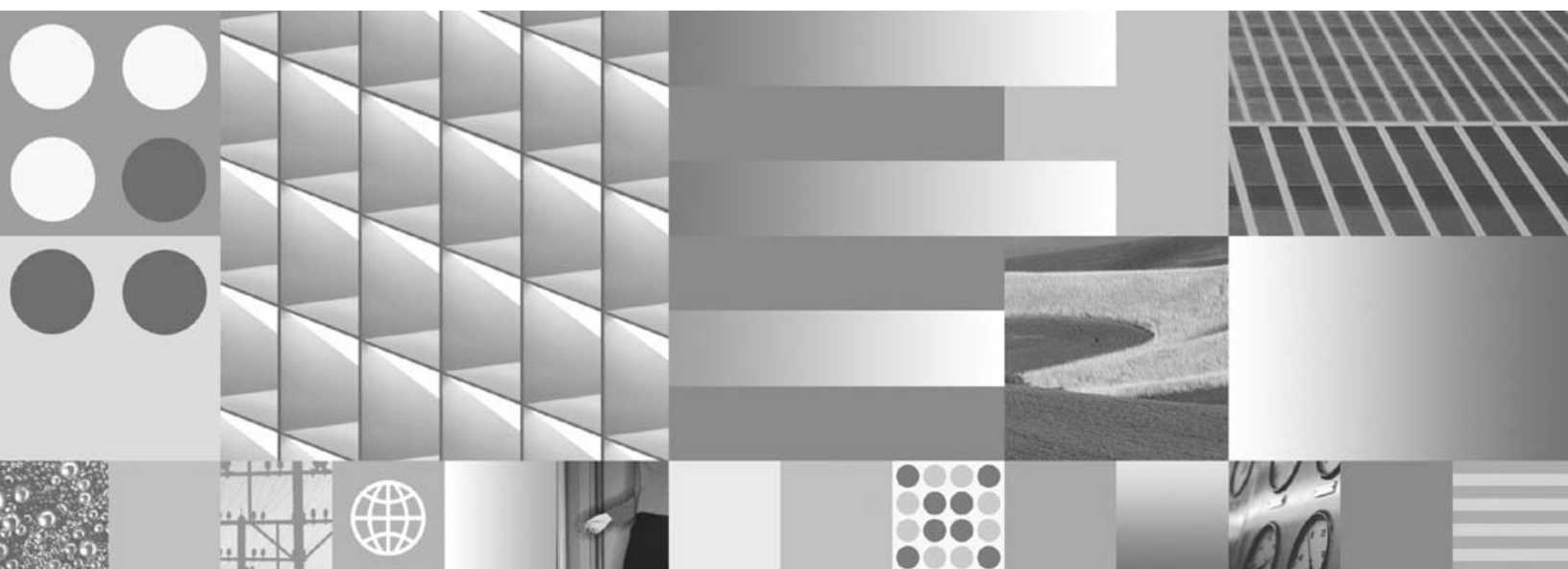


**Installation and Configuration Procedures for HP-UX on HP 9000 Servers and
HP Integrity Servers**



**Installation and Configuration Procedures for HP-UX on HP 9000 Servers and
HP Integrity Servers**

Note

Before using this information and the product it supports, read the information in “Notices” on page 387.

This edition applies to version 4.1 of IBM FileNet Image Services (product number 5724-R95) and to all subsequent releases and modifications until otherwise indicated in new editions.

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1

Getting Started

This document explains how to install and configure FileNet® Image Services 4.1 software with either Oracle 9i/10g RDBMS software or IBM® DB2® RDBMS software on:

- Hewlett-Packard 9000 Series 800 Business Servers (HP 9000/800)
- Hewlett-Packard Integrity servers powered by Intel® Itanium® 2 processors.

Overview

You can use the software installation and configuration procedures in this document to perform the following server-related tasks:

- Installing and configuring Image Services on either a Combined server system, Dual servers System, or Remote Entry System (RES)
- Adding a single Storage Library server to an existing Root/Index server
- Installing and configuring multiple Storage Library servers on an existing system
- Installing and configuring (adding services) on an Application server to an existing system

Required Skills

Installation by a FileNet Certified Professional (FCP) is recommended. For more information about the FCP program, go to the IBM web site (<http://www.ibm.com>), Products > Software > Information Management > Training and certification > FileNet Certified Professional Program (FCP). You will need an IBM-issued login name and password to access the Web site.

If an FCP is used, at least **ten days** before the installation, the FCP should contact the service representative to schedule the installation and access the team's latest list of current scheduling procedures.

This procedure assumes you have knowledge of:

- UNIX® and the HP-UX operating system
- The HP System Administration Manager tool (**SAM**)
- The HP-UX 11i v2 administrative command for tunable kernel parameters (**kctune**)
- Peripheral device configuration methods (for example, tape drives, printers, and storage libraries.)
- A text editor such as **vi**

Comments and Suggestions

Send your comments by e-mail to comments@us.ibm.com. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, include the location of the text (for example, a chapter and section title, a table number, a page number, or a help topic title).

Document revision history

IS version	Date	Comment
4.1	June 2008	Documentation refresh.
4.1	Nov. 2007	Blue wash.
4.1	June 2007	Initial release.

New Features of the IS 4.1 Installation

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

InstallShield Installer

This version of Image Services incorporates a new InstallShield Multi-Platform Installer. Before installing the Image Services software, the Installer performs a series of system configuration checks to verify the HP-UX server is ready for the Image Services installation. The Installer gives you two options:

- System Check only
- System Check and Install Image Services

If the Installer detects a problem at any point during the System Check, you can back up to the previous screen, correct the problem, and then go forward to rerun that check again. The HP-UX server must pass the System Check successfully before the Image Services software is installed.

IBM DB2 Universal Database Software

In this release, Image Services supports IBM DB2 Universal Database V8.1/V8.2. The DB2 databases are site-controlled and must reside on remote AIX® 5.2/5.3 or Solaris 9/10 servers. Image Services on the HP server accesses the remote DB2 database by using DB2 client software installed on the IS server.

See *Guidelines for Installing and Configuring DB2 Software* for more information. To download the guidelines from the IBM support page, see **[“Accessing IBM FileNet documentation” on page 28.](#)**

Oracle Database 10g Software

This release of Image Services includes support for both Oracle Database 9i and 10g Release 2 Standard or Enterprise Edition (64-bit).

Note

The Oracle 10g media are not supplied by FileNet.

See *Guidelines for Installing and Configuring Oracle 10g Software on UNIX Servers* for more information. To download the guidelines from

the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Improved Support for Oracle Features

For Oracle users, Image Services release 4.1 allows you to separate Image Services tables and indexes into different tablespaces.

Image Services release 4.1 supports Oracle password complexity functionality.

Support for User-Defined Passwords

Image Services 4.1 allows you define and manage passwords for f_sw, f_maint, f_sqi, and f_open relational database user passwords.

System Serial Number

The System Serial Number (SSN) is no longer supplied with new Image Services systems.

When installing a new Image Services systems, you are now required to construct your own SSN using any combination of numeric digits

that you choose. The valid range of SSNs is 1000 through 2147483646.

This identifier is vital to Image Services, as the SSN is included in the metadata of each committed record. Each IS system must have its own unique SSN to configure peer systems in a cross-system committal environment, and to prevent potential problems if media are ever transferred from one IS system to another.

Note

Current Image Services systems will continue to use their existing SSNs, which will always be valid.

SLAC Key Automation

In past IS releases, you had to install a Software License Access Control (SLAC) Key that was included with the IS software. Beginning with IS 4.1, this key is installed automatically by the InstallShield Installer.

IBM Information Management support page

The latest information concerning your update is available on the IBM Information Management support page (<http://www.ibm.com/software/data/support>).

You will need an IBM-issued login name and password to access the Web site.

Some of the documents that you can download include the Release Notes for Image Services 4.1, the Release Dependency Spreadsheet, and the Operating System Notes.

Accessing IBM FileNet documentation

To access documentation for IBM FileNet products:

- 1 Navigate to the Information Management support page (www.ibm.com/software/data/support).
- 2 Select the appropriate IBM FileNet product from the “Select a category” list.

- 3 From the Product Support page, click **Product Documentation** under Learn.
- 4 From the Product Documentation page
 - a If necessary, display the document list by clicking the Doc link for the appropriate component product.
 - b Click the icon in the appropriate release column to access the document you need.

Release Notes for Image Services 4.1

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

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 Ser-

vices installation. The System Administrator is responsible for obtaining and installing these patches.

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

Release Dependency Spreadsheet

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

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

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 **[“Installation Worksheet” on page 92](#)**.

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.

Application server during an Application server installation.

Note

Image Services Toolkit 4.1 is required if you plan to run both Image Services Toolkit and Image Services 4.1 on the same server.

Minimum Hardware Requirements

Note

These requirements have changed from previous FileNet Image Services releases.

Server Architecture

HP 9000 (PA-RISC) Servers

Servers containing PA-RISC processors that support the HP-UX11i v1, v2, and v3 operating system are required.

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

Note Oracle 10g software is compatible with 64-bit HP-UX servers only.

HP Integrity (Itanium® 2) Servers

HP Integrity servers containing 64-bit Intel Itanium 2 processors that support the HP-UX11i v2 and v3 operating system are required.

Server Memory

- Root/Index and Application Servers with Oracle:
9i - 512 MB memory for each processor in the server.
10g - 1024 MB memory for each processor in the server.
- Root/Index and Application Servers with DB2:
512 MB memory for each processor in the server.
- Storage Library and Application Servers without RDBMS:
512 MB memory for each processor in the server.

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

dmesg | grep Physical (HP 9000)

/usr/contrib/bin/machinfo | grep Memory (HP Integrity)

Note HP Integrity entry-class servers come with a minimum of **512 MB** of memory.

Total Swap Space

The recommended Swap Space is based on the amount of server memory. See the following table:

RAM	Swap
Up to 1024 MB	2 times the size of RAM
Between 1025 MB and 2048 MB	1.5 time the size of RAM
Between 2049 MB and 8192 MB	Equal to the size of RAM
More than 8192 MB	0.75 the size of RAM

Total Disk Space

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

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

Refer to the HP-UX and RDBMS documentation for space requirements for these products.

Note The server should have **at least three physical 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** minimum space in /fnsw.
- **500 MB** minimum space in /fnsw/local.

Note If /fnsw/local is not a separate file system, the installation requires **1000 MB** (1 GB) total space in /fnsw.

In addition, the Installer needs the following amount of temporary space for decompressing files:

- **500 MB** minimum space in /var

Tip If you don't have enough space in /var/tmp, you can direct the Installer to use another directory that has enough space.

Space for RDBMS Software

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

Refer to vendor's documentation for additional information about space requirements for RDBMS software products.

- **For Oracle**, refer to the *Guidelines for Installing and Updating Oracle 9i and 10g Software for UNIX Servers* for more information about space requirements.
- **For IBM DB2**, refer to the *Guidelines for Installing and Configuring DB2 Software* for more information about space requirements.

To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

FileNet’s SCoUT system configuration and output tool can help estimate the actual amount of disk space needed for FileNet, DB2, 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 must 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.

Software Requirements

Your system must meet the following requirements to complete this Image Services software installation procedure.

Server Naming Convention

Properly naming Image Services servers is an important step when setting up your Image Services system. Server names can have a maximum of **20 characters** and must only contain ASCII alpha-numeric characters and underscore characters.

Note Do not use non-alphanumeric characters and hyphens.

Every system resource is identified by a three-part name stored in the NCH database. The three parts of the resource name identify an object, a domain (system name), and an organization, in this format:

object:domain:organization

The maximum length of a three-part name is **82 characters**—40 for the object, 20 for the domain, 20 for the organization, and two for the colons separating the parts.

Important When you specify an object from a PC workstation, the maximum length of a three-part name is **79 characters**—39 for the object, 19 for the domain, 19 for the organization, and two for the colons.

Be aware that when NCH (Network Clearing House) crosses a router to find a server, it could convert the domain name to an IP host name using specific criteria, one of which is dropping the underscore character and all non-alphanumeric characters.

Object Name

An **object** is a resource like a tape, printer, database, software service, logon name, and so on. Some objects have names predefined by the system. For example, DefaultIMS is the name used to access the index database.

Domain Name

The **domain** (or system) name is set up at FileNet system configuration time using the **fn_setup** tool. In a multi-server system, each server has a different server name, so the domain name is usually the server name of the Root/Index server.

Organization Name

The third part of the NCH resource name is the **organization** name. This can be your company or department name, such as ABCDEnterprises.

Operating System and Related Information

The Image Services 4.1 software is compatible with:

- HP-UX 11i v1 (HP 9000 servers)
- HP-UX 11i v2 (64-bit) (HP 9000 servers and HP Integrity servers)
- HP-UX 11i v3 (64-bit) (HP 9000 servers and HP Integrity servers)

HP-UX Version

To determine the version of operating system software running on the server(s), enter the **uname -r** (release) command. The result should be:

B.11.11 (HP-UX 11i v1)

- or -

B.11.23 (HP-UX 11i v2)

- or -

B.11.31 (HP-UX 11i v3)

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.

Enter the **uname -m** (platform) command. For example, on an HP Integrity server, the result should be:

ia64

Verify the character set used by the operating system by entering the **locale charmap** command.

HP-UX Patches

After installing HP-UX 11i v1, v2, or v3, go to the IBM Information Management support page <http://www.ibm.com/software/data/support>.

Locate the *Image Services Compatibility and Dependency Matrix*, and review the patch recommendations and requirements.

Important

If you plan to install Oracle 10g on an HP-UX 11i v1 (11.11) server, verify that the following HP-UX patches have been installed:

PHCO_31923, PHCO_35743 + PHKL_34805

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 D – Configuring a Font Server for COLD Preview” on page 362** 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 (Optional)

Debugging software is recommended for Image Services 4.1 and, if present, must be installed on each Image Services server. A debugger

enables your service representatives to troubleshoot both FileNet and HP-related problems.

WDB 5.4

The HP Wildebeest Debugger (WDB) is an HP-supported implementation of the Open Source GNU debugger (GDB). HP WDB supports source-level debugging of object files written in HP C, HP aC++, and Fortran 90 on HP-UX 11i v1.6 and later for HP Integrity servers (Itanium®-based), and HP-UX 11.0 and later for HP 9000 (PA-RISC) servers.

HP WDB 5.4 is the recommended debugger for Integrity systems running HP-UX 11i v1.6 or later and HP 9000 (PA-RISC) systems running HP-UX 11.0 and 11i.

Other debuggers, such as xdb and HP DDE are no longer supported.

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.

GDB 6.4

GDB, the GNU Project debugger, allows you to see what is going on 'inside' another program while it executes – or what another program was doing at the moment it crashed. GDB is free software, protected by the GNU General Public License (GPL). GDB can run on most popular UNIX and Microsoft® Windows® variants.

The program being debugged can be written in C, C++, Pascal, Objective-C (and many other languages). Those programs might be executing on the same machine as GDB (native) or on another machine (remote).

You can download the current version for no charge by going to <http://www.gnu.org/software/gdb/>. Documentation is also available for download.

FileNet Image Services Software

To install Image Services 4.1, you'll need one of these software media:

- **FileNet Image Services & COLD™ 4.1 for HP 9000** (eSD image or software CD). This media contains the Image Services 4.1 and COLD 4.1 software.
- **FileNet Image Services & COLD™ 4.1 for HP Integrity** (eSD image or software CD). This media contains the Image Services 4.1 software including COLD 4.1 software.

IBM DB2 Universal Database™ Software

Refer to the *Guidelines for Installing and Configuring DB2 Software* for more information. To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Note The **Database Administrator** must install the appropriate version of DB2 and must supply the information described in the DB2 Guidelines to the System Administrator before the FileNet Image Services software can be installed.

Oracle RDBMS Software

Note The Oracle software media are not supplied with the FileNet software.

Refer to the *Guidelines for Installing and Updating Oracle 9i and 10g Software for UNIX Servers* for more information. To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Note The **Database Administrator** must install the appropriate version of Oracle and must supply the information described in the Oracle Guidelines to the System Administrator before the FileNet Image Services software can be installed.

National Language Support

When you install the operating system, select the character set you plan to use with Image Services and your relational database software, such as DB2 or Oracle. Likewise, when you install the relational database software, select the same character set as you did for the operating system.

Important

You must select the character set for one product that matches the character sets you select for all the others.

When you install the FileNet Image Services software, select the appropriate character set on both the System Attributes tab in the System Configuration Editor and on the Relational Databases/DB2 tab or 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 equivalent of the character set used by the RDBMS 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

Table 1-1: Character Sets, Continued

Character Sets			Decimal Values	
ISO (International Organization for Standardization)		Microsoft Windows Code Page	ASCII (0 to 127)	Non-ASCII (128 to 255)
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
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, choose an ISO character set for the RDBMS 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. 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*

To download these documents from the IBM support page, see [**"Accessing IBM FileNet documentation" on page 28.**](#)

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

System Administrator Tasks

System Administrator Checklist

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

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

At the customer site, the system administrator or your service representative will 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 a user with **root** privileges to check and gather the information in this section.

Check Server Memory

- 1 Verify that the system has the following hardware/software configuration:
 - An HP 9000 Series 800 Business Servers (HP 9000/800).

dmesg | grep Physical

- An HP Itanium Server with at least **512 MB** of memory.

Enter the **machinfo** command and grep for the Memory line.

`/usr/contrib/bin/machinfo | grep Memory`

```
Memory = 4080 MB (3.984375 GB)
```

Note

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

Enter your system's memory in the **[“Installation Worksheet” on page 92.](#)**

- One or more Ethernet interface cards (Media Access Controller Type). Enter type(s) in the **[“Installation Worksheet” on page 92.](#)** Refer to the back of the server for the card type.
- The appropriate Media device(s) for the software you are installing. FileNet Image Services software is available as an eSD image or on software CD.

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

Verify HP-UX Patches

After installing HP-UX 11i, go to the IBM Information Management support page and locate the *Images Services Compatibility and Dependency Matrix*. To download this matrix from the IBM support page, see [**"Accessing IBM FileNet documentation" on page 28.**](#)

Select your operating system from the list, and review the patch requirements. Verify that the most recent patch bundle has been installed. For example:

- HP-UX 11i v1 (11.11) (PA-RISC)
Support Plus June 2007
- HP-UX 11i v2 (11.23) (PA-RISC & Itanium)
Standard Patch Bundles June 2007

- HP-UX 11i v3 (11.31) (PA-RISC & Itanium)
Standard Patch Bundles Sept. 2007

Note HP supersedes its patches from time to time, so be sure to check for the latest requirements.

Important If you plan to install Oracle 10g on an HP-UX 11i v1 (11.11) server, verify that the following HP-UX patches have been installed:

PHCO_31923, PHCO_35743 + PHKL_34805

Check the Operating System Kernel Limits

- 1 Check the **Pending Value** for the parameters shown below.

Tip On HP-UX 11i v2 and v3 systems, you can also use the **kctune** command line tool to query and set tunable kernel parameters. See the man page for **kctune**.

To use the traditional SAM method, enter the following commands.

a As a user with **root** privileges, 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.

(The only exception to this rule, is **dbc_max_pct**, which has a maximum setting of 30.)

Table 2-1: Recommended Kernel Parameter Settings

Kernel Parameters	HP-UX 11i v1 Recommended Minimum Settings	HP-UX 11i v2 Recommended Minimum Settings	HP-UX 11i v3 Recommended Minimum Settings
max_acct_file_size	2147483647 (2 GB) 0x7FFFFFFF hex	2147483647 (2 GB) 0x7FFFFFFF hex	2147483647 (2 GB) 0x7FFFFFFF hex
maxdsiz	117440512 (112 MB) 0x7000000 hex	268435456 (256 MB) 0x10000000 hex	268435456 (256 MB) 0x10000000 hex
maxfiles	256	1024	1024
nproc	1005	1005	1005
maxuprc	400	400	400

Table 2-1: Recommended Kernel Parameter Settings, Continued

Kernel Parameters	HP-UX 11i v1 Recommended Minimum Settings	HP-UX 11i v2 Recommended Minimum Settings	HP-UX 11i v3 Recommended Minimum Settings
nfile	840 Although the minimum value for nfile is 840, you might want to set this value much higher. A value of 3000 , for example, would be acceptable.	2048 Although the minimum value for nfile is 2048, you might want to set this value much higher. A value of 5000 , for example, would be acceptable.	n/a The nfile parameter should no longer be used. The number of system-wide open files is now limited only by the amount of available system memory.
ninode	1085	1085	1085
semms	2000	2000	2000
semgni	2000	2000	2000
shmmax	268435456 (256 MB) 0x10000000 hex	536870912 (512 MB) 0x20000000 hex	536870912 (512 MB) 0x20000000 hex
shmseg	120	120	120
semnu	1000	1000	1000
semume	500	500	500

Table 2-1: Recommended Kernel Parameter Settings, Continued

Kernel Parameters	HP-UX 11i v1 Recommended Minimum Settings	HP-UX 11i v2 Recommended Minimum Settings	HP-UX 11i v3 Recommended Minimum Settings
msgmni	2048	2048	2048
msgseg	6640	16384	n/a
msgtql	6640	6640	6640
msgmap	msgtql + 2	msgtql + 2	n/a
dbc_max_pct	1 to 10 **	30 or less **	n/a
dbc_min_pct	5	5	n/a

**The dbc_max_pct kernel parameter must be set no higher than 30. A value of 7 would be acceptable. (The other recommended kernel parameter settings are minimum values.

Note

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

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

On servers with DB2 software installed, verify these settings:

Table 2-2: DB2 Recommended Kernel Parameter Settings

Kernel Parameters	Recommended Minimum Settings
msgmnb	65535
msgmax	65535

You must also 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 on page 64** now. If you do need to make changes, continue with the next step.
- 3 Change the kernel parameter values by following these substeps:

- 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 substeps a through f for each parameter you need to change.
- 4 If you changed any of the kernel parameters in the previous step, you might need to rebuild the kernel by completing the following substeps:
- 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, verify that 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.

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 was set correctly.
- a Now you must verify that the TZ environment variable is set correctly. As a user with **root** privileges, 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

The recommended Swap Space is based on the amount of server memory as shown in the following table:

RAM	Swap Space
Up to 1024 MB	2 times the size of RAM
Between 1025 MB and 2048 MB	1.5 time the size of RAM

RAM	Swap Space
Between 2049 MB and 8192 MB	Equal to the size of RAM
More than 8192 MB	0.75 the size of RAM

Check to see that the total swap space size is set to at least **1000 MB**.

Note If there is more than one swap space, verify 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 1 GB 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 between 1025 MB and 2048 MB
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.

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.

At this point, you need to log on as a user with **root** privileges 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 (vg00, for example), how many you will have, and what software you

will install on which **<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)

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 At the System Administration Manager menu of SAM, select the Disks and File Systems option.
- 2 From the Disk and File Systems Manager menu, 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)

This section contains instructions for creating an optional volume group for your FileNet datasets (**fnvg**).

If you extended the Root <Volume Group> (**vg00**) in the previous section, and you are going to install both the FileNet software and the FileNet datasets in **vg00**, skip this section.

Note If you choose to create an optional **fnvg** volume group, install all software on the root volume group Disk (such as **vg00**), and install the FileNet datasets on the other Disk(s) (such as **fnvg**).

In this section you will use SAM to create the FileNet <Volume Group> and call it **fnvg**. To create the FileNet volume group, follow these steps:

- 1 You should already be at the System Administration Manager menu of SAM. Select the Disks and File Systems option, and press **Return**.
- 2 From the Disk and File Systems Manager menu of SAM, select the Volumes Groups option.
- 3 You need to create a <Volume Group> for the FileNet datasets (**fnvg**, for example). From the Action pulldown menu, select the Create or Extend.
- 4 At the Select a Disk pop-up window, select the disk(s) you want to add within the volume group.
- 5 At the Add a Disk Using LVM screen, select the Create or Extend a Volume Group ... option.
- 6 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**.
- 7 At the Add a Disk Using LVM screen, click **OK**.

- 8 When you see a Note saying the volume group has been successfully created/extended, click **OK**.
- 9 The new volume group (**fnvg**) now displays in the **Disk and File Systems** menu.

This information can be viewed in more detail by using the **vgdisplay** command. Enter:

```
vgdisplay -v
```

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 FileNet software user such as **fnsw** 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 a user with administrative privileges, such as **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.

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 a name for the FileNet software user, such as **fnsu**, in the Login Name field and verify that the Create Home Directory option is checked.
- 5 Click on the Primary Group Name... button and type the user's primary group (for example, **fnsu**). Since the fnsu 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	Required 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.
fnadmin	<fnsw>, root	Members can perform administrative functions. Administrators must belong to this group to change configuration, perform diagnostics, or restore backups.
fnop	<fnsw>	Members can start and stop all FileNet software (including COLD). Administrators must also belong to this group.

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.

If Oracle software is installed on the local server, you also need to create a <dba group>, such as **oragrp**.

Group Name	Members	Group Description
<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>.

- 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 the FileNet software user, such as **fnsw**. Click **Add** to add this user 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 12 through 14 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.

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 verify that the total amount of space in each file system is equal to or greater than these minimum sizes.

Table 2-3: 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	510 VxFS		/fns
local (All servers)	500	510 VxFS		/fns/local

Create Logical Volumes and File Systems

Server Types

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

Tip

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

In this section you will create the **/fnsw** and **/fnsw/local** file systems for Image Services.

- 1 Now you can use SAM to create the file systems and logical volumes. You should already be at the System Administration Manager menu of SAM.
- 2 On the **System Administration Manager** menu, select the **Disks and File Systems** option.
- 3 From the Disk and File Systems Manager menu, select the **Logical Volumes** option.

- 4 From the Action pulldown menu, select the **Create** option.
- 5 Select the appropriate volume group for logical volume you're going to create and click **OK**.
- 6 Press **Return** at the Define new Logical Volumes field.

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 2-3 of the Configuration Worksheet). Add the logical volume names for all of the applicable logical volumes listed in Figure 2-3.

- 7 See the "Minimum Logical Volume Size (MB)" column of Figure 2-3 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.
- 8 Select **VxFS** (Journaled) File System.
- 9 Click **Modify FS Defaults**.

Verify that the following When to Mount options are checked:

- Now
- Every System Boot

- 10 Also verify that Enable Set User ID Execution is checked.
- 11 Set the Usage: field to **File System**, and type in the file system mount directory. Then click **Add**.
- 12 Repeat Steps 3 - 11 for all the file systems you need to create.
- 13 When you are finished adding all the File Systems, click **OK**.
- 14 At the Create New Logical Volumes screen, click **OK**.
- 15 At the Logical Volumes screen, the new logical volumes are listed on the display.

Determine 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 raw Logical Volume names as follows:

Dataset		Raw Logical Volume
cache0	-----	fn_cache0
permanent_db0	-----	fn_perm_db0
permanent_rl0	-----	fn_perm_rl0
transient_db0	-----	fn_trans_db0
transient_rl0	-----	fn_trans_rl0
sec_db0	-----	fn_sec_db0
sec_rl0	-----	fn_sec_rl0

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

Note Each of your servers should 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_rl0	64		
transient_db0	320		
transient_rl0	256		
sec_db0	64		
sec_rl0	64		

Note The actual minimum dataset size depends on how the volume manager configures the partitions. They can be multiples of 16 or 32.

- 16** 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

Create Logical Volumes for Image Services Datasets

You are now going to add the logical volumes for all of the FileNet datasets.

- 1 From the **System Administration Manager** menu of SAM, select the **Disks and File Systems** option and press **Return**.

- 2 From the Disk and File Systems Manager menu, select the **Logical Volumes** option. When the entry is highlighted press **Return**.
- 3 From the Action pulldown menu, select the **Create** option.
- 4 Select the appropriate volume group for logical volume and click **OK**. Press Return at the **Add new Logical Volumes** field. Refer to the [**“Installation Worksheet” on page 92**](#) to see the listing of the volume groups.
- 5 Fill in the LV Name field with the Logical Volume Names (for example, type in `fn_cache0` for the first Logical Volume entry listed in Table 2-4). Add logical volume names for all of the applicable logical volumes listed in Table 2-4.
- 6 See the “Minimum Size (in MB)...” column of Table 2-4 for the minimum logical volume sizes. Refer to 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.
- 7 In the Usage field, display the options (File System, Swap, or None). Select **None**, and press **Return**. Then tab to **add**, and press **Return**.

- 8 Repeat Steps 3-7 for all of the logical volumes you need to create on each server.

Table 2-4. FileNet Datasets

Logical Volume Name	Server Type			Minimum Size of Logical Volumes (in MB)	Increment (in MB)	Your Size (in MB)
	Com- bined	Root/ Index	Stor. Libr.			
fn_cache0	x	-	x	100	100	
fn_perm_db0	x	-	x	100	100	
fn_perm_rl0	x	-	x	64	64	
fn_trans_db0	x	-	x	320	320	
fn_trans_rl0	x	-	x	256	256	
fn_sec_db0	x	x	-	64	64	
fn_sec_rl0	x	x	-	64	64	

Note

The minimum logical volume sizes on your server might be slightly higher, depending on the server type and its configuration. (For example, fn_cache0 could be 112 MB instead of 100 MB.)

If you are going to increase the size of any of the logical volumes, you must increase the size by a multiple of the minimum logical volume size.

- 9** When you are finished adding all the logical volumes, click **OK**.
- 10** At the Create New Logical Volumes screen, click **OK**.
- 11** At the Logical Volumes screen, the new logical volumes are listed on the display.
- 12** Exit SAM and return to the system prompt.

Preparing for the Installation

This chapter contains a worksheet to record system information for your service representative to use during the Image Services software installation and configuration.

Server Types

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.

Installation Worksheet

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

System Information

- 1 Version of the HP-UX operating system software: _____
(use **uname -r**) (needs to be version **B.11.11** or **B.11.23** or higher)

- 2 Character set used by the operating system: _____
(USASCII7, ISO8859-1, ISO8859-2, for example)
(use **locale charmap**)

- 3 Media Device Type(s) (CD-ROM, DAT Cartridge, 8mm, for example):

Device Type(s): _____

Device Driver Name(s) (path): _____
(use **ioscan -fn**) (**/dev/dsk/c2t2d0** for CD-ROM, for example)
(**/dev/rmt/0m** for tape, for example)

4 System memory (in MB): _____
(use **/usr/contrib/bin/machinfo**)

5 FileNet Domain Name: _____

Organization Name: _____

6 System Serial Number (SSN): _____
(valid range: **1000 - 2147483646**)

Important

The SSN 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 (Ethernet, FDDI, for example)

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 numeric digits. The network address should contain four numbers separated by decimals (for example, **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.)

System Server Information

The server names, network addresses, and descriptions of servers comprising this Image Services system. The network address should contain four numbers separated by decimals (for example, **197.0.0.146**). The description can be Combined server, Root/Index server, Storage Library server, Application server, etc.

Table 3-2: Server Information

Server Names	Network Address	Description

FileNet Printer Server Information

If your Image Services system contains a Printer Server, record the NCH Name, Printer Type, and Printer Server IP Address for all of the printers on the system. The addresses should contain four numbers separated by decimals (for example, **197.0.0.146**).

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

NCH Name	Printer Type	Printer Server IP Address

Storage Library Information

Determine the number of storage library units that you plan to connect to the Image Services system (up to 8 per server/ 64 per system), (1-64): _____

Important

Verify that the SCSI adapter card is configured for a **maximum of 80 MB/second** data transfer for best optical library performance. See **“Appendix E – Setting the Maximum Data Transfer Rate for SCSI Host Bus Adapters” on page 370**

- 1 Collect the following information for each Storage Library on your system:
 - Storage Library Type (HP Autochanger, FileNet OSAR Library, Plasmon ODU, for example):

 - 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 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.)

Cache Percentages

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

Table 3-4: Cache Information

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

Use the SCouT program to find this information.

Install Relational Database 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.

The Database Administrator is responsible for installing the appropriate version of the Relational Database Management software.

Image Services on HP-UX supports two Relational Database Management Systems. Skip to the section for the one that is going to be installed on this FileNet Image Services system:

- [**“Oracle 9i and Oracle 10g” on page 101**](#)
- [**“IBM DB2 V8.1 and DB2 V8.2” on page 104.**](#)

Oracle 9i and Oracle 10g

If the Oracle software and datasets will 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.

To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Give this document to the Database Administrator.

Oracle Database Information

After Oracle has been successfully installed, the Database Administrator must provide the following Oracle variables and tablespace names and sizes.

Oracle Variables

Oracle Version: _____

\$ORACLE_HOME: _____

\$ORACLE_SID: _____

<Oracle User name>: _____

<DBA Group>: _____

Tablespace Names and Sizes

Recommended Tablespace Names	Tablespace Names You Actually Assign	Minimum Tablespace Size (MB)	Tablespace Size You Actually Create
fnsys_ts		200	
fntrp_ts		400	
fnidx_ts (optional for indexes)		200	
fnusr_ts (optional for WorkFlo Queue Services)		200	

After you have this information, you're ready to install the FileNet Image Services software. Continue with **Chapter 4, "Installing FileNet Image Services Software," on page 107.**

IBM DB2 V8.1 and DB2 V8.2

The **Database Administrator** is responsible for installing the DB2 software and creating the DB2 database for Image Services.

- The **DB2 server** software must be installed on a dedicated remote AIX server. Also, the DB2 database for Image Services must be created on the remote AIX or Solaris server. Refer to **Chapter 2** of the *Guidelines for Installing and Configuring DB2 Software* for further information.
- The **DB2 client** software must be installed on the HP-UX Image Services server and linked to the remote DB2 database. Refer to **Chapter 3** of the *FileNet Guidelines for Installing and Configuring DB2 Software* for details.

To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Give this guidelines document to the Database Administrator.

DB2 Database Information

After DB2 has been successfully installed, the Database Administrator must provide the following information.

	Default User Name	User Name You Chose	Default Group Name	Group Name You Chose
Instance Owner	db2inst1		db2iadm1	
Fenced User	db2fenc1		db2fadm1	
DB2 Administration Server User	db2as		db2asgrp	

Recommended Tablespace	Tablespace Name Actually Assigned	Minimum Size (MB)	Tablespace Size Actually Created
userspace1		200	

f_sw password: _____

f_sqi password: _____

f_maint password: _____

f_open password: _____

DB2 Database Alias Name: _____
(indexdb, for example)

User Tablespace Location: _____
(userspace1, for example)

After you have this information, you're ready to install the FileNet Image Services software. Continue with **Chapter 4, "Installing FileNet Image Services Software," on page 107.**

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
- 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 to run the FileNet tools and software, you must add this user to the **fnadmin** and **fnop** groups.

Check the Connection to the Remote Oracle Database

Server Types

Perform the steps in this section only on **servers with Oracle Client software**.

If the Oracle database is located on a remote server, check the connection between the Oracle Client and the remote Oracle database.

TWO_TASK

Verify that the internal Oracle networking is active and functional, by entering an sqlplus command in this format:

```
sqlplus <user>/<password>@<GLOBAL_DBNAME>
```

For example, you might enter:

```
sqlplus system/<system_password>@Michigan_IDB.world
```

If there are no errors, Oracle networking is working successfully. Exit from sqlplus.

Tip

As a double-check, you can enter:

```
tnsping Michigan_IDB.world
```

Check the Link to the DB2 Database

Server Types

Perform the steps in this section only on **servers with DB2 Client software**.

Since the DB2 database is located on a remote AIX or Solaris server, use the Command Line Processor (CLP) to check the connection between the DB2 Client and the remote DB2 database.

Log onto the Image Services server as the DB2 Client instance owner (such as **fns**), and enter:

db2

DB2> connect to <db_alias_name> user f_sw using <f_sw password>

where <db_alias_name> is the database alias name of the DB2 database on the remote server, and <f_sw password> is the f_sw user's password set up by the Database Administrator.

Mount the Image Services CD-ROM

Server Types

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

Note

If you're going to run the Installation Installer from a network drive, skip to the section, **"Run the Image Services Installer" on page 112.**

- 1 Verify that you're logged on as a user with **root** privileges, and change to the / (root) directory:

cd /

- 2 Load the appropriate media into the CD-ROM drive.

- 3 Mount the CD-ROM filesystem by doing the following substeps:
 - 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/c2t2d0**.

- 4 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.

- 5 To verify that the CD-ROM mounted successfully, enter:

mount

You should see the CD-ROM device listed.

Run the Image Services Installer

Server Types

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

If you're installing a multi-server system, verify that the Root server is installed and running first.

The IS Installer performs two tasks.

- First it runs a System Check to verify configuration prerequisites.
- Then it installs the Image Services software.

You can choose to run both, or just the System Check only.

The Installer System Check inspects the server for prerequisites and lists any warning and error conditions in two locations:

- Pop-up windows on your screen.
- Report and log files in the `/fnsw/local/logs/install/` directory.

Launch the IS Installation

- 1 Log on as a user with **root** privileges.
- 2 If you are running this program from a remote terminal, export the display from the server to your current terminal.

- In the Bourne or Korn shell, enter:

export DISPLAY=<host_identifier>:0

- In the C shell, enter:

setenv DISPLAY <host_identifier>:0

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

- 3 If you're going to run the Installer from a remote terminal, verify that you allow access to the host display by entering this command at the remote terminal:

xhost +

If the server has an Xconsole, rather than an ASCII terminal, enter the xhost + command there, too.

Note If you used the **su** command to switch from any user to a user with **root** privileges, you must enter the **xhost +** command at the original CDE login window.

Tip Test your DISPLAY setting by entering:

xclock &

If the clock appears on your remote terminal screen, the DISPLAY variable was exported correctly. If you don't see the clock, try the export or setenv command again using the IP address rather than the server name.

- 4 For Silent Installation only**, locate the appropriate options.txt file on the CD-ROM. The option file contains the standard responses to the installer's prompts. Copy the file to a local directory on your server. (You can rename it to something shorter, like **opt.txt**.) Use your preferred text editor to make any appropriate changes and save the file. The options and their default values are fully described in the file.

- 5 As a user with **root** privileges, change to the directory where the IS software is located and enter the appropriate command to invoke the Installer.
- Graphical mode – standard, graphical interface:
`.is_4.1.0_hp.bin &` (HP 9000)
- or -
`.is_4.1.0_hpintegrity.bin &` (HP Integrity)
 - Console mode – plain text interface:
`.is_4.1.0_hp.bin -console` (HP 9000)
- or -
`.is_4.1.0_hpintegrity.bin -console` (HP Integrity)

- Silent mode – no screen display:

```
./is_4.1.0_hp.bin -silent -options /tmp/opt.txt
```

- or -

```
./is_4.1.0_hpintegrity.bin -silent -options /tmp/opt.txt
```

where /tmp/opt.txt is the location of the text file you copied from the CD-ROM and modified. Specify its full path on the command line. For example, "... -options /fnsw/local/tmp/opt.txt".

Note

If you run the Installer System Check in silent mode, check the log file in /fnsw/local/logs/install/4.1.0/ to determine the results. The name of the log file is IS_4.1.0.log.

If you determined earlier that the /var/tmp directory does not have enough space, specify an alternate directory. Add **-is:tempdir <directory>** to the command line to override the default /var/tmp directory, as long as the <directory> you specify already exists. This optional temporary directory must be outside the /fnsw directory structure. For example, you might enter:

```
/cdrom/is_4.0.hp.bin -is:tempdir /othertmp
```

- or -

```
/cdrom/is_4.0.hpintegrity.bin -is:tempdir /othertmp
```

where /othertmp is the specific temporary directory you want to use.

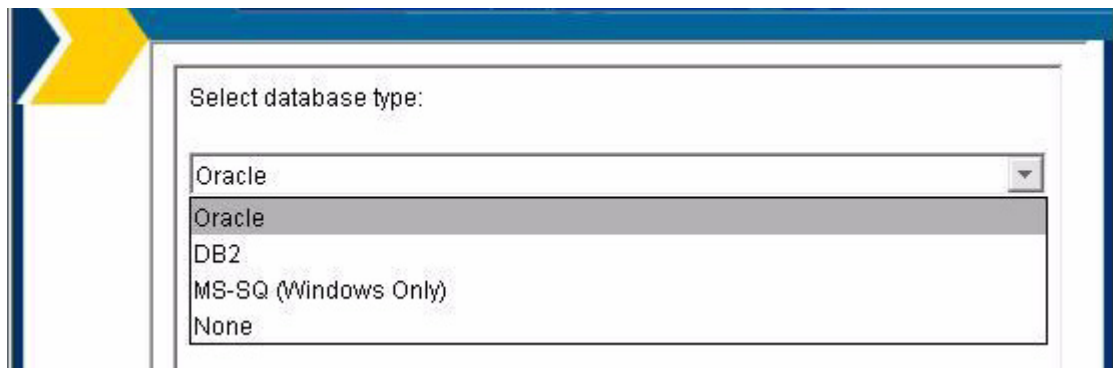
The following pages illustrate many, but not all, of the screens you'll see.

- 6 Read and accept the Notice to End Users to start the installer.
- 7 When you are prompted to select the parts of the Image Services installation you wish to perform, choose either the **System Check only** or the **System Check and Install Image Services**.

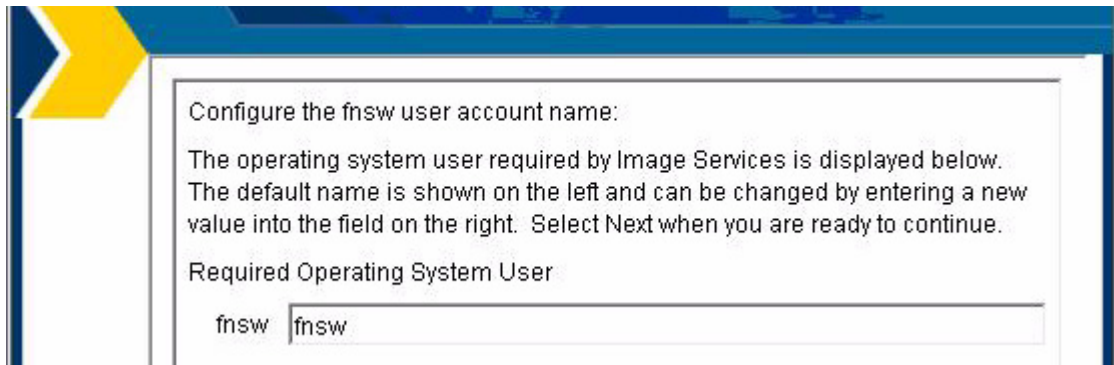
Select the appropriate radio button and click **Next**.

- If you select **System Check only**, skip to [**Step 10 on page 120**](#).
- If you select the **System Check and Image Services Installation** option, continue with the following steps.

- 8 On the Select database type screen, select the type of relational database software installed on this server. If this is a Storage Library server or an Application server without an RDBMS, select None.



- 9 Next, you are prompted to configure the FileNet software user account name. Enter the name of the user account you created earlier for the FileNet software user, such as **fns**.



The installer will check for the existence of this user and the default IS groups later in the installation. If the user or the groups do not exist, the installer will not install the IS software.

- 10** During the **System Check**, the Installer verifies the status of server characteristics in these categories:
- Hardware checks
 - Operating System checks

- Time zone checks
- FileNet users and groups

The same checks are performed for both the **System Check only** and the **System Check and Install Image Services** options.

Items in the Status column are color coded:

- **Green** indicates the check has passed.
- **Yellow** indicates a warning that an item has failed but the installer can continue.
- **Red** indicates that a check has failed and the installer cannot continue.

Some Installer SystemChecks produce only warnings while others prevent the installation of the Image Services software:

Condition	Severity
Not logged on as superuser	Will prevent install
Insufficient file system space	Will prevent install
Insufficient swap space	Warning only

Condition	Severity
Incompatible host name	Will prevent install
Incompatible O/S	Will prevent install
Missing debugger	Warning only
Inconsistent timezone	Warning only
Kernel parameter out of range	Warning only
Missing FileNet user/group	Will prevent install
Incorrect FileNet user/group membership	Will prevent install
Image Services running	Will prevent install

Hardware Checks

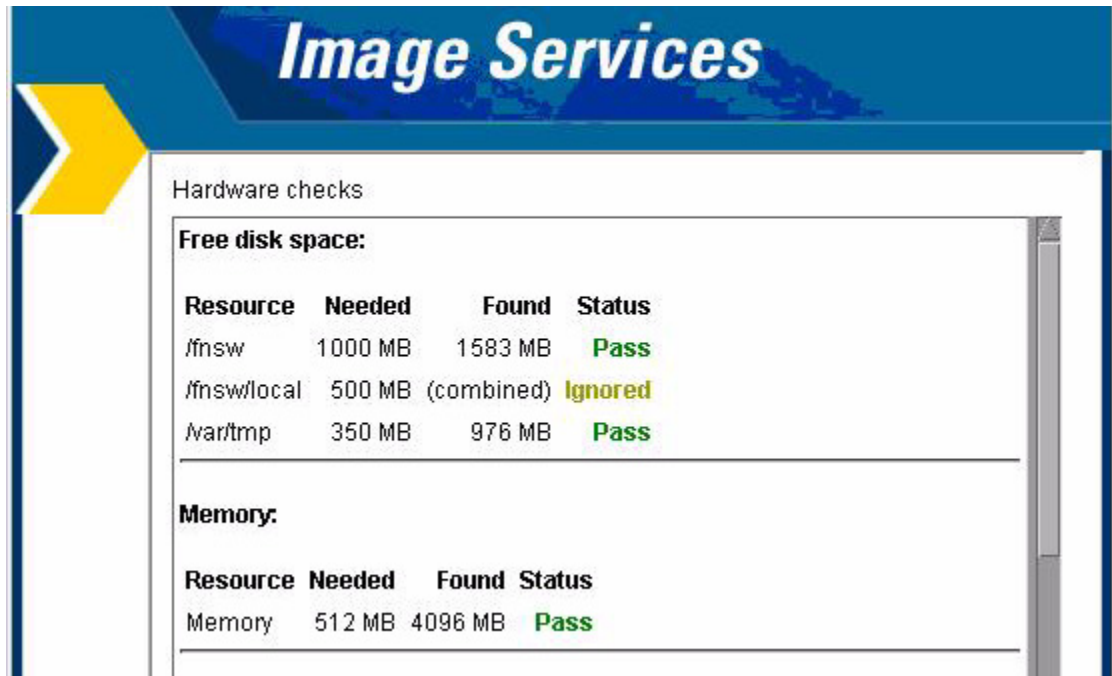
The first System Check screen displays:

- Free disk space
- Memory
- Swap Space

The Installer lists the resource, how much you need, how much you have, and either Pass or Fail.

If a configuration item, such as “insufficient file system space” or “kernel parameter out of range” does not pass the System Check, you can correct it while the Installer is still running.

- a Open another X Window on the desktop and make the necessary change. You might need to refer to **Chapter 2, “System Administrator Tasks,” on page 52.**
- b Then, click the **Back** button on the Installer display to return to the previous screen, and click **Next** again to rerun the check.





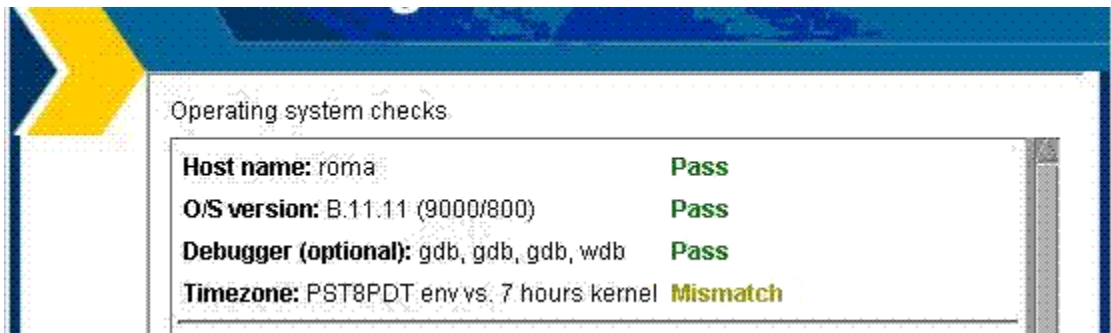
Click **Next** when you're ready to continue.

Operating System Checks

The Operating System Checks screen displays:

- Host name
- O/S version

- Debugger
- Timezone settings
- Kernel parameters



This example shows a mismatch between the Timezone kernel parameter and the TZ (timezone) environment variable. You'll need to correct this before you put your Image Services system into production. Refer back to the section in Chapter 2, **[“Check the Operating System Kernel Limits” on page 56](#)** for information about setting these values.

As you scroll down the display, you see the minimum and current kernel parameter settings.

Kernel parameters:

Resource	Required	Current	Status
maxdsiz	>= 117440512	1073741824	Pass
maxfiles	>= 256	512	Pass
maxuprc	>= 400	3687	Pass
msgmni	>= 256	4096	Pass

Tip

If any kernel parameters fail the system check, click the **Back** button to return to the previous screen.

Then, in a separate window, you can correct it.

In HP-UX 11i v1, use **SAM** to modify the kernel parameters.

In HP-UX 11i v2 and v3, run the **kctune** utility. For example, if maxfiles is too small, you would enter:

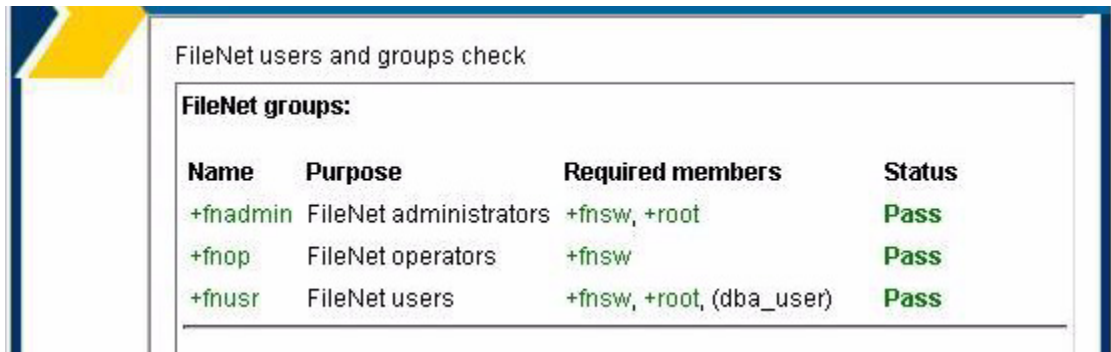
kctune maxfiles=1024

Finally, click **Next** on the installer screen to run the kernel parameter check again.

FileNet Users and Groups Check

The FileNet Users and Groups Check screen displays the required user and group memberships for FileNet Image Services.

- FileNet groups
- FileNet users
- Database user and group (Oracle only)



FileNet users and groups check

FileNet groups:

Name	Purpose	Required members	Status
+fnadmin	FileNet administrators	+fnsw, +root	Pass
+fnop	FileNet operators	+fnsw	Pass
+fnusr	FileNet users	+fnsw, +root, (dba_user)	Pass

+ **green** indicates the group and member users are present;

– **red** indicates the group or member users are missing.

The Status column indicates whether the group in the Name column exists and contains the appropriate users listed in the Required Members column.

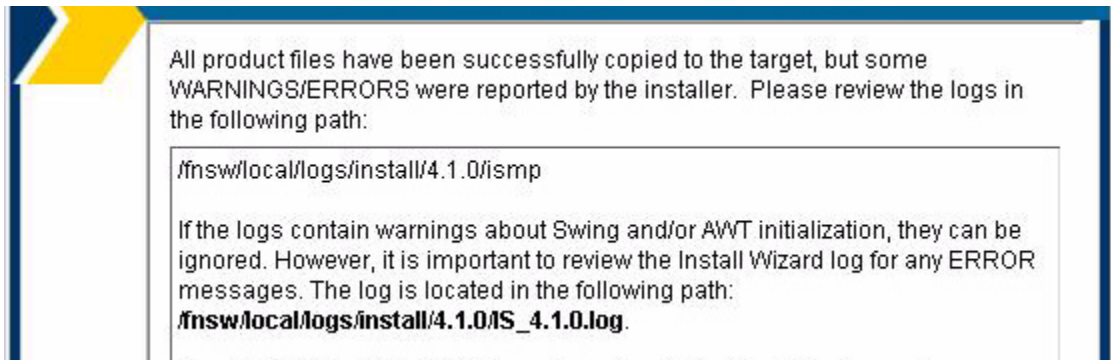
Tip You can click the **Back** button, create the missing users and add the users to the appropriate groups, then click **Next** again to rerun this check.

Note Oracle requires an additional user and group (DB2 does not). Since the Installer doesn't know whether Image Services will be configured to use Oracle or DB2, it shows a place holder for the Oracle user and group. This is for informational purposes only, and does not prevent the System Check from completing successfully.

Click **Next** to continue.

Finishing the System Check

If the System Check passed all its tests, but generated warnings for the swap space, debugger, or kernel parameter tests, the following screen displays.



Check the log file if you're not sure which additional items you need to correct.

You must fix all the error conditions reported by the Installer System Check before you install the Image Services software. You can run the System Check as often as you wish.

- If the Installer System Check completed successfully and you selected the option to install Image Services software, the Installer

continues automatically with the section, **“Installing Image Services 4.1” on page 133.**

- If the Installer System Check did not pass all its tests, return to the previous chapter to resolve the inconsistencies.

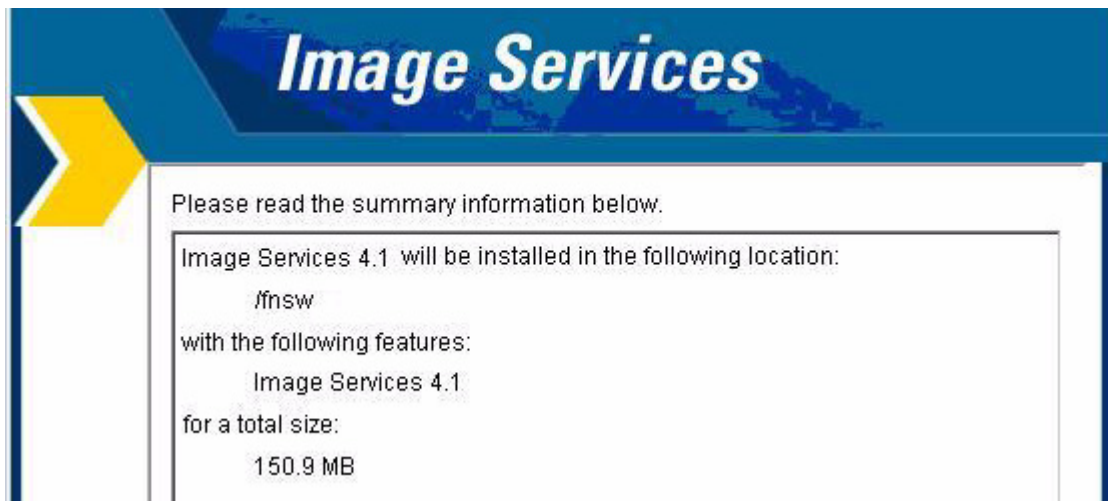
Rerunning the Image Services Installer

If the Installer System Check does not pass, be sure to review the log file in the /fnsw/local/logs/install/ directory. The most recent information is appended to the end of this file.

After you have made the changes required by the Installer System Check, return to **“Run the Image Services Installer” on page 112** and run the System Check again.

Installing Image Services 4.1

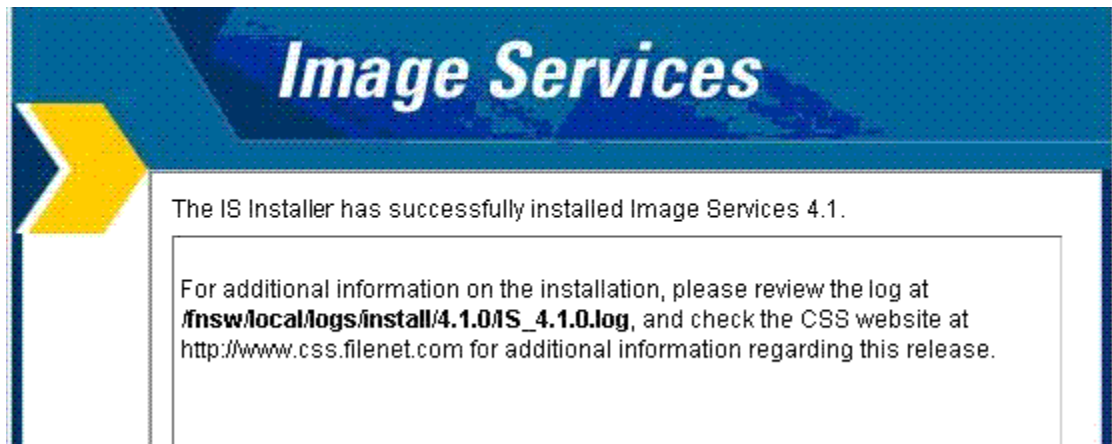
- 1 As the Image Services installer continues, the Summary screen displays. Verify that the information is correct for your system.



- 2 As the Image Services software installs, a progress bar displays.

Depending on your server's processor speed, expect the installation to take approximately **20 minutes**. (If you're installing image Services on several servers simultaneously from the same location, it might take a while longer.)

- 3 When the software installation is finished, the InstallShield Installer creates an uninstaller (/fnsf/etc/uninstaller/uninstall_is), and then verifies the version information.
- 4 The final screen indicates success. It also reminds you to check the Installer log.



Click **Finish** to exit the installer.

Unmount the Image Services CD-ROM

Server Types

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

Unmount the CD-ROM by entering:

```
umount /cdrom
```

And remove the installation media from the drive.

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 4.1 initial configuration issues. (You'll install any general Image Services 4.1 fix packs in a later section.)

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

You can retrieve these fixes either from the Tech Info CD or from the IBM Information Management support page (<http://www.ibm.com/software/data/support>).

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 might 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 FileNet Software User Environment

The FileNet software user, such as **fnsf**, 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 `/fnsf/etc`. After they've been copied, you can add your own preferences to these files.

- 1 In a CDE window, logon as the FileNet software user such as **fnsf**. You might 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, and set up the FileNet software user environment:

`/fnsf/etc/inst_templates`

- a Answer the prompts as appropriate for your server.
- b 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 of these services, select **0=none**; if the server has Oracle software installed on it, select **1=Oracle**; if the server has DB2 software installed, select **2=DB2**.

Enter the relational database type configured on this server
(0=none, 1=Oracle, 2=DB2) [**1**]:

Note If you're planning to use an existing Oracle or DB2 instance, accept the default RDBMS-related values listed at each prompt.

- c If **DB2** software exists on this server, enter the user ID of the relational database instance owner.

Enter the DB2 instance owner [**fnsw**]:

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

If **DB2** software is installed on this server, enter the path to the sqllib directory within the DB2 Client instance owner's home directory.

Enter the relational database home directory [**/home/client_920**]:

- 3 When inst_templates is finished, log out as the FileNet software user and log back in to put the templates into effect.

Set Up the root User Environment (Optional)

Note Setting up the **root** user environment is required for servers with relational database software. It is optional for all other servers such as Storage Library servers and certain Application servers that do not have relational database software.

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 /fnsf/etc. Once they have been copied, you can add your own preferences to these files.

- 1 Log on as a user with **root** privileges.
- 2 Enter the following command to copy all of the template files into the correct directory, and set up the **root** user environment:

/fnsf/etc/inst_templates

- a Answer the prompts as appropriate for your server.
 - b Answer the relational database prompts exactly the same as you did for the FileNet software user on this server.
- 3 When inst_templates is finished, log out to the system prompt and log back in as a user with **root** privileges to put the templates into effect.

Set File Ownerships and Permissions

Server Types

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

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. To download this document from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28**](#).

- 1 Log on as a user with **root** privileges.
- 2 Run the **fn_setup** tool by entering:

/fnsw/bin/fn_setup

- 3 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 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:YourCorp]:
```

- 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 [1234567890]:
```

Important

The SSN is written onto all storage media and **must** be unique for each Image Services system. If you have more than one Image Ser-

vices 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 of these services, select 0=none; if the server has Oracle software installed on it, select 1=Oracle; if the server has DB2 software installed, select 2=DB2.

Enter the relational database type configured on this server (0=none, 1=Oracle, 2=DB2) [**1**]:

Note

If you plan to use an existing Oracle or DB2 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 that software is located.

If **DB2** software exists on this server, enter the DB2 Client instance owner's DB2 home directory.

```
Enter the RDBMS home directory [/home/client_920]:
```

Note

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

- f If Oracle software (either client or server software) 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]:
```

- 4 When the **fn_setup** tool displays the information you supplied, confirm your entries:

```
This is the setup configuration:
NCH server name:  hpvenice:YourCorp
SSN:  1234567890
Relational database type:  oracle
Relational database home:  /home/client_920
Relational database user ID:  oracle
Relational database group ID:  dba
Relational database ID:  IDB
Do you want to continue (y/n) [y]:
```

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

- 5 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: 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.)

- 6 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 1 and run **fn_setup** again.
 - b If there were no problems, continue with the next section.

Reboot the Server

Important

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

As a user with **root** privileges, reboot the server by entering:

```
shutdown -ry 0
```

Image Services error messages (such as **.env :hostname not found**) will display 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 151.](#)**

If you're adding an **Application server**, skip to the section, **“Configure the Root Server” on page 235** in Appendix A.

If you're adding a **Storage Library server**, skip to the section, **“Configure the Root Server” on page 290** in Appendix B.

If you're migrating to an HP Integrity server from an HP 9000 server, skip to the document, *Guidelines for Migrating from HP 9000 Servers to HP Integrity Servers*. To download the guidelines from the IBM support page, see **“Accessing IBM FileNet documentation” on page 28**.

Configuring FileNet Image Services Software

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

- Using the FileNet configuration editor tool (fn_edit) to initially set up a server type (such as, Combined, Dual, and so on.)
- 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

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.

-
- 1 From an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, logon to the Image Services server as the FileNet software user, such as **fns**.
 - 2 Export the display from the server to your current terminal.

- In the Bourne or Korn shell, enter:

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

- In the C shell, enter:

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

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

- 3 Allow access to the server display by entering this command at your current terminal:

```
xhost +
```

Note

If you used the **su** command to switch from any user to a user with **root** privileges, you must enter the **xhost +** command at the original CDE login window.

Tip Test your DISPLAY setting by entering:

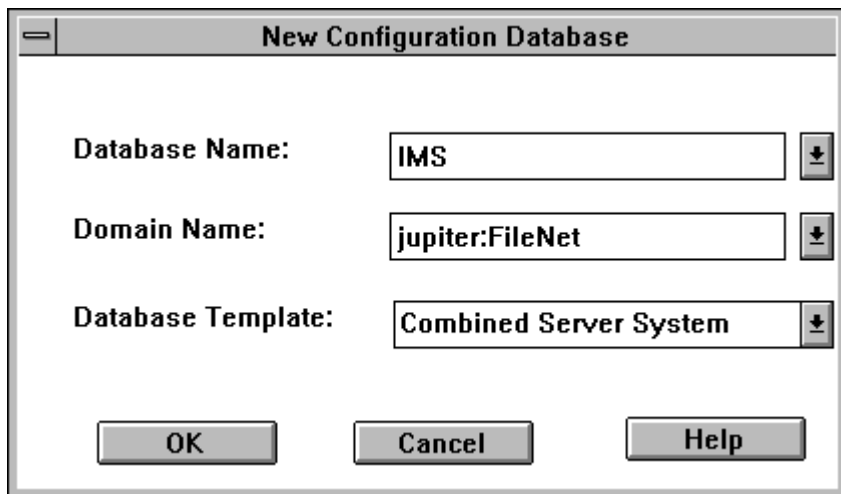
xclock &

If the clock appears on your remote terminal screen, the DISPLAY variable was exported correctly. If you don't see the clock, try the export or setenv command again using the IP address rather than the server name.

- 4 As the FileNet software user, such as **fnsw**, start X Windows (if you have not already done so).
- 5 Open a new X window, and enter the following command:

fn_edit &

A dialog box similar to the following displays:



The image shows a dialog box titled "New Configuration Database". It contains three input fields, each with a dropdown arrow on the right:

- Database Name: IMS
- Domain Name: jupiter:FileNet
- Database Template: Combined Server System

At the bottom of the dialog box are three buttons: OK, Cancel, and Help.

CAUTION

If the Open Configuration Database dialog box displays instead of the New Configuration Database dialog box, an Image Services configuration (cdb) file already exists. Click **Cancel**, then from the File pulldown 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.

- 6 Verify that the database and domain names are correct. (The two-part domain name is set up as follows: <Domain>:<Organization>.)
- 7 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
- 8 After you have verified the domain information and selected the template type, click **OK**.

- 9 You will receive several query prompts. The prompts you receive depend on which template you selected earlier. Refer to the **“Installation Worksheet” on page 92** to provide the appropriate answers.

Tip Use the on-line help for more instruction on answering the prompts for each template type. Select the Help menu option in the Configuration Editor.

When you're prompted for information about your relational database management system, Oracle or DB2, use the information that was supplied to you by the Database Administrator when the RDBMS software was installed. When you're prompted for the relational database type and release version, select the appropriate type and version for your installation. Refer to **“Oracle Database Information” on page 101** or the **“DB2 Database Information” on page 105**.

In addition to prompts for other system information, you'll be asked to:

- Select the relational database type (Oracle9i/10g, DB2 8.1/8.2).

- For DB2, enter and verify the passwords assigned to:
 - f_sw
 - f_maint
 - f_sqi
 - f_open
- Enter the relational database name.
- Enter the user tablespace name.

After you've answered all of the template prompts, you'll receive a message stating that the configuration is complete.

- 10** Now you can select any of the available tabs from the FileNet 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, 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 might need to complete the screen or window.

Select and Configure the Relational Database Instance (if applicable)

Important

This procedure assumes that the tablespaces and databases that you specify in the System Configuration Editor either already exist or that you will create them before you initialize the FileNet databases.

For **Oracle**, see the FileNet *Guidelines for Installing and Updating Oracle 9i Software for UNIX Servers* or the *Guidelines for Installing and Updating Oracle 10g Software for UNIX Servers*

For **DB2**, see the FileNet *Guidelines for Installing and Configuring DB2 Software*.

To download the guidelines from the IBM support page, see **[“Accessing IBM FileNet documentation” on page 28.](#)**

The Database Administrator has probably already supplied this information in the section, **“Install Relational Database Software” on page 100** in Chapter 3.

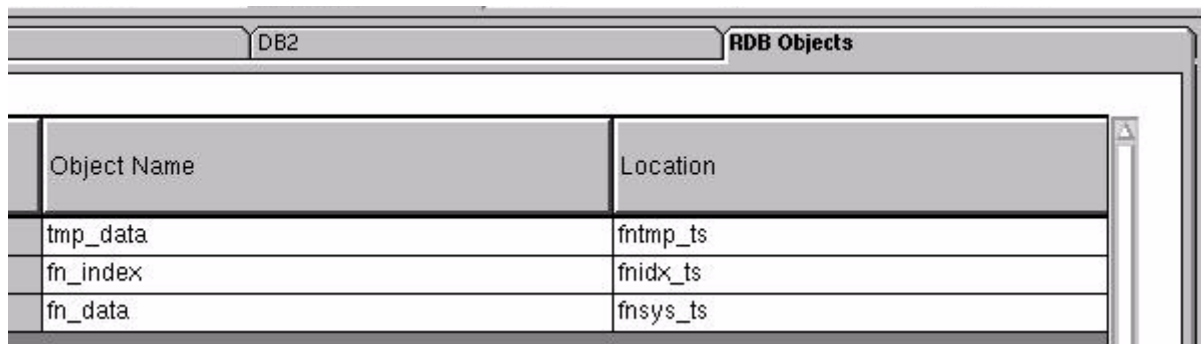
Continue with the appropriate subsection:

- **“Oracle 9i/10g” on page 160**
- **“DB2 V8.1/V8.2” on page 163**

Oracle 9i/10g

Define the Tablespace Names

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



The screenshot shows a window titled "DB2" with a sub-tab "RDB Objects". Inside the window is a table with two columns: "Object Name" and "Location". The table contains three rows of data:

Object Name	Location
tmp_data	fntmp_ts
fn_index	fnidx_ts
fn_data	fnsys_ts

- 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 **fnidx_ts** was created for indexes, change all occurrences of the name to your dedicated FileNet index tablespace.
- If an optional **fnusr_ts** was created for WorkFlo Queue Services, 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

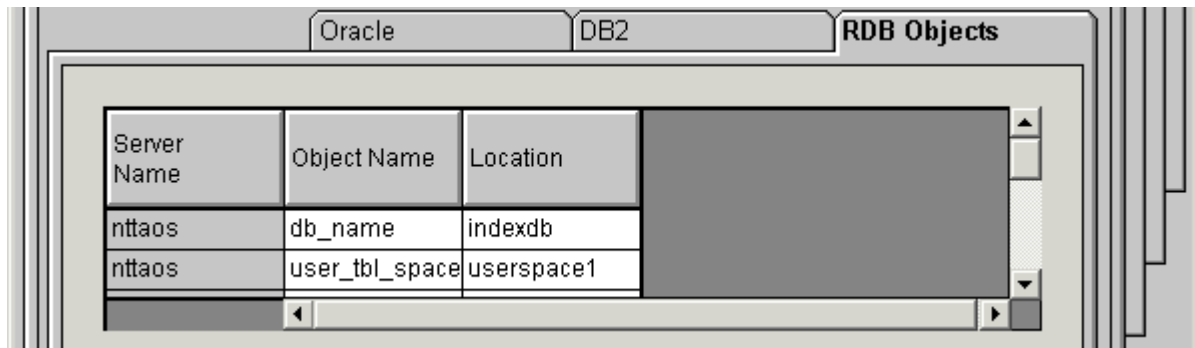
The tablespace names specified in the RDB Objects list must exist before you initialize the FileNet Image Services databases.

- 3 On the Oracle subtab, verify that the Oracle version is **9.2.0.8**, or **10.2.0.2** or later.
- 4 Skip to the section, **“Verify the Image Services Character Set” on page 165.**

DB2 V8.1/V8.2

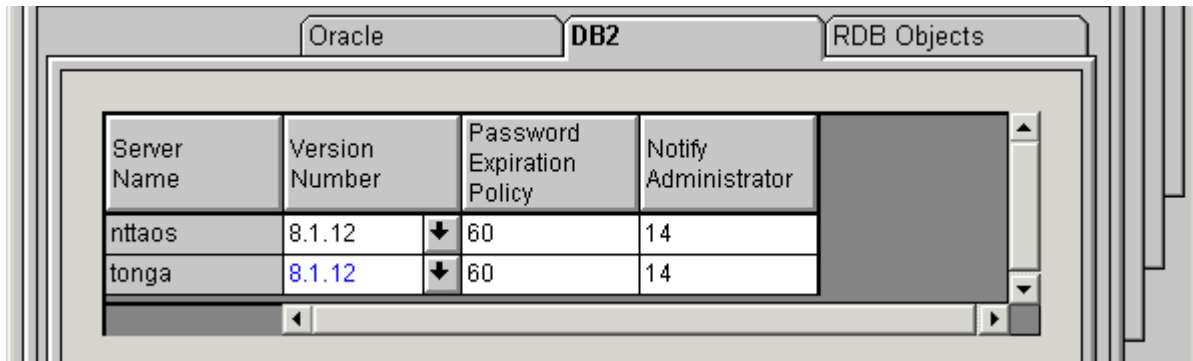
Verify the Database and User Tablespace Names

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



- 2 On the RDB Objects subtab, verify the database name and the tablespace name in the Location column:
 - **Database name**, such as indexdb.
 - **User Tablespace name**, such as userspace1.

3 On the DB2 subtab, verify the following fields:



Server Name	Version Number	Password Expiration Policy	Notify Administrator
nttaos	8.1.12	60	14
tonga	8.1.12	60	14

- **Version** - must be **8.1.12** or later (DB2 version 8.1.0 plus FixPak 12 or later), or **8.2.5** or later (DB2 version 8.2.0 plus FixPak 5 or later). DB2 version 7.2.0 is not supported at this time.
- **Password Expiration Policy** - This field lists the number of days that the f_sw, f_maint, f_sqi, and f_open passwords remain in effect before they expire. The default value is **60 days**. To change the default, enter a new value in this field.

Note A blank field is not permitted, and a value of 0 is equivalent to "Never Expires."

- **Notify Administrator** - This field lists the number of days before password expiration that the administrator will be reminded to update the password. The default value is **14 days** before the password expires. To change the default, enter a new value in this field.

Note This value must always be less than or equal to the password expiration value. A blank field is not permitted, and a value of 0 would mean notification on the day the password expires.

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 RDBMS character set; for example, ISO 8859-2. Refer to the **“Installation Worksheet” on page 92.**

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

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 **“Cache Percentages” on page 99** that were determined by the SCouT planning tool. Your dataset sizes must 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.
- Minimum size for security datasets is **64 MB**.
- Maximum size for cache datasets is **16 GB**.

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

- You can have a total of 255 cache dataset partitions, each 16 GB in size.

Note

Supporting 255 cache dataset partitions, each 16 GB in size, allows for terabyte caches. The maximum cache size is 4080 GB, or 4 TB (terabytes).

Refer to the **[“Installation Worksheet” on page 92](#)** 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 subtab to view a list of caches configured on your server. Default values are automatically given to each of the caches.

Note Refer to the **“Installation Worksheet” on page 92** 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 subtabs 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 (Optional)

- 1 Click on the System Application Services tab in the System Configuration Editor window.
- 2 Select the Document Services subtab 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 Help if you have any questions about the parameter values.

- 3 If you want to change the way images are sent to the optical disk, select the Others subtab. 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

Server Types

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

- 1 Click on the MKF Databases Tab in the FileNet 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.

Note

The default MKF database block size in Image Services 4.1 is **8 KB**. You can also choose a block size of 16 KB. Click Help if you have any questions on the parameter values.

Important: The Security database **SEC_db** and redo log **SEC_rl** **must use 8 KB blocks.**

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 [**"Installation Worksheet" on page 92**](#) 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).

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 (Optional)

Use this procedure to modify your system and server parameters.

Note Consult the 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`, and so on), click on the System Processes subtab and type the new values in the fields of the system processes you want to change.

- 3 To modify the server processes parameters (such as `bes_commit`, `dtp`, and so on), click on the Server Processes subtab 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 (Document Buffer Count, Document Buffer Size, for example), click on the Server Memory subtab.

Exit the System Configuration Editor

- 1 From the FileNet 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.
- 3 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)

Initialize RDBMS on the Root Server

Skip to the appropriate subsection:

- [**“On Servers with Oracle Software” on page 174**](#)
- [**“On Servers with DB2 Client Software” on page 178**](#)

On Servers with Oracle Software

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)

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 102**. 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 103** 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 On IS systems with remote Oracle databases:**Important**

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

- a As the FileNet software user, such as **fnsw**, run the following command on the IS server:

fn_oracle setquotas

This command creates the `/fnsw/local/oracle/ora_users.sql` file.

- b Copy the following scripts from the Image Services server to the corresponding directories on the Oracle server:

/fnsw/oracle/FileNet.sql

/fnsw/local/oracle/ora_users.sql

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

SQL> @FileNet.sql

(grants privileges to FileNet Image Services users)

SQL> @ora_users.sql

(assigns quotas, default tablespaces, and temporary tablespaces)

- 4 Skip to the section, **“Set Up Links Required for Image Services” on page 179.**

On Servers with DB2 Client Software

Note This section applies only to remote DB2 instances.

- 1 Ask the **Database Administrator** to start the RDBMS software before initializing the FileNet databases.
- 2 Verify that the DB2 Home and Instance environment variables are set appropriately for both the user with **root** privileges and the FileNet software user. As each user, enter the following commands:

echo \$DB2_INST

should be set to the name of the DB2 instance owner, such as **fns**w.

echo \$DB2_HOME

should be set to the sqllib directory within the DB2 Instance owner's DB2 home directory, such as **/home/fns**w/sqllib.

- 3 Compare the output of the above commands to the settings determined in the FileNet *Guidelines for Installing and Configuring DB2*

Software. To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

If DB2_HOME and the DB2_INST are not set correctly, return to [**“Install the User Environment Templates” on page 137**](#) and run the **inst_templates** command again.

Set Up Links Required for Image Services

In this section you will create links to the actual logical volumes that will be used to create the FileNet Image Services datasets.

- 1 Verify that you're logged on as the FileNet software user such as **fnsw**.
- 2 Change to the `/fnsw/dev/1` directory:

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

Tip

If one or more of the subdirectories in this path don't exist yet, you can create them with the **mkdir** command.

- 3 Create (and edit) the **filenet.links** file using your preferred editor (for example, **vi**).

Include a soft link command for each of the databases that you created or configured in the previous sections. Link the database name to the logical volume where you placed the database by entering a command structured similar to the following:

```
ln -s /dev/<volume group>/<logical volume> dbname
```

where **<logical volume>** is the disk location of the volume and **dbname** is the data base name. For example:

```
ln -s /dev/fnvg/fn_cache0 cache0
```

Note The **filenet.links** file contents shown below are examples ONLY. (The links you create must reflect the actual allocation of the volumes on your system.)

In the **filenet.links** file, you **MUST** have unique logical volume assignments for all volumes. (Verify that no two volumes share the same log-

ical volume assignment and that no volume is assigned to a logical volume occupied by any part of the operating system.)

Your `filenet.links` should contain link information similar to the following:

On a Combined (Root/Index/Storage Library) Server

```
ln -s /dev/fnvg/fn_cache0 cache0
ln -s /dev/fnvg/fn_perm_db0 permanent_db0
ln -s /dev/fnvg/fn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/fn_trans_db0 transient_db0
ln -s /dev/fnvg/fn_trans_rl0 transient_rl0
ln -s /dev/fnvg/fn_sec_db0 sec_db0
ln -s /dev/fnvg/fn_sec_rl0 sec_rl0
```

On a Root/Index Server

```
ln -s /dev/fnvg/fn_sec_db0 sec_db0
ln -s /dev/fnvg/fn_sec_rl0 sec_rl0
```

On a Storage Library Server

```
ln -s /dev/fnvg/fn_cache0 cache0
ln -s /dev/fnvg/fn_perm_db0 permanent_db0
ln -s /dev/fnvg/fn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/fn_trans_db0 transient_db0
ln -s /dev/fnvg/fn_trans_rl0 transient_rl0
```

- 4 Close the file and save the changes.
- 5 Use **chmod** to change the permission of the **filenet.links** file by entering the following:

chmod 755 filenet.links

Note If you do not change the permission of **filenet.links**, you will not be able to execute the file.

- 6 Execute the **filenet.links** file by entering the following commands:

```
cd /fnsw/dev/1  
./filenet.links
```

- 7 Examine the contents of the /fnsw/dev/1 directory by entering the following command:

```
ls -l
```

The -l option displays the mode, number of links, owner, group, size (in bytes), and time of last modification for each file.

Tip To verify that the links are pointing to the correct logical volumes, enter:

```
ls -lL
```

The -L option lists the file or directory contents that the link references.

The directory should contain the linked directories specified in the **filenet.links** file. If the /fnsw/dev/1 directory does not contain the links as shown above, verify and, if necessary, update the **filenet.links** file

with any changes and verify the permissions are correct for the file. Execute the links file again.

Set File Ownerships and Permissions

- 1 Use the **fn_setup** tool to verify that permissions are set correctly for the FileNet Image Services software and datasets. The **fn_setup** tool also verifies 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 **/fns** and **/fns/local** directories using a **permission_table** that is updated with each new Image Services release. If non-FileNet files are placed in the **/fns** 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. To download this document from the IBM support page, see **[“Accessing IBM FileNet documentation” on page 28.](#)**

As the FileNet software user, such as **fns**, 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.

- 2 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 1 and run fn_setup again.
 - b If there were no problems, continue with the next section.

Initialize All Databases

- 1 As the FileNet software user, such as **fnsw**, enter the following command to create the relational database users (f_sw, f_sqi, f_maint, f_open):

fn_setup_rdb -f

Follow the prompts to enter the requested information for your relational database.

- 2 Initialize all datasets configured on your server by entering:

fn_util init

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

- 3 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 messages, 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 might result from the system trying to remove RDBMS tables when they have already been removed.

Note The message “MKF irrecoverable read error” might appear in the fn_util.log file. Due to the current state of the system, you can ignore this message.

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.

Important **For remote Oracle databases:** If the Oracle database is located on a remote server, verify that the Oracle instance is running.

For local Oracle databases: If the Oracle database is located on this server, verify that the Oracle Instance has the correct SID. As a user

with **root** privileges, enter:

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

The output is similar to the following example in which 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
```

Verify that the Oracle SID is set appropriately for both the user with **root** privileges and the FileNet software user. 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 102**. If it is not set correctly, check with the Database Administrator to have it reset.

CAUTION

The Database Administrator must start the RDBMS software before attempting to start the FileNet Image Services software for the first time. If the Oracle or DB2 software is not available when the Image Services software starts, the Image Services software will fail and display error messages. If you receive error messages, start the RDBMS software and restart the Image Services software.

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

```
initfns start
```

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, the software automatically runs the **cfg_verify** program, which verifies the HP-UX kernel parameter settings.

If **cfg_verify** detects an invalid kernel parameter, it logs an error for each incorrect parameter. For example, you might 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 **vi** tool to find the **cfg_verify** assertion errors. From any directory, enter:

vi

The system log might contain an entry similar to this:

```
07/02/20 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 a minimum value of 1024 decimal (400 hexadecimal) should be set for Remote Entry servers.

You would need to use SAM or kctune 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 and kctune display the kernel parameters in decimal, you can enter modified values in hexadecimal, like this: 0x200. SAM and kctune automatically translate the hex value to decimal.

Fix all invalid kernel parameters, reboot the server indicated by SAM or kctune, 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 \(Optional\)” on page 215.](#)**

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 \(Optional\)” on page 215.](#)**

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 206.**

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 Verify that the SCSI adapter card is configured for a **maximum of 80 MB/second** data transfer for best optical library performance.

Refer to **“Appendix E – Setting the Maximum Data Transfer Rate for SCSI Host Bus Adapters” on page 370.**

- 2 Verify that the storage library devices are powered on and are active.
- 3 **Return to your server’s terminal**, and as a user with **root** privileges, use **ioscan** to determine the addresses of the HP optical drives and storage libraries.

ioscan -fn | 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.

Class	I	H/W Path	Driver	S/W State	H/W Type	Description	
=====							
...							
ba Adapter (122e)	2	0/2	lba	CLAIMED	BUS_NEXUS	Local PCI-X Bus	
ba Adapter (122e)	3	0/3	lba	CLAIMED	BUS_NEXUS	Local PCI-X Bus	
ext_bus Wide LVD A6829-60101	4	0/3/2/0	c8xx	CLAIMED	INTERFACE	SCSI C1010 Ultra2	
target	6	0/3/2/0.1	tgt	CLAIMED	DEVICE		
disk	10	0/3/2/0.1.0	sdisk	UNCLAIMED	UNKNOWN	HP	C1118J
target	7	0/3/2/0.2	tgt	CLAIMED	DEVICE		
disk	3	0/3/2/0.2.0	sdisk	CLAIMED	DEVICE	HP	C1113J
target	8	0/3/2/0.3	tgt	CLAIMED	DEVICE		
disk	4	0/3/2/0.3.0	sdisk	CLAIMED	DEVICE	HP	C1113J
target	10	0/3/2/0.7	tgt	CLAIMED	DEVICE		
ctl	5	0/3/2/0.7.0	sctl	CLAIMED	DEVICE	Initiator	
ext_bus Wide LVD A6829-60101	5	0/3/2/1	c8xx	CLAIMED	INTERFACE	SCSI C1010 Ultra2	
target	12	0/3/2/1.7	tgt	CLAIMED	DEVICE		
...							

In the previous example, the vendor ID is HP and the product IDs are C1118J and C1113J.

Notice that for HP C1118J, the S/W State and H/W Type are UNCLAIMED and UNDEFINED, which indicates that this device is the robotic arm. The two HP C1113J devices are the optical drives.

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 -fn > /fnsf/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 -fn > /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, **0/3/2/0.1.0**), the Class, and the Description (model numbers) of each storage library device shown on the display.

Create the /fnsw/local/sd/sod.conf File

- 1 Change to the appropriate directory and use your preferred text editor, such as **vi**, to create the sod.conf file:

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

- 2 Add 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 **sctl**.

- 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 0/3/2/0.1.0 sctl
```

```
driver 0/3/2/0.2.0 sctl
```

```
driver 0/3/2/0.3.0 sctl
```

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

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. Verify 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 a user with **root** privileges, enter the following command at the system prompt:

/fns/bin/FNPoll

The FNPoll display is similar to this:

```
Found HP-UX Version 11.23
```

```
Removing old device nodes and files used by FNPoll.
```

```
Determining model, series and device driver information.
```

```
This appears to be a(n) i-Series platform (ia64 hp server rx4640).
```

```
Looking up driver and class information for this platform.
```

```
Expected driver-class for single-ended SCSI: sctl-ctl
```

```
Alternate driver-class for single-ended SCSI: unknown-unknown
```

```
Allowable single-ended controller(s): C1010 and (alternate) none
```

```
Expected driver-class for differential SCSI: sctl-ctl
```

```
Alternate driver-class for differential SCSI: unknown-unknown
```

```
Allowable differential controller(s): C87x and (alternate) none
```

```
HP SCSI Pass-Through Driver:
```

```
    Single-Ended Major # 203 and (alternate) -1 unknown.
```

```
    Differential Major # 203 and (alternate) -1 unknown
```

If FNPoll is successful, you will also see:

```
Searching for FileNet Devices:
```

```
disk      10  0/3/2/0.1.0    sdisk      UNCLAIMED   UNKNOWN    HP          C1118J
disk      3   0/3/2/0.2.0    sdisk      CLAIMED      DEVICE      HP          C1113J
disk      4   0/3/2/0.3.0    sdisk      CLAIMED      DEVICE      HP          C1113J
```

```
Building FileNet Devices, Mon Jun  5 15:45:59 PDT 2006
```

```
crw-rw-rw- 1 fnsf      fnusr      203 0x041000 Jun  5 15:45 /dev/fnsod.4,0,1,0
crw-rw-rw- 1 fnsf      fnusr      203 0x042000 Jun  5 15:45 /dev/fnsod.4,0,2,0
crw-rw-rw- 1 fnsf      fnusr      203 0x043000 Jun  5 15:45 /dev/fnsod.4,0,3,0
-rw-rw-rw- 1 fnsf      fnusr          4 Jun  5 15:45 /dev/fnsod.major
-rw-rw-rw- 1 fnsf      fnusr          4 Jun  5 15:45 /dev/fnsod.major.DIFF
-rw-rw-rw- 1 fnsf      fnusr          4 Jun  5 15:45 /dev/fnsod.major.DIFF1
-rw-rw-rw- 1 fnsf      fnusr         11 Jun  5 15:45 /dev/fnsod.major.DIFF2
-rw-rw-rw- 1 fnsf      fnusr          4 Jun  5 15:45 /dev/fnsod.major.SE
-rw-rw-rw- 1 fnsf      fnusr          4 Jun  5 15:45 /dev/fnsod.major.SE1
-rw-rw-rw- 1 fnsf      fnusr         12 Jun  5 15:45 /dev/fnsod.major.SE2
```

After FNPoll has completed successfully, you can continue with the section **[“Configure Storage Library Device\(s\)” on page 206](#)**

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:
```

```
sctl 56/52.5.0 sctl
      ^^^^^^^^ 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.
```

Verify that 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 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 with a TTY robotic arm, 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 TTY 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, verify that 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
```

Configure Storage Library Device(s)

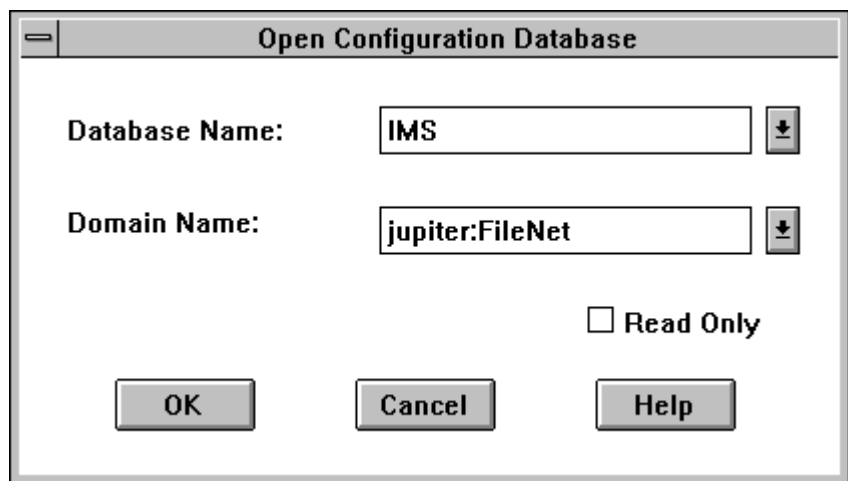
Note If there are no storage libraries on the server, skip to the next section, **[“Modify the /etc/inittab File on the Root Server \(Optional\)” on page 215.](#)**

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 the FileNet software user such as **fns**, 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 about 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 **[“Installation Worksheet” on page 92](#)** 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” on page 209](#)**
 - **[“Manually Configure Storage Library” on page 210](#)**

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 about 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 a user with **root** privileges.
- b Verify that 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 -fn | more

The **ioscan** display on an HP Integrity server looks similar to this:

Class	I	H/W Path	Driver	S/W State	H/W Type	Description
=====						
...						
ba	2	0/2	lba	CLAIMED	BUS_NEXUS	Local PCI-X Bus
Adapter (122e)						
ba	3	0/3	lba	CLAIMED	BUS_NEXUS	Local PCI-X Bus
Adapter (122e)						
ext_bus	4	0/3/2/0	c8xx	CLAIMED	INTERFACE	SCSI C1010 Ultra2
Wide LVD A6829-60101						
target	6	0/3/2/0.1	tgt	CLAIMED	DEVICE	
disk	10	0/3/2/0.1.0	sdisk	UNCLAIMED	UNKNOWN	HP C1118J
target	7	0/3/2/0.2	tgt	CLAIMED	DEVICE	
disk	3	0/3/2/0.2.0	sdisk	CLAIMED	DEVICE	HP C1113J
target	8	0/3/2/0.3	tgt	CLAIMED	DEVICE	
disk	4	0/3/2/0.3.0	sdisk	CLAIMED	DEVICE	HP C1113J
target	10	0/3/2/0.7	tgt	CLAIMED	DEVICE	
ctl	5	0/3/2/0.7.0	sctl	CLAIMED	DEVICE	Initiator
ext_bus	5	0/3/2/1	c8xx	CLAIMED	INTERFACE	SCSI C1010 Ultra2
Wide LVD A6829-60101						
target	12	0/3/2/1.7	tgt	CLAIMED	DEVICE	
...						

- 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 **sctl** 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 **4**.) 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:

4 0 1 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 about other storage libraries already configured on the system, select the Storage Libraries tab.

I 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 a user with **root** privileges:

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

- 5 Restart the Configuration Editor by entering:

```
fn_edit &
```

Modify the `/etc/inittab` File on the Root Server (Optional)

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 the Relational Database software will be started when the Image Services software starts, you might choose

not to uncomment the line in the inittab file.

If the Relational Database 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 DB2 or Oracle software, and then restart the Image Services software.

- 1 Log on as a user with **root** privileges 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 or DB2 software 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.initfnsw </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.

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 204.](#)**

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 Integrity server. Conversely, if you want that server to be able to communicate remotely with your HP Integrity server, you need 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.
- 7 Press **F8** to return to the system prompt.

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*. To download this handbook from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Each of the Image Services 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 are not required to be “compatible” systems with non-overlapping document IDs. If they aren’t compatible, new doc IDs are assigned on the target system, which could impact performance.

6

Completing the Installation

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

- Software tuning for COLD users
- Adapting the system for Xstation use
- Configuring the System Information Messenger
- Installing any remaining fixes
- Making system backups

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, might 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 a user with **root** privileges. 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.

Adapt the System for Xstation Use (Optional)

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 your service representative. Follow the instructions in the *System Information Messenger Manual* to enable and configure the

software. To download this manual from the IBM support page, see [“Accessing IBM FileNet documentation” on page 28.](#)

Install Service Packs and Fix Packs (Optional)

Server Types

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

Now you can install any fix packs or service packs that apply to Image Services 4.1. Read the accompanying README file, which contains the instructions for installing the software. Service packs are available from an eSD image or software CD. Fix packs are available on the IBM Information Management support page at <http://www.ibm.com/software/data/support>.

MSAR Systems

The Magnetic Storage and Retrieval (MSAR) storage library 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).

To configure an MSAR System, refer to the *MSAR Procedures and Guidelines* document for information. To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

Bring Up the FileNet Software

Server Types

Perform all of the procedures in this section on **all servers**.

- 1 As the FileNet software user such as **fns**, stop any FileNet processes that might be running by entering the following command:

killfns -DAy

- 2 Start the Image Services software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

CAUTION

If RDBMS software is installed on this server, be sure to start it before attempting to start the FileNet Image Services for the first time. If the RDBMS 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 RDBMS software and restart the Image Services software.

- 3 After the **TM_daemon.exe** message displays in the Process table, select the Monitor menu.
- 4 From the Monitor menu, select the Event Logs option. (The FileNet Event Logs window displays.)
- 5 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.
- 6 From the FileNet Task Manager window, select START.

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

- 7 Select the CLOSE button. (The Current Status window closes.)
- 8 Review the contents of the Event Log window to verify that there are no error messages from the software startup.

Make System Backups

Server Types

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

Regular backups of the system configuration and data are essential.

For information about 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 about making backups of your system configuration, refer to:

- *Image Services System Administrator's Handbook*
- *Image Services System Administrator's Companion for UNIX*

To download these documents from the IBM support page, see [**"Accessing IBM FileNet documentation" on page 28.**](#)

Begin Production Mode

This concludes the Image Services 4.1 Installation and Configuration Procedures for HP-UX. The FileNet Image Services system is now ready for production.

Appendix A – Adding an Application Server

This Appendix describes how to add an Application server on your Image Services system. Perform all of the steps in this appendix on the Application server unless stated 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 245.](#)**
- 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 4.1 and the Oracle or DB2 Relational Database 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 the main document for installing and configuring the Root server, then return to this appendix to set up the Application server.

Installation Prerequisites

Verify that 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 52.**

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 RDBMS software, skip to **"Install Image Services Software" on page 234.**
- If the DB2 or Oracle Relational Database software is already installed, you can also skip to **"Install Image Services Software" on page 234**
- If you're configuring an Application server with either WorkFlo Queue Services, SQL Services, or VWServices, continue with the next section to install the DB2 or Oracle software.

Install Relational Database Software (if applicable)

Server Types

Perform the steps in this section only on an **Application** server with either WorkFlo Queue Services, SQL Services, or VWServices.

Oracle 9i and Oracle 10g

- For guidelines on installing the Oracle RDBMS software, refer to the *Guidelines for Installing and Updating Oracle Software for*

UNIX Servers. To download the guidelines from the IBM support page, see [“Accessing IBM FileNet documentation” on page 28](#).

IBM DB2 V8.1 and DB2 V8.2

- For guidelines on installing the IBM DB2 RDBMS software, refer to the *Guidelines for Installing and Updating DB2 Software for UNIX Servers*. To download the guidelines from the IBM support page, see [“Accessing IBM FileNet documentation” on page 28](#).

Install Image Services Software

Server Types

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

Install the Image Services 4.1 software on the Application server by completing the procedures in [Chapter 3, “Preparing for the Installation,” on page 91](#) and [Chapter 4, “Installing FileNet Image Services Software,” on page 107](#).

At the end of Chapter 4 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 might 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 subsections on these servers:

Root/Index server during a Dual server installation

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

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 At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login to the Root server as the FileNet software user such as **fnsw**.
- 2 Open a new X Window, and enter the following command to launch the Image Services Configuration Editor:

fn_edit &

- 3 Verify that the database and domain names are correct, and click **OK**. (The two-part domain name is structured as follows:<Domain>:<Organization>.) The Image Services Configuration Editor window displays.
- 4 On the **Procedures** Tab in the System Cconfiguration Editor window, scroll through the list of available procedures. select the Add an Application Server option from the Procedure List, and click **Run**.

Note

If you need further help, use the on-line help to complete the following steps.

- 5 Enter the name of the Application server. The server name of the Application server is user-defined. Click **Next**.
- 6 At the prompt, “Is this a Windows Application Server?”, answer **Yes** if the new Application server is a Windows server. The default is **No**.
- 7 Enter the network address of the Application server (refer to the [**“Installation Worksheet” on page 92**](#)). Click **Next**.
- 8 To add another Application server, click on the Procedure Tab in the System Configuration Editor window and repeat Steps 4 through 7.

Select and Configure the Relational Database Instance (if applicable)

Note 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.

For **Oracle**, see the *FileNet Guidelines for Installing and Updating Oracle 9i and 10g Software for UNIX Servers*.

For **DB2**, see the FileNet *Guidelines for Installing and Configuring DB2 Software*.

To download the guidelines from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28**](#)

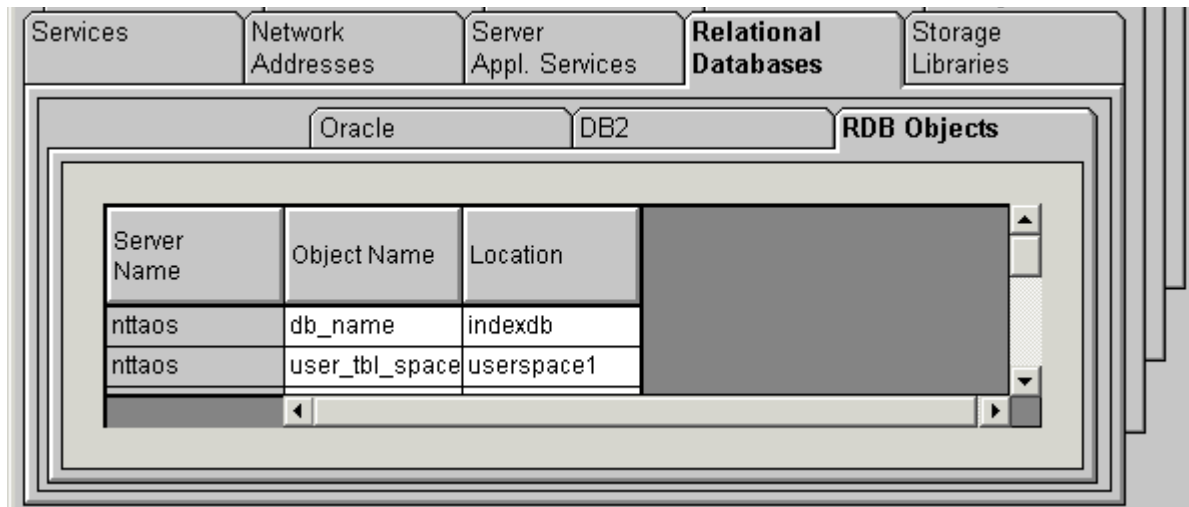
The Database Administrator has already supplied this information in the section, [**“Install Relational Database Software” on page 100**](#) in Chapter 3.

Continue with the appropriate subsection:

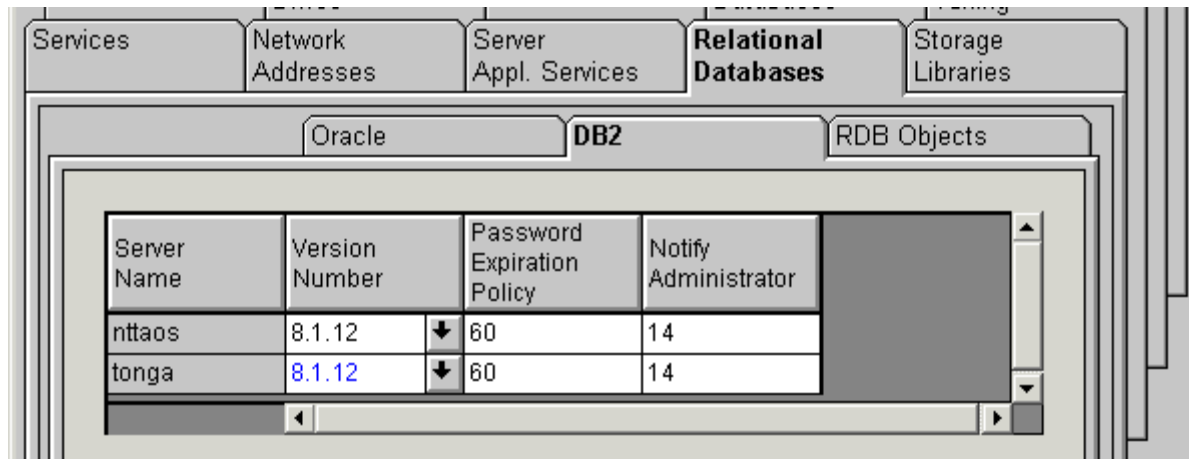
- [**“DB2 V8.1/V8.2” on page 239**](#)
- [**“Oracle 9i/10g” on page 243**](#)

DB2 V8.1/V8.2**Verify the Database and User Tablespace Names**

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



- 2 On the RDB Objects subtab, verify the database name and the tablespace name in the Location column:
 - **Database name**, such as indexdb.
 - **User Tablespace name**, such as userspace1.
- 3 On the DB2 subtab, verify the following fields:



- **Version** - must be **8.1.12** or later (DB2 version 8.1.0 plus FixPak 12 or later), or **8.2.5** or later (DB2 version 8.2.0 plus FixPak 5 or later). DB2 version 7.2.0 is not supported at this time.
- **Password Expiration Policy** This field lists the number of days that the f_sw, f_maint, sqi, and f_open passwords remain in effect

before they expire. The default value is **60 days**. To change the default, enter a new value in this field.

Note A blank field is not permitted, and a value of 0 equals "Never Expires."

- **Notify Administrator** This field lists the number of days before password expiration that the administrator will be reminded to update the password. The default value is **14 days** before the password expires. To change the default, enter a new value in this field.

Note This value must always be less than or equal to the password expiration value. A blank field is not permitted, and a value of 0 would mean notification on the day the password expires.

- 4 Skip to the section, **[“Add Services” on page 245.](#)**

Oracle 9i/10g

Verify the Tablespace Names

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

Network Addresses	Server Appl. Services	Relational Databases	Storage Libraries	Printing
Oracle		DB2	RDB Objects	
Server Name	Object Name	Location		
ibm51	tmp_data	fntmp_ts		
ibm51	fn_index	fnidx_ts		
ibm51	fn_data	fnsys_ts		

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.
- If an optional **fnidx_ts** was created for indexes, change all occurrences of the name to your dedicated FileNet index tablespace.
- If an optional **fnusr_ts** was created for WorkFlo Queue Services, 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 subtype.

Note

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

- 2 On the Oracle subtab, verify that the Oracle version is **9.2.0.8**, or **10.2.0.2** or later.

Add Services

Server Types

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

Add the services you want to use on the Application server:

- 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 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 Select the Application server domain name, when prompted.
- 4 Choose Batch Entry Services from the list of available services that can be added to the Application server
- 5 Enter the dataset path for the Image Services cache on your Application server.
 - The default cache path is **/fnsw/dev/1/cache_0**.
- 6 Enter the size of the cache. (The default is 100 MB.)

- 7 Enter the transient dataset paths on your Application server.
 - The default transient dataset path is **/fnsw/dev/1/transient_db0**.
 - The default transient redolog dataset path is **/fnsw/dev/1/transient_rl0**.
- 8 Enter the size of the transient dataset sizes. (The defaults are as follows: transient_db0 - 320 MB and transient_rl0 - 256 MB.)
- 9 Click **yes** or **no** to the “Do you want to use fast batch committal?” prompt. (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 about remote committal.

To download these manuals from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28**](#)

- 10 Enter the number of BES commitment processes. Choose **2** (the default) or **4**.
- 11 If this is the last service you're adding to the Application server, skip to the section, [**“Exit the Configuration Editor” on page 254**](#).

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. Click **Yes** to add print services.

- 5 Click on the Procedures Tab in the System Configuration Editor window.
- 6 Choose Add Printer.
- 7 Click **Yes** if this is your default printer.
- 8 Enter a printer name.
- 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 Add other 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 254.**

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 254.**

Add SQL Services

Use this procedure to add SQL services.

Note If you add SQL services to your system, you **MUST** install RDBMS software on the Application server, or on a site-controlled remote RDBMS server.

- 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 Complete the following when prompted:
 - f_sw password
 - f_maint password
 - f_sqi password
 - DB2 Database Alias Name

- User Tablespace Location
- 6 If this is the last service you're adding to the Application server, skip to the section, **“Exit the Configuration Editor” on page 254.**

Add WorkFlo Queue Services (WQS)

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

Note If you add WorkFlo Queue Services to your Application server, you **MUST** also install relational database software.

- 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 Complete the following when prompted:
 - f_sw password
 - f_maint password
 - f_sqj password
 - DB2 Database Alias Name
 - User Tablespace Location
- 6 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 254.**

Add VWServices

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

Add Tape Drive (Optional)

Follow these steps to add a tape drive to your Application server:

- 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 to verify that it was configured successfully.

Exit the Configuration Editor

- 1 From the System Configuration Editor window, click on File and click on Exit.
- 2 Click **Yes** 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 FileNet software user such as **fns**w:

initfnsw -y stop

- 2 Build the system configuration files by entering:

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 (/fns/w/local/NCH_db0) if the program does not find an existing file.

- 3 Verify that 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

Configure the Application Server

Server Types

This section and its subsections need to be performed on the **Application server**. FileNet Image Services software must be running on the Root server.

You will now configure the Application server for compatibility with the services you added to the Root server.

The procedures in this section assume that the same version of Image Services software is installed on both the Root server and the Application server.

Important

Even though RDBMS software might already be installed, there must be no RDBMS database or NCH database already existing on the Application server.

Note Verify that Image Services is running on the Root server, and **not** running on the Application server. (You can run **whatsup** on the Root server.)

If the Image Services software is running on the Application server, enter the following commands:

```
initfnsw -y stop  
killfnsw -DAy
```

Set File Ownerships and Permissions

The **fn_setup** tool is used to set the Application server's file ownerships and permissions. You will be asked for system-specific information. Refer to the [“Installation Worksheet” on page 92](#) for the appropriate information.

- 1 Verify that you are logged on as a user with **root** privileges (**the first time**).
- 2 Run **fn_setup** by entering the following command:

/fns/bin/fn_setup

Answer all prompts with appropriate information for this server.

- a The NCH server is the generally the Root server. On the Application server, select **2=no**.

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

- b The NCH server name is generally the name of the Root server. On an Application server, enter the name of the Root server.

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

- 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 [1234567890]:
```

Important

The SSN is written on 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 an Application server without one of these services, select 0=none; if the server has Oracle software installed on it, select 1=Oracle; if the server has DB2 software installed, select 2=DB2.

Enter the relational database type configured on this server (0=none, 1=Oracle 2=DB2) [1]:

Note

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

- e If **DB2** software exists on this server, enter the DB2 Client instance owner's DB2 home directory.

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

```
Enter the RDBMS home directory [/home/client_920]:
```

Note

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

- f If an Oracle 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:YourCorp
SSN:  1234567890
Relational database type:  oracle
Relational database home:  /home/client_920
Relational database user ID:  oracle
Relational database group ID:  dba
Relational database ID:  IDB
Do you want to continue (y/n) [y]:
```

- 4 Press **Return** to continue with the next step. If you type **n** for no, you exit to the system prompt; return to Step 2 and run **fn_setup** again.

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, it returns you to the system prompt.

Build Configuration Files on the Application Server

Note Verify that the FileNet software is running on the Root server. (You can run **whatsup** on the Root server.)

Now you need to build the correct configuration files and initialize the Application server. The same version of Image Services software must already be installed on both the Root server and Application server.

Note There must be no NCH database already existing on the Application server.

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

```
initfns -y stop  
killfns -DAy
```

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

```
fn_setup_rdb -f
```

- 3 Verify that the following files do not exist on your Application server:

```
/fns/local/sd/local/root_station  
/fns/local/sd/1/as_conf.s
```

If the files exist, delete them from the Application server only.

- 4 Verify that the following files do not exist on your Application server:

- /fns/sd/local/root.station
- /fns/local/sd/1/as_conf.s

- 5 If the files exist, delete them from the Application server only.

Create Logical Volumes on the Application Server

Server Types

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

Use SAM to add the logical volumes for all of the FileNet datasets used by the Application server.

- 1 As a user with **root** privileges, 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 On the menu bar, select Action > Create and press **Return**.

- 5 Select the appropriate volume group for logical volume and Tab to **OK**. Press Return at the Add new Logical Volumes field. Refer to the **“Installation Worksheet” on page 92** to see the listing of the volume groups.
- 6 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.

Table A-1. FileNet Datasets (Application Server)

Logical Volume Name	Minimum Size of Logical Volumes (in MB)	Increment
fn_cache0 (for BES/CS/PS)	100	100
fn_trans_db0 (for BES/CS/PS)	320	320

Table A-1. FileNet Datasets (Application Server), Continued

Logical Volume Name	Minimum Size of Logical Volumes (in MB)	Increment
fn_trans_rl0 (for BES/CS/PS)	256	256
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.		

- 7 See the “Minimum Size (in MB)...” column of Table A-1 for the suggested logical volume sizes. Also refer to the **“Installation Worksheet” on page 92** for your customer-specific sizing requirements. Refer to 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.
- 8 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**.

- 9 Repeat Steps 6-8 for all of the logical volumes you need to create.
- 10 **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.
- 11 Return to the System Administration Manager menu and exit SAM.

Create Symbolic Links for Each Dataset

The database programs used by FileNet software require the use of raw partitions instead of normal HP-UX datafiles. This generally allows the Image Services software to optimize speed and efficiency. In this section, you will create symbolic links for these partitions.

- 1 As a user with **root** privileges, enter the following commands to create the `/fnsw/dev/1` directory and change to that directory:

```
mkdir -p /fnsw/dev/1  
cd /fnsw/dev/1
```

Tip If one or more of the subdirectories in this path already exist, might get a message similar to the following: cannot create dev: File exists. You can ignore the message.

- 2 Create and edit the **filenet.links** file using your preferred editor (such as **vi**).

Include a soft link command for each of the databases that you created or configured in the previous section. Link the database name to the logical volume where you placed the database by entering a command structured similar to the following:

```
ln -s /dev/<volume group>/<logical volume> dbname
```

where **<logical volume>** is the disk location of the volume and **dbname** is the data base name. For example:

```
ln -s /dev/fnvg/fn_cache0 cache0
```

Note The **filenet.links** file contents shown below are examples ONLY. (The links you create must reflect the actual allocation of the volumes on

your system.)

In the **filenet.links** file, you MUST have unique logical volume assignments for all volumes. (Verify that no two volumes share the same logical volume assignment and that no volume is assigned to a logical volume occupied by any part of the operating system.)

Your **filenet.links** should contain link information similar to the following:

On an Application Server

```
ln -s /dev/fnvg/fn_cache0 cache0
ln -s /dev/fnvg/fn_trans_db0 transient_db0
ln -s /dev/fnvg/fn_trans_rl0 transient_rl0
```

- 3 Close the file and save the changes.
- 4 Use **chmod** to change the permission of the **filenet.links** file by entering the following:

chmod 755 filenet.links

Note If you do not change the permission of **filenet.links**, you will not be able to execute the file.

- 5 Execute the **filenet.links** file by entering the following commands:

```
cd /fnsw/dev/1  
./filenet.links
```

- 6 Examine the contents of the /fnsw/dev/1 directory by entering the following command:

```
ls -l
```

The -l option displays the mode, number of links, owner, group, size (in bytes), and time of last modification for each file.

Tip To verify that the links are pointing to the correct logical volumes, enter:

```
ls -lL
```

The -L option lists the file or directory contents that the link references.

The directory should contain the linked directories specified in the **filenet.links** file. If the /fns/dev/1 directory does not contain the links as shown above, verify and, if necessary, update the **filenet.links** file with any changes and verify the permissions are correct for the file. Execute the links file again.

Initialize Application Server Datasets

Server Types

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

Note

If there is **NO** relational database software, either server or client, installed on this Application server, skip to **“Create Logical Volumes on the Application Server” on page 264.**

If relational database software **IS** installed on this Application server, continue with the following sections.

Configure FileNet Datasets on the Application Server

Skip to the appropriate subsection:

- [“On Application Servers with DB2 Client Software” on page 272](#)
- [“On Application Servers with Oracle Software” on page 273](#)

On Application Servers with DB2 Client Software

Note This section applies only to remote DB2 instances.

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

See the FileNet *Guidelines for Installing and Configuring DB2 Software*. To download the guidelines from the IBM support page, see [“Accessing IBM FileNet documentation” on page 28](#).

Skip to the section, [“Create Logical Volumes on the Application Server” on page 264](#).

On Application Servers with Oracle Software

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

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

- 1 Verify that the Oracle Instance has the correct SID. As a user with **root** privileges, 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
```

- 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 102**. 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 103 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 Oracle Client software has been successfully installed on the Image Services server.

- a As the FileNet software user, such as **fnsw**, run the following command on the IS Application server:

fn_oracle setquotas

This command creates the `/fnsw/local/oracle/ora_users.sql` file.

- b Copy the following scripts from the Image Services Application server to the corresponding directories on the Oracle server:

/fnsw/oracle/FileNet.sql

/fnsw/local/oracle/ora_users.sql

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

SQL> @FileNet.sql

(grants privileges to FileNet Image Services users)

SQL> @ora_users.sql

(assigns quotas, default tablespaces, and temporary tablespaces)

Initialize the RDBMS and FileNet Databases on the Application Server

As the FileNet software user, such as **fns**w, enter the following command to initialize all FileNet databases configured on this server:

fn_util init

The **fn_util init** command initializes the FileNet databases for this Application server. After the databases are initialized, the program

checks for the presence of the transient.ddl file in the /fnsw/local/sd/1 directory. A message displays as the new database partitions are initialized and zeroed out.

Reset File Ownerships and Permissions

After you have created the Image Services datasets, you must re-initialize the RDBMS permissions.

- 1 As a user with **root** privileges, run `fn_setup` utility by entering the following command:

`/fnsw/bin/fn_setup`

- 2 At each prompt, accept the current setting. After you have finished, continue with the next section.

Start the FileNet Software

Server Types

Perform all of the procedures in this section (and associated subsections) on the **Application server**.

- 1 Logon as the FileNet software user such as **fns**w (if you aren't already), and start X Windows (if you have not already done so).
- 2 Stop all FileNet processes:

killfnsw -DAy

- 3 Start the updated FileNet Application server software:

Xtaskman &

The FileNet Task Manager interface displays.

CAUTION

If RDBMS software is installed on this Application server, be sure to start it before attempting to start the FileNet Image Services for the first time. If the RDBMS 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 RDBMS 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.
- 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**.
- 8 After the Image Services software startup process finishes successfully, click **CLOSE**.
- 9 Review the contents of the Event Log window to verify that there are no error messages from the software startup.

Modify the /etc/inittab File (Optional)

You can optionally edit the /etc/inittab file to allow the Image Services software to automatically start during the boot process.

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

If the Relational Database 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 or DB2 software, and then restart the Image Services software.

- 1 Verify that you are logged on as a user with **root** privileges 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.initfnsw </dev/console >/dev/console 2>&1
```

Reboot the Application Server

Important

All RDBMS users should be logged off the server and the RDBMS instance should 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 a user with **root** privileges.
- 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**.

- 1 At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login to your server as a user with **root** privileges.
- 2 Make a copy of the **inittab** file, and stop the FileNet software by entering the following series of commands:

```
cd /  
cp /etc/inittab /fnsf/etc/inittab.backup  
initfnsf 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 **vgcfbackup** command. Complete the following bullets:

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

vgcfbackup /dev/vg00

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

vgcfbackup /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:

~~###~~ | vlnp

```
###vde
###yj glvsd| #y#j 33#f r p p dqg# xvsxw
###yj glvsd| #y#qyj #i#lssdf deo, #f r p p dqg# xvsxw
###r vf dq#dq#f r p p dqg# xvsxw
```

- 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
```

Begin Production Mode

After you've backed up the system, the Application server is ready for 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 might 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:

- Gathered the information requested in **“Installation Worksheet” on page 92** relevant to the Storage Library server(s).
- Done all of the steps in the subsection **“Operating System Requirements” on page 53**.
- Transferred the information to the **“Installation Worksheet” on page 92**.

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 verify 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 con-

tains 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 need another server 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 another Storage Library server will increase system performance. However, if the existing server has not reached its performance limit, adding another optical library server will decrease system performance slightly because of the overhead of controlling the additional 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. Database Maintenance will not let you select destination Storage Library servers for a transaction log family.

Prepare the 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.

- 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 71**, depending on your preference.
- 2 Create the Image Services file systems by completing **“Create Logical Volumes and File Systems” on page 82**.

- 3 Create the **fnadmin** and **fnop** groups by completing **“Create fnadmin and fnop Groups” on page 73.**
- 4 Use the procedures in **“Create FileNet Users and fnusr Group” on page 76,** to create the FileNet software 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 4.1 software on the Storage Library server(s) by completing the section **“Mount the Image Services CD-ROM” on page 110** and **“Run the Image Services Installer” on page 112.**
- 2 Install show stopper fixes on the Storage Library server(s) by completing **“Install the Required Pre-Startup Fixes” on page 136.**

- 3 Set up the installation environment using **inst_templates** on the Storage Library server(s) by completing **“Install the User Environment Templates” on page 137** along with its subsections.
- 4 Continue with the next section. Perform the procedures only on the server indicated at the beginning of each section. (You might 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 subsections on the **Root server**, or on each server with a cache.

Commit Uncommitted Batches

You must verify 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	06/14/2004	COR_Listen -px -s5 -d20
fns	21133	1	06/14/2004	COR_Listen -px -s1099
fns	21385	1	06/14/2004	COR_Listen -pt -d20
fns	22708	1	06/14/2004	CSM_daemon
fns	14810	1	06/14/2004	CSMs
fns	15256	1	06/14/2004	DOCs
fns	16275	1	06/14/2004	INXbg -s IndexServer
fns	16515	1	06/14/2004	MKF_clean
fns	11420	1	06/14/2004	PRI_daemon
fns	12193	1	06/14/2004	PRI_fetch 0

USER	PID	PPID	Start Time	Processes
fns	12427	1	06/14/2004	COR_Listen -px -s5 -d20
fns	21133	1	06/14/2004	COR_Listen -px -s1099
fns	21385	1	06/14/2004	COR_Listen -pt -d20
fns	22708	1	06/14/2004	CSM_daemon
fns	14810	1	06/14/2004	CSMs
fns	15256	1	06/14/2004	DOCs
fns	16275	1	06/14/2004	INXbg -s IndexServer
fns	16515	1	06/14/2004	MKF_clean
fns	11420	1	06/14/2004	PRI_daemon
fns	12193	1	06/14/2004	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**:

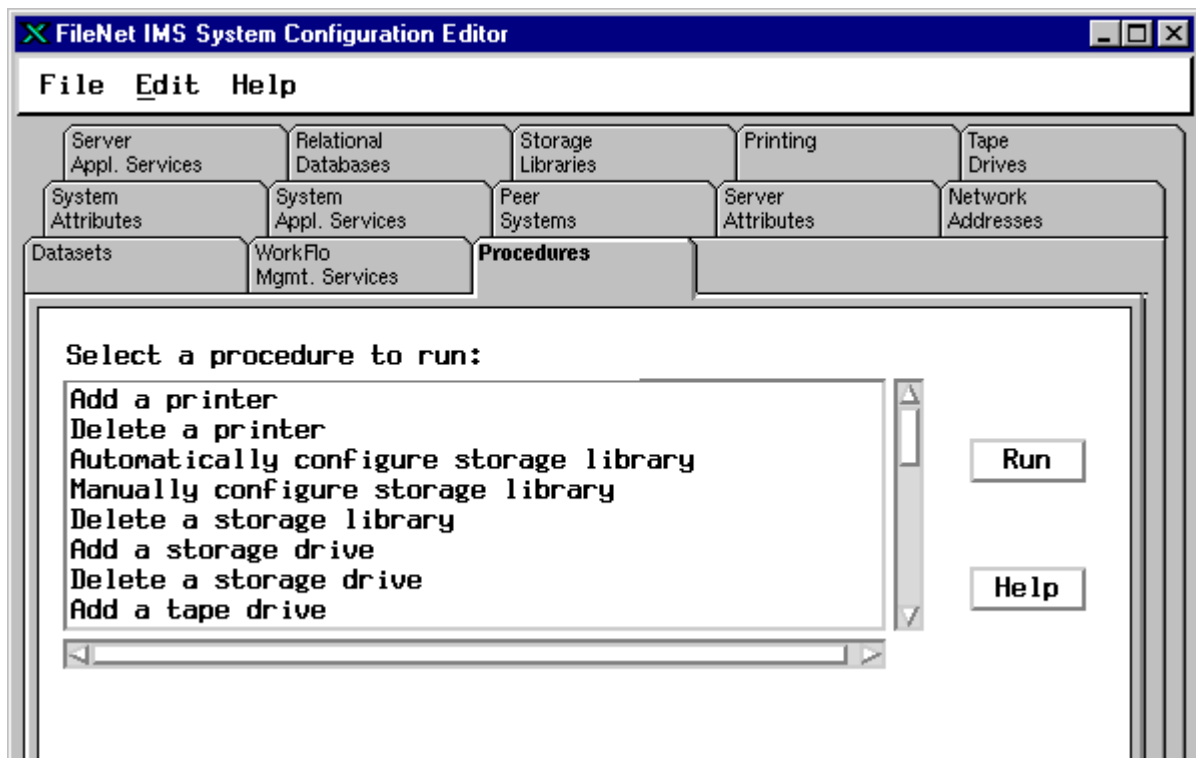
q

Add Storage Library Server(s)

- 1 At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login to your server as the FileNet software user such as **fnsw**.
- 2 Open a new window and enter the following command:

fn_edit &
- 3 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.



- 4 On the Procedures Tab in the System Configuration Editor window, select the Add a Storage Library server option from the Procedure List Box, and click **Run**.

Note Use online help when completing the following steps.

- 5 Enter the name of the Storage Library server. The server name of the storage library server is user defined. Click **Next**.
- 6 Enter the network address of the Storage Library server (refer to the [**“Installation Worksheet” on page 92**](#)). Click **Next**.
- 7 Enter the path for the cache partition (default: /fnsd/dev/1/cache0).
- 8 Enter the cache dataset size.
- 9 Enter the path for the transient database (default: /fnsd/dev/1/transient_db0).
- 10 Enter the dataset size for the transient database.

- 11 Enter the path for the transient database redo log (default: /fnsd/dev/1/transient_rld).
- 12 Enter the dataset size for the transient database redo log.
- 13 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 about remote committal.

To download these documents from the IBM support page, see **[“Accessing IBM FileNet documentation” on page 28.](#)**

- 14** Choose the number of BES commitment processes (1-4).
- 15** Enter the path for the permanent database (default: /fnsd/dev/1/permanent_db0).
- 16** Enter the dataset size for the permanent database.
- 17** Enter the path for the permanent database redo log (default: /fnsd/dev/1/permanent_rlog).
- 18** Enter the dataset size for the permanent database redo log.
- 19** Verify that you have entered the information correctly:
 - Click on the Network Tab to verify that the Storage Library server is listed.
 - Click on the Server Application Services Tab to verify that the Storage Library server is listed.

- Click on the Dataset Tab to see the datasets you added to the Storage Library server, including cache0, transient_db0, transient_rl0, permanent_db0, permanent_rl0.

20 Exit from the System Configuration Editor and save your changes.

Rebuild the Root Server Configuration Files

Server Types

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

- 1 On the Root server, logon as the FileNet software user such as **fnsw**.
- 2 Verify the FileNet software is not running. If the software is running, enter the following command:

initfnsw -y 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.

- 4 Verify that the command runs successfully by checking that no errors have occurred. (Any error that occur must be corrected before running the command again.)
- 5 Start the Image Services software by entering:

initfnsw start

Configure the Storage Library Server

Server Types

Perform this section and its subsections on each **Storage Library server** being added to the system.

FileNet Image Services software must be running on the Root server.

The procedures in this section assume that the same version of Image Services software is installed on both the Root server and the Storage Library server.

Note Verify that Image Services is running on the Root server, and **not** running on the Storage Library server. (You can run **whatsup** on the Root server.)

If the Image Services software is running on the Storage Library server, enter the following commands:

```
initfnsw -y stop  
killfnsw -DAy
```

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 **[“Installation Worksheet” on page 92](#)** of this guide for the correct information.

- 1 Verify that you are logged on as a user with **root** privileges (the first time).
- 2 Run `fn_setup` 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:YourCorp). 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, 1234567890).

Important

The SSN 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, 2 = DB2. (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: hpvenice:YourCorp
SSN: 1234567890
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 might 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 on the Storage Library Server

At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login to your server as a user with **root** privileges (a member of the **fnadmin** group) (the first time).

Create Logical Volumes on the Storage Library Server

You are now going to manually add the logical volumes for all of the FileNet datasets used by the Storage Library server.

- 1 As a user with **root** privileges, 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 On the menu bar, select the Action > Create option and press **Return**.
- 5 Select the appropriate volume group for logical volume and Tab to **OK**. Press Return at the Add new Logical Volumes field. Refer to the **[“Installation Worksheet” on page 92](#)** to see the listing of the volume groups.

- 6 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 Table B-1). Add logical volume names for all of the applicable logical volumes listed in Table B-1.

Table B-1. FileNet Datasets (Storage Library Server)

Logical Volume Name	Minimum Size of Logical Volumes (in MB)	Increment
<code>fn_cache0</code>	100	100
<code>fn_perm_db0</code>	100	100
<code>fn_perm_rl0</code>	64	64
<code>fn_trans_db0</code>	320	3200
<code>fn_trans_rl0</code>	256	256
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.		

- 7 See the “Minimum Size (in MB)...” column of Table B-1 for the suggested logical volume sizes. Also refer to the **“Installation Worksheet” on page 92** for your customer-specific sizing requirements. Refer to 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.
- 8 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**.
- 9 Repeat Steps 6-8 for all of the logical volumes you need to create.
- 10 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.
- 11 Return to the System Administration Manager menu of SAM and exit SAM.

Create Symbolic Links for Each Dataset

The database programs used by FileNet require the use of raw partitions instead of normal HP-UX datafiles. This generally allows the Image Services software to optimize speed and efficiency. In this section, you will create symbolic links for these partitions.

- 1 As a user with **root** privileges, enter the following commands to create the `/fnsw/dev/1` directory and change to that directory:

```
mkdir -p /fnsw/dev/1  
cd /fnsw/dev/1
```

Tip If one or more of the subdirectories in this path already exist, might get a message similar to the following: cannot create dev: File exists. You can ignore the message.

- 2 Create (and edit) the **filenet.links** file using your preferred editor (for example, **vi**).

Include a soft link command for each of the databases that you created or configured in the previous sections. Link the database name to the logical volume where you placed the database by entering a command structured similar to the following:

```
ln -s /dev/<volume group>/<logical volume> dbname
```

where **<logical volume>** is the disk location of the volume and **dbname** is the data base name. For example:

```
ln -s /dev/fnvg/fn_cache0 cache0
```

Note The **filenet.links** file contents shown below are examples ONLY. (The links you create must reflect the actual allocation of the volumes on your system.)

In the **filenet.links** file, you MUST have unique logical volume assignments for all volumes. (Verify that no two volumes share the same logical volume assignment and that no volume is assigned to a logical volume occupied by any part of the operating system.)

Your `filenet.links` should contain link information similar to the following:

On a Storage Library Server

```
ln -s /dev/fnvg/fn_cache0 cache0
ln -s /dev/fnvg/fn_perm_db0 permanent_db0
ln -s /dev/fnvg/fn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/fn_trans_db0 transient_db0
ln -s /dev/fnvg/fn_trans_rl0 transient_rl0
```

- 3 Close the file and save the changes.
- 4 Use **chmod** to change the permission of the **filenet.links** file by entering the following:

chmod 755 filenet.links

Note If you do not change the permission of **filenet.links**, you will not be able to execute the file.

- 5 Execute the **filenet.links** file by entering the following commands:

```
cd /fnsw/dev/1  
./filenet.links
```

- 6 Examine the contents of the /fnsw/dev/1 directory by entering the following command:

```
ls -l
```

Tip To display the volume owner and group use information, enter:

```
ls -lL
```

The directory should contain the linked directories specified in the **filenet.links** file. If the /fnsw/dev/1 directory does not contain the links as shown above, verify and, if necessary, update the **filenet.links** file with any changes and verify the permissions are correct for the file. Execute the links file again.

Initialize Storage Library Server Datasets

Server types

Perform the procedure in this section on the **Storage Library** server.

As the FileNet software user, such as **fns**, enter the following command to initialize all FileNet databases configured on this server:

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 /fns/local/sd/1 directory. A message displays as the new database partitions are initialized and zeroed out.

Reset File Ownerships and Permissions

After you have created the Image Services datasets, you must re-initialize the RDBMS permissions.

- 1 As a user with **root** privileges, run `fn_setup` utility by entering the following command:

`/fnsw/bin/fn_setup`

- 2 At each prompt, accept the current setting. After you have finished, continue with the next section.

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 **[“Installation Worksheet” on page 92](#)** 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 At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login to your server(s) as the FileNet software user, such as **fnsw..**
- 2 Open a new window and launch the Configuration Editor:

fn_edit &
- 3 Verify the two-part domain information is correct. (The two-part domain name is set up as follows: <Domain>:<Organization>.)
- 4 Select the System Attributes Tab and select Network Protocols from the Options list.
- 5 From the Protocol Preference option choose the TCP option for TCP/IP protocol.

- 6 From the Protocol Preferences option field, select the system appropriate preference from the pull down options list.
- 7 From the System Configuration Editor window, select the Network Addresses Tab.
- 8 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 the FileNet software user such as **fns**.

- 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 the FileNet software user, such as **fnsw**, 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 the FileNet software user such as **fnsr**.
- 3 Type **Xtaskman** at the system prompt. Click **Backup**. This starts COR.listen.
- 4 Obtain the server id assigned to each new Storage Library 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 330**](#)

Otherwise, verify that 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 Verify that the storage library devices are powered on and are active.
- 2 **At your Storage Library server's terminal**, and as a user with **root** privileges, use **ioscan** to determine the addresses of the HP optical drives and storage libraries.

`ioscan -fn | 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.

Class	I	H/W Path	Driver	S/W State	H/W Type	Description	
=====							
...							
ba Adapter (122e)	2	0/2	lba	CLAIMED	BUS_NEXUS	Local	PCI-X Bus
ba Adapter (122e)	3	0/3	lba	CLAIMED	BUS_NEXUS	Local	PCI-X Bus
ext_bus Wide LVD A6829-60101	4	0/3/2/0	c8xx	CLAIMED	INTERFACE	SCSI C1010	Ultra2
target	6	0/3/2/0.1	tgt	CLAIMED	DEVICE		
disk	10	0/3/2/0.1.0	sdisk	UNCLAIMED	UNKNOWN	HP	C1118J
target	7	0/3/2/0.2	tgt	CLAIMED	DEVICE		
disk	3	0/3/2/0.2.0	sdisk	CLAIMED	DEVICE	HP	C1113J
target	8	0/3/2/0.3	tgt	CLAIMED	DEVICE		
disk	4	0/3/2/0.3.0	sdisk	CLAIMED	DEVICE	HP	C1113J
target	10	0/3/2/0.7	tgt	CLAIMED	DEVICE		
ctl	5	0/3/2/0.7.0	sctl	CLAIMED	DEVICE	Initiator	
ext_bus Wide LVD A6829-60101	5	0/3/2/1	c8xx	CLAIMED	INTERFACE	SCSI C1010	Ultra2
target	12	0/3/2/1.7	tgt	CLAIMED	DEVICE		
...							

In the previous example, the vendor ID is HP and the product IDs are C1118J and C1113J.

Notice that for HP C1118J, the S/W State and H/W Type are UNCLAIMED and UNDEFINED, which indicates that this device is the robotic arm. The two HP C1113J devices are the optical drives.

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 -fn > /fnsf/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 -fn > /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, **0/3/2/0.1.0**), the Class, and the Description (model numbers) of each storage library device shown on the display.

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 **sctl**.

- 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 0/3/2/0.1.0 sctl  
driver 0/3/2/0.2.0 sctl  
driver 0/3/2/0.3.0 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.

Important

Verify that the SCSI adapter card is configured for a **maximum of 80 MB/second** data transfer for best optical library performance. Refer to **“Appendix E – Setting the Maximum Data Transfer Rate for SCSI Host Bus Adapters” on page 370.**

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. Verify 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 the FileNet software user such as **fnsu**, enter the following command at the system prompt:

/fnsb/bin/FNPoll

The FNPoll display is similar to this:

```
Found HPUX Version 11.23
```

```
Removing old device nodes and files used by FNPoll.
```

```
Determining model, series and device driver information.
```

```
This appears to be a(n) i-Series platform (ia64 hp server rx4640).
```

```
Looking up driver and class information for this platform.
```

```
Expected driver-class for single-ended SCSI: sctl-ctl
```

```
Alternate driver-class for single-ended SCSI: unknown-unknown
```

```
Allowable single-ended controller(s): C1010 and (alternate) none
```

```
Expected driver-class for differential SCSI: sctl-ctl
```

```
Alternate driver-class for differential SCSI: unknown-unknown
```

```
Allowable differential controller(s): C87x and (alternate) none
```

```
HP SCSI Pass-Through Driver:
```

```
    Single-Ended Major # 203  and (alternate) -1 unknown.
```

```
    Differential Major # 203  and (alternate) -1 unknown
```

If FNPoll is successful, you will also see:

```
Searching for FileNet Devices:
```

```
disk      10  0/3/2/0.1.0    sdisk      UNCLAIMED   UNKNOWN    HP          C1118J
disk       3  0/3/2/0.2.0    sdisk      CLAIMED      DEVICE      HP          C1113J
disk       4  0/3/2/0.3.0    sdisk      CLAIMED      DEVICE      HP          C1113J
```

```
Building FileNet Devices, Mon Jun  5 15:45:59 PDT 2006
```

```
crw-rw-rw-  1  fnsw      fnusr      203 0x041000 Jun  5 15:45 /dev/fnsod.4,0,1,0
crw-rw-rw-  1  fnsw      fnusr      203 0x042000 Jun  5 15:45 /dev/fnsod.4,0,2,0
crw-rw-rw-  1  fnsw      fnusr      203 0x043000 Jun  5 15:45 /dev/fnsod.4,0,3,0
-rw-rw-rw-  1  fnsw      fnusr           4 Jun  5 15:45 /dev/fnsod.major
-rw-rw-rw-  1  fnsw      fnusr           4 Jun  5 15:45 /dev/fnsod.major.DIFF
-rw-rw-rw-  1  fnsw      fnusr           4 Jun  5 15:45 /dev/fnsod.major.DIFF1
-rw-rw-rw-  1  fnsw      fnusr          11 Jun  5 15:45 /dev/fnsod.major.DIFF2
-rw-rw-rw-  1  fnsw      fnusr           4 Jun  5 15:45 /dev/fnsod.major.SE
-rw-rw-rw-  1  fnsw      fnusr           4 Jun  5 15:45 /dev/fnsod.major.SE1
-rw-rw-rw-  1  fnsw      fnusr          12 Jun  5 15:45 /dev/fnsod.major.SE2
```

After FNPoll has completed successfully, you can continue with the section **[“Reboot the Server” on page 330.](#)**

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.
```

Verify that 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 DB2 or Oracle users should be logged off the server and the RDBMS instance be shutdown before doing the following system 'shutdown' command. Failure to do so could result in a corrupted database!

As a user with **root** privileges, move to the root directory and reboot the server by entering:

```
cd /  
shutdown -ry 0
```

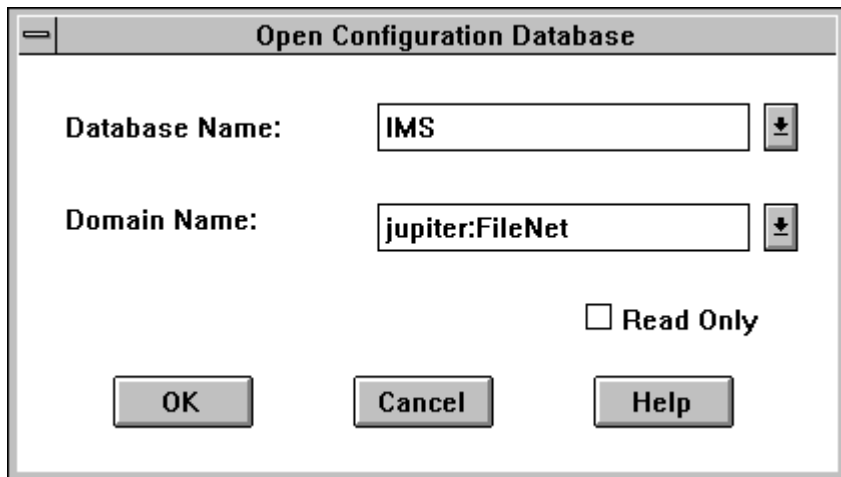
Logon to Configure Database

- 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 the FileNet software user such as **fnsf**.

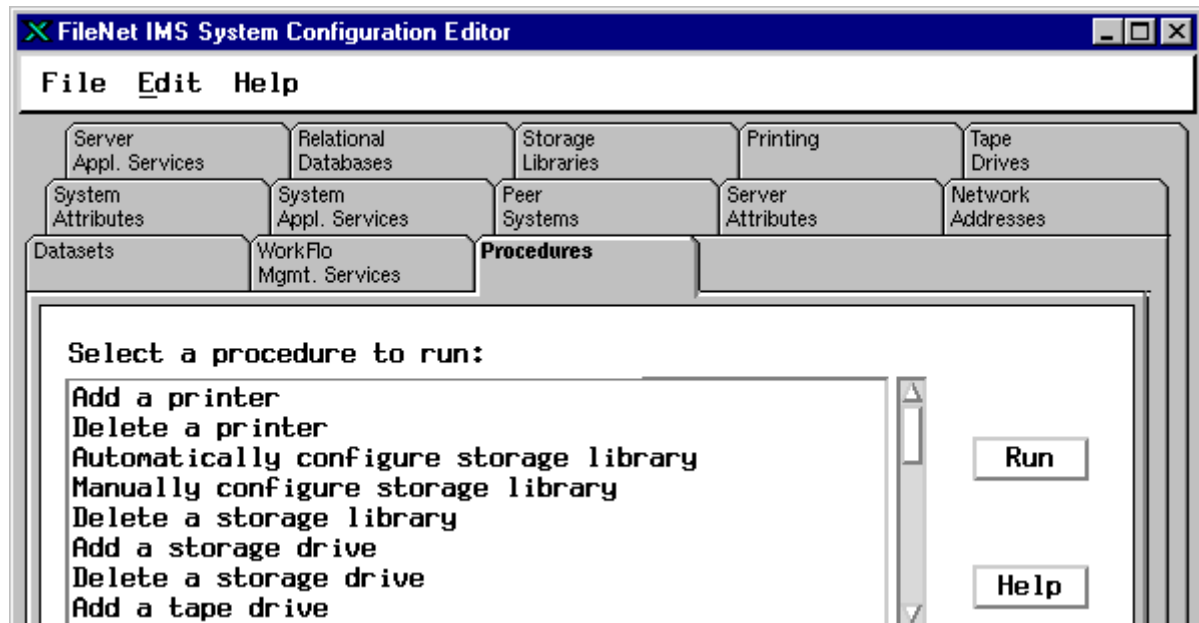
- 3 Open a new window, and enter the following command:

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 about 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, **[“Start the FileNet Software” on page 338.](#)**

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 **“Installation Worksheet” on page 92** 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 about other storage libraries already configured on the system, select the Storage Libraries Tab.
- 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 **“Installation Worksheet” on page 92** for the correct information.

- 1 Logon as the FileNet software user such as **fnsw**.
- 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. Reply **No** for the Storage Library server.
- 4 Enter the NCH server name (for example, root/index_domain:YourCorp). 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 SSN 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, 2 = DB2. 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: hpvenice:YourCorp
SSN: 1234567890
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 might receive a message indicating “exit status = 0 (success)(this is not an error.)” If necessary, press **Return** to go the system prompt.

Start the 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 the FileNet software user such as **fns** 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 Launch **Xapex**, and use Database Maintenance (on any server) to re-save all media families, and resolve any warning or error messages that appear.

- 3 Use the **vl** command to check the event log. If any documents were committed before the media families were re-saved, you might 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 should 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*. To download this manual from the IBM support page, see **[“Accessing IBM FileNet documentation” on page 28](#)**

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 about saving media families. To download this handbook from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28**](#)

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*. To download this handbook from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28**](#)
- 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*. To download this handbook from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28**](#)

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**. To download this manual from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)
- 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 Verify that 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 can run the **move_disk** utility to move optical disks, and you can 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 At an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, login to your server as a user with **root** privileges.
- 2 Make a copy of the **inittab** file, and stop the FileNet software by entering the following series of commands:

```
cd /  
cp /etc/inittab /fnsd/etc/inittab.backup  
initfnsd 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:

```
###| vlnp
###vde
###yj glvsd| #y#j 33#f r p p dqg# xvsxw
###yj glvsd| #y#qyj #i#lssdof deon, #f r p p dqg# xvsxw
###r vf dq#q#f r p p dqg# xvsxw
```

- 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

Begin Production Mode

This concludes the Image Services 4.1 Installation and Configuration Procedures for HP-UX. The Storage Library server is now ready for production.

Appendix C – National Language Support

This appendix contains steps to setup an HP 700/RX Xstation with an AT/2 keyboard so you can 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 Server

The HP Server that the Xstation boots from must contain certain items to be configured correctly for NLS.

- 1 You must verify that 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 Integrity server as a user with **root** privileges.
 - 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 Integrity 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 Verify that 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:

French is `fr_FR.iso88591`

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 Verify that 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 Verify that 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 the **Options** box, press and hold down the **F12** function key while selecting the **Restart Server** option until the Configuration menu displays.
- 3 Click the **Terminal** button at the top left of the Configuration menu.
- 4 In the Terminal menu, click 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 **OK** to return to the Configuration menu.
- 6 Click the **Server** button at the top left of the Configuration menu.

- 7 At the bottom of the Server menu, verify that 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 Integrity 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 the following Steps 9 through 16 for every user.

- 9 At the login screen, click 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:

export DISPLAY=<Xstation-name>:0

where <Xstation-name> is the name given to your Xstation when it is setup on your HP Integrity server.

- For **C shell** users, enter:

setenv DISPLAY <Xstation-name>:0

where <Xstation-name> is the name given to your Xstation when it is setup on your HP Integrity 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=C
```

where <locale> is the abbreviated national language name your Xstation is dedicated to. For example:

French is fr_FR.iso88591

German is de_DE.iso88591

For example, for French you would add these lines:

```
export LC_ALL=fr_FR.iso88591
```

```
export LANG=C
```

For German, you would add these lines:

```
export LC_ALL=de_DE.iso88591
```

```
export LANG=C
```

- For **csh**, 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.

For example, for French you would add this line:

```
setenv LANG fr_FR.iso88591
```

Or for German you would add this line:

```
setenv LANG de_DE.iso88591
```

- 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"
```

Verify that 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 from HP VUE, and then log 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 D – Configuring a Font Server for COLD Preview

This appendix contains instructions for setting up and testing a Font Server on an existing HP Integrity 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 a user with **root** privileges, use your favorite text editor, such as **vi**, to edit the `/etc/X11/fs/config` file.

- 1 Locate the “catalogue = ...” line.
- 2 Verify that 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 a user with **root** privileges, 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 a user with **root** privileges, 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 a user with **root** privileges, 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 might need to install patches from Hewlett-Packard.

Go to the IBM Information Management support page (<http://www.ibm.com/software/data/support>) and find the Image Services Compatibility Matrix. To download this matrix from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

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 a user with **root** privileges 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 might 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 43**](#) of the main procedure.

Appendix E – Setting the Maximum Data Transfer Rate for SCSI Host Bus Adapters

This appendix provides instructions for setting the maximum data transfer rate for a SCSI host bus adapter (HBA) installed in your HP Itanium-based server.

For best performance, the speed of the SCSI adapter channel that an optical library is connected to might need to be adjusted. The A7173A SCSI adapter runs at 320 MB/second.

UDO libraries can operate at these maximum SCSI adapter rates. But for use with all other storage library types, the SCSI adapter channel needs to be set to **80 MB/second**.

The following sections describe how to use the HP Lights-Out Configuration Utility and the Extended Firmware Interface flash utility to verify and set the data transfer rate for your SCSI host bus adapters.

Using the HP Lights-Out Configuration Utility

The HP Lights-Out Configuration Utility is a Windows®-based utility that connects to iLO (integrated Lights-Out) using a secure connection over the network. This utility requires a valid user ID and password with the appropriate privileges.

- 1 Using your preferred Internet browser, enter the TCP/IP address of the HP Integrity server console on the address line and **Enter** to display the iLO login window.
- 2 When the Lights-Out window displays, select the Remote Console tab, and click the "View Console" button.
- 3 In the console window, logon to the HP Integrity server as a user with **root** privileges and reboot the server by entering:

shutdown -r -y 0

- 4 Wait until a menu appears with several options including **go to an EFI shell**.

Important

Immediately scroll down with the arrow key to the **EFI shell** option and **Enter**. You have only a few seconds before this menu disappears. You now have access to enter EFI commands.

Entering EFI Commands

The Extended Firmware Interface (EFI) flash utility allows you to set the maximum data transfer rate for a SCSI host bus adapter. Follow these steps.

- 1 At the EFI shell prompt, enter:

drivers

The command display is shown in the following example.

```
Shell> drivers
```

		T	D			Number of Connections		
D		Y	C	I				
R		P	F	A				
V	VERSION	E	G	G	#D	#C	DRIVER NAME	IMAGE NAME
==	=====	=	=	=	==	==	=====	=====
11	00000010	B	-	-	6	13	PCI Bus Driver	PciBus
1B	01030000	D	X	X	1	-	LSI Logic Ultra320 SCSI Driver	PciROM:20:01:01:000
1C	01030000	B	X	X	1	2	LSI Logic Ultra320 SCSI Driver	PciROM:20:01:00:000
1D	00002160	B	-	-	1	1	Intel(R) PRO/1000 v2.16 EFI-64	PciROM:20:02:01:000
1E	00002160	B	-	-	1	1	Intel(R) PRO/1000 v2.16 EFI-64	PciROM:20:02:00:000
23	01030000	B	X	X	1	3	LSI Logic Ultra320 SCSI Driver	PciROM:80:01:01:000
24	01030000	D	X	X	1	-	LSI Logic Ultra320 SCSI Driver	PciROM:80:01:00:000
27	0000002A	D	-	-	2	-	Usb Ohci Driver	UsbOhci
28	00000010	B	-	-	2	4	USB Bus Driver	UsbBus
29	00001010	D	X	-	1	-	Usb Keyboard Driver	UsbKb
2A	00000011	?	-	-	-	-	Usb Mouse Driver	UsbMouse
2B	00000010	?	-	-	-	-	Usb Bot Mass Storage Driver	UsbBot
2C	00000010	?	-	-	-	-	Usb Cbi0 Mass Storage Driver	UsbCbi0
2D	00000010	?	-	-	-	-	<UNKNOWN>	UsbCbi1
2E	00000011	?	-	-	-	-	Generic USB Mass Storage Driver	UsbMass Storage
2F	00000010	?	-	-	-	-	UGA Console Driver	GraphicConsole

- 2 First you need to find the driver handle designation (<drv_handle>) in the **DRV** column for your optical library on this display.

To do this, you need to know which driver is associated with your SCSI device. For example, for an A7173A host bus adapter that uses the **LSI Logic Ultra320 SCSI Driver**, look in the DRIVER NAME column.

There are four occurrences of this driver listed in the sample display, so look for the one that has the appropriate number of connections in the #C (number of connections) column.

If your storage library has three connections (for two optical drives and a robotic arm), locate the **LSI Logic Ultra320 SCSI Driver** line that has **3** in the **#C** column.

Now you can find the driver handle designation (<drv_handle>) in the **DRV** column, which is **23** in the sample display.

- 3 Next you need to find the controller handle designation, <cntrl_handle>.

At the EFI shell prompt, enter:

drvcfg

The command display is shown in the following example.

```
Shell> drvcfg
Configurable Components
  Drv[1B]  Ctrl[20]  Lang [eng]
  Drv[1C]  Ctrl[1F]  Lang [eng]
  Drv[23] Ctrl[26]  Lang [eng]
  Drv[24]  Ctrl[25]  Lang [eng]
  Drv[29]  Ctrl[40]  Lang [eng]
  Drv[49]  Ctrl[19]  Lang [eng]
```

From the output of the **drvcfg** command, look for the line(s) where the NN in Drv[NN] is same as the <drv_handle> for the driver(s) you determined in the previous step. For example, locate Drv[23].

The second column, Ctrl [NN], contains the corresponding <cntrl_handle>, where NN is the controller handle. In the example, the controller handle that corresponds to driver handle 23 is Ctrl [26].

- 4 Now that you have identified both the driver handle and the controller handle, you can display the SCSI parameters and set them for any driver and corresponding host bus adapter on the SCSI bus.

At the EFI shell prompt, enter:

drvcfg -s <drv_handle> <cntrl_handle>

The Global Properties screen displays containing information about the host bus adapter to which the controller handle corresponds, as in this example:

```
Shell> drvcfg -s 23 26
LSI Logic Host Bus Adapters
Adapter  PCI  PCI  PCI  RAID  FW Revision  Pro-  LSI  RAID  IRQ
          Bus  Dev  Fnc  Alert                duct  Control  Status
<53C1030  80   01   01>  -----  1.03.35.65  IT   Enabled  -----  0
```


Enter to display the Adapter Properties screen containing the host bus adapter settings.

On the Adapter Properties screen, use the arrow keys to highlight the Device Properties option, and **Enter**.

The Device Properties screen displays, as shown in this example:

Device Properties								
SCSI ID	Device Identifier		MB/Sec		MT/Sec	Data Width	Scan ID	Scan LUNs > 0
0	HP	C1118M	5.14	80	[40]	[16]	[Yes]	[Yes]
1	HP	C1113M	1.18	80	[40]	[16]	[Yes]	[Yes]
2	-			80	[40]	[16]	[Yes]	[Yes]
3	-			80	[40]	[16]	[Yes]	[Yes]
4	-			80	[40]	[16]	[Yes]	[Yes]
5	HP	C1113M	1.18	80	[40]	[16]	[Yes]	[Yes]
6	-			80	[40]	[16]	[Yes]	[Yes]
7	53C1030			80	[40]	[16]	[Yes]	[Yes]
8	-			80	[40]	[16]	[Yes]	[Yes]
9	-			80	[40]	[16]	[Yes]	[Yes]
10	-			80	[40]	[16]	[Yes]	[Yes]
...								

The default speed is the maximum for the SCSI adapter:

- 320 MB/second for A7173A adapters

UDO libraries can operate at these maximum SCSI adapter rates. But for use with all other storage library types, the SCSI adapter channel needs to be set to **80 MB/second**.

Tip

Assign the data transfer rate to the SCSI host bus adapter (in this example, **53C1030, SCSI ID 7**), so the same maximum data transfer rate is set to all the devices attached to the adapter.

To change the maximum data transfer rate, use the arrow keys to highlight the corresponding option under the **MT/Sec** column, and then use the plus (+) or minus (-) keys to change the values.

Important

For example, to change the transfer rate to 80 MB/Sec, you must change the MT/Sec transfer rate to **40**.

- 5 After making the necessary changes, press **Esc** to exit the Device Properties screen. This takes you back to the Adapter Properties screen.
- 6 Press **Esc** again to exit the Adapter Properties screen.

If you did not modify any of the SCSI parameters, then the Global Properties screen displays.

However, if you modified any of the SCSI parameters, then the following screen displays:

```
Adapter and/or device property changes have been made.  
<Cancel Exit>  
<Save changes then exit this menu>  
<Discard changes then exit this menu>  
Exit the Configuration Utility
```

Use the arrow keys to highlight your selection from the listed choices, and then **Enter** to return to the Global Properties screen.

7 Press **Esc**. The following screen displays:

```
Are you sure you want to exit?  
<Cancel Exit>  
Save changes then exit this menu  
Discard changes then exit this menu  
<Exit the Configuration Utility>
```

Use the arrow keys to highlight your selection from the listed choices, and then **Enter** to return to the EFI shell prompt.

8 At the EFI shell prompt, enter the following command to reboot the system:

reset

Note The system reboot is required for the new setting to take effect.

Appendix F – Installing the HP AD278A PCI MUX 8-port Adapter Card

This appendix provides instructions for installing and configuring the HP AD278A Peripheral Component Interconnect (PCI) Multiplexer (MUX) adapter.

The AD278A PCI MUX adapter is a high-speed serial communication multiple port product. It combines various signals for transmission over a single channel and provides intelligent communication functions to off-load CPU serial communication processing tasks.

The AD278A PCI MUX 8-port adapter is supported with the following versions of the HP-UX operating system:

- HP-UX 11i v1 (B.11.11)
- HP-UX 11i v2 (B.11.23)
- HP-UX 11i v3 (B.11.31)

Installation Steps

- 1 Shutdown Image Services, and turn power off to the IS storage library server.
- 2 Follow the manufactures's instructions to install the AD278A adapter into the storage library server.
- 3 Connect the serial OSAR library to the MUX cable using one of the following cables:
 - 3100611-025 (25 feet long)
 - 3100611-050 (50 feet long)
- 4 Apply power on to the storage library server and restart HP-UX.
- 5 For HP-UX 11i v1 and v2, follow the instructions to download the device driver software from the HP Web site.

For HP-UX 11i v3, locate the driver on the HP-UX 11i v3 media.
- 6 Install the driver software.

7 After you install the driver, the server automatically restarts.

8 List the MUX ports by entering the following command:

ioscan -knfC tty

Verify that the newly configured adapter appears in the list.

9 Determine the MUX port number the OSAR library is connected to. Using that port number, find the device name. For example, the port 1 (P1) Connector has a device name like:

/dev/tty2a1

10 Change the owner to fnsf.

chown fnsf /dev/tty2a1

11 And change the permissions.

chmod 660 /dev/tty2a1

- 12** Launch the IS System Configuration Editor:

fn_edit &

- 13** Select the Storage Libraries tab, and enter that name (/dev/tty2a1, for example) into the device address for the serial FileNet OSAR library. Exit and save your changes.

- 14** Rebuild the system configuration files by entering:

fn_build -a

- 15** Start Image Services.

Appendix G – Uninstalling Image Services

If it becomes necessary to remove the Image Services software from your server, follow these steps:

- 1 Verify that you're logged on with **root** privileges.
- 2 Stop the Image Services software.
- 3 Back up any log files or other data in the /fnsd and /fnsd/local directories that you want to save.
- 4 Change to the root directory and run the uninstaller by entering:

cd /

- Graphical mode – standard, graphical interface:

/fnsd/etc/uninstaller/uninstall_is &

-
- Console mode – plain text interface:

`/fnsw/etc/uninstaller/uninstall_is -console`

- Silent mode – no screen display whatsoever:

`/fnsw/etc/uninstaller/uninstall_is -silent`

Important

It's essential that you use the `uninstall_is` command if you decide to uninstall the Image Services software. You cannot use the Operating System tools to remove Image Services.

- 5** The uninstaller will lead you through the necessary steps and prompt you when finished.

Note

The uninstaller leaves certain critical directories intact to protect existing data.

- 6** After the uninstaller has finished, go to the `/fnsw` directory and examine the remaining contents. Manually remove any unwanted files and directories.

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