Installation and Configuration Procedures for AIX/6000

Release 4.0 DB2 Edition

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1
Getting Started

This document describes how to install FileNet Image Services Version 4.0 DB2 Edition and DB2 RDBMS software on an IBM RS/6000 server running the AIX 5L operating system. It also describes how to configure and initialize FileNet files and databases using initialization and configuration tools.

Overview

Installation and configuration can be done on the following servers:

- A Combined server (Root/Index/Storage Library server)
- A Dual server (Root/Index server and Storage Library server)
- An Entry server (Root/Index/Storage Library server).
- An Application server.

- A Multi-Storage Library server.

Tip Reconfiguring an existing server should be handled the same as installing and configuring a new server.

The server types supported in this release are the uniprocessor and multiprocessor (SMP).

Required Skills

The software installation and configuration procedures described in this document must be performed by a **FileNet Certified Professional (FCP)**. To learn more about the FCP certification program, please refer to FileNet's Web site at **http://www.filenet.com** under Products > Services & Support > Global Learning Services. FileNet Professional certification is available to FileNet customers, FileNet employees, FileNet partners, and other Technical Service Providers (TSP).

At least **seven days** prior to the installation, the FCP must contact the Upgrade/Install Assurance Team to schedule the installation and access the team's latest list of current scheduling procedures.

This procedure assumes you have knowledge of:

- UNIX, specifically, the AIX operating system
- a text editor such as **vi**
- System Manager Interface Tool (**SMIT**).

Documentation Conventions

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

To familiarize yourself with the conventions used in this document and for other general information, see the ***Documentation Conventions*** file on the Image Services documentation CD.

New Features of the IS 4.0 DB2 Edition Installation

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

IBM DB2 Universal Database Software

In Image Services 4.0 DB2 Edition, FileNet introduces support for IBM DB2 relational database software. All DB2 databases are site-controlled and must reside on remote AIX 5.2 64-bit servers. Image Services on the AIX database server accesses the remote DB2 database by using DB2 client software installed on the IS server.

DB2 Universal Database Version 8 FixPak 4a or later is also required.

See ***Guidelines for Installing and Configuring DB2 Software*** for more information.

CSS Worldwide Customer Support

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

Release Notes for Image Services 4.0 DB2 Edition

The Release Notes file is available in two places.

- The Image Services 4.0 CD-ROM in location \relnotes.htm and \relnotes.txt
- The FileNet website at **http://www.css.filenet.com**.

Since the latest Release Notes are located on the FileNet Web site, it is **highly recommended** that you obtain the Release Notes file from that location instead using the file on the IS 4.0 CD-ROM.

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

Pay special attention to the **"Patches"** mentioned in the Release Notes. (Search for the keywords **PRE-INSTALL** and **REQUIRED** to locate information about AIX, DB2, and FileNet patches that need to be applied before starting this installation.)

Operating System Notes

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

Release Dependency Spreadsheet

Review the Release Dependency spreadsheet for information that might be pertinent to the system configuration. The Release Dependency spreadsheet contains software compatibility information for client workstations, fax servers, and printer servers. The Release Dependency spreadsheet is located on the FileNet Web site.

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

Note **When running Image Services and the Image Services Toolkit (formerly known as WAL) on the same server, the Image Services Toolkit must be version 4.0 or later.**

Installation Prerequisites

The prerequisites for an installation are outlined in the following sections from which you will gather specific information. After you find each piece of information, enter it in the appropriate space in the **"FileNet TC Worksheet" on page 68**.

Server Types

Perform the steps in this section on these servers:

Root/Index and **Storage Library** during a Dual server install
Root/Index/Storage Library during a Combined or Entry server install.

Note Image Services ToolKit 4.0 is required if you are running Image Services Toolkit and Image Services 4.0 DB2 Edition on the same server.

Minimum Hardware Requirements

Note These requirements have changed from previous Image Services releases.

Server Architecture

- **64-bit** processors for all servers with RDBMS software including Root/Index servers and Application servers with either WorkFlo Queue Services, SQL Services, or VWServices.
- **32-bit** or **64-bit** processors for servers without RDBMS software such as separate Storage Library servers and Application servers with only Batch, Print, and/or Cache Services.

Server Memory

To see the amount of usable memory, enter:

lsattr -E -l sys0 -F 'description value' -a 'realmem'

- Root/Index and Application Servers with DB2:

  256 MB memory for each processor in the server.

- Storage Library and Application Servers without RDBMS software:

  256 MB memory for each processor in the server.

Paging Space

- DB2 recommends that paging space be **2 times** the amount of physical RAM server memory.

Note On systems with more than 2 GB of physical RAM memory, the requirements for paging space can be lowered, but it should never be less than the amount of physical RAM memory.

To see the amount of paging space currently available on your server, type:

lsps -a

Total Disk Space

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

  These sizes include a 30% growth factor, but **do not** include space required for the AIX operating system or for RDBMS software.

  To see the available free space, enter the following command for each volume group on your server:

  lsvg <volume group name>

  Multiply the **FREE PP** number by the **PP SIZE** to get the free space on that particular volume group. Add up the free space on all the volume groups to get the total free space.

Available File System Space for FileNet Software

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

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

Note For maintenance purposes, you may want to increase these values.

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

Refer to the ***Guidelines for Installing and Configuring DB2 Software*** for more information about space requirements for DB2 software.

FileNet's SCouT system configuration and output tool can help estimate the actual amount of disk space needed for FileNet and DB2 datasets on this Image Services system.

Graphics Monitor

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

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

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

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

Software Requirements

Software requirements described in this document are for the following:

- Operating system and related information
- FileNet Image Services Software (including COLD)
- Relational Database Management Software
  - IBM DB2 Version 8.1
- Release Notes file
- Appropriate patches for your AIX operating system and RDBMS.

Server Naming Convention

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

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

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, two for the colons separating the parts.

Object Name

An **object** is a resource like a tape, printer, database, software service, logon name, etc. 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 or FileNetAccounting.

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, two for the colons.

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

Operating System Requirements

AIX Version

You can install Image Services Release 4.0 DB2 Edition on systems with the following AIX operating systems **only**:

- AIX 5L version 5.2, Maintenance Level 2
- APAR IY50083

In addition, the version of Simple Network Management Protocol (SNMP) on the AIX 5.2 server should be:

- SNMP or SNMPv1

Follow these steps to determine what version of SNMP you are running:

1 As root user, enter

ps -e | grep snmpd

2 If your output included snmpdv1, you're running SNMP version 1. Skip to the next section.

3 If you received no output, you probably need to start the snmpd daemon. Enter:

startsec -s snmpd

Then repeat step 1.

4 If your output included another version of SNMP, please refer to the *IBM System Management Guide* for information on converting back to SNMP version 1.

Common Desktop Environment (CDE)

The Common Desktop Environment (CDE) is a graphical user interface that runs in conjunction with the X Windows system. It is included with the AIX software. After you logon in CDE, you can right click on the background to get a menu.

If you are using an international keyboard, you need to select the keyboard language when you first logon to CDE. At the logon box, select Options, then Language. From the pulldown menu, select the appropriate language.

You can perform non-GUI commands at the GUI terminal or the ASCII terminal. The procedures in this document were written for use on an ASCII terminal for the sake of consistency. For more information about using CDE, refer to the AIX/6000 documentation.

To disable CDE and use X Windows instead, refer to AIX/6000 documentation. To re-enable CDE, run the **/fnsw/etc/DTwindows** script after completing the Image Services install.

FileNet Image Services Software

To complete the Image Services for AIX 5L installation procedure, you must have the CD media labelled:

FileNet Image Services 4.0 DB2 Edition for AIX 5L.

This media contains the Image Services 4.0 DB2 Edition software including COLD 4.0 software for AIX 5.2 and the five Universal SLAC Keys.

IBM DB2 Universal Database

- **IBM DB2 V8.1 for AIX Database Server** (1 CD). IBM DB2 RDBMS software products for DB2 UDB Enterprise Server Edition and DB2 Administration Client.
- **IBM DB2 V8.1 for AIX Client** (1CD). Runtime or administrator client on AIX/6000 platform.
- **IBM DB2 Universal database Version 8 FixPak 4a** or later. You can download the fixpack from www.ibm.com.

Note IBM DB2 software media are not supplied by FileNet.

Note If the **database administrator** or **system administrator** wants to install DB2 before the FileNet Technical Consultant arrives to update the Image Services software see ***Guidelines for Installing and Configuring DB2 Software***. Use these guidelines to update the DB2 software.

National Language Support

This release of Image Services provides additional information on using character sets other than US7ASCII and ISO 8859-1. It's extremely important that the character set you select for one product matches the character sets you select for all the others.

For example, when you install the operating system, be sure to select the character set you plan to use with Image Services and DB2. Likewise, when you install DB2 software, be sure to select the same character set as you did for the operating system.

And when you install the FileNet Image Services software, be sure to select the appropriate character set on both the System Attributes tab in the System Configuration Editor and on the Relational Databases/ DB2 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 DB2 and IS on the Image Services server.

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

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

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

Table 1-1: Character Sets

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

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)
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, be sure to choose an ISO character set for DB2 and Image Services that has a corresponding Windows code page.

Related Documents

The following documents contain information related to the installation of Image Services on AIX/6000. Locate these documents on the FileNet Image Services Documentation CD-ROM, and print or read them before you install the Image Services software.

- ***Image Services System Administrator's Handbook***
- ***Image Services System Administrator's Companion for UNIX***
- ***Image Services MSAR Procedures and Guidelines***
- ***Guidelines for Installing and Configuring DB2 Software***

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

2

System Administrator Tasks

System Administrator Checklist

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

1. ❒ Operating System Requirements
2. ❒ Set Time Zone Parameters
3. ❒ Set Number of Processes per User
4. ❒ Set a Paging Space
5. ❒ Turn on SNMP
6. ❒ Add Peer Systems to the /etc/hosts File
7. ❒ Create the FileNet Volume Group (fnvg) (optional)
8. ❒ Create and Mount the /fnsw and /fnsw/local Journaled File Systems
9. ❒ Create RDBMS User and Groups
10. ❒ Configure TTY Ports for a Modem
11. ❒ Configure Aynchronous I/O
12. ❒ Modify Network Oprions
13. ❒ Reboot the Server

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

_____

Operating System Requirements

OS level

You can install Image Services Release 4.0 DB2 Edition on systems with the following AIX operating systems **only**:

- AIX 5L version 5.2, Maintenance Level 2
- APAR IY50083

To check the operating system version type the following command:

oslevel -r

To check the maintenance level type the following command:

instfix | grep AIX

In addition, the version of Simple Network Management Protocol (SNMP) on the AIX 5.2 server should be:

- SNMP or SNMPv1

Follow these steps to determine what version of SNMP you are running:

1. As root user, enter

   ps -e | grep snmpd

2. If your output included snmpdv1, you're running SNMP version 1. Skip to the next section.

3. If you received no output, you probably need to start the snmpd daemon. Enter:

   startsrc -s snmpd

   Then repeat step 1.

4. If your output included another version of SNMP, please refer to the *IBM System Management Guide* for information on converting back to SNMP version 1.

Server Bundle

FileNet software requires that the **Server Bundle** be installed as part of the AIX operating system (OS). If you know that your server has the Server Bundle, you can skip to **"Other Required AIX OS Files" on page 47**.

If you haven't installed the Server Bundle or are not sure if the Server Bundle is installed, follow these steps:

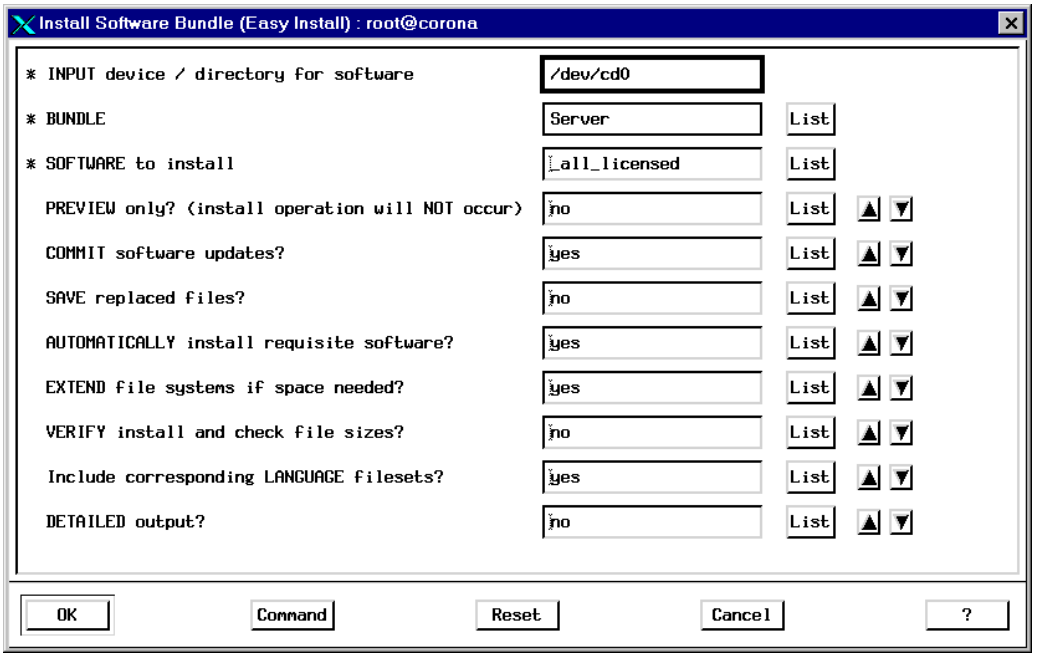
5 Launch SMIT by entering:

smitty

Note You will be instructed to insert Volumes 2 and 3 of the AIX operating system media during the install.

6 In SMIT, choose Software Installation and Maintenance ➔Install and Update Software ➔ Install Software Bundle (Easy Install) ➔ From the list of input devices, select the CD-ROM drive ➔ select Server from he list.

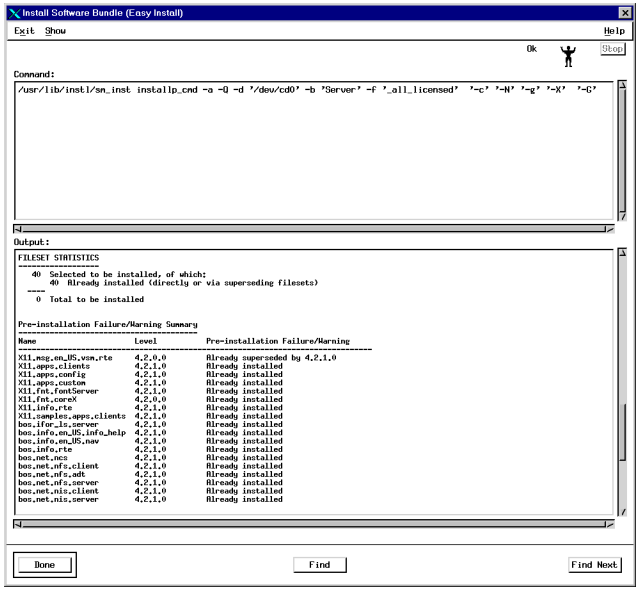
7 You will see a list of installation defaults which looks similar to the following:



Accept all the defaults and click the **OK** button.

8 You will receive a warning. Click **OK** to continue.

9 During the bundle installation, you will see a display similar to the following:



Note that the related files are marked as Installed (if the Server Bundle was needed) or Already Installed (if the Server Bundle was already present).

10 The bundle installation will automatically exit from SMIT when the installation is complete.

bos.adt

FileNet software requires that **bos.adt** be installed as part of the AIX operating system (OS).

Verify that all the required parts of bos.adt are installed by entering the following commands:

lslpp -h bos.adt.debug
lslpp -h bos.adt.libm
lslpp -h bos.adt.base
lslpp -h bos.adt.lib
lslpp -h bos.perf.perfstat

If they are not installed, you can use the **smitty install_latest** command to install the individual files.

11 Unmount the CD by entering:

```
cd /
umount /cdrom
```

Other Required AIX OS Files

To run the Image Services software, the following may be needed:

- PTFs required for your AIX version. For information about required PTFs and kernel settings, refer to the latest information posted on the web at **www.css.filenet.com**.
- If you are an AIX IS Toolkit user, you must also install the C Compiler.

X11 Fonts for COLD Preview

If you're licensed to use COLD, you'll need to install a font package necessary for running COLD Preview.

1 As **root** user, mount the AIX operating system media by entering:

mount -rv cdrfs /dev/cd0 /cdrom

2 Launch SMIT by entering:

smitty

3 In SMIT, choose Software Installation and Maintenance → Install and Update Software → Install and Update from Latest Available Software → List the input devices and select the CD-ROM drive.

4 In the Software to install box, type:

X11.fnt.iso1

5 Click **OK** to continue. The font installation will automatically exit from SMIT when the installation is complete.

6 Unmount the CD by entering:

```
cd /
umount /cdrom
```

7 Now you can safely remove the CD from the drive.

Set Time Zone Parameters

Review and change the time zone parameters if necessary. In SMIT choose System Environments → Change/Show Date and Time → Change Time Zone Using System Defined Values. Choose the Daylight Savings Time option if applicable. At the CUT Time Zone menu, choose the option associated with your site. For example, in California, the time zone needs to be set to the Pacific time zone (PST8PDT) Pacific U.S.; Yukon (cut -8).

Click the **OK** button followed by the **Done** button.

Set Number of Processes per User

In SMIT choose System Environments → Change/Show Characteristics of Operating System. Do the following:

- Maximum Number of PROCESSES allowed per user needs to be at least **400**.
- Maximum Kbytes of real memory allowed for MBUFS option needs to be set to **0**.

Note Setting the MBUFS parameter to 0 causes the system to use the default amount of available memory. This default amount is approximately 1/8 to 1/4 the amount of real memory.

Click the **OK** button followed by the **Done** button.

Note These are minimums and as each system differs, it is important to remember not to change the values if they are already greater than our minimum requirements.

Set a Paging Space

Recommended paging space is **2 times** the amount of server memory.

However, if the server has more than 1 GB of server memory, we recommend that paging space be **1.5 to 2** times that amount.

If the total paging space size is less than the minimum size, you must increase the number of partitions until your total paging space size equals the minimum for the server type you have.

Check Current Paging Space

In SMIT choose System Storage Management (Physical & Logical Storage) → Logical Volume Manager → Paging Space → List All Paging Spaces. Usually the hd6 file system is the primary file system. Add up all paging spaces listed and click the **Done** button to return to the Paging Space menu.

Add Paging Space

If the paging spaces are not sufficient, enter the following SMIT choices from the Paging Space menu: Change/Show Characteristics of a Paging Space → select the paging space you wish to enlarge. You will enter the additional paging space in the field entitled “NUMBER of additional logical partitions (Num.)

CAUTION

You will be entering the number of **additional physical partitions** for paging space, **not** the total desired paging space size. The partitions you enter are based on how the physical volume was added to the volume group. If your volume group is in partitions of 8MB, each unit you enter in this field will indicate an 8MB addition to paging space. For example, if you enter ‘2’ in this field, you will have 16MB added to your paging space.

Enter the number of additional partitions and press **OK**. When SMIT has completed processing this command, click **Done** followed by **Cancel**.

Turn On SNMP

Check if SNMP is running by entering the following command:

lssrc -s snmpd

If snmpd is **not** listed as active, enter the following

In SMIT, choose Processes and Subsystems → Subsystems → Start a Subsystem → List all the Subsystems by pressing the F4 button and select the snmpd entry. Press Enter → Start the Subsystem by pressing Enter again.

Next edit the **/etc/rc.tcpip** file using **vi** or your preferred editor. Uncomment the following line:

startsrc /usr/sbin/snmpd "$src_running"

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, **“Create the FileNet Volume Group (fnvg) (optional)” on page 55**.

Any server on the network that you’ll be accessing via a remote login (**rlogin**) needs to be added to the /etc/hosts file of the Series 6000 server you are currently installing. Conversely, if you want another server to be able to communicate remotely with your Series 6000 server, you have to edit the /etc/hosts file on that other server as well. You need the name(s) and IP address(es) of the server(s) you want to be able to communicate with remotely. Refer to the “Installation Prerequisites” section in Chapter 1 of this guide for this information.

To add an entry in the /etc/host file, perform the following:

In SMIT, from the System Management menu, choose Communications → Applications and Services → TCP/IP → Further Configuration →

Name Resolution → Hosts Table → Add a Host. Add the server name and address.

Create the FileNet Volume Group (fnvg) (optional)

Do this subsection if you will be installing the DB2 software in a volume group other than the root volume group (e.g. rootvg). Do this subsection if you want to create another volume group (e.g. fnvg) for your FileNet datasets. If you are not going to install FileNet datasets in a new volume group, skip this step.

Note FileNet suggests that all operating system software be installed on the root volume group disk(s) (e.g., rootvg), and the FileNet software be installed on another volume group (e.g., fnvg).

Throughout the remainder of this document, you will see the mention of **<volume group>.** You have to determine what you want to call your volume group(s) (e.g., rootvg or fnvg).

The following example uses fnvg as a volume group name and **16MB**

physical partition sizes. This may not apply to your installation. **Use the physical partition size that applies to your installation**.

1 On the System Management menu of SMIT select System Storage Management (Physical & Logical Storage) → Logical Volume Manager → Volume Groups → Add a Volume Group.

2 Enter the following for each SMIT value:

SMIT Entry	Value
VOLUME GROUP Name	**fnvg**
Physical partition SIZE	**16**
PHYSICAL VOLUME name	Click the List button to get a list. Select a physical volume from the list and press OK.
Activate volume group AUTOMATICALLY at system restart?	**yes**

Accept the remaining default values. Press **OK** to create the volume group.

Create and Mount the /fnsw and /fnsw/local Journaled File Systems

FileNet recommends that you create separate file systems for the FileNet Image Services software (/fnsw) and for the FileNet Image Services data files (/fnsw/local).

1 In SMIT, choose System Storage Management (Physical & Logical Storage) → File Systems → Add/Change/Show/Delete File Systems → Journaled File Systems → Add a Journaled File System → Add a Standard Journaled File System. Select the volume group on which you will create the file system.

Note If you do not install the file system to rootvg, you will not have a backup of the file system during the **mksysb** backup process.

2 Enter the following for each SMIT value:

SMIT Entry	Value
SIZE of filesytem:	**1048576**
Mount POINT	**/fnsw**
Mount AUTOMATICALLY at System Restart**:**	**yes**
PERMISSIONS:	**read/write**

3 Press **OK** to create the file system.

4 In a separate command window, manually mount the /fnsw file system before creating and mounting the /fnsw/local file system. Type the following at the system prompt:

mount /fnsw

5 Return to SMIT and access the Add a Standard Journaled File System option as already described above. Create the /fnsw/local file system in SMIT using the following values:

SMIT Entry	Value
SIZE of filesytem:	**1048576**
Mount POINT	**/fnsw/local**
Mount AUTOMATICALLY at System Restart**:**	**yes**
PERMISSIONS:	**read/write**

6 In a separate command window, manually mount the /fnsw/local file system before continuing in this procedure. Type the following at the system prompt:

mount /fnsw/local

Create RDBMS User and Groups

Server Types

Perform the steps in this section on these servers for the FileNet groups and users:

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.

In this section, you will use **smitty** to create groups and users (with the appropriate IDs) for FileNet administration.

1 In SMIT, choose Security & Users → Groups → Add a Group. Use the following values for the entry fields:

SMIT Entry	Value
Group NAME:	**fnusr**
ADMINISTRATIVE Group	**False**

2 Press **Enter** to create the group.

3 Set the password for the user. (Select the Normal password option.)

4 Create the home directories for the appropriate users. (For example, the fnsw home directory could be /home/fnsw.)

5 Click **OK** to accept the new user.

User Name	Group Assignment
fnsw	Primary Group: fnusr Secondary Group: fnadmin, fnop

Verify that all necessary users and groups exist and are configured correctly.

Note If you want to use the FileNet tools and software when logged on as a specific user, you must add the user to either the **fnop** or **fnadmin** groups. Users in the **fnop** group can start and stop FileNet software only, while users in the **fnadmin** can read, write and execute FileNet

software. Additionally, if you add others user to **fnop** or **fnadmin**, you must also add them to the **fnusr** group.

Set Up Password for fnsw user

If you have not previously established a password for **fnsw**, create the password now before proceeding with the Image Services software installation.

1 To set up the **fnsw** password, at the system prompt enter:

passwd fnsw

2 You are then prompted New password:.

3 After you enter the password, you are then prompted Re-enter new password:.

4 After you enter the password a second time, you return to the system prompt.

Configure TTY Ports for a Modem

Note Perform the steps in this section only if you're using a modem.

1. In SMIT on the System Management menu select Devices → TTY → Add a TTY.
2. Select the tty rs232 Asynchronous Terminal for TTY, and select the port the Modem is attached to; for example, sa0 Available 00-00-S1 Standard I/O Serial Port 1.

To add a tty with a Port number of s1, enter the following for each SMIT value:

SMIT Entry	Value
PORT number	**s1**
enable LOGIN	**enable**
BAUD rate	**9600**
PARITY	**none**
BITS per character	**8**
Number of START BITS	**1**
Number of STOP BITS	**1**
FLOW CONTROL	**none**

3 Add **,clocal** (no space between the comma and clocal) to the end of the STTY attributes for RUN TIME listing. (This creates device tty0 for a modem.) Press **Enter**.

Modify Network Options

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

In this section you will make your FileNet system run more efficiently by making changes to the **/etc/rc.dt** file.

1. Add the following lines to the beginning of **/etc/rc.dt**:

   /usr/sbin/no -o tcp_ephemeral_low=42767
   /usr/sbin/no -o udp_ephemeral_low=42767

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

Reboot the Server

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

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

1 - the Application server(s)
2 - the Storage Library server(s)
3 - the Root server.

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

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

shutdown -Fr

There may be many Image Services error messages during the reboot because the system is not yet configured.

3

Preparing for the Installation

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

Server Types

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

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

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

Application server if adding an Application server to your system.

With Xwindows open, use SMIT to complete the system configuration steps described in this chapter. For more information about using SMIT, refer to the on-line referencing tool for the version of AIX on your system.

FileNet TC Worksheet

Use the following worksheet to help you gather information needed to do the installation. You will need this information to complete a successful installation.

Note Root access is required for AIX installation and configuration.

1 Get the following miscellaneous information:

- The following passwords, if they exist:

  fnsw (if it exists)_____

- NCH Domain Name(s):_____

- Organization Name:_____

- FileNet System Software SSN:_____

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

2 Find out the system serial numbers (SSNs) of any other systems that this system must be compatible with (e.g., for the sharing of optical disks). The system serial number(s) should contain, at most, 10 digits.

SSNs here: _____ _____

_____ _____ _____

This can be determined by entering the **ssn** command on each compatible system's Root server.

3 To check which version of the operating system software is installed on your server(s), complete the following steps:

- As **root** user, enter the following command:

  oslevel -r

- To check the maintenance level, type the following command:

  instfix | grep AIX

- The following versions should be displayed at the system prompt:

  - AIX 5L version 5.5, Maintenance Level 2
  - APAR IY50083

In addition, the version of Simple Network Management Protocol (SNMP) on the AIX 5.2 server should be:

- SNMP or SNMPv1

Follow these steps to determine what version of SNMP you are running:

1 As root user, enter

ps -e | grep snmpd

2 If your output included snmpdv1, you're running SNMP version 1. Skip to the next section.

3 If you received no output, you probably need to start the snmpd daemon. Enter:

startsec -s snmpd

Then repeat step 1.

4 If your output included another version of SNMP, please refer to the *IBM System Management Guide* for information on converting back to SNMP version 1.

Network Information and Test

5 Determine the following for each Image Services server in your system:

HOST NAME: _____

6 Find out the IP address(es) of the Series 6000 server(s), IS/WorkFlo Print/Fax station(s), and any servers that will be communicating remotely with the server. The address(es) should contain four numbers separated by periods (e.g., **197.0.0.146**).

Make sure the server's name, IP address and the IP addresses of any remote systems that will be connected are properly configured in the /etc/hosts file, or via NIS.

IP address(es) here: _____ _____

_____ _____ _____

7 Before you test your network, you must start the network service on your server(s). In SMIT, choose Communication Applications and Services → TCP/IP → Minimum Configuration & Startup.

Select Ethernet (en0) .

Complete the following fields:

- The HOSTNAME is the name associated with the system .
- The Internet Address is the server's TCP/IP address.
- The Cable Type is usually set to dix. It may be N/A if you don't have a choice, as with the Model 7011.

Put your changes in place by clicking **OK**.

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

8 Test your network by entering the command:

ping <hostname>

where **<hostname>** is the name of your server. If you get messages concerning your server's name, your server's network configuration is properly configured. At this point, type Ctrl C.

If you get the following message back, you need to check further:

host name <hostname> NOT FOUND

If your server uses the /etc/hosts file for address resolution, enter the following command to look at your /etc/hosts file:

more /etc/hosts

If your server name is in the /etc/hosts file yet you get the “Not Found” message, you have some network problem that won’t allow the **ping** command to complete and you must fix the problem.

If your server is configured to use NIS or DNS for address resolution, contact your network administrator to resolve this problem before proceeding.

File System Free Space Requirements

Determine how much free space the file systems need to have, in available megabytes.

Logical Volume	Minimum Size (MB)	Size (MB)	File System
Image Services:			
fnsw	500		/fnsw
local	500		/fnsw/local

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

Note If your volume group contains more than one hard disk (physical volume), FileNet recommends that you setup the databases with recovery logs on a disk different than the one on which their associated recovery log resides.

Later in this document you can change the default settings for logical volume sizes that the FileNet program sets for you. The dataset names map to logical volume names as follows: .

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

FileNet recommends that the FileNet datasets reside in the **fnvg** volume group, unless you have a single disk drive. In the case of a single disk drive, you need to use the **rootvg** volume group.

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

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

Most of this information can be supplied by using the SCouT program.

11 Complete the following table appropriately for your system.

Dataset	Min. Size (MB)	Size (MB)	Volume Group
MKF:			
cache0	100		
permanent_db0	100		
permanent_rl0	40		
transient_db0	20		

transient_rl0	40		
sec_db0	12		
sec_rl0	4		

Exit SMIT

After completing all the required pre-installation configuration steps, exit SMIT.

Reboot the Server

Enter the following at the command line:

shutdown -Fr

Install RDBMS Software

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

IBM DB2 V8.1

The Database Administrator needs to install DB2 server software and create the DB2 database for Image Services. Refer to Chapter 2 of the ***Guidelines for Installing and Configuring DB2 Software*** for further information.

If the DB2 database resides on a dedicated remote database server, the client software needs to be installed on the Image Services server and linked to the remote DB2 database. Refer to Chapter 3 of the ***Guidelines for Installing and Configuring DB2 Software*** for details.

The Guidelines document may be printed and given to the Database Administrator.

DB2 Database Information

After DB2 has been successfully installed, the Database Administrator needs to provide the following information to the System Administrator and the FileNet Technical Consultant.

	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	

f_sw password: _____

f_open password: _____

f_sqi password: _____

f_maint password: _____

DB2 Database Name: _____
(e.g., indexdb)

DB2 userTablespace _____
(e.g., userspace1)

Note Minimum Tablespace required for userspace1 is **200MB**.

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 82**.

Check the Link to the DB2 Database

Since the DB2 database is located on a remote AIX server, you can 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 **fnsw**), 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.

Install the IS Software

Server Types

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

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

Important!

If this server is configured to use Network Information Services (NIS or NIS+, formerly known as Yellow Pages), ask the Network Administrator to disable it temporarily.

Disabling NIS allows the Image Services installation routine to automatically create the necessary FileNet users and groups on the server.

Note

Make sure the /fnsw and /fnsw/local file systems are mounted before you install the Image Services software. At the system prompt, type **mount** to see a list of what is currently mounted. Make sure that Info Explorer is not mounted on the CD. If it is, unmount it.

Note When you install FileNet Image Services software, **COLD 4.0** is also installed.

1. Logon as **root** user and change to the / (root) directory:

   cd /

2. Load the Image Services 4.0 DB2 Edition for AIX/6000 CD into the drive. Wait for the light to stop flashing.

3. At the prompt, type the following command:

   lsdev -C l grep cd

   A message similar to the following will display. Make sure that the CD-ROM drive is available:

```
cd0 Available 00-08-00-3,0 CD-ROM Drive
```

Mount the Image Services CD-ROM

1. Create a directory to mount the CD-ROM drive if you have not already done so:

   mkdir /cdrom

2. Mount the CD-ROM drive to the directory you just created:

   mount -rv cdrfs /dev/cd0 /cdrom

   where /dev/cd0 is the appropriate device name.

3. To make sure the CD-ROM mounted correctly, type:

   mount

   You should see the CD-ROM device listed.

Install the Image Services 4.0 DB2 Edition Software

1 Enter the following command to begin at the proper location in the SMIT program:

smitty install_latest

2 The Install Software Products at Latest Level screen displays, which looks **similar** to the following:

```
                  Install Software Products at Latest Level

Type or select a value for the entry field.
Press Enter AFTER making all desired changes.

[Entry Fields]
*  INPUT device / directory for software              [/cdrom/AIX_5.2/IS]
+

    F1 = Help        F2 = Refresh       F3 = Cancel         F4 = List
    F5 = Undo        F6 = Command       F7 = Edit           F8 = Image
    F9 = Shell       F10 = Exit         Enter = Do
```

3 Complete the Input Device field by typing the following under [Entry Fields]:

/cdrom/AIX_5.2/IS

Next, the Install Software Products at Latest Level screen re-displays. The screen looks similar to the following.

Note Do **not** press Enter after the next step. Wait until one of the following steps specifically instructs you to press Enter.

```
                Install Software Products at Latest Level

        Type or select a value for the entry field.
        Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
*   INPUT device / directory for software             /cdrom/AIX_5.2/IS

*   SOFTWARE to install                                [all_latest]
    PREVIEW only? (install operation will Not occur)       no
    COMMIT software updates?                               yes
    SAVE replaced files?                                   no
    ALTERNATE save directory                               []
    AUTOMATICALLY install requisite software?              yes
    EXTEND file systems if space needed?                   yes
    OVERWRITE same or newer versions?                      no
    VERIFY install and check file sizes?                   no
    Include corresponding LANGUAGE filesets?               yes
    DETAILED output?                                       no
    Process Multiple Volumes                               yes

    F1 = Help        F2 = Refresh       F3 = Cancel        F4 = List
    F5 = Undo        F6 = Command       F7 = Edit          F8 = Image
    F0 = Shell       F10 = Exit         Enter = Do
```

The Software to install field should be highlighted.

If you want to change the other settings, move the cursor to each field using the Arrow Keys and use the Tab key to toggle yes or no.

The Install Software Products at Latest Level screen should appear similar to the screen shown below.

```
                  Install Software Products at Latest Level
        Type or select a value for the entry field.
        Press Enter AFTER making all desired changes.
                                                          [Entry Fields]
*   INPUT device / directory for software                /cdrom/AIX_5.2/IS

*   SOFTWARE to install                                   [_all_latest]
    PREVIEW only? (install operation will Not occur)      no
    COMMIT software updates?                              yes
    SAVE replaced files?                                  no
    AUTOMATICALLY install requisite software?             yes
    EXTEND file systems if space needed?                  yes
    OVERWRITE same or newer versions?                     no
    VERIFY install and check file sizes?                  no
    Include corresponding LANGUAGE filesets?              yes
    DETAILED output?                                      no
    F1 = Help        F2 = Refresh       F3 = Cancel        F4 = List
    F5 = Undo        F6 = Command       F7 = Edit          F8 = Image
    F0 = Shell       F10 = Exit         Enter = Do
```

4 When you have finished changing settings on the Install Software Products at Latest Level screen, press Enter to begin installation of the software. A screen similar to the following displays:

```
                        ARE YOU SURE?

Continuing may delete information you may want to keep.
This is your last chance to stop before continuing.
    Press Enter to continue.
    Press Cancel to return to the application.

  F1 = Help       F2 = Refresh      F3 = Cancel
  F8 = Image      F10 = Exit        Enter = Do
```

5 Press Enter and the Command Status screen displays. The screen looks similar to the following:

```
            COMMAND STATUS

Command: running        stdout: no          stderr: no

Before command completion, additional instructions may
appear below.
```

You will first see a listing of the selected software subsystems and their release levels, followed by a listing of the actual files being installed and verified. The installation of the software takes anywhere from **15 to 45 minutes**, depending on which software you are installing and the hardware. When the installation process finishes running, the “Command:” status indicator in the upper left corner of the screen changes from RUNNING to OK or FAILED.

- OK means that the installation process ran to completion. Review the system messages to make sure there were no errors during installation.

- FAILED means that the installation process did not complete. Use the Arrow Keys to review the system messages to find out what went wrong. After the problems are resolved, redo the installation procedure beginning with step 1.

6 When all of the software has been installed successfully, press the F10 key to exit smitty and return to the system prompt.

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

Verify/Update the /etc/services File

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

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

If you just installed Image Services software and you have **NIS** (Network Information Service, formerly called Yellow Pages, a trademark of British Telecom) set-up on your system, you must enter the ypcat services command on your “Master” server to check for the following entries at the bottom of the file:

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

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

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

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

Copy the Universal SLAC Key to the Root Server

Server Types

Perform the steps in this section on these servers:

Root/Index server during a multi-server install

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

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

1 Choose the following SLAC Key for your Image Services system:

- **uisdb2.key** - Image Services with eProcess for DB2

2 Create a directory for the SLAC Key on your root server, and copy the appropriate key. As an example, for an IS system with DB2, you might enter:

```
mkdir  /fnsw/local/SLAC
cp  /cdrom/SLAC/uisdb2.key  /fnsw/local/SLAC
```

Unmount the Image Services CD-ROM

1 As **root** user, unmount the CD by entering:

umount /cdrom

2 Remove the Image Services media from the drive.

Note If NIS was disabled earlier, the Network Administrator can reenable it now.

Install the Required Pre-Startup Fixes

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

At this time, install only the fixes that directly relate to Image Services 4.0 DB2 Edition initial configuration issues. (You'll install any general Image Services 4.0 DB2 Edition patches in a later section.) Search through the Release Notes file for the key words **PRE-STARTUP** and **REQUIRED**.

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

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

Install the User Environment Templates

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

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

- If you enter **y** for yes in response to each prompt, the existing files are renamed with a **.old.n** extension where n represents the version of the changed file. The new files are created using the original file name.

- If you enter **n** for no to any prompt, that file will not be installed.

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

If you run inst_templates more than once, existing .old files are not overwritten. The new .old files are given .old.0 extensions, and each time you run inst_templates after that, the last digit of the file name increases.

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

Set Up fnsw User Environment

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

1 If you are logged on as **root** user, switch user to fnsw (**su - fnsw**).

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

/fnsw/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 these services, select 0=none; 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) [2]:
```

Note If you're planning to use an existing 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 **DB2** software exists on this server, enter the DB2 Client instance owner's DB2 home directory.

```
Enter the relational database home directory [/home/fnsw/sqllib]:
```

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

Set Up Root Environment

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 are using, an appropriate environmental setup can be installed by copying the corresponding template file from /fnsw/etc. Once copied, you can add your own preferences to these files.

1 Log on as **root** user.

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

/fnsw/etc/inst_templates

a Answer the prompts as appropriate for your server.

b Answer the relational database prompts exactly the same as you did for the **fnsw** user on this server.

3 When inst_templates is finished, log out to the system prompt and log back in as **root** user to put the templates into effect.

Reboot the System

Enter the following at the command line:

shutdown -Fr

Set File Ownerships and Permissions

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

In this section, you create all directories needed for the installation using fn_setup. In addition, you will set the appropriate file ownerships and permissions for the directories. You will be asked for system-spe-

cific information, refer to the **"FileNet TC Worksheet" on page 68** for the correct information.

Note The **fn_setup** program attempts to set the permissions for all files under /fnsw and /fnsw/local directories using a permission_table that is updated with each new Image Services release. If non-FileNet files are placed in the /fnsw directory structure, a local_permission_table needs to specify the appropriate permissions for these files. See Chapter 3, "Directories and Files," of the ***System Administrator's Companion for UNIX*** for details.

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

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

1. Verify that you are logged on as **root** user.
2. Run 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
4. Enter the NCH server name (for example, intaix:FileNet).
5. Enter the system serial number (ssn) from the Installation Worksheet (for example, 11008010xx).

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

6 Relational databases are only configured on servers with Index services, WorkFlo Queue Services (WQS), VWServices, or SQL services. If you are configuring a separate Storage Library server, or an Application server without one these services, select 0=none; if the server has DB2 software installed, select 2=DB2.

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

Note If you plan to use an existing DB2 instance, you must accept the default values offered as they relate to DB2.

7 If RDBMS 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/fnsw/sqllib]:
```

8 The fn_setup tool then displays the information you supplied so you can confirm your entries:

```
This is the setup configuration:
     NCH server name:  clark:FileNet
     SSN:  11008016xx
     Relational database type:  db2
     Relational database home:  /home/fnsw/sqllib
Do you want to continue (y/n) [y]:
```

9 Verify the output and determine whether or not you want to continue: y/n (default: yes). Answer y to continue and n to start over.

After you answer y, you then receive messages similar to the following:

```
fn_setup: Creating file /fnsw/local/setup_config
fn_setup: Creating file /fnsw/local/sd/root_station
fn_setup: Creating file /fnsw/local/ssn
fn_setup: Creating file /fnsw/local/sd/nch_domain
fn_setup: Calling fn_util initnch
fn_setup: Changing permission on FileNet software and databases
```

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

The following prompt occurs only if **fn_setup** ran **fn_util initnch** successfully:

```
fn_setup: Running “nch_update” server:organization”
```

If the procedure fails, check the log file (/tmp/fn_setup.log) for further information. Correct the problem(s) before re-executing the command.

Install Universal SLAC Key on the Root Server

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

/fnsw/bin/lic_admin -f /fnsw/local/SLAC/uisdb2.key

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

Modify the /etc/inittab File

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

In this section, you will edit the **/etc/inittab** file to make your installation easier and faster. Later in this procedure you will “uncomment” these commands.

1 Comment out the **rc.initfnsw** statement. To block messages, the statement should read as follows:

```
:rcfnsw:2:once:/etc/rc.initfnsw > /dev/console 2>&1
```

You will “uncomment” the statement later when the Image Services software has been successfully started.

2 Save the changes you made and exit from the file. This change will go into effect when the server is rebooted at the end of this chapter.

Additional DB2 Tasks

Verify the setup_config File

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

cd /fnsw/local
vi setup_config

Verify the following values:

RDBMS_TYPE = 2

RDBMS_HOME = /home/fnsw/sqllib - Default

Exit from the file and save changes, if necessary.

Reboot the Server

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

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

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

1 - the Application server(s)
2 - the Storage Library server(s)
3 - the Root server.

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

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

shutdown -Fr

There may be many Image Services error messages during the reboot because the system is not yet configured.

5

Configuring FileNet Image Services Software

This chapter contains procedures for configuring the Image Services software on your system.

Create the Configuration Database

The first step in configuring the FileNet Image Services Software is to connect the storage library devices (see **“Configure Your System” on page 114** and **“Configure Third-Party Access to Optical Libraries (Optional)” on page 208**).

For MSAR systems that do not contain Storage Libraries, refer to ***MSAR Procedures and Guidelines***.

Configure Your System

It is necessary to construct an Image Services system configuration database customized to your installation.

Note

When using the various tabs in the System Configuration Editor window, you will click on a tab, complete the fields as instructed, and immediately click on the next tab, as directed.

Every screen and pop-up window has an on-line help button designed to provide information you may need to complete the screen or window. In addition, most screens can be re-sized (for example, “maximized”) to satisfy user preference.

Server Types

Except where specifically noted, this section and its sub-sections need to be performed only on the Root/Index server during a Dual server installation, or on the Root/Index/Storage Library server during a Combined or Entry server installation.

Running Xapex from an IBM Xstation (Optional)

Note Perform this section on all servers where you will be running Xapex.

If you want to run Xapex, a GUI application, from an IBM Xstation, do the steps in this section on the Xstation before bringing up the FileNet Image Services software. If you will not be running Xapex or if you are using an NCD Xstation, skip this section and go to the next section.

As **root** user, enter the following commands:

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

This adds a new font path and the **/usr/lib/X11/fonts/100dpi** directory.

If you are running Xapex from an IBM Xstation, enter the following command as **root** to disable the access control option so you can run the application from the Xstation:

```
xhost +
```

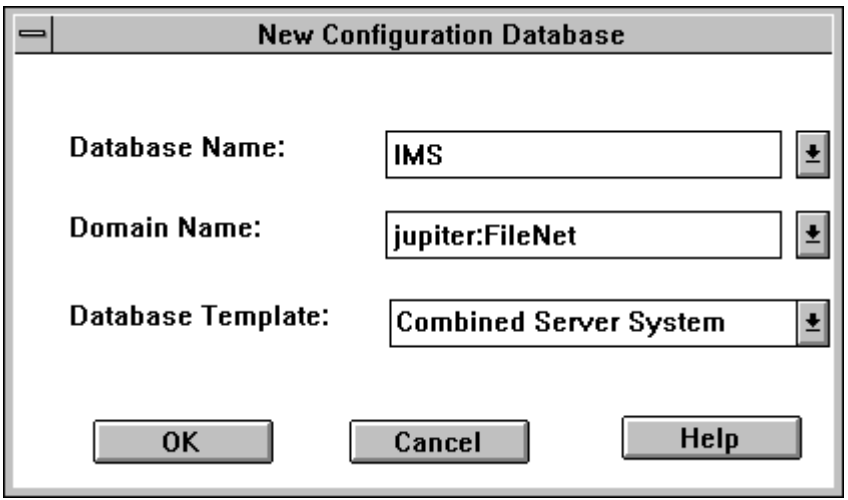
Logon to Configuration Database

1 As **fnsw** user, start Xwindows.

2 Open a new window, and enter at the system prompt:

fn_edit &

A dialog box similar to the following displays:



CAUTION If the Open Configuration Database dialog box displays instead of the New Configuration Database dialog box, you have an existing Image Services configuration (cdb) file. Click **Cancel**, then from the File pull-down menu, select **New**.

3 Verify that the database and domain names are correct. (The two-part domain name is set up as follows: <Domain>:<Organization>).

4 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.

Select a template type from the following template choices:

- Combined Server System
- Dual Server System
- Entry System
- WorkFlo Management System

5 Select the Server Type you are configuring, then click OK.

Note The message about deleting existing DB2 datasets from the configuration is OK.

6 **You will receive several query prompts**. The prompts you receive depend on the template selected in Step 4. Refer to the **"FileNet TC Worksheet" on page 68** to provide the appropriate answers.

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

When you're prompted for information about your Relational Database Management system, DB2, use the information that was supplied to you by the Database Administrator when the RDBMS software was installed. Refer to **"DB2 Database Information" on page 80**.

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

- Select the relational database type (DB2 8.1.0).

- 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 the template prompts, you'll receive a message stating that configuration is complete.

7 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 FileNet System Configuration Editor window, you will click on a tab, complete the fields as instructed, and immediately click on the next tab (without exiting), as directed.

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

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

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.

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.

Select and Configure 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.

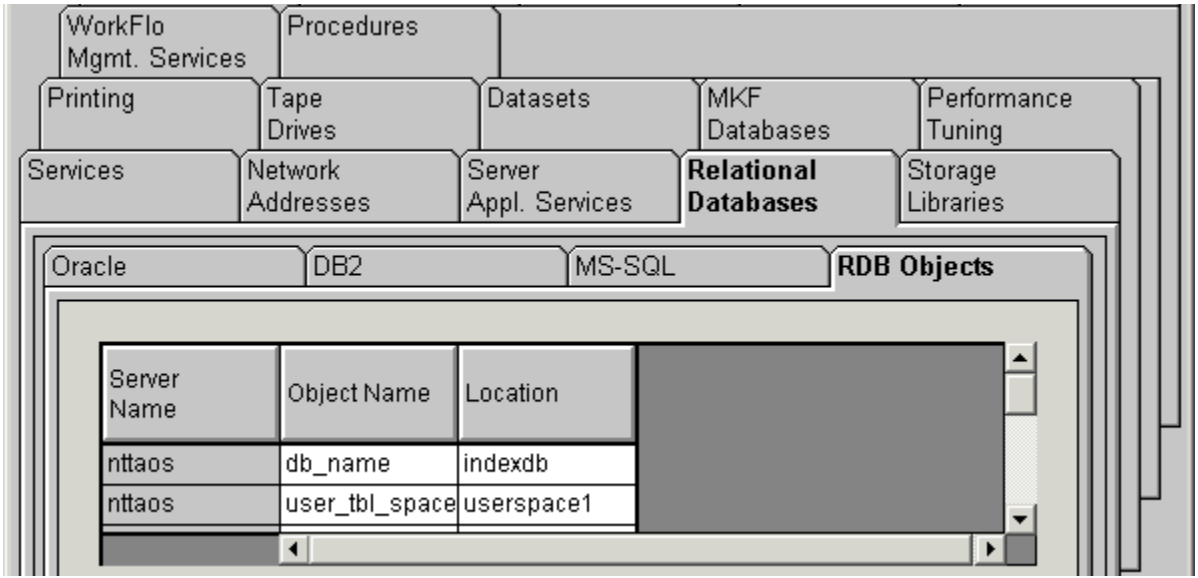
For **DB2**, see the FileNet ***Guidelines for Installing and Configuring DB2 Software***.

The Database Administrator has probably already supplied this information in the section, **"Install Relational Database Software" on page 111** in Chapter 3.

DB2 V8

Verify the Database and 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 **8.1.4** or later (DB2 version 8.1.0 plus FixPak 4a or later.) DB2 version 7.2.0 is not supported at this time.
- **Password Expiration Policy** (number of days) - This field lists the number of days that the f_sw, f_maint, f_open, and f_sqi 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 Admin Policy This field lists the number of days prior to 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 the day the password expires.

4 Skip to the section, **"Verify the Image Services Character Set" on page 120**.

Configure Relational Database Parameters (Optional)

1 Click on the Relational Databases tab in the System Configuration Editor window.

2 Click on the appropriate sub-tab for your installed RDBMS software.

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

4 If you need to change any of these parameter values, select the field below the database parameter and type in the new value.

Configure MKF Database Parameters (Optional)

Note Do this section on the servers that have an MKF database.

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

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

Note The default MKF database blocksize in Image Services 4.0 DB2 Edition is 8 KB. Other possible blocksizes are 1 KB, 4 KB, or 16 KB. If you select 1 KB, the maximum size of the database is limited to 16 GB (eight 2 GB datafiles). The other blocksizes enable you to have Permanent and Transient databases larger than 16 GB. Click Help if you have any questions on the parameter values.

Configure Logical Cache (Optional)

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

2 Select the Cache sub-tab to view a list of caches configured on your server. Default values are automatically given to each of the caches.

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 remain set to their default values.

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

- 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.

- ICR: option currently not supported in this release.

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

Note Consult Help Text regarding the parameter options.

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

Modify the System and Server Parameters (Optional)

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, etc.), click on the System Processes sub-tab and type in the new values in the fields of the system processes you want to change.

Note Consult Help Text regarding the parameter options.

3. To modify the server processes parameters (for example, bes_commit, dtp, etc.), click on the Server Processes sub-tab and type in the new values in the fields of the system processes you want to change.

4. To modify other specific server processes parameters (for example, Document Buffer Count, Document Buffer Size, etc.), click on the Server Memory sub-tab. These parameters should be left at their default values unless changes are necessary.

Configure Network Parameters (Optional)

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

To configure the TCP/IP network parameters complete the following steps:

1. Click on the System Attributes tab in the System Configuration Editor window. Scroll over to the Network Protocols list.
2. From the Protocol Preference option choose TCP.

Exit System Configuration Editor

Save the changes you made and exit fn_edit.

Verify DB2 Instances

1. Ask the DBA to startup the remote instance.

2 Connect to the remote DB2 database. As fnsw/root user do the following:

$db2 connect to <dbname> user f_sw

Enter f_sw password to connect.

Verify Variables

Note This section applies only to remote DB2 instances.

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

Make sure the DB2 Home and DB2 Instance environment variables are set appropriately for both **root** and **fnsw** users. As each user, enter the following commands:

echo $DB2_INST
should be set to the name of the DB2 instance owner, such as **fnsw**.

echo $DB2_HOME
should be set to the sqllib directory within the DB2 Instance owner's DB2 home directory, such as **/home/fnsw/sqllib**.

Compare the output of the above commands to the settings determined in the FileNet ***Guidelines for Installing and Configuring DB2 Software***. If DB2_HOME and the DB2_INST are not set correctly, return to **"Install the User Environment Templates" on page 97** and run the **inst_templates** command again.

Configuring MKF Datasets

The following steps describe how you can configure the MKF datasets automatically. As an alternative, see **"Configure FileNet Datasets Manually on the Root Server" on page 133**.

1. On the Root server, log on as **root** user. Open Xwindows.
2. In SMIT, select the FileNet Image Management System option, then the Manage FileNet Datasets option, then the Initialize FileNet Datasets option.

3 If you receive the following prompt, Initialization will remove all FileNet logical volumes, enter Y (Yes).

4 The FileNet Dataset Configuration Box displays listing parameters. Verify sizes, mirror copies and volume group of all the datasets, then click OK.

This operation may take a while, depending upon your system. While the Initialize FileNet Datasets option is running, information about each step will appear in the SMIT Output window. As the datasets are initialized, they are displayed in the FileNet Dataset Configuration Window.

If there is an error, you can read the last error in the SMIT Output window. For example, if the last step to appear is “Transient Database phase”, the program failed while trying to create, update, or initialize the transient database.

When all datasets have been configured successfully, the following message displays:

```
fn_dataset_config: Finished successfully <date time>
```

Exit SMIT.

Configure FileNet Datasets Manually on the Root Server

The following steps describe how to configure the datasets manually using the mknod command. As an alternative, you can use fn_util mk_links. For more information on mk_links, see the ***System Configuration Overview***.

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

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

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

odda1 (one for each optical drive)
permanent_db
permanent_rl0

transient_db0
transient_rl0
sec_db0*
sec_rl0*
cache0
osara (one for each optical library)

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

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

2 You need to have device files for all of the logical volumes you have created. If some device files are missing from /fnsw/dev/1, this step will create these missing device files.

a If you haven't already, log on as **root** user.

b Display the major and minor numbers for each logical volume you've created and make note of them to complete this section.

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

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

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

ls -l rfn*

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

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

rfn_cache0 _____
rfn_perm_db0 _____
rfn_perm_rl0 _____
rfn_trans_db0 _____
rfn_trans_rl0 _____
rfn_sec_db0 _____
rfn_sec_rl0 _____

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

cd /fnsw/dev/1

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

mkdir: cannot create dev: File exists

one or both of the directories already exist. Continue.

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

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

mknod <dataset> c <major#> <minor#>

Note Do not mix up the name of the logical volume (e.g., fn_perm_db0) with the name needed for a device driver (e.g., permanent_db0). Also, when you enter the following commands, replace X with the appropriate major number; replace Y with the appropriate minor number for each dataset.

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

mknod sec_db0 c <X> <Y>
mknod sec_rl0 c <X> <Y>

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

```
mknod cache0 c <X> <Y>
mknod permanent_db0 c <X> <Y>
mknod permanent_rl0 c <X> <Y>
mknod transient_db0 c <X> <Y>
mknod transient_rl0 c <X> <Y>
```

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

```
killfnsw -DAy
```

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

The -A option removes all IPC segments.

The -y option answers yes to subsequent prompts.

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

whatsup

The display now looks similar to this

```
User     PID      PPID   Start Time   Processes
fnsw     10306    1       06/24/03    TM_daemon -s
```

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

kill -9 <process id>

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

6 Repeat steps 4 and 5 until **whatsup** displays no processes at all, except for **TM_daemon**.

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

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

```
fn_util init
```

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

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

```
Error 79000017 on drop table (continuing)
```

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

```
Operating system error:
```

DB_LIBRARY error:

---

9 Review the /fnsw/local/logs/fn_util/fn_util.log file after the fn_util init command is complete.

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

---

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

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

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

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

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

As **root** user, enter:

/fnsw/bin/fn_setup

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

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

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

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

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

c The system serial number should be the serial number of the Root server.

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

Important! The 10-digit ssn, which is assigned by FileNet, is written onto all storage media and **must** be unique for each Image Services system. If you have more than one Image Services system (domain), each

must use its own unique ssn to prevent potential problems if media are ever transferred from one IS system to another.

d Relational databases are configured on servers with Index Services, WorkFlo Queue Services (WQS), SQL Services, or VWServices. Select 2=DB2.

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

Note If you plan to use an existing RDBMS instance, you must accept the default values offered as they relate to DB2.

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

```
Enter the RDBMS home directory [/home/fnsw/sqllib]:
```

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

```
This is the setup configuration:
     NCH server name:  clark:FileNet
     SSN:  11008016xx
     Relational database type:  db2
     Relational database home:  /usr/opt/db2_08_01
Do you want to continue (y/n) [y]:
```

Press **Return** to continue with the next step. If you type **n** for no, you exit to the system prompt; return to Step 8 and run **fn_setup** again.

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

For example:

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

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

a If a problem occurs during fn_setup, check the /fnsw/local/logs/fn_setup/fn_setup.log file to determine what went wrong. After you have corrected the problem, go back to Step 8 and run fn_setup again.

b If there were no problems, continue with the next section.

Configure RES or Multi-Committal Systems

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

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

- A Cross-Committal System is composed of a **source** Image Services system and a **target** Image Services system. The source system commits images to the target system, but does not retain the images locally.

- A Remote Entry Server (RES) is a specific type of Cross-Committal system that has no storage library and is used only for entering images for committal to another independent system (the target) that does have a storage library. The target system is also capable of entering and committing images, so in this situation the two sys-

tems must be “compatible,” that is, they must have non-overlapping document IDs and surface IDs.

- A Multi-committal System is an independent FileNet system that contains a Storage Library server and commits images both to its own Storage Library and to the Storage Library of another independent FileNet system. Multi-Committal Systems may or may not be “compatible” systems with non-overlapping document IDs. If they aren’t compatible, new doc IDs are assigned on the target system, a minor performance consideration.

6

Completing the Installation

In this chapter you will finish the installation by installing communications software, setting the DISPLAY variable for Xwindows, changing the f_maint password, verifying the init.ora file and backing up the system.

Edit the /etc/inittab File

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

Since you previously blocked network error messages from broadcasting to other systems, you need to “uncomment” the rc.initfnsw statement in the /etc/inittab file so that FileNet software will start when you reboot.

1 Back up the **inittab** file.

2 As **root** user, change to the /etc directory by entering:

cd /etc

3 Use your favorite text editor, such as vi, to open the inittab file.

4 Locate and uncomment the following line to unblock messages, remove the colon (:) that begins the line. The statement should read as follows:

```
rcfnsw:2:once:/etc/rc.initfnsw > /dev/console 2>&1
```

Uncomment any other fnsw processes that were commented out in this file. Save your changes and exit the file editor.

Reboot the Server

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

1. Stop Image Services. If Xtaskman is still open from a previous step, click the **Stop** button on the Xtaskman screen.

   If Xtaskman is not open, enter the following on the command line:

   ```
   initfnsw -y stop
   ```

2. As **root** user, enter the following to reboot the server and restart the FileNet software:

   ```
   shutdown -Fr
   ```

Set DISPLAY Environment Variable for Xwindows

Server Types Do this section on all applicable servers.

When the following circumstances occur, the DISPLAY environment variable, normally set by the system, may change:

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

Use the following work-around to correctly set this variable:

1. Logon as **fnsw**.
2. Check the value of DISPLAY using the following command:

   echo $DISPLAY

3 If DISPLAY has a value, it will display on your screen. If it has no value, or was never set, you'll either see an empty line (K-shell) or an error message (C-shell). In that case, provide a value, as follows:

DISPLAY="<Xstation identifier>:0"; export DISPLAY(K-shell)

setenv DISPLAY "<Xstation identifier>:0"(C-shell)

The value of **<Xstation identifier>** is the name of the X-station or system where the user originally logged in (for example, **my_X_station**) or the station's IP address. With no automatic way of knowing this value, the user must know and set it appropriately. For example:

DISPLAY="my_X_station:0"; export DISPLAY(K-shell)

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

Configure the System Information Messenger

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

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

Install Service Packs and Hot Fix Packs (Optional)

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

Now you can install any Hot Fix Packs or Service Packs that apply to Image Services 4.0 DB2 Edition. Be sure to read the accompanying README file, which contains the instructions for installing the software. Services Packs are available on CD-ROM. Hot Fix Packs are available on the FileNet Web site **http://www.css.filenet.com**.

Backup the System

Regular backups of the system configuration and data are essential.

For information on developing the backup and restore scripts for the MKF databases using FileNet's EBR, refer to:

- ***Image Services Enterprise Backup and Restore User's Guide***

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

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

Make System Backups

You need to make backups of your system configuration in case something unforeseen occurs. For complete information on making system backups refer to the ***Image Services System Administrator's Handbook*** or the ***Image Services Enterprise Backup and Restore User's Guide***.

Begin Production Mode

This concludes the Image Services 4.0 DB2 Edition for AIX 5L software installation procedure. The FileNet Image Services system is now ready for production mode.

Install MSAR

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

For information on installing and configuring an MSAR System, refer to the ***MSAR Procedures and Guidelines*** document for information.

Appendix A – Adding an Application Server

This appendix describes how to add an Application server to your system, and uses some of the procedures in the main body of this document. All of the steps in this appendix should be done on the Application server unless specified otherwise.

In addition to installing and configuring a new Application server, use this appendix to:

- Add services to an existing server (for example, adding Batch Entry Services to an existing server). See, **“Add Services” on page 168**.
- Reconfigure 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

Before using this appendix ensure that:

- FileNet Image Services Release 4.0 DB2 Edition and RDBMS software has already been installed and configured on a Combined or Dual server system.
- The Combined server will be the Root server for the Application server.

  If a Root server has not already been established, see the ***Guidelines for Installing and Configuring DB2 Software*** document and **Chapter 4, "Installing FileNet Image Services Software," on page 82** to install the necessary software.

Installation Prerequisites

Certain prerequisites (software and system requirements) are required to be performed prior to beginning the installation of the Application server software. Refer to **"Installation Prerequisites" on page 21** of this document to complete these requirements.

The Installation Prerequisites section also details specific file system and dataset information that you must gather (or determine) to successfully complete the Image Services installation on the Application server.

An **“FileNet TC Worksheet” on page 68** is available for your use. You should transfer all of the requested information to the appropriate sections on the Installation Worksheet. All of the information necessary to complete the Image Services installation on the Application server will be in one easy-to-find place.

Additional System Information

In addition to verifying that your system meets the minimum software and system requirements detailed above, you must gather other important information to complete the Application server installation. After you have gathered the information requested, transfer the data to the **“FileNet TC Worksheet” on page 68**.

Other Sources of Information

As you read this procedure, you will see references to other documents you may need to consult. Refer to **“Related Documents” on page 38** for a list of the documents you might need during the software installation procedure.

Install Relational Database Software (if applicable)

If you are configuring an Application server with only Batch, Print, and/or Cache Services, or if DB2 software is already installed, you **do not** need to install RDBMS software. Instead, proceed to the section **“Install Image Services Software” on page 161**.

- If you are configuring an Application server with either WorkFlo Queue Services, SQL Services, or VWServices, you need to install RDBMS software.

  For guidelines on installing the IBM DB2 RDBMS software, refer to the ***Guidelines for Installing and Configuring DB2 Software***.

Install Image Services Software

The procedures for installing Image Services software on your Application server are the same as the procedures in the main body of this document.

Refer to **Chapter 4, “Installing FileNet Image Services Software,” on page 82** to install your Application server software.

Reboot the Servers

Server Types

Perform the steps in this section first on the **Root** Server, then on the **Application** server.

You now need to reboot the system, to load AIX extensions and to verify successful installation of the software.

Note

If you do not want network error messages to temporarily broadcast to other systems, you need to comment out the rc.initfnsw statement in the /etc/inittab file. To block messages, the statement should read:

```
:rcfnsw:2:once:/etc/rc.initfnsw > /dev/console 2>&1
```

You will uncomment the statement later when the Image Services software has been successfully started.

1 As **root** user, reboot the server:

shutdown -Fr

There will be many Image Services error messages during the reboot because the system is not yet configured.

2 Enter the following after the shutdown/reboot is complete:

killfnsw -ADy

3 Check your status to make sure all FileNet processes are killed:

ps -ef | grep fnsw

4 Type the following where <process_id> is the PID number:

kill -9 <process_id>

Configure the Root Server

Server Types

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

Repeat the steps in this section to configure additional application servers.

Add Application Servers

To create the new Application server do the following:

1. With Xwindows running, as **fnsw** user enter the following command:

   fn_edit &

2. The Open Configuration Database screen is displayed. Verify that all information displayed is correct, then click OK.

3 Click on the Procedures Tab in the System Configuration Editor window.

4 Select the Add an Application Server option from the Procedure List Box, and then click Run.

Note If you need further help, use on-line help when completing the following fields.

5 In the next window, enter the name of the application server. This can be user-defined. Click OK.

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 In the next window, enter the network address. Click OK.

8 If you want to add another application server, click on the Procedure Tab in the System Configuration Editor window.

a Choose Add an Application Server.

b Repeat steps 4 through 7.

Select and Configure the Relational Database Instance (if applicable)

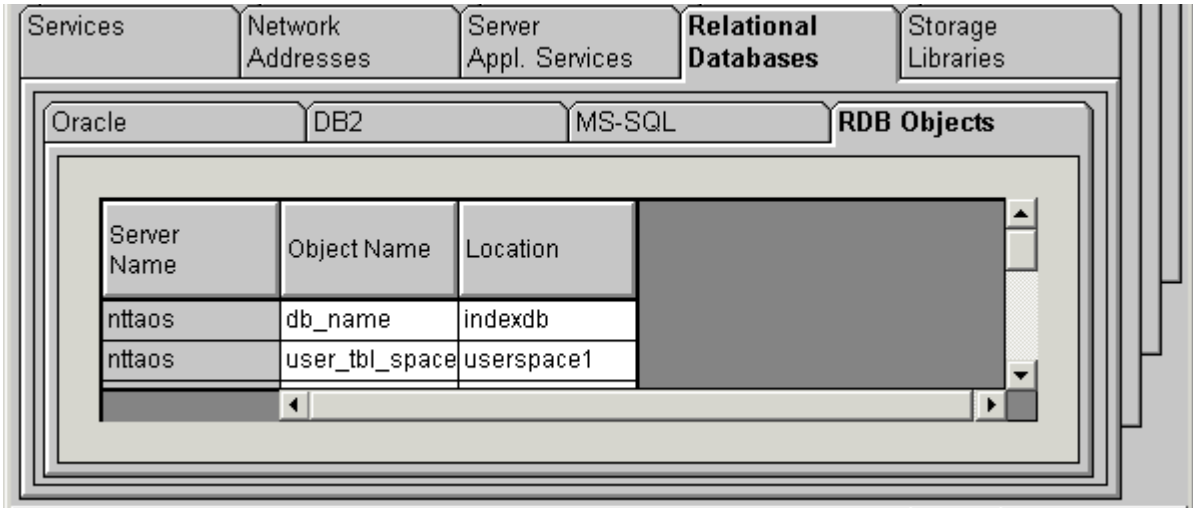
CAUTION This procedure assumes that the tablespaces and devices that you specify in the System Configuration Editor either already exist or that you will create them before you initialize the FileNet databases.

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

DB2 V8

Verify the Database and User Tablespace Names

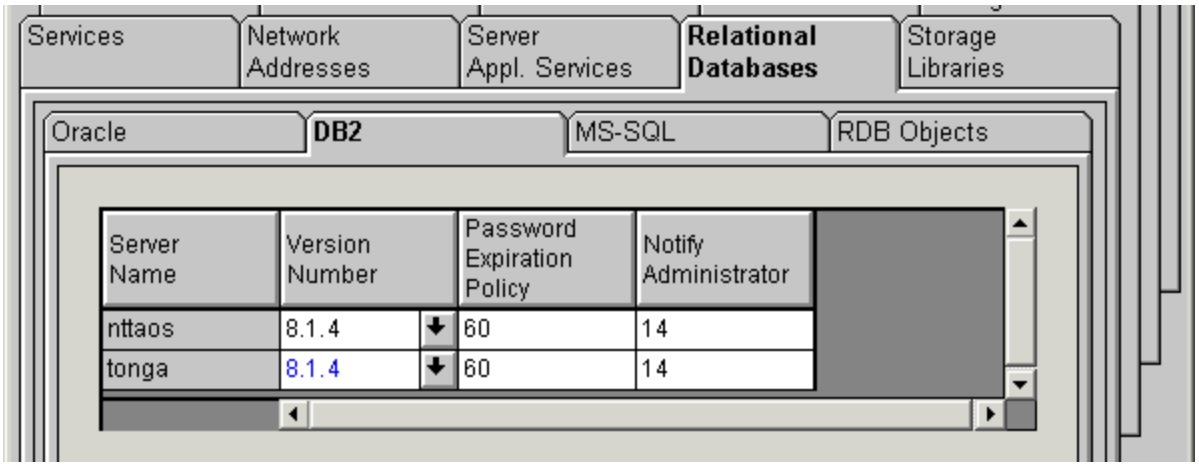
1 Click the Relational Databases tab, then click the RDB Objects subtab.



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 **8.1.4** or later (DB2 version 8.1.0 plus FixPak 4a or later.) DB2 version 7.2.0 is not supported at this time.
- **Password Expiration Policy** (number of days) - This field lists the number of days that the f_sw, f_maint, f_open, and f_sqi pass-

words 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 Admin Policy This field lists the number of days prior to 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 the day the password expires.

Add Services

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

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

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

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

Add only the services you want. After you have added the desired services, go to the section **“Exit the Configuration Editor” on page 179**.

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**.

   A dialog box displays prompting you for the domain name in which the Application server resides.

3. Select the Application server domain name.

   A new dialog box displays containing a list of services that can be added to an Application server.

4. From the list of available services, choose Batch Entry Services.

5. You are prompted for dataset path for the Image Services cache on your Application server.

   - The default cache path is **/fnsw/dev/1/cache_0.**

6 You are prompted for the size of the cache. (The default is 100 MB.)

7 You are prompted for 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 You are prompted for the size of the transient dataset sizes. (The defaults are as follows: transient_db0 - 20 MB and transient_rl0 - 40 MB.)

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

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

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

10 You are prompted for 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 179**.

Add Print Services and a Printer

1 Click on the Procedures Tab in the System Configuration Editor window.

2 Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.

3 Click on the domain name of the Application server.

4 Choose Print Services. You will be asked if you want to add print services. Click **Yes**.

5 Click on the Procedures Tab in the System Configuration Editor window.

6 Choose Add Printer.

7 You will be asked if this is the default printer you are adding. If it is, click **Yes**. If you are not adding the default printer, click **No**.

8 Enter the printer name, which is user-defined.

9 Enter the NCH printer name (for example, LJ4M).

10 Enter the network address for the printer (for example, 125.0.85.245).

11 Select the paper printer size.

12 Select the printer eject tray.

13 You are prompted regarding adding additional printers. Add more printers as necessary.

14 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 179**.

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 179**.

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. Continue adding the necessary services to your system. After you have added all of the needed services, skip to **"Exit the Configuration Editor" on page 179**.

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. You may also be prompted for:

- 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 179**.

Add WorkFlo Queue Services (WQS)

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

Note If you add WorkFlo Queue Services to your system, you MUST install DB2 client software on the Application server and DB2 server software on a remote database server. Continue adding the necessary services to your system. After you have added all of the needed services, skip to **"Exit the Configuration Editor" on page 179**.

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. You may also be prompted for:

   - 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 179**.

Add VWServices

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

Add Tape Drive (Optional)

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

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

Exit the Configuration Editor

1. From the System Configuration Editor window, click on the File pull down menu and click on the Exit option.

2. You will then be asked if you want to save the changes you have just made to the current configuration database before you exit. Click on the **Yes** button to save the configuration and exit the System Configuration Editor.

Set Up Multiple Networks (optional)

If you are setting up your system on more than one network, refer to **"Appendix C – Setting Up Multiple Networks" on page 231**.

Rebuild the Root Server's Configuration Files

Server Types Perform the steps in this section on the **Root server**.

1. As **fnsw**, stop the FileNet software by entering:

initfnsw stop

2 To rebuild the entire configuration for the server, enter the following command at the shell prompt as **fnsw**:

fn_build -a

Running **fn_build** automatically builds the Network Clearinghouse database file, /fnsw/local/sd/NCH_db0, if it doesn't find one. The **fn_build** tool also installs all the configuration files based on the current state of the system database and creates any missing directories needed for configuration.

3 With Xwindows running, start the FileNet software by entering the following on the Root server:

Xtaskman

Click on Restart.

Configure the Application Server

Server Types

Do this section and its sub-sections on the **Application server**.

It is now necessary to build the Application server's configuration files and initialize the server. The same version of Image Services software must already be installed on the Root/Index server and the Application server.

Note

Make sure FileNet Software is running on the Root server, and not on the Application server. (You can do a **whatsup** on the Root server.) If FileNet is running on the Application server, run **killfnsw -ADy**.

On the Application server(s), run the fn_setup utility. Refer to **"Select and Configure Relational Database Instance (if applicable)" on page 121**.

Build Application Server Configuration

Server Types

Perform this section on each Application server being added to the system. FileNet software must be up and running on the Root server.

In this section, you create all directories needed for the installation using fn_setup. In addition, you will set the appropriate file ownerships and permissions for the directories. You will be asked for system-specific information, refer to the **"FileNet TC Worksheet" on page 68** for the correct information.

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

   /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 application server.

4 Enter the NCH server name (for example, Root/Index_ domain:FileNet). Enter the domain of the **root** server.

5 Enter the system serial number (ssn). Enter the ssn of the root server (for example, 11008010xx).

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

6 Enter the RDBMS software configured on the server: 0 = None, 2 = DB2.

7 Enter the RDBMS home directory (for example, /home/fnsw/sqllib).

You receive a series of messages displaying the information you entered. An example of the output is displayed below:

```
This is the setup configuration:
NCH server name: clark:FileNet
SSN: 11008010xx
Relational database type: DB2
Relational database home: /usr/ora/920
Do you want to continue (y/n) [y]:
```

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

You then receive messages similar to the following:

```
fn_setup: Creating file /fnsw/local/setup_config
fn_setup: Creating file /fnsw/local/sd/root_station
fn_setup: Creating file /fnsw/local/ssn
fn_setup: Creating file /fnsw/local/sd/nch_domain
fn_setup: Calling fn_util initnch
fn_setup: Changing permission on FileNet software and databases
```

When **fn_setup** is finished, you may receive a message indicating “exit status = 0 (success)(this is not an error.)” If necessary, press **Return** to go the system prompt.

9 Build the configuration files for the server by entering the following command:

fn_build -a

10 You must correct any **fn_build** errors before continuing. You can find the error log in:

/fnsw/local/logs/fn_build/log_xxxx

Initialize Application Server Datasets

Server Types Perform this section on each Application server being added to the system.

On each Application server being added to the system initialize the FileNet datasets. Refer to **“Verify Variables” on page 130**.

Bring Up FileNet Software

Server Types Perform all of the procedures in this section (and associated sub-sections) on the **Application server**.

1. Logon as **fnsw** user (if you aren't already), and start X Windows (if you have not already done so).

2. Stop all FileNet processes by entering the following command:

   killfnsw -ADy

3. Start the updated FileNet App software by entering:

   Xtaskman &

   The FileNet Task Manager interface displays.

CAUTION Ask the Database Administrator to start the relational database software before attempting to start the FileNet Image Services software for the first time. If the relational database 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 relational database software and restart the Image Services software.

4 After the **TM_daemon** message displays in the Process table, select the Monitor menu.

5 From the Monitor menu, select the Event Logs option. (The FileNet Event Logs window displays.)

6 From the Event Logs window, select the DISPLAY menu, and select Dynamic. (The Dynamic option enables screen refreshes each time the messages are logged.) Return to the FileNet Task Manager window, but do not close the Event Logs window.

7 From the FileNet Task Manager window, select START.

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

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

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

Make System Configuration Backups

To complete installation, make a backup of your system. Refer to the ***Image Services System Administrator's Handbook*** or the ***Image Services Enterprise Backup and Restore User's Guide***.

Begin Production Mode

This concludes the Image Services 4.0 DB2 Edition Installation and Configuration Procedures for AIX 5L. The Application server is now ready to be put into production.

Appendix B – Adding a Storage Library Server

This appendix describes how to add a Storage Library server.

Overview

The instructions in this appendix may be used for the following scenarios:

- Installing and configuring one or more new Storage Library servers
- Reconfiguring an old server because the functions it performs are no longer required.

This guide also assumes that FileNet Image Services Release 4.0 DB2 Edition and RDBMS software have already been installed and configured on a Combined server or that a storage library server will

be configured as a Dual server. The Combined or Dual server will be the Root server for the multi-Storage Library servers.

Multiple Storage Library Server Uses

Multiple Storage Library servers are set up 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 close enough to the existing server, you may need another server in order to add an optical disk library to the system and to allow the system to handle more disks on-line.

- If the CPU, I/O bus, or magnetic disks on a Storage Library server are already pushed to their maximum throughput, adding a Storage Library server will increase performance. If, however, the existing server has not reached its performance limit, adding another Storage Library server will decrease performance slightly because of the overhead of controlling a second server.

Multiple Storage Library servers are **not** a solution for a disaster recovery plan because you cannot write the primary copy of one document to one Storage Library server and the transaction log copy to another Storage Library server. Both copies will always be written to the same Storage Library server. Note that Database Maintenance will not let you select destination Storage Library servers for a transaction log family.

Storage Library Device Information

Find out the number of Storage Libraries (1-8): _____ (up to 8 Libraries per server/ 64 Libraries per system)

Collect the following information for each Storage Library on your system:

- Storage Library Device Type (e.g., ODU, HP Autochanger (AC) Model 20C, etc.):

  _____

Storage Library: RS-232 port number (0 - 9): _____

Note SCSI connections on optical devices are configured automatically.

Use the following chart to keep track of optical devices that use a serial port connection for its arm. Look at the back of the server or the jack number on the 8-port asynchronous adapter (if there is one), which is located between the Storage Library and the server, and then reference the following chart:

If the Storage Library device is plugged into...	Then enter RS-232 port number...
Server port S1	0
Server port S2	1
Extension port 0	2
Extension port 1	3
Extension port 2	4

Extension port 3	5
Extension port 4	6
Extension port 5	7
Extension port 6	8
Extension port 7	9

- Number of Optical Drives (1 - 12): _____

  This can be determined by looking at the AC's front panel LCD or looking inside the Storage Library (2 or 4 for AC Model 60C and 100C).

  Collect the information below for each Optical Drive within the Storage Library

- Optical Drive Type (e.g., Hitachi_I, HP C1716C, etc.)

  _____

For the Hitachi drives, this can be determined by opening the front doors on the Storage Library and looking at the number (e.g., OD-301) on the label on the drive.

OD-301 -- Hitachi_I
OD-321 -- Hitachi_II
OD-F321 -- Hitachi_III

For the HP Autochanger drives, this can be determined by removing the rear cover of the device and looking at the model number of the Autochanger (e.g., C1700C) on the top of the assembly.

Autochanger Model C17xxC = HP C1716C (650MB) drives
Autochanger Model C17xxT = HP C1716T (1.3GB) drives

Install Image Services on the Multi-Storage Library Servers

1 Install Image Services Release 4.0 DB2 Edition on each Storage Library server as described in **“Installing FileNet Image Services Software” on page 82**, including installing *SS fixes.

2 After successfully installing Image Services 4.0 DB2 Edition on each Storage Library server, set up the installation environment as described in **“Modify Network Options” on page 197**.

Set Up Password for fnsw

Server Types Do this section on the Storage Library server(s).

If you have not previously established passwords for **fnsw** user, you need to do so now.

1 As **root** user at the system prompt enter:

passwd fnsw

2 You are then prompted twice to *Enter the new password*.

Modify Network Options

On the Storage Library server(s) you can modify network options for ease of running FileNet software. Follow the procedure in **"Modify Network Options" on page 197**.

Reboot the Servers

Server Types Do this section first on the Root server, then do it on the Storage Library server(s).

You now need to reboot the system, to load AIX extensions and to verify successful installation of the software.

Note If you do not want network error messages to temporarily broadcast to other systems, you need to comment out the rc.initfnsw statement in the /etc/inittab file. To block messages, the statement should read:

```
:rcfnsw:2:once:/etc/rc.initfnsw > /dev/console 2>&1
```

You will uncomment the statement later when the Image Services software has been successfully started.

1 As **root**, reboot the server:

shutdown -Fr

There will be many Image Services error messages during the reboot because the system is not yet configured.

2 Enter the following after the shutdown/reboot is complete:

killfnsw -DAy

3 Check your status to make sure all FileNet processes are killed:

ps -ef | grep fnsw

4 Type the following where <process_id> is the PID number:

kill -9 <process_id>

Configure the Root Server

Clear the Transient Database

Server Types Do the steps in this section on each server with a cache.

You must clear the transient database to make sure that the batches not yet committed are not lost while you configure the Storage Library server.

1. Verify that the FileNet Image Services software is running by entering the following command:

   whatsup

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.

If you have any FAX servers, two locked objects per FAX server in print_cache will remain. You will need to configure Print Services as described later in this manual to rebuild the print_cache.

6 Type the following to quit the **CSM_tool**:

q

Add Storage Library Server(s)

Server Types Do the steps in this section on the Root server.

1. With Xwindows open, run **fn_edit** by entering:

   fn_edit &

2. Click on OK in the initial dialog box. The Procedures tab in the System Configuration Editor window displays.

3. Select the Add a Storage Library server option from the Procedure List Box, then click Run.

4. Enter the domain name of the Storage Library server.

5. Enter the machine ID of the Storage Library server. (You can get the ID by entering the **uname -a** command.)

6. Enter the network address of the Storage Library server.

7. Enter the path for the cache partition (default: /fnsw/dev/1/cache0).

8 Enter the cache dataset size.

9 Enter the path for the transient database (default: /fnsw/dev/1/transient_db0).

10 Enter the dataset size for the transient database.

11 Enter the path for the transient database redo log (default: /fnsw/dev/1/transient_rl0).

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 accept fast batch committal, you will accept the defaults. You can change the configuration later.

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

14 You are prompted for the number of BES commitment processes. Choose 1 - 4.

15 Enter the path for the permanent database (default: /fnsw/dev/1/permanent_db0).

16 Enter the dataset size for the permanent database.

17 Enter the path for the permanent database redo log (default: /fnsw/dev/1/permanent_rl0).

18 Enter the dataset size for the permanent database redo log.

19 Make sure you have entered the information correctly by clicking on the Network tab in the Configuration Editor window. You should see the Storage Library server listed. In addition, click on Server Application Services Tab; you should see the Storage Library server listed. Click on the Dataset Tab to see the datasets you added to the Storage Library server including cache0, transient_db0, transient_rl0, permanent_db0, permanent_rl0.

20 Repeat steps 2 through 19 for additional Storage Library servers.

21 To save your changes, choose File, then Close. A pop-up window asks if you want to save changes. Click YES. Choose File, then Exit.

Set Up and Configure Networks (optional)

1 If you are setting up your system on more than one network, refer to **"Appendix C – Setting Up Multiple Networks" on page 231**.

2 To configure network parameters for TCP/IP refer to **"Configure Network Parameters (Optional)" on page 129**.

Rebuild Configuration Files

Server Types Do this section on the Root server.

To update the Root server's configuration files, you will use the **fn_build** tool.

1 On the Root server as **fnsw** user, stop the FileNet software:

```
initfnsw stop
```

2 As **fnsw**, update the entire configuration for the server by entering the following command at the shell prompt:

fn_build -a

If "**ERROR**" displays while running **fn_build**, you must correct any problems before continuing by referring to the log file:

/fnsw/local/logs/fn_build/log_XXXX

Running **fn_build** automatically builds the Network Clearinghouse database file, /fnsw/local/sd/NCH_db0, if it doesn't find one. The **fn_build** tool also performs the following:

- Installs all the configuration files based on the current state of the system database
- Creates any missing directories needed for configuration

3 Restart the FileNet software on the root server by entering:

Xtaskman &

Click on Restart.

Note In the future, when you boot the server, the FileNet software will start up automatically because the /etc/inittab file has been modified to contain an entry to start the FileNet software.

Note If you have configured an Optical Disk Library, but haven't physically connected the hardware, you may see the error tuple *30,0,2* after the system boots. This is OK because it will be corrected when the hardware is connected.

Configure the Storage Library Server

If you have a cache-only, multi-server system, you need to configure a phantom storage library. Skip this section and proceed to **"DO NOT use the fnsod.foreign file to exclude a broken drive within a Storage Library. The library arm informs the system software of the drives in the library, and this would cause problems with auto-configuration routines." on page 210**.

Server Types

Do all the steps in this section on the Storage Library server(s).

1. On the Storage Library server, run the fn_setup utility. Refer to **"Select and Configure Relational Database Instance (if applicable)" on page 121**.

2. On each Storage Library server being added to the system configure the FileNet datasets. Refer to **"Verify Variables" on page 130**.

Configure Third-Party Access to Optical Libraries (Optional)

Image Services normally reserves all the optical drives and library arms on the SCSI bus for its own use. However, if other third-party software products that access these devices are also going to run on this server, a text file named fnsod.foreign needs to be created in the /fnsw/local/sd directory to specify which devices are available for use by the third-party products.

If this server is dedicated to running Image Services only, skip this section.

If this server is going to be used for both Image Services and third-party software, continue with the following steps.

Note Make sure that Image Services is not running before starting this procedure.

1 Attach the device or group of devices (such as an ODU or Storage Library).

2 As **fnsw** user, use your preferred text editor, such as **vi**, to create the fnsod.foreign file. For example:

```
cd  /fnsw/local/sd
vi  fnsod.foreign
```

3 In this file, list all the SCSI device nodes that the third-party application will use. The format is:

/dev/fnsod.b,c,t,l

where:

b,c,t,l are the bus, controller, target, and lun (logical unit number).

Tip In another window, run /fnsw/bin/FNPoll as **root** user to list the available SCSI devices on the server.

The contents of your fnsod.foreign file might look similar to this:

```
/dev/fnsod.4,8,0,0
/dev/fnsod.4,8,1,0
/dev/fnsod.4,8,3,0
```

4 As **root** user, install the /etc/config copy of FNPoll that AIX uses when it boots by entering:

fnsod.install

5 Then run FNPoll to list the available devices:

/fnsw/bin/FNPoll

The resulting list of devices should contain all the attached optical arms and disks NOT listed in the /fnsw/local/sd/fnsod.foreign file you just created.

Important! DO NOT use the fnsod.foreign file to exclude a broken drive within a Storage Library. The library arm informs the system software of the drives in the library, and this would cause problems with auto-configuration routines.

Finishing Up

The final steps in configuring a Storage Library server include starting the database and network software, adding the new optical storage devices to the appropriate database(s), and restarting the FileNet software with the new configuration.

1 Make sure your system's Root server is up with FileNet Image Services software running on it. If the FileNet Image Services software is not running, enter the following as **root** on the Root server:

Xtaskman &

Click on Backup.

2 At a command prompt, enter:

fn_util startdb

Start Databases and Network Software

Server Types Do this section on all the Storage Library server(s).

1 Stop the FileNet software by entering the following:

Xtaskman &

Click on Stop.

2 Run a start database script 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 **fnsw** user, enter the following command on *every* Storage Library server:

fn_util startdb

Running **fn_util startdb** shuts down the FileNet Image Services software and starts up all FileNet databases present on the Storage Library server, including transient, permanent and index.

Add a New Storage Library Server

Server Types Do this section on the Storage Library server(s).

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. Type **Xtaskman** at the system prompt. Click on Backup. This will start COR.listen.

2. Obtain the server ID assigned to each new Storage Library server using one of the following bulleted methods:

- The server ID is assigned and viewed using the **fn_edit** utility: Run **fn_edit**. Click on the Server Application Services tab, then the Scheduling sub-tab. Scroll to the right to see the Storage Library ID for each server.

- Access the **/fnsw/local/sd/nch_dbinit** file on the Root server. Storage library servers are numbered OsarServer1, OsarServer2, etc. The server ID is the second number following OsarDesc. In the following example for OsarServer2 the Storage Library server ID number is 4.

```
creatobj OsarServer2
additem OsarServer2 OsarService “OSAR Service”
additem OsarServer2 addressList [0.080034001086.5]
[136.0.0.131]
additem OsarServer2 OsarDesc 0 4 DocServer page_cache4
```

- 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

3 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. Once the **add_osvr** utility has completed successfully, you will see the following prompt:

```
program terminated successfully
```

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.

Restart FileNet Software

Server Types

Do this section first on the Root server, then do it again on the Storage Library server(s).

To restart the FileNet software, type the following at the system prompt:

Xtaskman &

Click on Restart.

Configure Optical Peripherals

Note Do this section first on the Root server, then do it again on the Storage Library server(s).

1. Shutdown your system:

   shutdown -Fr

   Turn off the power to the server.

2. Connect the optical peripherals to the system and turn them on.

3. Turn on the power to the AIX server. After the server boots up, **FNPoll** is automatically run to configure the storage library peripherals. For your use, informative messages from **FNPoll** are kept in the following log file, /var/adm/ras/bootlog.

Note Do *not* run /fnsw/bin/FNPoll manually, as that can cause SCSI errors and/or corruption of magnetic disks.

4 Logon as **fnsw** user.

5 To configure the storage library, type the following:

fn_edit &

6 Under the Procedures Tab in the System Configuration Editor window, choose the Automatically Configure a Storage Library option. Click on Run.

7 Choose File, then Close. A pop-up window asks if you want to save changes. Click Yes. Choose File, then Exit.

8 Rebuild the system configuration by entering the following:

fn_build -a

9 Using **Xtaskman**, restart the FileNet Image Services software on all servers; Root server first, then the Storage Library server.

10 When the system is up and running again, log on as **fnsw** user and launch **Xapex**. Use Database Maintenance (on any server) to re-save

all media families, and resolve any warning or error messages that appear.

11 Use the **vl** command to check the event log. If any documents were committed before the media families were resaved, you may see a warning message. If so, add or change the preferred library information to match the current storage library configuration.

Reset File Permissions

Server Types Perform this section on the Storage Library server(s) only if you configured optical peripherals.

1 Logon as **fnsw**.

2 Set the correct permissions by entering

fn_setup

Configure a TTY Port for an OSAR Robotic Arm

Note If the Storage Library devices in this system do not include a FileNet OSAR library, skip to **"Exit SMIT" on page 222**.

Perform the steps in this section only if the OSAR library uses a serial (RS232) connection to the server. (If the library uses a SCSI connection, these steps are not needed.) Also perform the steps in this section

Use SMIT to set up a tty port for the OSAR's robotic arm.

FileNet OSAR libraries have two types of ports:

- **Host Control Port** - each OSAR library has two Host Control ports to connect the library to the server.
- **F.E. Port** - used by Field Engineers to connect a laptop computer directly to the OSAR library to run diagnostics. Note that this port is configured differently than the Host Control Port. For details, refer to the Maintenance Manual for your OSAR Storage Library.

Make sure the OSAR library is connected to the server via one of the **Host Control Ports**.

Host Control Port

To set up a TTY port for the Storage Library arm connected to one of the two Host Control ports, follow these steps:

1 In SMIT on the System Management menu select Devices → TTY → Add a TTY.

2 Select the tty rs232 Asynchronous Terminal for TTY and select the port the RS232 cable is attached to; for example, sa1 Available 00-00-S2 Standard I/O Serial Port 2.

To add a tty with a PORT number of s2, enter the following for each SMIT value:

SMIT Entry	Value
PORT number	**s2**

SMIT Entry	Value
enable LOGIN	**disable**
BAUD rate	**9600**
PARITY	**odd**
BITS per character	**7**
Number of START BITS	**1**
Number of STOP BITS	**1**
FLOW CONTROL	**none**

This creates the device for the Storage Library arm. Press **Enter**.

Exit SMIT

After completing all the required configuration steps, exit SMIT.

Storage Library Server Utilities

This section briefly describes the function and uses of the following Storage Library server utilities:

- **move_disk**, which allows you to move optical disks from one optical disk library to another.
- **del_osvr**, which allows you to remove a Storage Library server from your system.

The utilities described in this section need not be used on any Storage Library server unless a specific need exists. For more information about Storage Library server utilities, refer to the ***System Tools Reference Manual***.

CAUTION

Whenever any change in Storage Library configuration occurs–especially when a Storage Library is deleted–it's extremely important to resave all the media families manually and resolve any errors. See the Database Maintenance chapter of the ***System Administrator's Handbook*** for information on saving media families.

Move 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.

Do the following to run **move_disk**:

1. Eject all disks to be moved from the Optical Disk Library as described in the Server Control Subsystem specification.

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> ... <surfid*n*> <dest_server_name>

   where **<surfid 1> ... <surfid*n*>** 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***.

Delete 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 Document Services Utilities specification for information about **WRT_clean**.

- Copies all optical disk database information from each Storage Library server to be deleted to the destination Storage Library server. It then deletes this information from the Storage Library server being deleted.

- Updates the family disk information on each deleted Storage Library server to remove all current, future, and previous write surfaces. It adds this information to the destination Storage Library server so that partially full disks will continue to be written. If a a partially full disk cannot be added to the destination family's current surfaces because the current surface array is full, a message is logged to the system error log.

- Updates the surface locator and family locator tables. If only one Storage Library server remains, the entries in the surface and family locator tables are deleted. If multiple Storage Library servers remain, the pointer in the surface locator table is changed to point to the destination Storage Library server, and the pointer to the deleted Storage Library server in the family locator table is removed. Optical disks assigned to deleted Storage Library servers will be assigned to the destination Storage Library server. However, families referencing a deleted Storage Library server will have that reference removed, but will not have a reference to the destination Storage Library server explicitly added. Also, if all the servers referenced by a family are deleted, that family will be changed to reference all remaining Storage Library servers.

Run the **del_osvr** utility from the source Storage Library server (the server that you are deleting) to update the permanent and transient MKF databases on each Storage Library server with the necessary changes. To use **del_osvr**, perform the following steps:

1. Backup the system to tape.

Note If you get partially through deleting a Storage Library server and have a problem, restoring the backups is the only way to return to the original state. There is no other program that can undo an uncompleted attempt to delete a Storage Library server.

2. Make sure there are no pending write requests for the Storage Library server(s) to be deleted. If there are, delete them.

3. Eject all disks to be moved from the Optical Disk Library(s) out of the Storage Library server to be deleted as described in the Server Control Subsystem specification.

4. Bring down the FileNet software on all Storage Library servers by entering:

Xtaskman &

Click on Stop.

5 Run the **fn_util startdb** on every Storage Library server to start up the permanent and transient databases.

fn_util startdb

6 On each server, enter a command similar to the following:

del_osvr <svrid1> <svrid2> ... <svrid*n*> <dest_server_num>

where **<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.

Tip If the Storage Library server on which optical disks are referenced is not correct, or the Storage Library server's families referenced are not the desired ones after you run the **del_osvr** utility, you may run the **move_disk** utility to move optical disks, and you may also run database maintenance to change families.

7 After **del_osvr** is completed, run **fn_edit** on the Root server to delete the Storage Library server. Be sure to delete the logical cache allocation before removing the station.

8 In **Xapex**, use Database Maintenance to re-save all media families, and resolve any warning or error messages that appear by adding or changing the preferred library information to match the current storage library configuration.

Backup Your System

To complete installation, make a backup of your system. Refer to the following documents:

- ***Image Services System Administrator's Handbook***
- ***Image Services System Administrator's Companion for UNIX***
- ***Image Services Enterprise Backup and Restore***

Appendix C – Setting Up Multiple Networks

This appendix describes how to set up your system on more than one network. The sections include:

- Removing Current Network Interfaces
- Modifying Network Adapter Characteristics
- Adding Network Interfaces
- Rebooting the Server(s)

Note If you are configuring a Dual server system, and you want to set up both servers onto more than one network, all of the sections in this appendix need to be completed on both servers. This is not mandatory, however. You can have a Dual server system with only one of the servers configured onto more than one network.

It is important that you complete the steps presented in this appendix before completing the modification steps in **fn_edit** to configure your system onto more than one network for the FileNet software. The procedure in this appendix only reflects changes to the operating system as it relates to configuring your system onto more than one network.

Note Beginning with this Image Services release, IPX/SPX support is provided only for existing Image Services customers, not new customers. The following information is supplied in case you need to rely on backup copies of your system. In Image Services 3.5.0, IPX/SPX will not be supported in any manner.

Remove Current Network Interfaces

You first need to remove the current Ethernet and Token Ring network interfaces.

1 As **root** user, make sure all FileNet software is down and that there are no remote network activities. To do this, enter:

Xtaskman

Click on Stop.

2 You need to determine the server's current XNS address. The XNS address is a twelve (12) digit number (e.g., **02608c2f1205**). Enter the following command and use the Hardware Address as the XNS address for this server.

lscfg -v -l ent0

_____

3 Next, to get to the Network Interface Selection menu in SMIT, enter the following SMIT fastpath command:

smitty inet

4 From the Network Interface Selection menu, select the Change/Show Characteristics of a Network Interface option and press Enter.

5 From the Available Network Interfaces pop-up menu, select the en0 Standard Ethernet Network Interface option and press Enter.

6 From the Change/Show a Standard Ethernet Interface menu, write down the current entries in the INTERNET ADDRESS and Network MASK fields on the appropriate line below for later use. Also, if there is an entry in the BROADCAST ADDRESS field, write it down.

en0

INTERNET ADDRESS_____

Network MASK_____

BROADCAST ADDRESS_____

7 Press the F3 key to return to the Network Interface Selection menu.

8 From the Network Interface Selection menu, select the Change/Show Characteristics of a Network Interface option and press Enter.

9 From the Available Network Interfaces pop-up menu, select the tr0 Token Ring Network Interface option and press Enter.

10 From the Change/Show a Standard Ethernet Interface menu, write down the current entries in the INTERNET ADDRESS and Network MASK fields on the appropriate line below for later use. Also, if there is an entry in the BROADCAST ADDRESS field, write it down.

INTERNET ADDRESS_____

Network MASK_____

BROADCAST ADDRESS_____

11 Press the F3 key to return to the Network Interface Selection menu.

12 From the Network Interface Selection menu, select the Remove a Network Interface option using the Arrow Keys and press Enter.

13 From the Available Network Interfaces pop-up menu, select the en0 Standard Ethernet Network Interface option and press Enter. This will remove the Standard Ethernet Network Interface. When you receive a

message that the network interface has been removed, press the F3 key to return to the Network Interface Selection menu.

14 From the Network Interface Selection menu, select the Remove a Network Interface option and press Enter.

15 From the Available Network Interfaces pop-up menu, select the tr0 Token Ring Network Interface option and press Enter. This will remove the Token Ring Network Interface. When you receive a message that the network interface has been removed, press the F10 key to exit SMIT.

Modify Network Adapter Characteristics

This section details how to modify the network adapter characteristics for both Ethernet and Token Ring.

1 To get to the Communication menu in SMIT, enter the following SMIT fastpath command:

smitty commodev

2 From the Communication menu, select the Ethernet Adapter option and press Enter.

3 Then select the Adapter option and press Enter.

4 Next, select the Change/Show Characteristics of an Ethernet Adapter option and press Enter.

5 At the Ethernet Adapter pop-up menu, press Enter to select ent0 Available 00-05 Ethernet High-Performance LAN Adapter.

6 At the Change/Show Characteristics of an Ethernet Adapter menu, use the Arrow Keys to go down to the Enable ALTERNATE ETHERNET address field and use the Tab key to toggle this field to yes.

a Locate the ALTERNATE ETHERNET address field, and enter the address you wrote down in Step 2 of the previous section with the following exceptions:

- Replace the first two digits of the address you wrote down with **42** (for example, change **02608c2f1205** to **42608c2f1205**).

- Type this new number after the 0x that already exists in the field (for example, the number in the field would be 0x42608c2f1205).

b Once you finish typing the number into the ALTERNATE ETHERNET address field, press Enter to save the change.

7 Press the F3 key three times to return to the Communication menu.

8 From the Communication menu, select the Token Ring Adapter option and press Enter. Select the Adapter option and press Enter.

9 Next, select the Change/Show Characteristics of a Token Ring Adapter option and press Enter.

10 At the Token Ring Adapter pop-up menu, press Enter to select tok0 Available 00-06 Token-Ring High-Performance Adapter.

11 At the Change/Show Characteristics of an Token Ring Adapter menu, use the Arrow Keys to go down to the Enable ALTERNATE TOKEN RING address field and use the Tab key to toggle this field to yes.

a Locate the ALTERNATE TOKEN RING address field and enter the address you wrote down in Step 2 of the previous section with the following exceptions:

- Replace the first two digits of the address you wrote down with **42** (for example, change **02608c2f1205** to **42608c2f1205**).
- Type this new number after the 0x that already exists in the field (for example, the number in the field would be 0x42608c2f1205).

b After you finish typing the number into the ALTERNATE TOKEN RING address field, press Enter to save the change.

12 Press the F10 key to exit SMIT.

Add Network Interfaces

This section details how to add the network interfaces for both Ethernet and Token Ring.

1 To get to the Add a Network Interface menu in SMIT, enter the following SMIT fastpath command:

smitty mkinet

2 From the Add a Network Interface menu, select the Add a Standard Ethernet Network Interface option and press Enter.

3 From the Available Network Interfaces pop-up menu, select the en0 Standard Ethernet Network Interface option and press Enter.

4 At the Add a Standard Ethernet Network Interface menu, type in all the numbers you wrote down in Step 6 of the “Removing Current Network Interfaces” section in the appropriate fields. Also, make sure the ACTIVATE the Interface after Creating it? field is set to yes. Then press Enter.

5 Press the F3 key to return to the Add a Network Interface menu.

6 From the Add a Network Interface menu, select the Add a Token-Ring Network Interface option and press Enter.

7 From the Available Network Interfaces pop-up menu, select the tr0 Token Ring Network Interface option and press Enter.

8 At the Add a Token Ring Network Interface menu, type in all the numbers you wrote down in Step 10 of the “Removing Current Network Interfaces” section in the appropriate fields. Also, make sure the ACTIVATE the Interface after Creating it? field is set to yes. Then press Enter.

9 Press the F10 key to exit SMIT.

Reboot the Server(s)

You now need to reboot the server(s) for the network changes to take affect:

```
shutdown  -Fr
```

Logon as **fnsw** user and invoke the **fn_edit** program. Then return to the appropriate section in **Chapter 5, “Configure Network Parameters (Optional),” on page 129**