the RDBMS group ID (for example, dba).
- 9 Determine whether or not you want to continue: y/n (default: yes). When you choose yes, you will receive a display similar to the following, recapping the selections you have made, followed by fn_setup status messages.

- 10** You receive a series of messages displaying the information you entered. An example of the output is displayed below:

```
NCH server name: hpvenice:FileNet
SSN: 11008016xx
Relational database type: oracle
Relational database home: /usr/ora/920
Relational database user ID: oracle
Relational database group ID: dba
```

- 11** You then receive messages similar to the following:

```
fn_setup: Creating file /fnsw/local/setup_config
fn_setup: Creating file /fnsw/local/ssn
fn_setup: Creating file /fnsw/local/sd/nch_domain
fn_setup: Calling fn_util initnch
fn_setup: Changing permission on FileNet software and databases
```

- 12** Check the ownership of **ctl.ora** by looking at the oracle control file directories using the following commands:

```
cd /fnsw/local/oracle/control0  
ls -al
```

Then repeat the same command for the **control1** directory. **ctl.ora** should be owned by **oracle:dba**.

- 13** From the command line prompt, logon as **fnsw** user and enter the following command to bring up the FileNet software:

```
initfnsw restart
```

- 14** Verify that the FileNet software is up, and run the **dupip** script by entering the following:

```
nohup /fnsw/etc/dupip
```

Bring Up FileNet Software

Server Types

Perform all of the procedures in this section (and associated sub-sections) on the **Application server**.

- 1 Logon as **fns** user (if you aren't already), and start X Windows (if you have not already done so).
- 2 Stop all FileNet processes by entering the following command:

killfns -DAy

- 3 Start the updated FileNet Application server software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

CAUTION

If Oracle software is installed on this Application server, be sure to start the Oracle software before attempting to start the FileNet Image Services for the first time. If the Oracle software is not available when the

Image Services software starts, the Image Services software will fail and will display error messages. If you receive Image Services error messages, start the Oracle software and restart the Image Services software.

- 4 After the **TM_daemon.exe** message displays in the Process table, select the Monitor menu.
- 5 From the Monitor menu, select the Event Logs option. (The FileNet Event Logs window displays.)
- 6 From the Event Logs window, select the DISPLAY menu, and select Dynamic. (The Dynamic option enables screen refreshes each time the messages are logged.) Return to the FileNet Task Manager window, but do not close the Event Logs window.
- 7 From the FileNet Task Manager window, select START.

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

- 8 Select the CLOSE button. (The Current Status window closes.)
- 9 Review the contents of the Event Log window to make sure that there are no error messages from the software startup.

Modify the `/etc/inittab` File (Optional)

You must edit again the `/etc/inittab` file to allow the Image Services software to automatically start during the boot process.

- 1 Verify that you are logged on as **root** user and change to the `/etc` directory by entering the following command:

```
cd /etc
```

- 2 Using your preferred editor (for example, **vi**), open and prepare to edit the `inittab` file.
- 3 Locate and re-enable the following line:

```
rcfn:2:wait:/bin/sh /etc/rc.inittfns </dev/console >/dev/console 2>&1
```

Reboot the Application Server

Important! All Oracle users should be logged off the server and the Oracle instance be shutdown before doing the following system 'shutdown' command. Failure to do so could result in a corrupted database!

In this section, you need to reboot your server(s).

- 1 Verify that you are logged on as **root** user.
- 2 Move to your root directory and reboot the server by entering the following series of commands:

```
cd /  
shutdown -ry 0
```

Make System Configuration Backups

Server Types

Perform the steps in this appendix on both the **Root server** and the **Application server**.

You need to make backups of your system configuration in case something unforeseen occurs.

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server as **root** user.
- 2 Make a copy of the **inittab** file, and stop the FileNet software by entering the following series of commands:

```
cd /  
cp /etc/inittab /fnsw/etc/inittab.backup  
initfnsw stop
```

Note Shutdown the FileNet software on the Application server before the Root/Index server.

3 Create a backup of your LVM configuration to protect the system from potential disk crashes. Refer to the **man** page for more information regarding the **vgcfgbackup** command. Complete the following bullets:

- If you have only the root volume group (**rootvg**) on your system, enter the following command:

```
vgcfgbackup /dev/vg00
```

- If you have the FileNet volume group (**fnvg**) (or some other <volume group>) on your system, also enter the following command:

```
vgcfgbackup /dev/fnvg
```

- This step will make restores easier if the system ever crashes. These LVM configuration backups are stored in an area that is automatically accessed during a restore.

Note In the event of a disk crash, it will be beneficial to have copies of the following files or command output listings (hard copies at least) to help in the recovery:

system

fstab

vgdisplay -v vg00 (command output)

vgdisplay -v fnvg (if applicable) (command output)

ioscan -f (command output)

- 4 Next, make a system backup tape using the Backup and Recovery option in SAM. **This backup will take about 45 minutes.** Refer to the *HP-UX System Administration Tasks* for information about system backups and restores.
- 5 From the command line prompt, enter the following command to bring up the FileNet software:

initfnsw restart

- 6 Verify that the FileNet software is up, and run the **dupip** script by entering the following:

```
nohup /fnsw/etc/dupip
```

Begin Production Mode

After you've backed up the system, the Application server is ready to be put into production.

Appendix B – Adding a Storage Library Server

This appendix describes how to configure multiple Storage Library servers on your system, and it is structured for use with some of the procedures already documented in the main body of the installation procedure. Where necessary, this appendix references procedures (by section name and page number) of the procedure you must perform, even though the note at the beginning of the section may not mention the server type you are installing. Some procedures necessary for adding multiple Storage Library servers are not documented elsewhere and have been included (in the appropriate sections) in this appendix.

Before You Begin

To successfully complete the instructions in this appendix, you must have already performed the following actions:

- 1 Gathered the information requested in **“FileNet TC Worksheet” on page 101** relevant to the Storage Library server(s).
- 2 Done all of the steps in the sub-section **“Operating System Requirements” on page 49.**
- 3 Transferred the information to the **“FileNet TC Worksheet” on page 101.**

If you have not completed these steps for the Storage Library server, do them now before continuing with the rest of this appendix.

Multiple Optical Library Server Uses

The portion of the FileNet Image Services software that files and retrieves document images is known as Storage Library Services. This software controls every activity in the Optical Disk Library to make sure that all documents are stored and retrieved from the optical disks in an orderly manner. Storage library services can be added to any system on a Combined server, Dual server, or multi-server installation. The Storage Library server keeps track of the name and location of every

document stored in the Optical Disk library. In addition, the server contains one or more magnetic disk drives to store images temporarily before they are written to optical disk permanently.

Multiple Storage Library servers are setup on a system to enhance capacity and/or performance:

- If you already have as many optical disk libraries on a server as possible, or if you cannot physically fit another optical disk library in close enough proximity to the existing server, you may need another server in order to add an optical disk library to the system and to allow the system to handle more disks on-line.
- If the CPU, I/O bus, or magnetic disks on a Storage Library server are already pushed to their maximum throughput, adding an optical library server will increase performance. However, if the existing server has not reached its performance limit, adding another optical library server will decrease performance slightly because of the overhead of controlling a second server.

Multiple Storage Library servers are **not** a solution for a disaster recovery plan because you cannot write the primary copy of one docu-

ment to one Storage Library server and the transaction log copy to another Storage Library server. Both copies will always be written to the same Storage Library server. Note that Database Maintenance will not let you select destination Storage Library servers for a transaction log family.

Prepare Storage Library Server(s)

Perform the procedures only on the Storage Library server(s). Perform the referenced procedures listed below in the order in which they appear.

Note You do not need install RDBMS software on the Storage Library server(s) unless you are also going to install Structured Query Language (SQL) services, WorkFlo Queue Services (WQS), or VWServices on the Storage Library server.

Some of the following sections contain information related to installing and configuring RDBMS software, so unless you're planning to install Oracle, you can skip all procedures related to RDBMS configuration.

- 1 Set up the volume group(s) by completing either [“Extend the Root Volume Group \(vg00\) \(Optional\)” on page 70](#), or [“Create the FileNet Volume Group \(fnvg\) \(Optional\)” on page 72](#), depending on your preference.
- 2 Create the Image Services file systems by completing [“Create File Systems” on page 95](#).
- 3 Create the **fnadmin** and **fnop** groups by completing [“Create fnadmin and fnop Groups” on page 88](#).
- 4 Using the procedures in [“Create FileNet Users and fnusr Group” on page 91](#), create the **fns** user and the **fnusr** and **dba** groups.

Note On the Storage Library server you don't need to create an RDBMS user or group.

Install Image Services Software

- 1 Install the Image Services 4.0.0 software on the Storage Library server(s) by completing the section [“Mount the IS CD-ROM” on page 116](#) and [“Install the IS Software” on page 118](#).
- 2 Install show stopper fixes on the Storage Library server(s) by completing [“Install the Required Pre-Startup Fixes” on page 122](#).
- 3 Set up the installation environment using **inst_templates** on the Storage Library server(s) by completing [“Install the User Environment Templates” on page 123](#) along with its sub-sections.
- 4 Set the **fns** user password by completing [“Set Up Passwords for the fns User \(Optional\)” on page 126](#).
- 5 Continue with the next section. Perform the procedures only on the server indicated at the beginning of each section. (You may not need to perform some of the procedures included in this appendix.)

Configure the Root Server

Server Types

Perform the steps in this section and its sub-sections on the **Root server**, or on each server with a cache.

Commit Uncommitted Batches

You must make sure that any uncommitted batches are not lost while you configure the Storage Library server.

- 1 Verify that the FileNet Image Services software is up and running by entering the following command:

whatsup

You will receive a display similar to the following. (Your local System Administrator can tell you if anything appears to be abnormal.)

USER	PID	PPID	Start Time	Processes
fns	12427	1	06/14/2003	COR_Listen -px -s5 -d20
fns	21133	1	06/14/2003	COR_Listen -px -s1099
fns	21385	1	06/14/2003	COR_Listen -pt -d20
fns	22708	1	06/14/2003	CSM_daemon
fns	14810	1	06/14/2003	CSMs
fns	15256	1	06/14/2003	DOCs
fns	16275	1	06/14/2003	INXbg -s IndexServer
fns	16515	1	06/14/2003	MKF_clean
fns	11420	1	06/14/2003	PRI_daemon
fns	12193	1	06/14/2003	PRI_fetch 0

USER	PID	PPID	Start Time	Processes
fns	12427	1	06/14/2003	COR_Listen -px -s5 -d20
fns	21133	1	06/14/2003	COR_Listen -px -s1099
fns	21385	1	06/14/2003	COR_Listen -pt -d20
fns	22708	1	06/14/2003	CSM_daemon
fns	14810	1	06/14/2003	CSMs
fns	15256	1	06/14/2003	DOCs
fns	16275	1	06/14/2003	INXbg -s IndexServer
fns	16515	1	06/14/2003	MKF_clean
fns	11420	1	06/14/2003	PRI_daemon
fns	12193	1	06/14/2003	PRI_fetch 0

- 2 Print or delete all outstanding print requests.
- 3 Commit or delete all uncommitted batches.
- 4 To examine the remaining contents of cache, enter:

CSM_tool

Note FileNet Image Services software must be running for **CSM_tool** to work properly.

- 5 To obtain statistics on `bes_cache`, `page_cache`, and `print_cache`, enter the following at the **CSM_tool** prompt:

```
st
```

All caches should show no locked objects. These represent uncommitted batches, unwritten images, and pending print jobs.

Note If you have any FAX servers, there will be two locked objects per FAX server in `print_cache`.

- 6 Type the following to quit the **CSM_tool**:

```
q
```

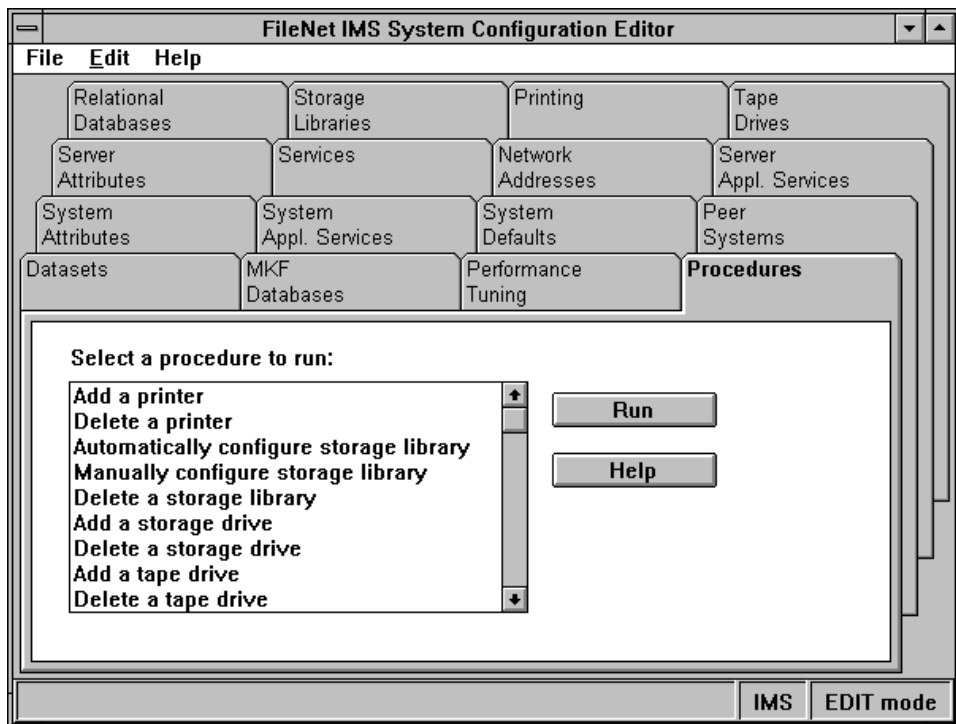

Add Storage Library Server(s)

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server.
- 2 With Windows running, verify you are logged on as **fns** user.
- 3 Open a new window and enter the following command:

fn_edit &

- 4 Verify the two-part domain information is correct. (The two-part domain name is set up as follows: <Domain>:<Organization>.)

The System Configuration Editor window displays.



- 5 Click on the Procedures Tab in the System Configuration Editor window.
- 6 Select the Add a Storage Library server option from the Procedure List Box, then click **Run**.

Note Use online help when completing the following steps.

- 7 Enter the name of the Storage Library server. The server name of the storage library server is user defined. Click **Next**.
- 8 Enter the network address of the Storage Library server (refer to the **“FileNet TC Worksheet” on page 101**). Click **Next**.
- 9 Enter the path for the cache partition (default: /fns/dev/1/cache0).
- 10 Enter the cache dataset size.
- 11 Enter the path for the transient database (default: /fns/dev/1/transient_db0).

- 12 Enter the dataset size for the transient database.
- 13 Enter the path for the transient database redo log (default: /fnsw/dev/1/transient_r10).
- 14 Enter the dataset size for the transient database redo log.
- 15 Respond to the “Do you want to use fast batch committal?” prompt by clicking **yes** or **no**. (If you select yes, default settings are automatically entered into the system. You can change the settings later if necessary.)

Note If fast batch committal is configured, you cannot use cluster indexes. See the ***System Administrator’s Handbook*** for more details on fast batch committal and clustering.

The maximum document size for remote committals using fast batch is 2.1 GB. See the ***Multi-Committal and Cross-Committal Configuration Handbook*** for more information on remote committal.

- 16** You are prompted for the number of BES commitment processes. Choose **1 - 4**.
- 17** Enter the path for the permanent database (default: `/fnsw/dev/1/permanent_db0`).
- 18** Enter the dataset size for the permanent database.
- 19** Enter the path for the permanent database redo log (default: `/fnsw/dev/1/permanent_rl0`).
- 20** Enter the dataset size for the permanent database redo log.
- 21** You can make sure you have entered the information correctly by clicking on the Network Tab in the System Configuration Editor window. You should see the Storage Library server listed.

In addition, click on Server Application Services Tab; you should see the Storage Library server listed.

Click on the Dataset Tab to see the datasets you added to the Storage Library server including cache0, transient_db0, transient_r10, permanent_db0, permanent_r10.

- 22 From the System Configuration Editor window, click on the **File** pull down and click on the **Exit** option.
- 23 You will then be asked if you want to save the changes you have just made to the current configuration database before you exit. Click on this button to save the configuration and exit the System Configuration Editor.

Update Root Server Configuration Files

- 1 On the Root server, logon as **fns** user.
- 2 Verify the FileNet software is not running. If the software is running, enter the following command:

initfns stop

- 3 Update the entire configuration for the server by entering the following command at the shell prompt:

fn_build -a

This will generate configuration files used by the components of the Image Services software. Each file is produced in two steps. First a temporary file is produced with a **.new** extension. Then, if there is a difference between the **.new** version and the existing version, the **.new** version of the file is copied over the existing version of the file. (**fn_build -a** also checks the validity of the software license.)

- 4 Make sure the command runs successfully by checking that no errors have occurred. (Any error that occur must be corrected before running the command again.)

Configure the Storage Library Server

Server Types

Perform this section and its sub-sections on each **Storage Library server** being added to the system.

Make sure that the FileNet software is running on the Root server. (You can do a **whatsup** on the Root server.)

Set File Ownerships and Permissions

The **fn_setup** tool is used to set the Storage Library server's file ownerships and permissions. You will be asked for system-specific information, refer to the [“FileNet TC Worksheet” on page 101](#) of this guide for the correct information.

- 1 Verify that you are logged on as **root** user (the first time).
- 2 Run the **fn_setup** utility by entering the following command:

```
/fnsw/bin/fn_setup
```


Several prompts display. Answer the prompts with information related to your system.

- 3 Determine whether or not this is the NCH server, 1 = yes, 2 = no (default: no). Reply **No** for the Storage Library server.
- 4 Enter the NCH server name (for example, root/index_domain:FileNet). Enter the domain and organization of the **Root** server.
- 5 Enter the system serial number (ssn). Enter the ssn of the **Root** server (for example, 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.

- 6 Enter the RDBMS software configured on the server: 0 = None, 1 = Oracle. (For a Storage Library server, select 0=none.)

Relational databases are only configured on servers with Index services, WorkFlo Queue Services (WQS), SQL services, or VWServices.

You receive a series of messages displaying the information you entered. An example of the output is displayed below:

```
This is the setup configuration:
NCH server name: clark:FileNet
SSN: 11008016xx
Relational database type: None
Do you want to continue (y/n) [y]:
```

- 7 Determine whether or not you want to continue: y/n (default: yes).

You then receive messages similar to the following:

```
fn_setup: Creating file /fnsw/local/setup_config
fn_setup: Changing permission on FileNet software
and databases
```

When **fn_setup** is finished, you may receive a message indicating “exit status = 0 (success)(this is not an error.)” If necessary, press **Return** to go the system prompt.

Build Configuration Files

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server as **root** user (a member of the **fnadmin** group) (the first time).
- 2 Enter the following command to build the system configuration files:

```
fn_dataset_config -i
```

The **fn_dataset_config** tool will create logical volumes, will create the device files in **/fnsw/dev/1**, and will run the appropriate tools to initialize the databases on the server.

- 3 When you receive the following prompt, “Initialization will remove all FileNet logical volumes”, click on **Y** (Yes).

- 4 In the FileNet Dataset Configuration Box window, verify that the datasets are shown correctly with accurate sizes. Refer to the [“FileNet TC Worksheet” on page 101](#) for your site-specific requirements. Click the up and down arrows in the Modified Size columns to adjust the dataset sizes, if necessary. Click the **OK** button to create and initialize the datasets. The initialization of the FileNet databases on the server will take about 20 minutes. You should see a screen with information similar to the following when the tool is finished:

```
Increasing Mirror copies Phase
Initializing Databases
Initializing Transient Database
Initializing Permanent Database

fn_dataset_config:Finished successfully Mon Feb 2
15:05:03 2003
```

- 5 Make sure this command runs successfully by checking the log file and other files in `/fnsw/local/tmp` to see that no errors have occurred. Do not accept the “Finished successfully . . .” message alone. Also check the log files. If you determine the command has run successfully go to

“Configure Network Parameters (Optional)” on page 324. If **fn_dataset_config** is not successful continue with the next section.

Add Logical Volumes for the FileNet Datasets

Note Perform the steps in this section only if the **fn_dataset_config** tool fails.

You are now going to manually add the logical volumes for all of the FileNet datasets used by the Storage Library server.

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

sam
- 2 From the System Administration Manager menu of SAM, select the Disks and File Systems option by pressing the Arrow Up or Arrow Down keys. When the option is highlighted, press **Return**.
- 3 From the Disk and File Systems Manager menu of SAM, select the Logical Volumes option. When the entry is highlighted press **Return**.

- 4 Press the **F4** key to access the menu bar.
- 5 Type **A** to select the Action option.
- 6 From the Action menu, select the Create option using the Arrow keys and press **Return**.
- 7 Select the appropriate volume group for logical volume and Tab to **OK**. Press Return at the Add new Logical Volumes field. Refer to the [“FileNet TC Worksheet” on page 101](#) to see the listing of the volume groups.
- 8 Fill in the LV Name field with the Logical Volume Names (for example, type in fn_perm_db0 for the first Logical Volume entry listed in Figure E-1). Add logical volume names for all of the applicable logical volumes listed in Table E-1.
- 9 See the “Minimum Size (in MB)...” column of Table B-1 for the suggested logical volume sizes. Also refer to the [“FileNet TC Worksheet” on page 101](#) for your customer specific sizing requirements. Reference the “Size (MB)” column for your selected logical volume and

then type the **<Size in MB>** for the logical volume you are adding in the LV Size (Mbytes) field.

- 10** Next, in the Usage field, press **Return** to display the options (File System, Swap, or None), Arrow down to **None**, and press **Return**. Then tab to **add**, press **Return**. Repeat Steps 8-10 for all of the logical volumes you need to create.

Table B-1. FileNet Datasets

Logical Volume Name	Minimum Size of Logical Volumes (in MB)	Increment
fn_perm_db0	100	100
fn_perm_rl0	40	40
fn_trans_db0	20	20
fn_trans_rl0	40	40
fn_cache0	100	100
NOTE: If you are going to increase the size of any of the logical volumes, you must increase the size by a multiple of the number shown in the "Increment" column.		

- 11 When you are finished adding all of the logical volumes, tab to **OK** and press **Return** again. Finally, at the Create New Logical Volume screen tab to **OK** and press **Return** to create the logical volumes.
- 12 Return to the System Administration Manager menu of SAM and press **F8** to exit SAM.

Create Character Device for Each Dataset

Note Perform the steps in this section only if the **fn_dataset_config** tool fails.

The database programs used by FileNet require the use of raw partitions instead of normal HP-UX datafiles. This generally allows the programs to optimize speed and efficiency. This section creates device files for these partitions.

- 1 If you haven't already, logon as **root** user.
- 2 Now you need to display the major and minor numbers for each logical volume you've created and make note of them to complete this section.

- a To position to the `/dev/<volume group>` directory, enter:

```
cd /dev/<volume group> (for example, <volume group> is  
fnvg or whatever you named it)
```

- b To list the contents of the directory, enter the following command:

```
ls -l rfn*
```

- c A directory list displays the major and minor numbers for each logical volume. Make a note of the numbers in the spaces below, because you are going to be using them on the next page. Do not create any character devices for file systems if any file systems happened to be made as part of your `fnvg` (for example, `rfnsw`). The following is a sample line from the listing: 64, is the **major** number; 0x01000a, the **minor**.

```
crw-rw---  1 root sys  64 0x01000a  May 5 13:13 rfn_cache0.
```

```
rfn_cache0 _____  
rfn_perm_db0 _____  
rfn_perm_rl0 _____  
rfn_trans_db0 _____  
rfn_trans_rl0 _____
```

- 3 Enter the following commands to create and go to the /fnsw/dev/1 directory:

```
mkdir -p /fnsw/dev/1  
cd /fnsw/dev/1
```

Note The /dev and/or /1 directories may already exist. If you get a message similar to the following:

```
mkdir: cannot create dev: File exists
```

one or both of the directories already exist. Continue.

- 4 Refer to the list of major and minor numbers you made earlier.

The general syntax for the command to create a character device is:

```
mknod <dataset> c <major#> <minor#>
```

Note Do not mix up the name of the logical volume (e.g., `fn_perm_db0`) with the name needed for a device driver (e.g., `permanent_db0`). Also, when you enter the following commands, replace X with the appropriate major number; replace Y with the appropriate minor number for each dataset.

To create a character device for each dataset on the Storage Library server, enter:

```
mknod cache0 c <X> <Y>  
mknod permanent_db0 c <X> <Y>  
mknod permanent_rl0 c <X> <Y>
```

```
mknod transient_db0 c <X> <Y>
```

```
mknod transient_r10 c <X> <Y>
```

- 5 On the new Storage Library server(s), enter the following commands in the order shown:

```
fn_util init
```

The **fn_util init** script initializes the transient and permanent databases on the Storage Library server(s). After the databases are initialized, the scripts check for the presence of permanent.ddl and transient.ddl files in the /fnsw/local/sd/1 directory. A message displays as the new database partitions are initialized and zeroed out.

Configure Network Parameters (Optional)

This section assumes that you have already installed and configured the appropriate network protocol on the Root/Index server.

Before beginning the steps included in this section, you must know the following information: the Internal Network Number for your system,

the File server name, and the MAC address. (Refer to the [“FileNet TC Worksheet” on page 101](#) for this information.)

Note If you are configuring Dual Homing support, you must have two network adapter cards installed on your system: one for Ethernet, one for Token Ring.) Configure the appropriate protocol for each network adapter card on your system.

To configure the network parameters, complete the following steps:

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server(s).
- 2 With Windows running, verify you are logged on as **fns**.
- 3 Open a new window and enter the following command:

fn_edit &

- 4 Verify the two-part domain information is correct. (The two-part domain name is set up as follows: <Domain>:<Organization>.)
- 5 Select the System Attributes Tab and select Network Protocols from the Options list.
- 6 From the Protocol Preference option choose the TCP option for TCP/IP protocol.
- 7 From the Protocol Preferences option field, select the system appropriate preference from the pull down options list.
- 8 From the System Configuration Editor window, select the Network Addresses Tab.
- 9 Enter the network address (if one is not already present).

You can enter up to eight network addresses for each network card in the server. The format for a TCP/IP address is shown in the following example:

10.2.53.33

After the FileNet Image Services software restarts, `fn_build` will determine if any changes have occurred in the `fn_edit` configuration.

Starting Databases and Network Software

- 1 On the new Storage Library server(s), log on as **fns**w user.
- 2 Run a start database command on every Storage Library server to start up the MKF databases and the Network Clearinghouse background processes that are needed during the installation process.

As **fns**w user, enter the following command on every Storage Library server:

fn_util startdb

Running **fn_util startdb** shuts down the FileNet Image Services software and starts up all FileNet databases present on the Storage Library server.

Adding a New Storage Library Server

After you have executed the **fn_util startdb** script on every Storage Library server, you are ready to run the **add_osvr** utility which adds a new Storage Library server.

In addition to adding a new Storage Library server, the **add_osvr** utility updates the permanent and transient databases on each Storage Library server to reflect the new server(s). The **add_osvr** utility updates the family and surface locator tables on the Document Locator server and the family disk table on each new Storage Library server.

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server.
- 2 With Windows running, verify you are logged on as **fns** user.
- 3 Type **Xtaskman** at the system prompt. Click on Backup. This will start COR.listen.

- 4 Obtain the server id assigned to each new Storage Library server using one of the following bulleted methods.
 - The server id is assigned by the **fn_edit** utility. Run **fn_edit**. Click on the Server Applications Services Tab, then the Scheduling sub-tab. Scroll to the right to see the OSAR ID for each server.
 - Run **nch_tool** and list the properties to view the Storage Library server id in the NCH database. For the above example, the **nch_tool** command would be:

listprop OsarServer2

- 5 To run **add_osvr**, enter the following from any station with Storage Library Services:

add_osvr <server id 1> <server id 2> ... <server id n>

where **<server id 1> <server id 2> ... <server id n>** are the Storage Library server identification numbers of the servers you are adding. (These are **not** the station numbers.) Enter a space between each server id.

Entering **add_osvr** with no parameters displays a description of the program and a usage statement. After the **add_osvr** utility has completed successfully, you will see the following message:

```
program terminated successfully
```

Note If the system crashes or is rebooted while **add_osvr** is running, you can rerun the program. If **add_osvr** fails for any reason, correct the problem and rerun the program. DO NOT run any other programs until **add_osvr** completes successfully. If the process cannot be completed, restore your system from the backup tape.

Verify Optical Device Files on the Storage Library Server

Note If you're configuring a cache-only server (no optical devices are attached to the server), skip to section, [**“Reboot the Server” on page 350**](#)

Otherwise, make sure the optical devices are powered on and active

(you can use `ioscan` to check this). If the optical device is not powered on, the optical device will not be found.

To verify the new driver for the HP optical disk drive and the HP Storage Library system, follow these steps:

- 1 Make sure that the storage library devices are powered on and are active.
- 2 **At your Storage Library server's terminal**, and as **root** user, use **ioscan** to determine the addresses of the HP optical drives and storage libraries.

ioscan -f | less

Look in the **ioscan** display for your storage libraries and drives. You can identify the storage drives by locating the vendor ID and the product ID in the Description column.

If necessary, refer to the documentation that accompanies your storage library to determine the vendor and product IDs to look for.

(Note: This sample display has been annotated for clarity. Lines beginning with “^^^^^^^^” are descriptive comments.)

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
bc	0		root	CLAIMED	BUS_NEXUS	
bc	1	8	bc	CLAIMED	BUS_NEXUS	Pseudo Bus Conve
bc	2	8/0	bc	CLAIMED	BUS_NEXUS	Bus Converter
tty	0	8/0/0	mux2	CLAIMED	INTERFACE	MUX
ext_bus	0	8/4	c720	CLAIMED	INTERFACE	GSC add-on
Fast/Wide SCSI Interface						
target	0	8/4.5	tgt	CLAIMED	DEVICE	
disk	0	8/4.5.0	sdisk	CLAIMED	DEVICE	SEAGATE ST32171
target	1	8/4.7	tgt	CLAIMED	DEVICE	
ctl	0	8/4.7.0	sctl	CLAIMED	DEVICE	Initiator
target	2	8/4.8	tgt	CLAIMED	DEVICE	
disk	1	8/4.8.0	sdisk	CLAIMED	DEVICE	SEAGATE ST32171
^^^^^^^^	++++	Everything on one SCSI bus (one FileNet and one HP library:				
ext_bus	4	8/8	c720	CLAIMED	INTERFACE	GSC add-on
Fast/Wide SCSI Interface						
target	3	8/8.0	tgt	CLAIMED	DEVICE	
disk	4	8/8.0.0	sdisk	CLAIMED	DEVICE	LMS LD

```

6100SER.
  ^^^^^^^^^^+++++ Philips drives (LMS) ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
target      5  8/8.3          tgt          CLAIMED   DEVICE
unknown    -1  8/8.3.0
  ^^^^^^^^^^+++++++ FileNet 50GTL or 40GTL or 107 GTL ^SCSI arm...^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
target      5  8/8.4          tgt          CLAIMED   DEVICE
disk       -1  8/8.4.0        sdisk       CLAIMED   DEVICE       HP       C1716T
  ^^^^^^^^^^+++++++ HP drive ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
target      5  8/8.5          tgt          CLAIMED   DEVICE
disk       -1  8/8.5.0        sdisk       CLAIMED   DEVICE       HP       C1716T
  ^^^^^^^^^^+++++++ HP drive ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
target      5  8/8.6          tgt          CLAIMED   DEVICE
unknown    -1  8/8.6.0          UNCLAIMED UNKNOWN    HP       C1113F
  ^^^^^^^^^^+++++++ HP Library ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
target      6  8/8.7          tgt          CLAIMED   DEVICE
ctl         3  8/8.7.0        sctl         CLAIMED   DEVICE       Initiator
ba          0  8/16          bus_adapter CLAIMED   BUS_NEXUS   Core I/O Adapt
ext_bus     2  8/16/0        CentIf       CLAIMED   INTERFACE   Built-in Paral

```

Tip If you cannot locate the storage library devices in the **ioscan** display, you can try this method as a last resort:

- a. Shutdown the server and turn power off to all the storage library devices.
- b. Turn power back on only to the server and run the **ioscan** command, saving the output to a file. For example:

```
ioscan -f > /fnsw/local/tmp/ioscan_pwr.off
```

- c. Shutdown the server again and turn power back on to all the storage library devices.
- d. Turn power on to the server and run the **ioscan** command, saving the output to a different file. For example:

```
ioscan -f > /fnsw/local/tmp/ioscan_pwr.on
```

- e. Find the differences between the two files by entering:

```
diff /fnsw/local/tmp/ioscan_pwr.off /fnsw/local/tmp/ioscan_pwr.on
```

- f. The resulting display should contain only the lines pertaining to the storage library devices.
-

Write down the H/W Paths (you only need to write down the numbers separated by dots after the right-most slash), the Class, and the Description (model numbers) of each storage library device shown on the display.

- 3** Perform the steps in whichever one of the two following subsections applies to your server. Verify that the optical device drivers have been updated successfully.
- On HP 9000 servers that support the HP-PB bus, you need to verify both the `/fnsw/local/sd/sod.conf` file and the `/stand/system` file by completing both the section, **“Verify the /fnsw/local/sd/sod.conf File” on page 336** and the section, **“Verify the /stand/**

system File on a Storage Library Server with HP-PB Bus SCSI Adapters” on page 340.

- On all other HP 9000 servers, you need to verify only the /fnsw/local/sd/sod.conf file by completing the next section, **“Verify the /fnsw/local/sd/sod.conf File”** .

Note The D-Class, R-Class, and V-Class servers are examples of servers that do **not** support the HP-PB bus.

The K-Class servers support **both** the HP-PB bus and the HSC bus, so be extremely careful to determine which type of SCSI adapter is used to connect the storage library.

Verify the /fnsw/local/sd/sod.conf File

Server Types Perform the steps in this subsection on all HP-UX servers.

- 1 Change to the appropriate directory and display the contents of the file:


```
cd /fnsw/local/sd
more sod.conf
```

(If the sod.conf file does not exist, use **vi** or your preferred text editor to create it.)

- 2 Look for a line for each of the storage library devices shown on the **ioscan** display. The sod.conf file should include lines for both optical devices and robotic arm devices, using the following format:

```
driver <H/W Path> <driver>
driver <H/W Path> <driver>
. . .
driver <H/W Path> <driver>
```

where:

The <H/W Path> is the entire H/W path field shown on the ioscan display line for each library device.

The <driver> is **spt** for HP-PB bus SCSI adapters and is **sctl** for all others.

Bus	Driver
HP-PB	spt
HSC	sctl
GSC	sctl
PCI	sctl

If necessary, consult the HP technical documentation to identify the bus used for your SCSI adapter.

- 3 The sod.conf file must specify a driver for each storage library device shown on the **ioscan** display. Your sod.conf file might have lines that look similar to this:

```
driver 8/8.0.0 spt
```

```
driver 8/8.1.0 spt
```

```
driver 8/8.3.0 spt
```

```
- or -
```

```
driver 8/8.4.0 sctl  
driver 8/8.5.0 sctl  
driver 8/8.6.0 sctl
```

- If lines similar to this already appear and are correct, the file has been updated successfully.
 - If you are not able to locate these lines or if they're inaccurate, you need to add or change them manually. Use your preferred text editor, such as **vi**, to edit the file.
- 4 Save your changes to the file, and exit the editor.
 - 5 If this server has **no** HP-PB bus SCSI adapters, skip to the section, **[“Create Optical Device Files” on page 345.](#)** (You do not have to rebuild the kernel or reboot the server at this point.)

Verify the `/stand/system` File on a Storage Library Server with HP-PB Bus SCSI Adapters

Server Types

Perform the steps in this subsection on servers that have any SCSI adapter for the storage libraries on the HP-PB bus. For example, HP 28655A single-ended and HP 28696A differential adapters.

- 1 Change to the appropriate directory and display the contents of the file:

```
cd /stand  
more system
```

- 2 In the **system** file, look for a line for each storage library device that is attached to an HP-PB bus SCSI adapter, as shown on the **ioscan** display. For example:

```
driver 8/8.0.0 spt  
driver 8/8.1.0 spt  
driver 8/8.3.0 spt  
driver 8/8.4.0 spt
```

driver 8/8.5.0 spt

driver 8/8.6.0 spt

- If these lines already appear, the file has been updated successfully. Skip to [“Rebuild the Kernel on the Storage Library Server” on page 342.](#)
 - If you are not able to locate these lines, you need to add them manually. Use your favorite text editor, such as **vi**, to edit the file.
 - There should be **no** **sctl** entries for library devices attached to HSC, GSC, or PCI SCSI adapters. Continue with the next step.
- 3** First look for an **spt** entry alphabetically toward the front of the file. If it is not there, add it where it would go alphabetically. Then add a line for each of the optical devices attached to single-ended SCSI adapters shown on the **ioscan** display. Include lines for both optical devices and robotic arm devices in the **Kernel** section toward the bottom of the file. Use the format:

driver <H/W Path> <driver>

driver <H/W Path> <driver>

...
driver <H/W Path> <driver>

Note The <driver> can only be **spt**. There should be **no** sctl entries for library devices attached to HSC, GSC, or PCI SCSI adapters.

- 4 Save your changes to the file, and exit the editor.

Rebuild the Kernel on the Storage Library Server

Rebuild the Kernel by entering:

```
mk_kernel -o /stand/vmunix
```

Stop the FileNet Software

After you have rebuilt the kernel, shutdown the FileNet Image Services software.

- 1 As **fns** user, stop the FileNet software by entering:

initfnsw stop

When you see “Termination of FileNet Software completed”, press **Enter** to get the system prompt.

- 2 To find out which processes are currently running, enter:

whatsup

The resulting display looks similar to this:

User	PID	PPID	Start Time	Processes
fnsw	2599	1	03:40:43 PM	TM_daemon
-s				

- If the only process still active is the TM_daemon, skip to the next section, **[“Create Optical Device Files” on page 345.](#)**
- If there are still several other processes active, continue with the next step.

- 3 Enter the following command at the system prompt to kill all the remaining processes displayed:

killfnsw -DAy

The -A option removes all IPC segments.

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 -y option answers yes to subsequent prompts.

- 4 Run **whatsup** again to make sure all the processes except TM_daemon have been killed:

whatsup

Note Running **whatsup** after **killfnsw -DAy** will restart the Task Manager Daemon.

The only process should be the TM_daemon:

User	PID	PPID	Start Time	Processes
fnsw	2599	1	03:40:43 PM	TM_daemon -s

- 5 If any other processes remain active, you may need to kill each one explicitly. At the system prompt, enter:

kill -9 <process id>

where <process id> is the process number displayed in the PID column.

- 6 Repeat steps 4 and 5 until the **whatsup** command displays only the TM_daemon process.

Create Optical Device Files

Note If there are no optical devices attached to your server, skip this section.

Use the **FNPoll** command to create the optical device files. Make sure that the optical device is powered on and active. (You can use **ioscan** to check this.) If the optical device is not powered on, or needs to have a disk in the drive to be recognized, **FNPoll** will not find it. **FNPoll** will report No FileNet Device Found.

As **fns** user, enter the following command at the system prompt:

/fns/bin/FNPoll

The FNPoll display is similar to this:

```
Found HPUX Version 11.11

Removing old device nodes and files used by FNPoll.
Determining model, series and device driver information

This appears to be a(n) D-Series platform (D330).
Looking up driver and class information for this platfo

Expected driver-class for single-ended SCSI: sctl-ctl
Allowable single-ended controller(s): HWP0C80

Expected driver-class for differential SCSI: sctl-ctl
Allowable differential controller(s): GSC

HP SCSI Pass-Through Driver:
    Single-Ended Major # 203
```

If FNPoll is successful, you will also see:

```
Searching for FileNet Devices:
```

```
disk      4  8/8.0.0      sdisk      CLAIMED   DEVICE    LMS       LD 6100SER.
disk      5  8/8.1.0      sdisk      CLAIMED   DEVICE    LMS       LD 6100SER.
unknown   -1  8/8.3.0      UNCLAIMED UNKNOWN    FILENET   0155
```

```
Building FileNet Devices, Wed May 28 14:45:04 PDT 2003
```

```
crw-rw-rw- 1 fnsf      fnusr      203 0x040000 May 28 14:45 /dev/fnsod.4,8,0,0
crw-rw-rw- 1 fnsf      fnusr      203 0x041000 May 28 14:45 /dev/fnsod.4,8,1,0
crw-rw-rw- 1 fnsf      fnusr      203 0x043000 May 28 14:45 /dev/fnsod.4,8,3,0
-rw-rw-rw- 1 fnsf      fnusr           4 May 28 14:45 /dev/fnsod.major
-rw-rw-rw- 1 fnsf      fnusr           4 May 28 14:45 /dev/fnsod.major.DIFF
-rw-rw-rw- 1 fnsf      fnusr           4 May 28 14:45 /dev/fnsod.major.SE
```

After FNPoll has completed successfully, you can continue with the section [“Reboot the Server” on page 350](#).

However, if FNPoll is not able to locate the `/fnsw/local/sd/sod.conf` file, you will see:

```
Searching for FileNet Devices:
```

```
ERROR: /fnsw/local/sd/sod.conf must be created with the configuration
       information for your system.
```

```
The entries in /fnsw/local/sd/sod.conf are of the form:
```

```
spt 56/52.5.0 spt
^^^^^^^^^^ This is the 'H/W Path' from the output of a call to
'ioscan -f'. Put in a line for every device (library and disk
drive) to be used by the FileNet Image Services.
```

```
ERROR: No devices created.
```

Make sure the `sod.conf` file is in the correct directory, and that it contains the appropriate entries for your system. Then return to the beginning of this section and run FNPoll again.

Reboot the Server

CAUTION All Oracle users should be logged off the server and the Oracle instance be shutdown before doing the following system 'shutdown' command. Failure to do so could result in a corrupted database!

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

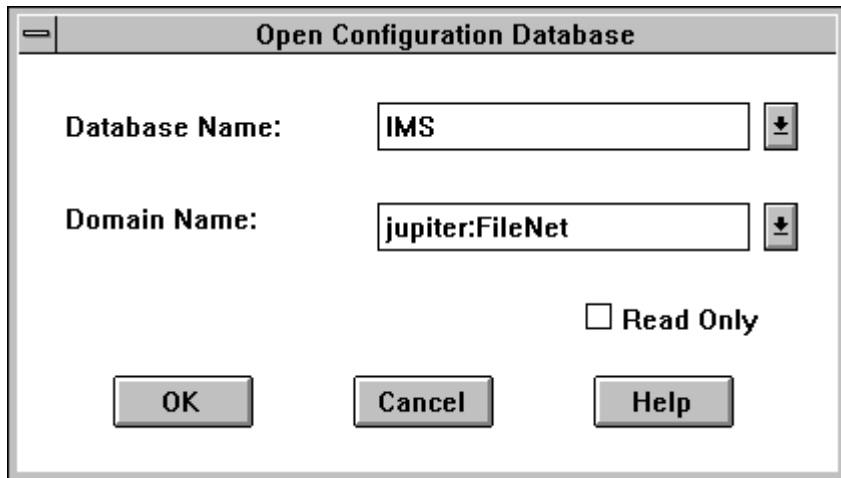
```
cd /  
shutdown -ry 0
```

Logon to Configure Database

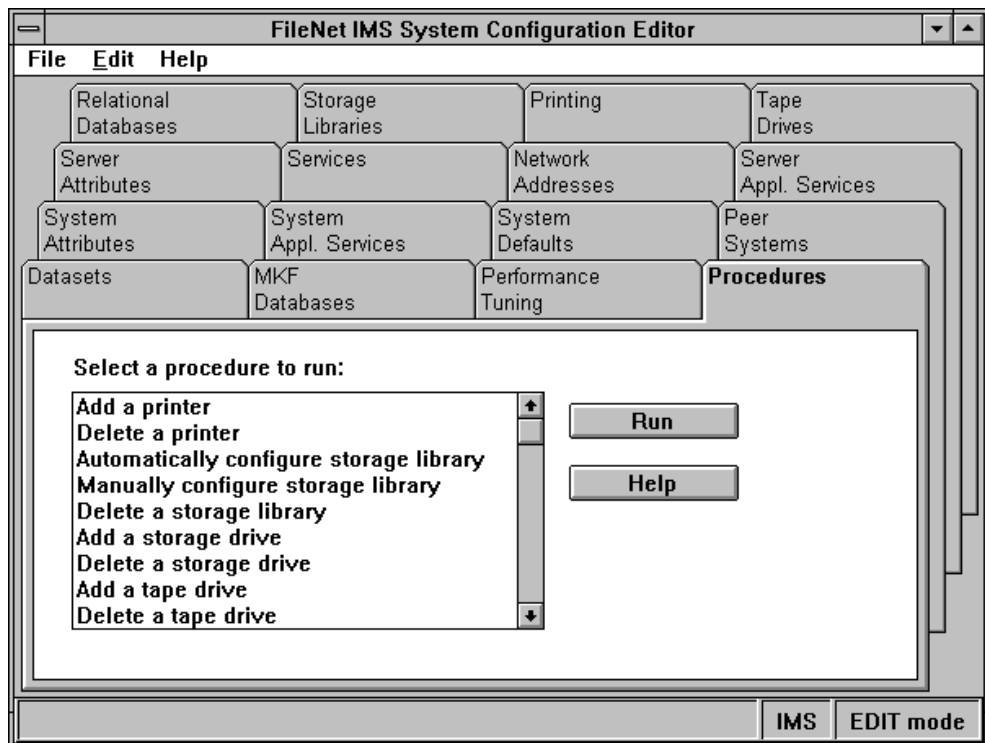
- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server.
- 2 With Windows running, verify you're logged on as **fnsw** user.
- 3 Open a new window, and enter the following command:

fn_edit &

A dialog box similar to the following displays:



- 4 Verify that the database and domain names are correct, and click **OK**. (The two-part domain name is set up as follows:<Domain>:<Organization>.) The System Configuration Editor window displays.



Note The online help contains information on all of the tabs. You can access the online template information by selecting the *Help* menu option in the System Configuration Editor window.

Configure Storage Library Device(s)

If there are no storage libraries on the server, skip to the next section, **[“Restart FileNet Software” on page 364.](#)**

Tip Even though an ODU (Optical Disk Unit) is technically not a storage library because it lacks a robotic arm, for the purposes of configuration be sure to perform the same steps for an ODU that you would perform for a storage library.

- 1 If you want to view the information concerning the optical library device(s) configured on your server, select the Storage Libraries Tab from System Configuration Editor window.

Refer to the **“FileNet TC Worksheet” on page 101** for information concerning your optical library devices.

- 2 If you need to configure a storage library you have two choices:

Automatically Configure Storage Library

Storage libraries can be configured automatically if they are attached correctly to the server, and if they are fully powered on.

To configure a storage library automatically, follow these steps:

- a Click on the Procedures Tab.
- b Scroll through the list of available procedures and select Automatically Configure Storage Library.

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

- c 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.
- d After the storage library has been configured, skip to Step 3.

Manually Configure Storage Library

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

- a At the server to which the storage library is attached, log on as **root** user.
- b Make sure the storage library is cabled to the server correctly and that power is turned on.
- c Use **ioscan** to determine the addresses of the storage libraries:

ioscan -f

The **ioscan** display looks similar to this:

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
ext_bus	2	10/4/8	scsil	CLAIMED	INTERFACE	HP 28655A - SE SCSI ID=7
target	3	10/4/8.2	target	CLAIMED	DEVICE	
spt	0	10/4/8.2.0	spt	CLAIMED	DEVICE	LMS LD 6100SER.
target	4	10/4/8.3	target	CLAIMED	DEVICE	
spt	1	10/4/8.3.0	spt	CLAIMED	DEVICE	LMS LD 6100SER.
unknown Interface	-1	10/4/9		UNCLAIMED	UNKNOWN	HP 28655A - Parallel
unknown Interface	-1	10/4/12		UNCLAIMED	UNKNOWN	HP J2157A - FDDI
graphics	0	10/8	graph3	CLAIMED	INTERFACE	Graphics
ba	0	10/12	bus_adapter	CLAIMED	BUS_NEXUS	Core I/O Adapte
ext_bus Interface	4	10/12/0	CentIf	CLAIMED	INTERFACE	Built-in Parallel
ext_bus	3	10/12/5	c700	CLAIMED	INTERFACE	Built-in SCSI

- d Locate the lines that apply to the storage library you are going to configure. For example, in the previous display, locate the lines that contain **spt** in the Class and Driver columns.

- e Determine the Instance number for the storage library devices by locating **ext_bus** in the Class column above the storage library devices. Find the Instance number in the **I** column. (The Instance number in the example above is **2**.) Use the same Instance number for all devices in the storage library.

- f Now write down the last three numbers (separated by dots) of the hardware paths for each storage library device in the H/W Path column. Also write down the description (model number) of each device. The Configuration Editor **fn_edit** will ask you for this information in a later step.

Instance	H/W Path	Description
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- g Return to the server that is running **fn_edit**.

- h Click on the Procedures Tab.

- i Scroll through the list of available procedures and select Manually Configure Storage Library.
- j 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.

Note The four part SCSI address values are taken from the information you wrote down from the **ioscan** display earlier. For example, you might enter:

2 8 2 0

where:

the first number is the SCSI adapter ID

(the number you copied from the **I** (Instance) column of the **ioscan** display)

the second number is the bus ID

(the first of the three numbers from the H/W Path column)

the third number is the target device ID

(the second of the three numbers from the H/W Path column)

the fourth number is the Logical Unit Number (LUN)

(the third number from the H/W Path column)

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

- k 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.

- I After the storage library has been configured, continue with the next step.
- 3 Exit the Configuration Editor and save your changes.

Set File Ownerships and Permissions

Server Types

Perform the steps in this section on the **Storage Library server(s)** only if you configured optical devices.

After configuring optical devices, you need to re-set the file permissions. You will be asked for system-specific information, refer to the [“FileNet TC Worksheet” on page 101](#) for the correct information.

- 1 Logon as **fns** user.
- 2 Run the `fn_setup` utility by entering the following command:

```
/fns/bin/fn_setup
```

Several prompts display. Answer the prompts with information related to your system.

- 3 Determine whether or not this is the NCH server, 1 = yes, 2 = no. Reply **No** for the Storage Library server.
- 4 Enter the NCH server name (for example, root/index_domain:FileNet). Enter the domain and organization of the **Root** server.
- 5 Enter the system serial number (ssn). Enter the ssn of the **Root** server.

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.

- 6 Enter the RDBMS software configured on the server: 0 = None, 1 = Oracle. Enter 0 for None, unless the Storage Library server has WorkFlo Queue Services (WQS) or SQL services.

You receive a series of messages displaying the information you entered. An example of the output is displayed below:

```
This is the setup configuration:
NCH server name: clark:FileNet
SSN: 11008016xx
Relational database type: None
Do you want to continue (y/n) [y]:
```

- 7 Determine whether or not you want to continue: y/n (default: yes).

You then receive messages similar to the following:

```
fn_setup: Creating file /fnsw/local/setup_config
fn_setup: Changing permission on FileNet software
and databases
```

When **fn_setup** is finished, you may receive a message indicating “exit status = 0 (success)(this is not an error.)” If necessary, press **Return** to go the system prompt.

Restart FileNet Software

Server Types

Perform the steps in this section on **all servers**: Root server first, then the Storage Library server(s).

- 1 From the command line prompt, logon as **fns** user and enter the following command to bring up the FileNet software on all servers; Root server first, then the Storage Library server.:

initfns restart

- 2 Verify that the FileNet software is up, and run the **dupip** script by entering:

nohup /fns/etc/dupip

- 3 Launch **Xapex**, and use Database Maintenance (on any server) to re-save all media families, and resolve any warning or error messages that appear.

- 4 Use the **vl** command to check the event log. If any documents were committed before the media families were resaved, you may see a warning message. If so, add or change the preferred library information to match the current storage library configuration.

Storage Library Server Utilities (Optional)

This section briefly describes the function and uses of the following Storage Library server utilities:

- **move_disk**, which allows you to move optical disks from one optical disk library to another.
- **del_osvr**, which allows you to remove a Storage Library server from your system.

The utilities described in this section need not be used on any Storage Library server unless a specific need exists. For more information about Storage Library server utilities, refer to the [***System Tools Reference Manual***](#).

CAUTION

Whenever any change in Storage Library configuration occurs—especially when a Storage Library is deleted—it's extremely important to re-save all the media families manually and resolve any errors. See the Database Maintenance chapter of the *[System Administrator's Handbook](#)* for information on saving media families.

Moving Disks Between Storage Library Servers

Run the **move_disk** utility if you want to move optical disks from an Optical Disk Library attached to your old Storage Library server to an Optical Disk Library attached to your new Storage Library server in order to balance disks equally between each server.

The **move_disk** utility does the following:

- Reads optical disk information from the Storage Library server database where it currently resides.
- Inserts the optical disk information into the destination Storage Library server database.

- Updates the surface locator table to point to the new location of the optical disk.
- Deletes the optical disk information from the source Storage Library server database where the disk previously resided.

To run **move_disk**, follow these steps:

- 1 Eject all disks to be moved from the Optical Disk Library as described in the “Storage Library Control” chapter of the *[Image Services System Administrator’s Handbook](#)*.
- 2 Run the **move_disk** utility from the source Storage Library server attached to the Optical Disk Library where the disks currently reside.
Type:

```
move_disk <surfid 1> ... <surfidn> <dest_server_name>
```

where **<surfid 1> ... <surfidn>** represents the surface ids and **<dest_server_name>** represents the server id of the Storage Library server attached to the Optical Disk Library to which you want to move the disks.

- 3 Insert the disks into the Optical Disk Library attached to the destination Storage Library server using Storage Library Control (SLC). This is described in the “Storage Library Control” chapter of the *[Image Services System Administrator’s Handbook](#)*.

Deleting a Storage Library Server

You can delete a Storage Library server using the **del_osvr** utility. This utility removes a Storage Library server from a system and moves references to the optical disks from the deleted Storage Library server to a remaining Storage Library server.

The **del_osvr** utility does the following:

- Checks the Storage Library server(s) for documents not written yet. If it finds any unwritten documents, it notes the problem and terminates. You must then either start the Storage Library server and let it finish the outstanding write_requests, or run **WRT_clean** to remove them. Refer to the *[Image Services System Tools Reference Manual](#)* for information about **WRT_clean**.

- Copies all optical disk database information from each Storage Library server to be deleted to the destination Storage Library server. It then deletes this information from the Storage Library server being deleted.
- Updates the family disk information on each deleted Storage Library server to remove all current, future, and previous write surfaces. It adds this information to the destination Storage Library server so that partially full disks will continue to be written. If a partially full disk cannot be added to the destination family's current surfaces because the current surface array is full, a message is logged to the system error log.
- Updates the surface locator and family locator tables. If only one Storage Library server remains, the entries in the surface and family locator tables are deleted. If multiple Storage Library servers remain, the pointer in the surface locator table is changed to point to the destination Storage Library server, and the pointer to the deleted Storage Library server in the family locator table is removed. Optical disks assigned to deleted Storage Library servers will be assigned to the destination Storage Library server. However, families referencing a deleted Storage Library server will have that

reference removed, but will not have a reference to the destination Storage Library server explicitly added. Also, if all the servers referenced by a family are deleted, that family will be changed to reference all remaining Storage Library servers.

Run the **del_osvr** utility from the source Storage Library server (the server that you are deleting) to update the permanent and transient MKF databases on each Storage Library server with the necessary changes.

To use **del_osvr**, perform the following steps:

- 1 Backup the system to tape.

Note If you get partially through deleting a Storage Library server and have a problem, restoring the backups is the **only** way to return to the original state. There is no other program that can undo an uncompleted attempt to delete a Storage Library server.

- 2 Make sure there are no pending write requests for the Storage Library server(s) to be deleted. If there are, delete them.

- 3 Eject all disks to be moved from the Optical Disk Library(s) of the Storage Library server to be deleted.
- 4 Bring down the FileNet software on all Storage Library servers by entering:

initfnsw stop

- 5 Run the **fn_util startdb** tool on every Storage Library server to start up the permanent and transient databases by typing the following:

fn_util startdb

- 6 On each server, enter a command similar to the following:

del_osvr <svrid1> <svrid2> ... <svridn> <dest_server_num>

<svrid1> <svrid2> ... <svridn> are the server ids of the Storage Library servers to be deleted, and **<dest_server_num>** is the destination Storage Library server to move information to from the Storage Library servers being deleted.

Note If the Storage Library server on which optical disks are referenced is not correct, or the Storage Library server's families referenced are not the desired ones after you run the **del_osvr** utility, you may run the **move_disk** utility to move optical disks, and you may also run database maintenance to change families.

- 7 After **del_osvr** is completed, run **fn_edit** on the Root server to delete the Storage Library server. Be sure to delete the logical cache allocation before removing the station.
- 8 In **Xapex**, use Database Maintenance to re-save all media families, and resolve any warning or error messages that appear by adding or changing the preferred library information to match the current storage library configuration.

Make System Configuration Backups

Note Perform the steps in this appendix on both the Root server and the Storage Library server(s).

Regular backups of the system configuration and data are essential.

- 1 Go to an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator and login to your server as **root** user.
- 2 Make a copy of the **inittab** file, and stop the FileNet software by entering the following series of commands:

```
cd /  
cp /etc/inittab /fns/etc/inittab.backup  
initfns stop
```

Note If you have a Dual server, shutdown the FileNet software on the Storage Library server(s) before the Root/Index server.

- 3 Create a backup of your LVM configuration to protect the system from potential disk crashes. Refer to the **man** page for more information regarding the **vgcfgbackup** command. Complete the following bullets:

- If you have only the root volume group (**rootvg**) on your system, enter the following command:

```
vgcfgbackup /dev/vg00
```

- If you have the FileNet volume group (**fnvg**) (or some other <volume group>) on your system, also enter the following command:

```
vgcfgbackup /dev/fnvg
```

- This step will make restores easier if the system ever crashes. These LVM configuration backups are stored in an area that is automatically accessed during a restore.

Note In the event of a disk crash, it will be beneficial to have copies of the following files or command output listings (hard copies at least) to help in the recovery:

```
system
```

```
fstab
```

```
vgdisplay -v vg00 (command output)
```

vgdisplay -v fnvg (if applicable) (command output)

ioscan -f (command output)

- 4 Next, make a system backup tape using the Backup and Recovery option in SAM. This backup will take about 45 minutes. Refer to the *HP-UX System Administration Tasks* for information about system backups and restores.
- 5 From the command line prompt, enter the following command to bring up the FileNet software:

initfnsw restart

- 6 Verify that the FileNet software is up, and run the **dupip** script by entering:

nohup /fnsw/etc/dupip

Begin Production Mode

This concludes the Image Services Installation and Configuration Procedures for HP-UX, Release 4.0.0. The Storage Library server is now ready to put into production.

Appendix C – IS and CS Collocation Requirements

This appendix contains Image Services setup requirements and parameters for systems that will have both Image Services (IS) and Content Services (CS) installed on the same server.

Read the Release Notes

Installing IS and CS on the same server demands that certain configuration requirements be met. To be sure that you have the most recent information, read the Release Notes file. Search through the Release Notes file using the keywords **IS/CS COLLOCATION**.

Supported Platform Configurations

You can install Content Services to share a server and database engine with an existing Image Services system only with the following configuration:

FileNet Server-Based Services

- Image Services 4.0.0
- Content Services 5.3

Operating System

HP-UX 11i (64-bit)

RDBMS

- Oracle9i Database Release 2 Enterprise/Standard Edition for HP-UX (64-bit)
- Oracle Patch Set 2 (9.2.0.2)
- 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.

Installation Order

The order of installation for Image Services and Content Services is critical for this release. For Image Services release 4.0.0, the IS software must be installed first. Only after installing the Image Services can the Content Services software installation take place.

Control of Oracle Database

Startup and shutdown of Oracle is normally an automatic function of Image Services. However, depending on your customer requirements, there are two options to this setup.

- If the Content Services system needs to be up and running while the Image Services is off, then the Oracle RDBMS must be Site-Controlled. The Database Administrator is responsible for installing the RDBMS software and the database objects. See the FileNet

Guidelines for Installing and Updating Oracle Software for UNIX Servers for more information.

Note With a site-controlled database, some features will not be supported - mainly dataset maintenance.

- If the CS system does not need to be running after the Image Services is shutdown, then just ensure that the CS is shutdown first.

Storage Media

When Image Services and Content Services are located on the same server, separate, dedicated storage media must be used for each. You cannot use the same storage media for both IS and CS.

Appendix D – National Language Support

This appendix contains steps to setup an HP 700/RX Xstation with an AT/2 keyboard so you may enter the characters for any of the supported languages. The following prerequisites must be met in order to complete the National Language Support (NLS) Environment setup:

You must have one of the HP 700/RX Xstations with an AT/2 keyboard.

You must be running the HP VUE application on your Xstation.

Note The steps in this Appendix can be performed on any of the HP 700/RX Xstations, but the only keyboard supported for the imaging software is the AT/2 keyboard.

Configuring the HP 9000 Series 800 Business Server

The HP 9000 Server the Xstation boots from must contain certain items to be configured correctly for NLS.

- 1 You must make sure the server contains the NLS ISO 8859-1 character set for the language you want the Xstation to be dedicated to. To check this:
 - a Logon to the HP 9000 server as **root** user.
 - b Check for the **/usr/lib/nls/config** file by listing it with the **ls** command. If it does not exist, you need to have your HP System Administrator install the NLS product on your HP 9000 server. This product is an optional product, but more than likely is installed on your server when the operating system is installed. You cannot continue with the next step until the NLS product has been installed on your server.

- 2 You must make sure the following line exists in the `/usr/lib/nls/config` file:

`<locale>.iso88591` where `<locale>` is the abbreviated national language name your Xstation is dedicated to. For example:

German is `de_DE.iso88591`

If the line does not exist in the **config** file, refer to your HP documentation or have your HP System Administrator set it up.

- 3 You must make sure the `/usr/lib/nls/<language>/iso88591` directory exists. If the directory does not exist, refer to your HP documentation or have your HP System Administrator set it up.
- 4 You must make sure the **locale.inf** file exists in the `/usr/lib/nls/<language>/iso88591` directory.

Regardless of which version of HP-UX you are running, if the file(s) do not exist, refer to your HP documentation or have your HP System Administrator set them up.

Setting Up the Xstation

- 1 Turn on the Xstation (if it isn't already). If you are in a current session, exit completely by selecting the **exit** button in the bottom right corner of the screen.
- 2 At the login screen, click on the **Options** box, press and hold down the **F12** function key while selecting the **Restart Server** option until the Configuration menu displays.
- 3 Click on the **Terminal** button at the top left of the Configuration menu.
- 4 In the Terminal menu, click on the box to the right of the AT/2 keyboard field.
- 5 From the AT/2 keyboard language menu, select the language you want the Xstation to be dedicated to and click on the **OK** button to return to the Configuration menu.
- 6 Click on the **Server** button at the top left of the Configuration menu.

- 7 At the bottom of the Server menu, make sure the Font Path field includes the following lines:

```
/usr/lib/X11/700X/fonts/iso_8859.1/100dpi/  
/usr/lib/X11/700X/fonts/iso_8859.1/75dpi/
```

If these font paths are not specified in this menu and you want to add them, try clicking on the Reset Font Path button and these paths should be added to your font menu setting by default. If the paths are not added automatically, add them manually at the bottom of the font menu.

- 8 Save and exit out of the Configuration menu by clicking on the **OK** button. Wait about two seconds and then **power cycle** the Xstation to force the Xstation to boot and download the files from your HP 9000 server. The Xstation should take a few minutes to finish booting.

If you receive error messages concerning the iso_8859 fonts, you need to contact your HP System Administrator to load the necessary fonts.

Note Complete Steps 9 through 16 for every user.

- 9 At the login screen, click on the Options box and select the HP VUE Session option.

Then, log in with your User Name and Password.

- 10 From the HP VUE User Interface screen, select a window and export the **DISPLAY** environment variable by completing one of the following bulleted steps, depending upon the shell you are using:

- For **Bourne** and **Korn shell** users, enter the following command:

```
export DISPLAY=<Xstation-name>:0
```

where <Xstation-name> is the name given to your Xstation when it is setup on your HP 9000 server.

- For **C shell** users, enter the following command:

```
setenv DISPLAY <Xstation-name>:0
```

where <Xstation-name> is the name given to your Xstation when it is setup on your HP 9000 server.

- 11 Using your preferred editor (**vi**, for example), edit the **/fnsw/etc/Xresources.template** file. First, in this file look for a line similar to the following line:

```
vuesession*sessionLanguage:    en_US.iso88591
```

Replace the word **en_US** with the language you want. Then save the change to this file.

- 12 Enter the following command to merge the **Xresources.template** file content to your current HP VUE session resources file:

```
xrdb -merge /fnsw/etc/Xresources.template
```

This command updates your VUE session with the information in the given resources file.

- 13 If you want to permanently save the changes made to the **Xresources.template** file in your home resources file, complete the following bullets. Otherwise, SKIP THIS STEP completely and GO TO STEP 14.

- Activate the Style Manager icon from the VUE front panel and click on the Startup icon.
 - Click on the **Set Home Session** button and select **OK** to update your home session with the current session, which you have just modified with the **xrdb** command in Step 13.
 - When this is completed, exit out of the Style Manager window completely.
- 14** Set up the **LANG** variable in your shell environment files using your preferred editor (**vi**, for example). From your **HOME** directory, edit the necessary files by completing one of the following bulleted steps, depending upon the shell you are using:
- For **sh** and **ksh**, add the following lines to both your **.profile** and **.vueprofile** files:

```
LANG=<locale>.iso88591
export LANG
```

where <locale> is the abbreviated national language name your Xstation is dedicated to. For example:

German is de_DE.iso88591

- For **cs**, add the following line to both your **.login** and **.vueprofile** files:

```
setenv LANG <language>.iso88591
```

where **<language>** is the language your Xstation is dedicated to.

- 15** Continue to edit the **.vueprofile** by adding the following lines at the end of the file:

```
xmodmap -e "keysym Print = F13"  
xmodmap -e "keysym Scroll_Lock = F14"  
xmodmap -e "keysym Pause = F15"  
xmodmap -e "keysym Insert = F16"  
xmodmap -e "keysym Home = F17"  
xmodmap -e "keysym Delete = F18"  
xmodmap -e "keysym End = F19"
```

Make sure there are no typos, otherwise the function keys won't be mapped properly. These key mappings allow APEX to map its function keys to the AT/2 keyboard.

- 16** Reboot the Xstation by selecting the **exit** button in the bottom right corner of the screen to exit out of HP VUE, and then logging back in.

Return to Production Mode

This concludes the procedure to configure National Language Support on FileNet Image Services for HP-UX. The server is now ready to put into production.

Appendix E – Configuring a Font Server for COLD Preview

This appendix contains instructions for setting up and testing a Font Server on an existing HP 9000 Storage Library server that will be running FileNet COLD Preview software.

Note These instructions are adapted from Hewlett-Packard procedures, and are designed to be run by an HP professional. For further information on configuring and testing the Font Server, contact HP.

Configure the Font Server

The Common Desktop Environment (CDE) includes a small set of fonts and font aliases that are not part of the standard distribution of X Windows. For CDE to function correctly, these fonts need to be available to the X-servers (X-terminals) displaying CDE.

The Font Server needs to include the CDE fonts in its catalog. You can do this by editing the following files:

Edit the `/etc/X11/fs/config` File

As **root** user, use your favorite text editor, such as **vi**, to edit the `/etc/X11/fs/config` file.

- 1 Locate the “catalogue = ...” line.
- 2 Make sure the first item in the catalogue list is:

`/usr/lib/X11/fonts/type1.st`

- 3 At the end of the catalogue line append the following phrase:

`./usr/dt/config/xfonts/C`

- 4 Save your changes and exit the file.

Edit the `/etc/rc.config.d/xfs` File

As **root** user, you also need to edit the `/etc/rc.config.d/xfs` file.

Add or modify the line for the following variable:

```
RUN_X_FONT_SERVER=1
```

Start the Font Server

As **root** user, start the Font Server by entering:

```
/sbin/init.d/xfs start
```

If the Font Server is already running, kill it and repeat the `xfs start` command.

Edit the `/etc/dt/config/Xsetup` File

Before you edit this file, you need to copy it from the `/usr/config` directory.

As **root** user, enter:

```
cp /usr/config/Xsetup /etc/dt/config/Xsetup
```

Edit the `/etc/dt/config/Xsetup` file you just copied. Add this line at the end of the file:

```
$XDIR/xset fp+ tcp/<server_id>:7000 1>/dev/null
```

where `<server_id>` is either the **server name** as found in the `/etc/hosts` file, or the **TCP/IP address** of the server. If you need to find out the TCP/IP address, enter:

```
nslookup 'hostname'
```

Install HP-UX Patches, if necessary

Depending on the version of HP-UX operating system installed on your server, you may need to install patches from Hewlett-Packard.

Go to the FileNet Web site <http://www.css.filenet.com> and log into Worldwide Customer Support. Click on:

Install/Upgrade

1. Begin Here (Introduction)

2. Upgrade/Install General Overview

5. Review the Operating System/RDBMS Notes

Select your version of the HP-UX operating system from the list, and scroll down to review the patch recommendations and requirements.

Reboot the Server

Reboot the server by entering:

```
shutdown -ry 0
```

Verify the Font Server

After the server reboots, log in as **root** user and verify that the Font Server is working properly.

- 1 Verify that the Font Server has started by entering:

```
ps -ef | grep xfs
```

If the Font Server has started successfully, the process status information displays.

- 2 Verify that the Font Server is at the head of the Xserver's font path by entering:

```
xset -q
```

You should see a section that says, "Font Path:", then an entry similar to this:

```
tcp/:7000
```

This entry should appear before you see any specific font directory path names.

- 3 Verify that your Xserver can find scalable fonts by entering:

```
xlsfonts -fn “*-0-0-0-0-”
```

You should see a list of fonts. The first fonts on the list should be from Adobe.

Verify the Xstation

Note Perform the steps in this section on the Xstation you will be using to run the COLD Preview application.

If you are not already running COLD software on the server, you may have to postpone this test until after you have completed the rest of the Image Services update procedure.

To verify that the Xstation is selecting the correct font, run the Xstation's Configuration Diagnostics (for example, hold down the F12 key and select the Diagnostics icon. You should see a button to display font logging.)

Then run COLD Preview. The font logging will show whether font selections are coming from the Font Server or the Xserver, and it will also show you which specific font is being selected.

Return to the Main Procedure

After you have finished configuring and verifying the Font Server, you can return to [“TCP/IP Address” on page 37](#) of the main procedure.

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