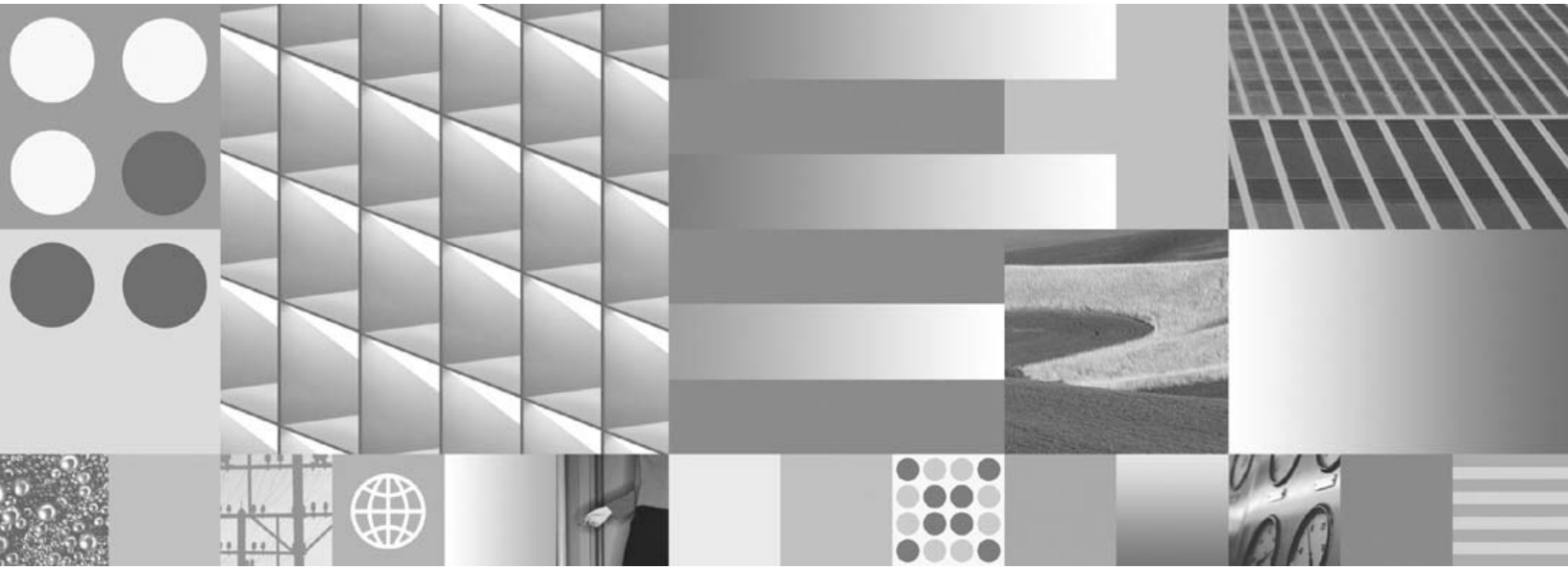
IBM FileNet Image Services

Version 4.1

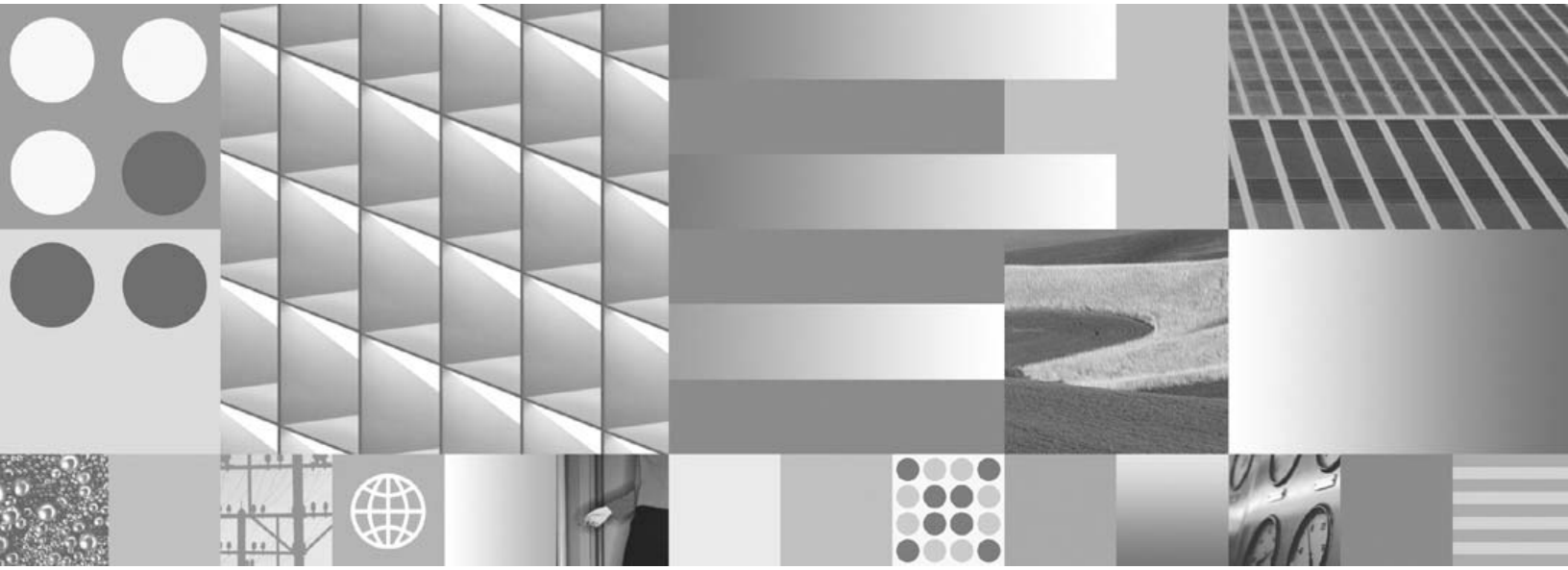


Installation and Configuration Procedures for AIX/6000

GC31-5557-01

IBM FileNet Image Services

Version 4.1



Installation and Configuration Procedures for AIX/6000

GC31-5557-01

Note
Before using this information and the product it supports, read the information in "Notices" on page 287.

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

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1
Getting Started

This document describes how to install IBM® FileNet® Image Services Version 4.1 software with either Oracle 9i/10g RDBMS software or IBM DB2® RDBMS software server running the AIX/6000 operating system. It also describes how to configure and initialize FileNet files and databases using initialization and configuration tools.

Overview

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

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

- Installing and configuring multiple Storage Library servers on an existing system
- Installing and configuring (adding services) an Application server to an existing system

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

Required Skills

Installation by a FileNet Certified Professional (FCP) is recommended. If an FCP is used, at least **ten days** before the installation, the FCP should contact your service representative to schedule the installation and access the team's latest list of current scheduling procedures.

This procedure assumes you have knowledge of:

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

Comments and Suggestions

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

Document revision history

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

New Features of the IS 4.1 Installation

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

InstallShield Installer

This release of Image Services incorporates an InstallShield MultiPlatform Installer. Before installing the Image Services software, the Installer performs a series of system configuration checks to verify that the AIX server is ready for the Image Services installation.The Installer gives you two options:

- System Check only
- System Check and Install Image Services

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

IBM DB2 Universal Database Software

This release of Image Services supports IBM DB2 Universal Database™ V8.1/V8.2. The DB2 databases are site-controlled and must reside on remote AIX 5.2/5.3 or Solaris 9/10 servers. See *Guidelines for Installing and Configuring DB2 Software* for more information. To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Oracle Database 10g Software

In addition to support for Oracle 9i, this release of Image Services includes support for Oracle Database 10g Release 2 Standard or Enterprise Edition (32-bit or 64-bit). This applies to FileNet-controlled as well as site-controlled Oracles installations.

Note The Oracle media are not supplied by IBM.

All installations of Oracle are Site-controlled. For information regarding what data must be provided by the Database Administrator of **Site-controlled Oracle installations** refer to the *Guidelines for Installing and Updating Oracle10g Software for UNIX Servers*.

To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

System Serial Number

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

When installing a new Image Services system, you are now required to construct your own SSN using any combination of numeric digits that you choose. This identifier is vital to Image Services, as the SSN is included in the metadata of each committed record. Each IS system must have its own unique SSN to configure peer systems in a cross-system committal environment, and to prevent potential prob-lems if media are ever transferred from one IS system to another.

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

SLAC Key Installation No Longer Required

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

Improved Support for Oracle Features

- For Oracle users, Image Services release 4.1 allows you to separate Image Services tables and indexes into different tablespaces.
- Image Services release 4.1 supports Oracle password complexity functionality.

Support for User-defined Passwords

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

IBM Information Management support page

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

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

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

Accessing IBM FileNet documentation

To access documentation for IBM FileNet products:

1. Navigate to the Information Management support page (**www.ibm.com/software/data/support**).
2. Select the appropriate IBM FileNet product from the “Select a category” list.
3. From the Product Support page, click **Product Documentation** under Learn.
4. From the Product Documentation page

a If necessary, display the document list by clicking the Doc link for the appropriate component product.

b Click the icon in the appropriate release column to access the document you need.

Release Notes for Image Services 4.1

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

Release Dependency Spreadsheet

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

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

Operating System Notes

Review the Operating System Notes for your current version of AIX to determine if any fix packs need to be installed prior to this Image Services update. The System Administrator is responsible for obtaining and installing these fix packs.

Installation Prerequisites

The prerequisites for an installation are outlined in the following sections. After you find each piece of information, enter it in the appropriate space in the **"Installation Worksheet" on page 76**.

Server Types

This information pertains to these servers:

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

Minimum Hardware Requirements

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

Server Hardware

- **AIX 64-bit** processors for all servers with Oracle9i or 10g software including Root/Index servers and Application servers with either WorkFlo Queue Services, SQL Services, or VWServices.

Note Oracle 9i software is compatible with both 32-bit and 64-bit AIX servers. Oracle 10g is compatible with only 64-bit servers. DB2 databases must be located on remote AIX or SUN servers.

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

Note For Oracle, the kernel can be 32- or 64-bit but the hardware must be 64-bit.

Server Memory

- Root/Index and Application Servers with Oracle:

  512 MB memory for each processor in the server.

- Root/Index and Application Servers with DB2:

  512 MB memory or more for each processor in the server.

- **Storage Library and Application Servers without Oracle:**

  512 MB memory for each processor in the server.

- To see the amount of usable memory, enter:

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

Paging Space

- Oracle recommends that paging space be **2 times** the amount of server memory. For example, a server with 512 MB of memory would require 1 GB of paging space.

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.

Note For more information about IBM recommendations on paging space, see the IBM AIX Web site at **http://www.rs6000.ibm.com/doc_link/en_US/a_doc_lib/aixbman/baseadmn/pg_space_vm.htm#pagingsp**

Total Disk Space

For FileNet Image Services software and minimum datasets only:

- At least **1.0 GB**

This includes a 30% growth factor, but does not include space required for the AIX Operating System or for RDBMS software.

Refer to the AIX and RDBMS documentation for space requirements for these products.

Available File System Space for Image Services Software
The FileNet Image Services software needs the minimum amounts of free disk space in the file systems shown here:

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

Note If /fnsw/local is not a separate file system, the update requires **1000 MB** total space in /fnsw.

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

- **500 MB** total space in /tmp.

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

Space for RDBMS Software

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

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

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

To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

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

X Terminal or Equivalent

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 graphical user interface (GUI) capabilities to:

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

When the documentation directs you to perform a command requiring any GUI capabilities on the Root/Index/Storage Library server, for example, you must be at the X-station or PC you have attached to your

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

Software Requirements

AIX Operating System

You can install Image Services Release 4.1 on systems with the following AIX operating systems **only**:

- AIX 5.2 TL 8,9
- AIX 5.3 TL 3,4
- AIX 6.1 (with Image Services 4.1.1 and later)

Note Update to one of these versions of AIX **BEFORE** you update the IS and RDBMS software.

Installing SNMP

On AIX 5.2, SNMP version 3 is installed by default. Change this to SNMP version 1 as described in this section.

Note Failure to switch to SNMP version 1 will cause fn_snmpd to abort when the Image Services software is started.

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

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

   ps -e | grep snmpd

2. If the following process names appear, the system is configured to use SNMP version 3.

   626912 - 0.00 snmpmibd64

   659506 - 0:00 snmpdv3ne

3 To change to SNMP version 1, enter

/usr/sbin/snmpv3_ssw-1

4 To verify that you are running SNMP version 1, re-enter

ps -e | grep snmpd

5 The following process name should appear:

659510 - 0:00 snmpd64v1

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 underscores.

Note Do not use non-alphanumeric characters.

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

object:domain:organization

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

Object Name

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

Domain Name

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

Organization Name

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

Important

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

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

Image Services Software

FileNet Image Services 4.1 for AIX/6000. This media contains the Image Services 4.1 software including COLD 4.1 software.

IBM DB2 Universal Database Software

Refer to the *Guidelines for Installing and Configuring DB2 Software for UNIX* for more information.

Oracle RDBMS Software

Note Oracle 10g software media are not supplied by IBM.

Refer to the *Guidelines for Installing and Configuring Oracle 9i Software for UNIX* or *Guidelines for Installing and Configuring Oracle 10g Software for UNIX* for more information.

To download the guidelines from the IBM support page, see **“Accessing IBM FileNet documentation” on page 26**.

National Language Support

It’s important that the character set you select for one product matches the character sets you select for all the others.

Choose the same character system when you install Image Services, the operating system and the relational database software.

And when you install the FileNet Image Services software, select the appropriate character set on both the System Attributes tab in the

System Configuration Editor and on the Relational Databases/DB2 tab.

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 Image Services systems configured with Western European character sets, valid alphanumeric characters must be in the 7-bit ASCII range. For Image Services 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.

Character Set Support

The following table summarizes 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, choose an ISO character set for DB2 and Image Services that has a corresponding Windows code page.

Setting the LANG Environment Variable

Set up the **LANG** variable in your shell environment files using your preferred text editor (**vi**, for example). From your **HOME** directory, edit

the necessary files by completing one of the following bulleted steps, depending upon the shell you are using:

Important The language you select here must also match the language that the database administrator selects when the relational database software is installed.

- For **sh** and **ksh**, add the following lines to your **.profile** file:

  ```
  LANG=<locale>
  export  LANG=C
  ```

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

  French is fr_FR
  German is de_DE

Add these lines for French:

```
export LC_ALL=fr_FR
export LANG=C
```

Or add these lines for German:

```
export LC_ALL=de_DE
export LANG=C
```

- For **csh**, add the following line to your **.login** file:

  setenv LANG <language>

  where **<language>** is the language your Xstation is dedicated to.

  For example, add this line for French:

  ```
  setenv LANG fr_FR
  ```

  Or add this line for German:

  ```
  setenv LANG de_DE
  ```

Related Documents

The following documents contain information related to the installation of Image Services on AIX/6000. 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*
- *Guidelines for Installing and Configuring Oracle 9i Software for UNIX*
- *Guidelines for Installing and Configuring Oracle 10g Software for UNIX*

To download the documents from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

You will also see references to the on-line referencing tool. Use this tool when you have 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 Number of Processes per User
3. ❒ Set a Paging Space
4. ❒ Turn on SNMP
5. ❒ Add Peer Systems to the /etc/hosts File
6. ❒ Create the FileNet Volume Group (fnvg) (optional)
7. ❒ Create and Mount the /fnsw and /fnsw/local Journaled File Systems.
8. ❒ Configure TTY Ports for a Modem
9. ❒ Configure Aynchronous I/O
10. ❒ Modify Network Options

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

_____

Operating System Requirements

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

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

Operating System Requirements

Install Image Services Release 4.1 on systems with the following AIX operating systems **only**:

- AIX 5.2 TL 8,9 or AIX 5.3 TL 4,5

To check the operating system version type the following command:

oslevel -r

To check the maintenance level type the following command:

instfix -i | grep AIX

In addition, the version of Simple Network Management Protocol (SNMP) on the AIX 5.2 server must 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, refer to the *IBM System Management Guide* for information about converting back to SNMP version 1.

To download the guide from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

App-Dev Bundle

FileNet software requires that the **App-Dev Bundle** be installed as part of the AIX operating system (OS). If you know that your server has the App-Dev Bundle, you can skip to **"Other Required AIX OS Files" on page 55**.

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

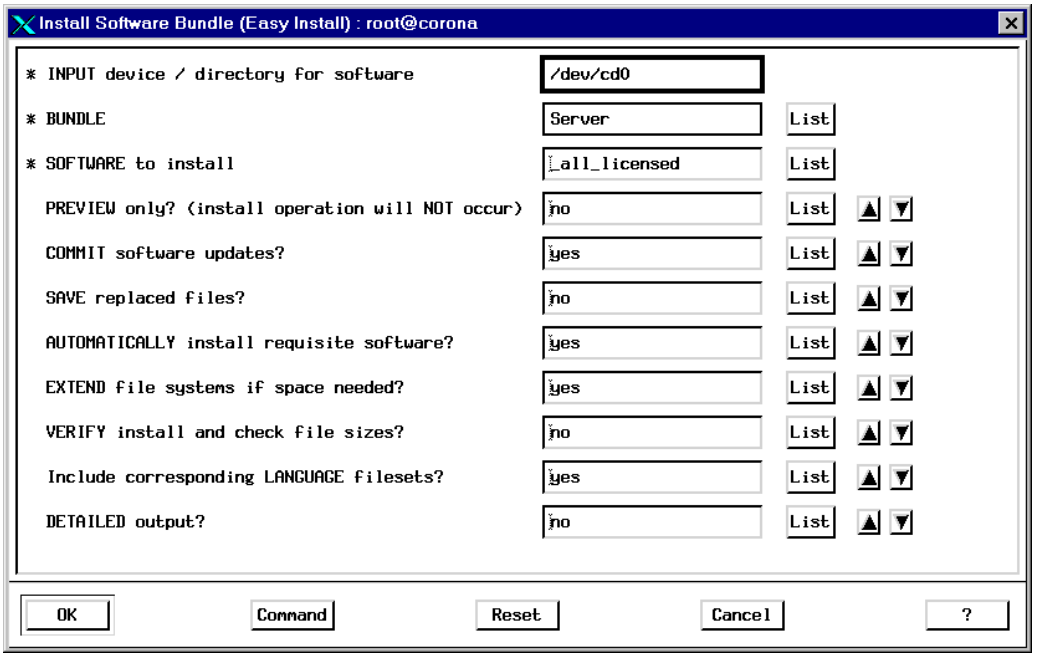
1 Launch SMIT by entering:

smitty

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

2 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.

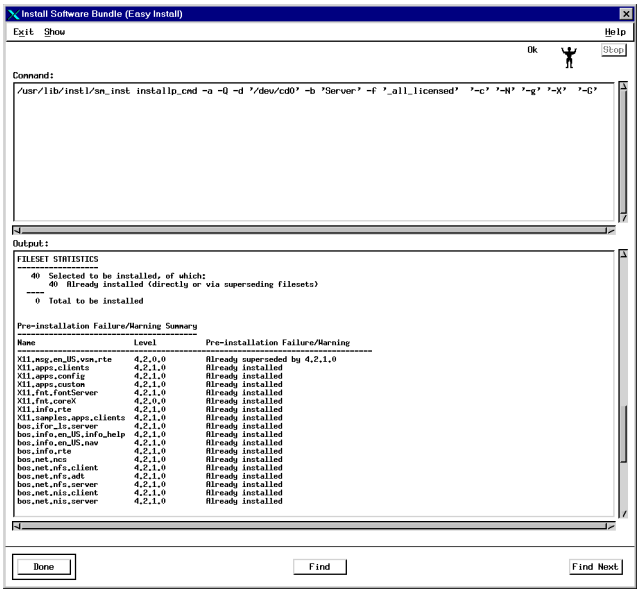
3 You will see a list of installation defaults which looks similar to the following:



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

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

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



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

6 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, use the **smitty install_latest** command to install the individual files.

7 Unmount the CD by entering:

```
cd /
umount /cdrom
```

Other Required AIX OS Files

To run the Image Services software, you might need:

- PTFs required for your AIX version. For information about required PTFs and kernel settings, refer to the latest information posted on IBM Information Management support page at **www.ibm.com/software/data/support**.
- 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 must 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).

Set Number of Processes per User

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

- Change Maximum Number of PROCESSES allowed per user to at least **400**.
- Change Maximum Kbytes of real memory allowed for MBUFS option 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 **OK** followed by **Done**.

Note These are minimums and each system differs. Do not 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, increase the number of partitions until your total paging space size equals the minimum for your server type.

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 **Done** 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 want to enlarge. You will enter the additional paging space in the field entitled “NUMBER of additional logical partitions (Num.)

CAUTION

Enter 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

To check if SNMP is running, enter 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. Enter ➔ Start the Subsystem by selecting 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), skip this section. Contact the network administrator for further information. Skip to the section, **"Create the FileNet Volume Group (fnvg) (optional)" on page 63**.

Add any server on the network that you'll be accessing with a remote login (**rlogin**) 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, edit the /etc/hosts file on that other server as well. You need the names and IP addresses of the servers you want 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 step if you will be installing the DB2 software in a volume group other than the root volume group (such as rootvg). Do this step if you want to create another volume group (such as fnvg) for your FileNet datasets. If you are not going to install FileNet datasets in a new volume group, skip this step.

Note You should install all operating system software on the root volume group disk(s) (for example, rootvg), and the FileNet software on another volume group (for example, fnvg).

Throughout the remainder of this document, you will see the mention of **<volume group>.** You must decide what you want to call your volume group(s) (rootvg or fnvg, for example).

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

physical partition sizes. This might 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. Click **OK** to create the volume group.

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

You should 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 where 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 Click **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 FileNet Users 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**
Group NAME:	**fnop**
ADMINISTRATIVE Group	**False**
Group NAME:	**fnadmin**
ADMINISTRATIVE Group	**False**

2 Click **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, 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 other users to **fnop** or **fnadmin**, you must also add them to the **fnusr** group.

Set Up Password for the FileNet Software 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 FileNet software user such as **fnsw** password, at the system prompt enter:

   passwd <fnsw>

2. Enter the password when prompted.

3. Re-enter the password.

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.) Click **Enter**.

Verify Network Options

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

Ephemeral ports are assigned for temporary use from a designated range of port numbers. When network traffic is extremely heavy, your system might run out of ephemeral ports unless you specify a wider range of port numbers.

1 Run the following commands to maximize the range of ephemeral ports in the **/etc/tunables/nextboot** file:

```
/usr/sbin/no –p –o tcp_ephemeral_high=65535
/usr/sbin/no –p –o tcp_ephemeral_low=42767
/usr/sbin/no –p –o udp_ephemeral_high=65535
/usr/sbin/no –p –o udp_ephemeral_low=42767
```

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
```

Image Services error messages will display during 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.

Installation Worksheet

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

System Information

Note Root user access is required for AIX installation and configuration.

1 Get the following miscellaneous information:

- The following user passwords, if they exist:

  fnsw (if it exists)_____

- NCH Domain Name(s):_____

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

Important

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

Peer System Information

The Domain name, System Serial Number (SSN), and IP address of each Image Services system (peer system) that is going to be communicating with this Image Services system. The serial numbers should contain 10 numeric digits. The network address should contain four numbers separated by decimals (for example, **197.0.0.146**).

Table 3-1: Peer System Information

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

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

Operating System Version

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

- As a user with **root** privileges, enter the following command:

  oslevel -r

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

  instfix -i | grep AIX

- The following versions will display at the system prompt:
  - AIX 5.2 TL 8,9 or AIX 5.3 TL 3,4
  - APAR IY50083

SNMP Version

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

- SNMP or SNMPv1

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

1. As a user with **root** privileges, 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, start the snmpd daemon. Enter:

   startsec -s snmpd

   Then repeat step 1.

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

   To download the guide from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Network Information and Test

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

HOST NAME: _____

2 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) contain four numbers separated by periods (for example, **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 with NIS.

IP address(es) here: _____ _____

_____ _____ _____

3 Before you test your network, 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 of the server .
- The Internet Address is the server's TCP/IP address.
- The Cable Type is usually set to dix. It could be N/A if you don't have a choice, as with the Model 7011.

Click **OK** to save your changes.

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.

4 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

5 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), you should set up 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

The FileNet datasets should reside in the **fnvg** volume group, unless you have only a single disk drive. In the case of a single disk drive, use the **rootvg** volume group.

6 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%

Use SCouT to find this information.

7 Complete the following table appropriately for your system.

Dataset	Min. Size	Size (MB)	Volume Group
MKF:			
cache0	100/128		
permanent_db0	100/128		
permanent_rl0	64		
transient_db0	320		

transient_rl0	256		
sec_db0	64		
sec_rl0	64		

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 Relational Database Software

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

Application server with WorkFlo Queue services or SQL services.

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

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

- **"Oracle 9i and Oracle 10g" on page 89**
- **"IBM DB2 V8.x" on page 92**.

Oracle 9i and Oracle 10g

If the Oracle software and datasets will reside on the local FileNet Image Services server, refer to Chapter 2 of the *Guidelines for Installing and Updating Oracle Software for UNIX Servers*.

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

Give this document to the Database Administrator.

To download the guidelines from the IBM support page, see **“Accessing IBM FileNet documentation” on page 26**.

Oracle Database Information

After Oracle9i has been successfully installed, the Database Administrator must provide the following Oracle variables and tablespace names and sizes.

Oracle Variables

$ORACLE_HOME: _____

$ORACLE_SID: _____

<Oracle User name>: _____

<DBA Group>: _____

f_sw password: _____

f_sqi password: _____

f_maint password: _____

f_open password: _____

Tablespace Names and Sizes

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

After you have this information, you're ready to install the FileNet Image Services software. Continue with **Chapter 4, "Installing FileNet Image Services Software," on page 95**.

IBM DB2 V8.x

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

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

Give the Guidelines document to the Database Administrator.

To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

DB2 Database Information

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

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

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

f_sw password: _____

f_sqi password: _____

f_maint password: _____

f_open password: _____

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

User Tablespace Location: _____
(userspace1, for example)

After you have this information, you're ready to install the FileNet Image Services software. Continue with **Chapter 4, "Installing FileNet Image Services Software," on page 95**.

4

Installing FileNet Image Services Software

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

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

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

Check the Link to the Remote Oracle Database

Server Types

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

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

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

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

For example, you might enter:

sqlplus sys/<sys_password>@Michigan_IDB.world

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

Tip As a double-check, you can enter:

tnsping Michigan_IDB.world

Check the Link to the DB2 Database

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

Since the DB2 database is located on a remote AIX server, use the Command Line Processor (CLP) to check the connection between the DB5 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.

Mount the Image Services CD-ROM

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

Note If you're going to run the installer from a network drive, skip to the section, **"Launch the IS Installer" on page 101**.

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 verify the CD-ROM mounted correctly, type:

mount

You should see the CD-ROM device listed.

Run the Image Services Installer

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

If you're installing a multi-server system, verify 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 Verify 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. Verify that Info Explorer is not mounted on the CD. If it is, unmount it.

Note When you install FileNet Image Services software, **COLD 4.1** is also installed.

The IS installer performs two tasks.

- It runs a System Check to verify configuration prerequisites.
- It installs the Image Services software.

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

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

- Informational windows on your screen.
- Report and log files in the /fnsw/local/logs/install/4.1.0/ directory.

Note COLD 4.1 is included on the Image Services eSD image or software CD-ROM. However, you must be licensed to use the COLD application.

Launch the IS Installer

The Image Services Installer can be run in graphical, console, or silent mode.

- Graphical mode is the default graphical interface and is described later in this section.
- Console mode offers a plain text interface for workstations that do not support graphical mode.

- Silent mode displays nothing on the screen while the installer is running. The user should review the Silent install log file for access to the progress and results of the installation.

1 Log on as a user with **root** privileges.

2 If you are running this program from a remote terminal, export the display from the server to your current terminal.

- In the Bourne or Korn shell, enter:

  export DISPLAY=<host_identifier>:0

- In the C shell, enter:

  setenv DISPLAY <host_identifier>:0

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

3 If you are running the Installer from a remote terminal, allow access to the host display by entering this command at the remote terminal:

xhost +

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

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

Tip Test your DISPLAY setting by entering:

```
xclock  &
```

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

4 **For Silent Installation only**, locate the the appropriate options.txt file on the eSD image or software CD. The options file contains standard responses to the installer's prompts. Copy the file to a local directory on your server. (You can rename it to something shorter, like **opt.txt**.) Use your preferred text editor to make any appropriate changes and

save the file. The options and their default values are fully described in the file.

5 As the root user, change to the directory where the IS software is located and invoke the appropriate installer.

cd /

- Graphical mode

  ./is_4.1.0_aix.bin &

Note The trailing “&” detaches the installer from the console window, thereby freeing up the console window for use in correcting any configuration errors reported by the installer as it is running.

- Console mode

  ./is_4.1.0_aix.bin -console

- Silent mode

  ./is_4.1.0_aix.bin -silent -options /tmp/opt.txt

where /tmp/opt.txt is the location of the text file you modified in step 4. Specify its full path on the command line. For example, "... -options /fnsw/local/tmp/opt.txt".

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

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

```
./is_4.1.0_aix.bin  -is:tempdir  /othertmp
```

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

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

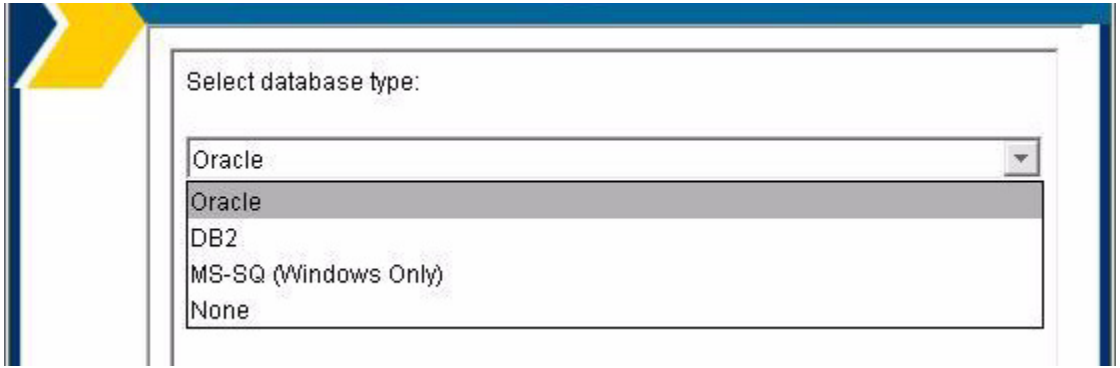
6 Read and accept the Notice to End Users to start the installer.

7 Select the parts of the Image Services Installation you want to perform. Run either the **System Check only** or the **System Check and Install Imag Services**.

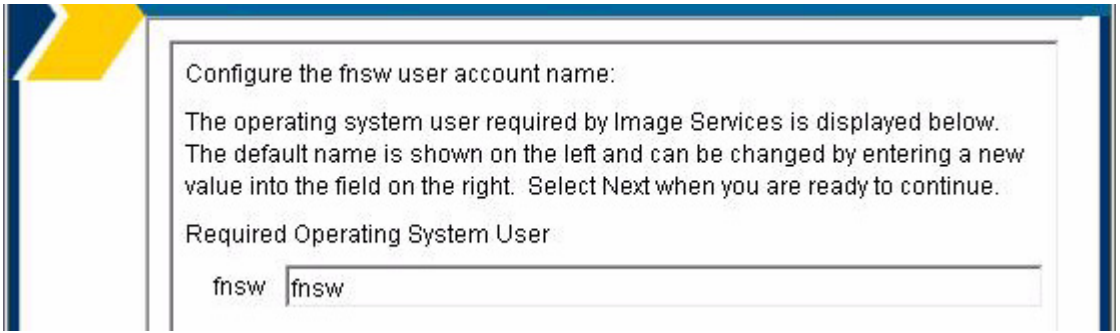
Select the appropriate radio button and click **Next**.

- If you select **System Check only**, skip to **Step 10 on page 108.**
- If you select **System Check and Install Image Services**, continue with the following steps.

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



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



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

10 During the System Check, the Installer verifies the status of server characteristics in these categories:

- Hardware checks
- Operating System checks
- FileNet users and groups

The same checks are performed for both the **System Check only** and the **System Check and Install Image Services** options. **Items in the status column are color coded to indicate:**

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

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

Condition	Severity
Not logged on as superuser	Will prevent install
Insufficient file system space	Will prevent install
Insufficient swap space	Warning only
Incompatible host name	Will prevent install
Incompatible O/S	Will prevent install

Condition	Severity
Missing debugger	Warning only
Kernel parameter out of range	Warning only
Missing FileNet user/group	Will prevent install
Incorrect FileNet user/group membership	Will prevent install
Image Services running	Will prevent install

Hardware Checks

The first System Check screen displays:

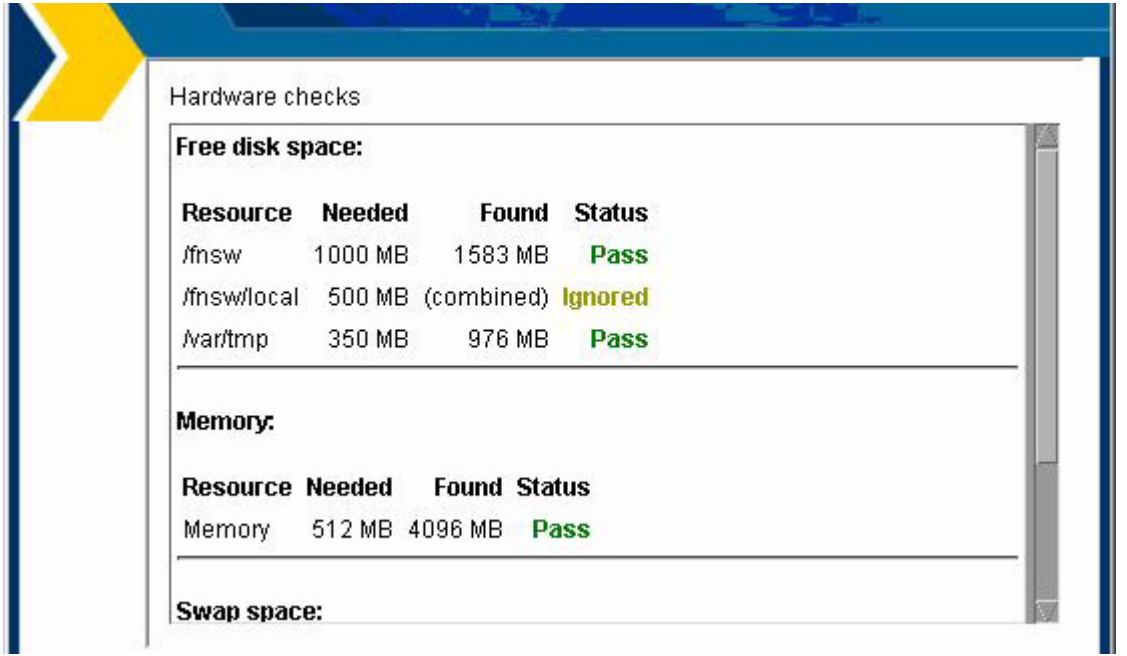
- Free disk space
- Memory
- Swap Space

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

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

a Open another X Window on the desktop and make the necessary change.

b Then, click the **Back** button on the Installer display to return to the previous screen, and click **Next** again to rerun the check.



Click **Next** to continue.

Operating System Checks

The Operating System Checks screen displays:

- Host name
- O/S version
- Debugger
- Kernel parameters

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

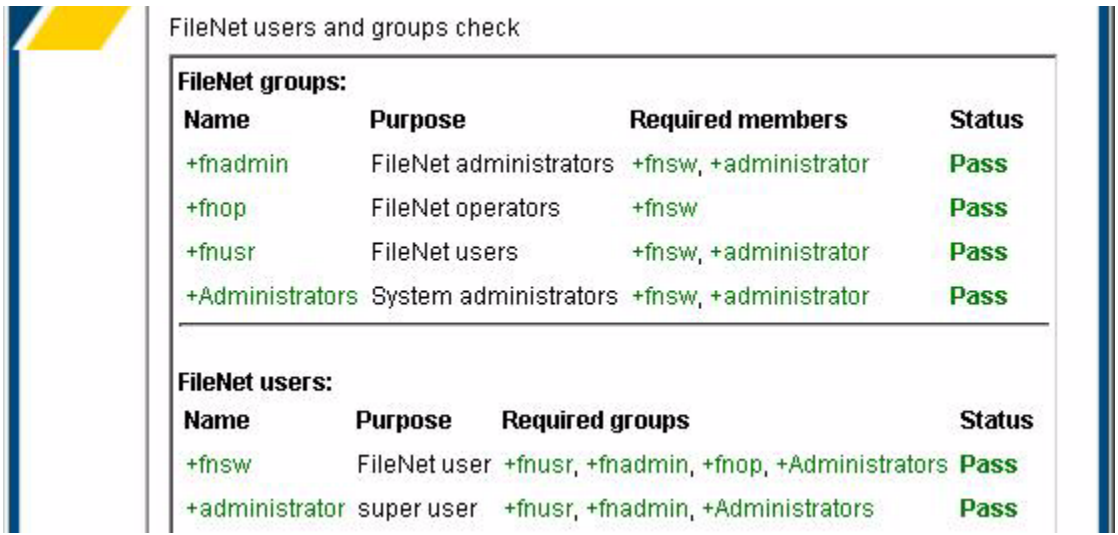
Enter the correct kernel parameters.

Click **Next** on the installer screen to run the kernel parameter check again.

FileNet Users and Groups Check

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

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



FileNet users and groups check

FileNet groups:

Name	Purpose	Required members	Status
+fnadmin	FileNet administrators	+fnsw, +administrator	Pass
+fnop	FileNet operators	+fnsw	Pass
+fnusr	FileNet users	+fnsw, +administrator	Pass
+Administrators	System administrators	+fnsw, +administrator	Pass

FileNet users:

Name	Purpose	Required groups	Status
+fnsw	FileNet user	+fnusr, +fnadmin, +fnop, +Administrators	Pass
+administrator	super user	+fnusr, +fnadmin, +Administrators	Pass

+ green indicates the group and member users are present;
– red indicates the group or member users are missing.

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

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

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

Click **Next** to continue.

Finishing the System Check

When the System Check is complete it has either passed or failed.

If the System Check failed with errors, you must fix all the error conditions reported. You can then run the System Check again.

If the System Check passed all its tests, but generated warnings for the swap space, debugger, or kernel parameter tests the final screen will indicate this. Check the log file for additional items you might want to correct.

If the Installer System Check completed successfully and you selected the option to install Image Services software, the Installer continues with the section, **“Installing Image Services 4.1” on page 117**.

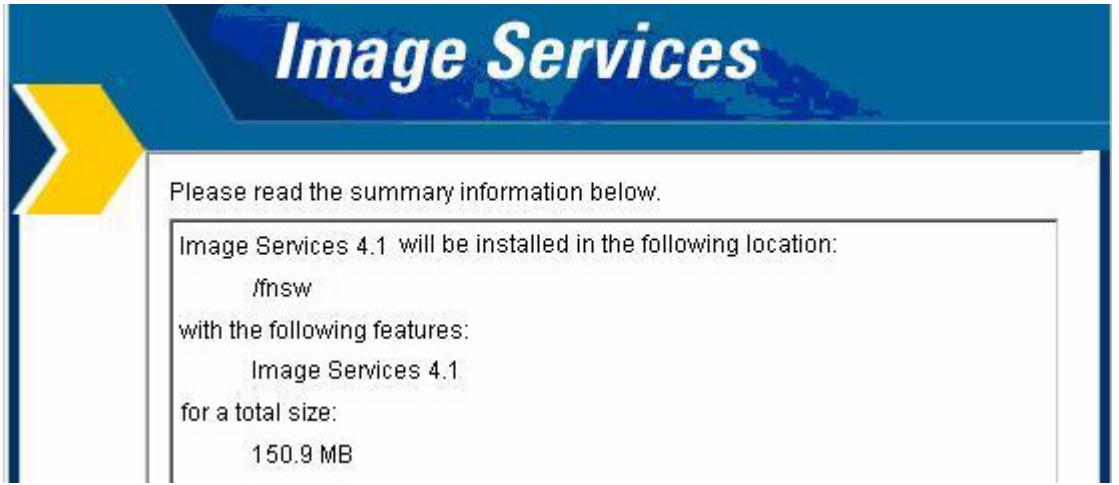
Rerunning the Image Services Installer

If the Installer System Check does not pass, be sure to review the log file in the /fnsw/local/logs/install/4.1.0/ directory. The most recent information is appended to the end of this file.

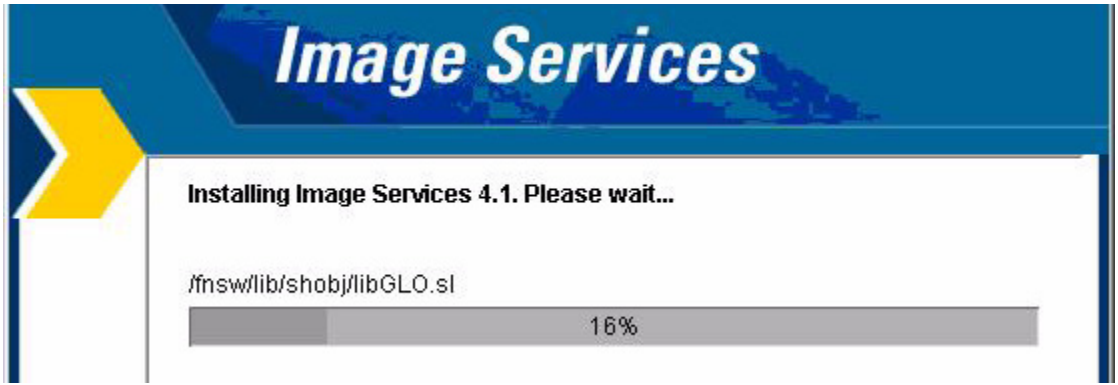
After you have made the changes required by the Installer System Check, return to **“Launch the IS Installer” on page 101** and run the System Check again.

Installing Image Services 4.1

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



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



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

3 When the software installation is finished, the InstallShield Installer creates an uninstaller (/fnsw/etc/uninstaller/uninstall_is), and then verifies the version information.

4 The final screen indicates success. It also reminds you to check the Installer log and the IBM Information Management support page for the latest updates.

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.

Verify/Update the /etc/services File

A customizing script runs automatically 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.

AIX 5.3 Servers only

On servers with version 5.3 of the AIX operating system, you might find entries similar to the following in your /etc/services file:

```
filenet-tms      32768/tcp              # Filenet TMS
filenet-tms      32768/udp              # Filenet TMS
filenet-rpc      32769/tcp              # Filenet RPC
filenet-rpc      32769/udp              # Filenet RPC
filenet-nch      32770/tcp              # Filenet NCH
filenet-nch      32770/udp              # Filenet NCH
filenet-rmi      32771/tcp              # FileNet RMI
filenet-rmi      32771/udp              # FileNet RMI
filenet-pa       32772/tcp              # FileNet Process Analyzer
filenet-pa       32772/udp              # FileNet Process Analyzer
filenet-cm       32773/tcp              # FileNet Component Manager
filenet-cm       32773/udp              # FileNet Component Manager
filenet-re       32774/tcp              # FileNet Rules Engine
filenet-re       32774/udp              # FileNet Rules Engine
```

If so, edit the file and add the following lines:

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

Then comment out the corresponding “filenet-xxx” lines.

AIX 5.2 and 5.3 Servers

If you just installed Image Services software and you have NIS (Network Information Service) set-up on your system, you must enter the ypcat services command on your “Master” server to check for the following entries near the end of the file:

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

If the cor, nch and tms entries are present, all is well. If the entries are not present, add the above entries to the /etc/services file on the "Master" server. Then ask the System Administrator to enter the following yppush command to make the changes permanent.

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

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

Install the Required Pre-Startup Fixes

Server Types

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

At this time, install only the fixes that directly relate to Image Services 4.1 initial configuration issues. (You'll install any general Image Services 4.1 fix packs in a later section.)

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

You can retrieve these fixes from the IBM Information Management support page (**http://www.ibm.com/software/data/support**).

Install the User Environment Templates

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

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

- 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 could 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 FileNet Software User Environment

The FileNet software user, such as **fnsw** 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. After they've been 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, and set 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 Oracle software installed, select 1=Oracle, if the server has DB2 software installed, select **2**=DB2.

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

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

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

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

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

If **DB2** software exists on this server, enter the path to the sqllib

directory within 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 the FileNet software user user and log back in to put the templates into effect.

Set Up the root User Environment (Optional)

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

The **root** user might need its own FileNet environment variables set. You need to complete this section if you do not have a specialized root environment already established on your system (For example, a

.login file with specific system-related entries). Otherwise, skip this section.

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

1 Log on as a user with root privileges.

2 Enter the following command to copy all of the template files into the correct directory, set 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 FileNet software user such as **fnsw** 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.

Set File Ownerships and Permissions

Server Types

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

The IS Installer creates all the directories needed for the installation. In addition, it sets the appropriate file ownerships and permissions for the directories.

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

To download the document from the IBM support page, see **“Accessing IBM FileNet documentation” on page 26**.

1 Log on as a user with **root** privileges and run the fn_setup utility as follows:

/fnsw/bin/fn_setup

2 Answer all prompts with information related to your system.

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

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

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

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

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

```
Enter system serial number [1234567890]:
```

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

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

if the server has Oracle software installed on it, select **1**=Oracle; if the server has DB2 software installed, select **2**=DB2.

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

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

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

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

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

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

f If Oracle software (either client or server software) exists on the server, enter the user and group IDs at the following prompts.

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

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

```
This is the setup configuration:
     NCH server name:  aixvenice:YourCorp
     SSN:  11008016xx
     Relational database type:  oracle
     Relational database home:  /home/client_920
     Relational database user ID:  oracle
     Relational database group ID:  dba
     Relational database ID:  IDB
Do you want to continue (y/n) [y]:
```

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

Reboot the Server

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

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

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

```
shutdown -Fr
```

Image Services error messages will display during the reboot because the system is not yet configured.

Continue with Server Configuration

For a **Combined server or Dual server** system, continue with the next chapter, **Chapter 5, "Configuring FileNet Image Services Software," on page 138**.

If you're adding an **Application server**, skip to the section, **"Configure the Root Server" on page 193** in Appendix A.

If you're adding a **Storage Library server**, skip to the section, **"Configure the Root Server" on page 245** in Appendix B.

5

Configuring FileNet Image Services Software

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

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

Logon to the Configuration Database

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation

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

Application server running WorkFlo Queue Services or SQL Services.

1. From an X-station, a workstation that supports X Windows or Common Desktop Environment (CDE), or a PC with an X Windows emulator, logon to the Image Services server as the FileNet software user, such as **fnsw**.

2. Export the display from the server to your current terminal.

- In the Bourne or Korn shell, enter:

  export DISPLAY=<host_identifier>:0

- In the C shell, enter:

  setenv DISPLAY <host_identifier>:0

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

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

xhost +

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

Tip Test your DISPLAY setting by entering:

xclock &

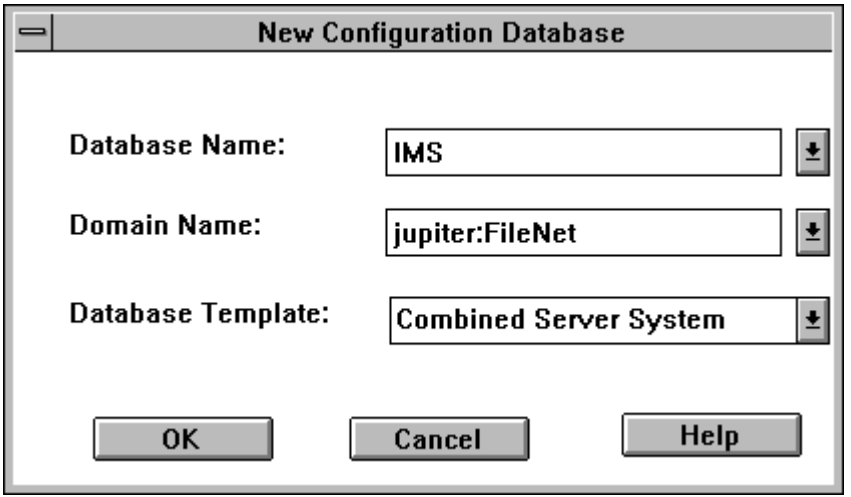
If the clock appears on your remote terminal screen, the DISPLAY variable was exported correctly. If you don't see the clock, try the export or setenv command again using the IP address rather than the server name.

4 As the FileNet software user, such as **fnsw**, start X Windows (if you have not already done so).

5 Open a new X window, and enter the following command:

fn_edit &

A dialog box similar to the following displays:



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**.

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

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

7 From the Database Template pull-down list, select a template type from the following template choices:

- Combined server System
- Dual servers System
- Remote Entry System
- WorkFlo Management System

8 After you have verified the domain information and selected the template type, click **OK**.

9 **You will receive several query prompts.** The prompts you receive depend on which template you selected earlier.

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

When you're prompted for information about your relational database management system, Oracle or DB2, use the information that was supplied to you by the Database Administrator when the RDBMS software was installed. When you're prompted for the relational database type and release version, select the appropriate type and version for your installation. Refer to **"Oracle Database Information" on page 89** or **"DB2 Database Information" on page 93**.

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

- Select the relational database type (Oracle9i/10g, DB2 8.1/8.2).
- For DB2, enter and verify the passwords assigned to:
  - f_sw

- f_maint
- f_sqi
- f_open

- Enter the relational database name.
- Enter the user tablespace name.

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

10 Now you can select any of the available tabs from the FileNet System Configuration Editor window to review or change the current configuration settings.

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

Each screen and pop-up window has an on-line help button designed to provide information you might need to complete the screen or window.

Select and Configure Relational Database Instance (if applicable)

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

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

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

To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

The Database Administrator might have already supplied this informa-

tion in the section, **"Install Relational Database Software" on page 88** in Chapter 3.

Continue with the appropriate sub-section:

- **"Oracle 9i/10g" on page 147**
- **"DB2 V8.1/V8.2" on page 149**

Oracle 9i/10g

Define the Tablespace Names

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

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

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

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

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

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

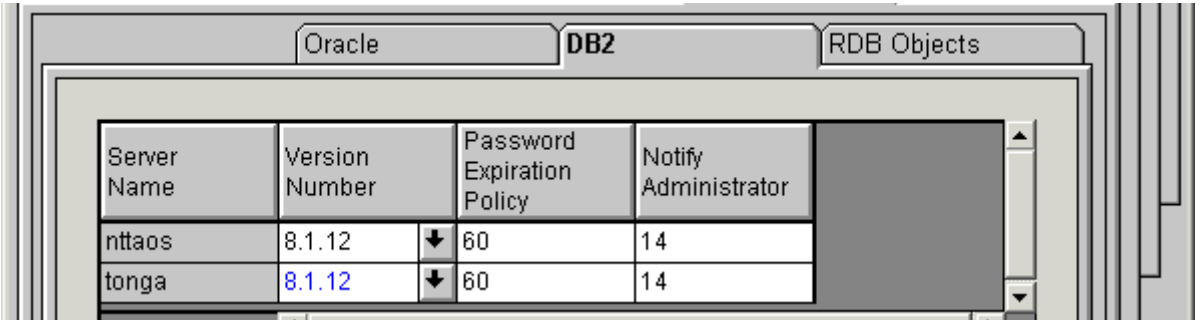
3 On the Oracle subtab, verify that the **Version** is **9.2.0.8** or **10.2.0.2** or later.

4 Skip to the section, **"Verify the Image Services Character Set" on page 151**.

DB2 V8.1/V8.2

Verify the Database and User Tablespace Names

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



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

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

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

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

Verify the Image Services Character Set

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

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

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

Modify Dataset File Sizes

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

Refer to the **“Cache Percentages” on page 99** that were determined by the SCouT planning tool. Your dataset sizes must match the sizes recorded in that table.

When creating larger datasets, note the following:

- The sizes of all of the datasets can be changed in this Datasets tab in the Dataset Size column.

- Maximum and minimum sizes in number of megabytes is checked by the Editor program.
- Minimum size for security datasets is **64 MB**.
- Maximum size for cache datasets is **16 GB**.

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

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

Note Supporting 255 cache dataset partitions, each 16 GB in size, allows for terabyte caches. The maximum cache size is 4080 GB, or 4 TB (terabytes). Refer to the **“Installation Worksheet” on page 76** for previously defined or calculated dataset sizes.

Configure Logical Cache (Optional)

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

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

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.

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, and so on), click on the System Processes sub-tab and type 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, and so on), 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, and so on), click on the Server Memory sub-tab. These parameters should be left at their default values unless changes are necessary.

Configure MKF Database Parameters

Note Perform the steps in this section on servers that have an MKF database.

1 Click 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.

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

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

Configure Network Parameters

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

To configure the network parameters complete the following steps:

1 In the System Configuration Editor window, select the Network Addresses tab.

2 Enter the network address (if one is not already present).

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

10.2.53.33

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

Exit the System Configuration Editor

Save the changes you made and exit fn_edit.

Build and Initialize the Root Server

Server Types

Perform the steps in this section on these servers:

Root/Index - (Multi-server installation)

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

Initialize RDBMS on the Root Server

Skip to the appropriate subsection:

- **"On Servers with Oracle Software" on page 159**
- **"On Servers with DB2 Client Software" on page 163**

On Servers with Oracle Software

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

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

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

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

As each user, enter the following commands:

echo $ORACLE_SID
echo $ORACLE_HOME

2 Compare the output of the above command to the setting determined in **“Oracle Variables” on page 90**. If the ORACLE_SID and the ORACLE_HOME are not set correctly, see the Database Administrator for the system to have the settings changed.

CAUTION In addition, the Database Administrator must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. Refer to the Tablespace table in **"Tablespace Names and Sizes" on page 91** for this information.

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

3 On IS systems with remote Oracle databases:

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

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

fn_oracle setquotas

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

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

/fnsw/oracle/FileNet.sql
/fnsw/local/oracle/ora_users.sql

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

SQL>**@FileNet.sql**
(grants privileges to FileNet Image Services users)
SQL>**@ora_users.sql**
(assigns quotas, default tablespaces, and temporary tablespaces)

4 Skip to the section, **"Set Up Links Required for Image Services" on page 164**.

On Servers with DB2 Client Software

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

2. Connect to the remote DB2 database. As the FileNet software user, such as **fnsw,** enter the following:

   $db2 connect to <dbname> user f_sw

   Enter the f_sw password to connect to the database.

Note This section applies only to remote DB2 instances.

3. Verify that the DB2 Home and Instance environment variables are set appropriately for both **root** and the FileNet software user, such as **fnsw**. 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**.

4 Compare the output of the above commands to the settings determined in the *Guidelines for Installing and Configuring DB2 Software*. To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

If DB2_HOME and the DB2_INST are not set correctly, return to **"Install the User Environment Templates" on page 124** and run the **inst_templates** command again.

Set Up Links Required for Image Services

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

1 Verify that you're logged on as the FileNet software user, such as **fnsw**.

2 Change to the /fnsw/dev/1 directory:

cd /fnsw/dev/1

Tip If one or more of the sub-directories in this path don't exist yet, create them with the **mkdir** command.

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

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

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

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

ln -s /dev/fnvg/rfn_cache0 cache0

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

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

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

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

```
ln -s /dev/fnvg/rfn_cache0 cache0
ln -s /dev/fnvg/rfn_perm_db0 permanent_db0
ln -s /dev/fnvg/rfn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/rfn_trans_db0 transient_db0
ln -s /dev/fnvg/rfn_trans_rl0 transient_rl0
ln -s /dev/fnvg/rfn_sec_db0 sec_db0
ln -s /dev/fnvg/rfn_sec_rl0 sec_rl0
```

On a Root/Index Server

```
ln -s /dev/fnvg/rfn_sec_db0 sec_db0
ln -s /dev/fnvg/rfn_sec_rl0 sec_rl0
```

On a Storage Library Server

```
ln -s /dev/fnvg/rfn_cache0 cache0
ln -s /dev/fnvg/rfn_perm_db0 permanent_db0
ln -s /dev/fnvg/rfn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/rfn_trans_db0 transient_db0
ln -s /dev/fnvg/rfn_trans_rl0 transient_rl0
```

4 Close the file and save the changes.

5 Use **chmod** to change the permission of the **filenet.links** file by entering the following:

chmod 755 filenet.links

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

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

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

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

```
ls  -l
```

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

Tip To list the file or directory contents that the link references enter:

```
ls  -lL
```

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

Set File Ownerships and Permissions

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

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

To download this document from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

As the FileNet software user, such as **fnsw**, enter:

```
/fnsw/bin/fn_setup  -d
```

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

Initialize All Databases

1 As the FileNet software user, such as **fnsw**, initialize all databases configured on your server:

```
fn_setup_rdb  -f
```

```
fn_util  init
```

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

2 Check the /fnsw/local/logs/fn_util/fn_util.log file after the fn_util init command is complete. If you see any of the following messages, ignore them:

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

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

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

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

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual-server installation.

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

Important

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

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

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

The output is similar to the following example in which the SID appears at the end of process name. In this example, the SID is IDB.

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

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

echo $ORACLE_SID

Compare the output of the above command to the setting determined in **"Oracle Variables" on page 90**. If it is not set correctly, check with the System Database Administrator to have it reset.

CAUTION The Database Administrator must start the RDBMS software before attempting to start the FileNet Image Services software for the first

time. If the Oracle or DB2 software is not available when the Image Services software starts, the Image Services software will fail and display error messages. If you receive error messages, start the RDBMS software and restart the Image Services software.

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

```
initfnsw  start
```

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*. To download the handbook from the IBM support page, see **“Accessing IBM FileNet documentation” on page 26**.

Each of the FileNet systems in an RES configuration, Cross-Committal configuration, or a Multi-Committal System configuration is technically

an independent system with a Root/Index server and is considered a **peer system** by all the others.

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

6

Completing the Installation

In this chapter you will finish by installing the 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 (Optional)

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

Since you previously blocked network error messages from broadcasting to other systems, you must “uncomment” the rc.initfnsw statement in the /etc/inittab file so the 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 reenable by removing 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.

Software Tuning for COLD Users (Optional)

Server Types

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

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

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

The following work around exists:

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

echo $DISPLAY

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

- For Bourne or Korn shell, enter:

  export DISPLAY=<host_identifier>:0

- For C shell, enter:

  setenv DISPLAY <host_identifier>:0

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

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

Configure the System Information Messenger

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

The System Information Messenger is a utility that automatically collects performance statistics, license usage data, system configuration data, and software registration information from the server and makes the data available to your service representative. Follow the instructions in the *System Information Messenger Manual* to enable and configure the software. To download the manual from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Install Service Packs and Fix Packs (Optional)

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

You can install any fix packs or service packs that apply to Image Services 4.1. Read the accompanying README file, which contains the instructions for installing the software. Service packs are available on

CD. Fix packs are available on the IBM Information Management support page (**http://www.ibm.com/software/data/support**).

Create the Cor_backoff_config File (optional)

The cor_backoff_config configuration file allows you to modify the connection failure/retry behavior that applies to the Courier protocol for both an Image Services and an ISTK system. You should consider creating this configuration file:

- If you have a slow network
- If the courier default values are not sufficient for your network
- If the TCP/IP parameters have been set up correctly but are encountering errors.

For more information, see the release notes located on the IBM Information Management support page (**http://www.ibm.com/software/data/support**).

MSAR Systems

The Magnetic Storage and Retrieval (MSAR) storage library provides high speed and high capacity storage libraries on magnetic disk media instead of using optical media or large magnetic disk caches (OSAR-less systems).

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

To download this document from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Bring Up the FileNet Software

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

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

killfnsw -DAy

2 Start the Image Services software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

CAUTION If RDBMS software is installed on this server, be sure to start it before attempting to start the FileNet Image Services for the first time. If the RDBMS software is not available when the Image Services software starts, the Image Services software will fail and will display error messages. If you receive Image Services error messages, start the RDBMS software and restart the Image Services software.

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

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

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

6 From the FileNet Task Manager window, select START.

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

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

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

Make System Backups

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

Regular backups of the system configuration and data are essential.

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

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

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

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

To download these documents from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Begin Production Mode

This concludes the Image Services 4.1 for AIX/6000 software installation procedure. FileNet Image Services is now ready for production mode.

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 document. Perform all of the steps in this appendix on the Application server unless stated otherwise.

In addition to installing and configuring a new Application server, 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 201**.
- 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

This appendix assumes that FileNet Image Services 4.1 and the Relational Database software have already been installed and configured on a Combined or Dual server system. The Combined or Root/Index server will be the Root server for the Application server. If a Root server has not already been established, follow the procedures in this manual for installing and configuring the Root server, then return to this appendix to set up the Application server.

Installation Prerequisites

Verify that the server is ready for the software installation by completing the procedures and gathering the information for the worksheet in **Chapter 2, "System Administrator Tasks," on page 47**.

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

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 **"Installation Worksheet" on page 76**.

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 46** 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 190**.

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 IBM DB2, Oracle or SQL software, refer to the *Guidelines for Installing and Configuring RDBMS Software for Windows*. To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Install Image Services Software

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

Refer to **Chapter 4, "Installing FileNet Image Services Software," on page 95** 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

Ignore the 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 that all FileNet processes are killed:

ps -ef | grep fnsw

4 Explicitly kill any processes that are still running:

kill -9 <process_id>

Configure the Root Server

Server Types

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

Root/Index server during a Dual server installation)

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

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

Define the New Application Server

To create the new Application server do the following:

1 With Xwindows running, as the FileNet software user such as **fnsw,** enter the following command:

fn_edit &

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

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

4 Select the Add an Application Server option from the Procedures List, and click Run.

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

5 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 Enter the network address. Click OK.

8 To add additional application server, click on the Procedure Tab in the System Configuration Editor window and repeat steps 4 through 7.

Select and Configure the Relational Database Instance (if applicable)

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*.

For **Oracle**, seethe FileNet *Guidelines for Installing and Configuring Oracle9i Software* or *Guidelines for Installing and Configuring Oracle10g Software.*

To download these guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

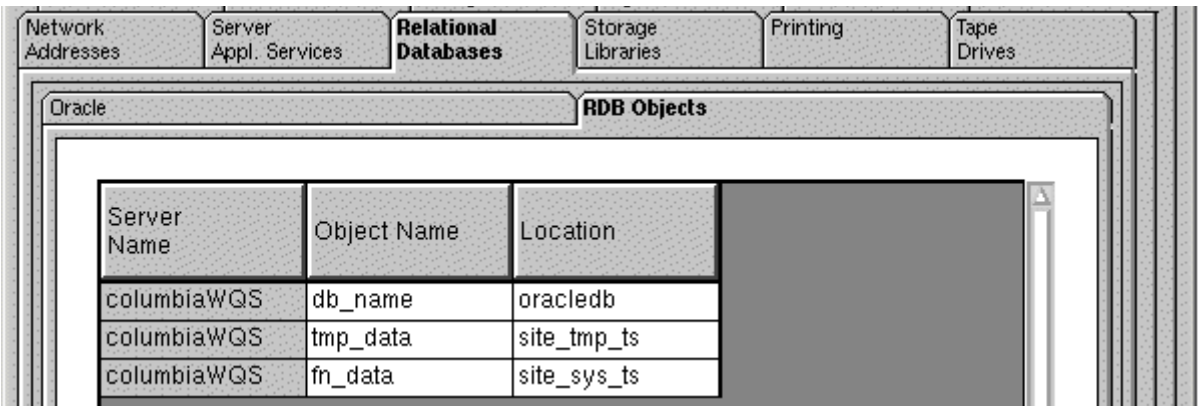
Continue with the appropriate sub-section:

- **"Oracle 9i and 10g" on page 196**
- **"DB2 V8.1 and V8.2" on page 198**

Oracle 9i and 10g

Verify the Tablespace Names

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



2 In the Location column of the RDB Objects window, click on a cell and replace the default FileNet tablespace names with the site-specific

table names. While replacing the tablespace names, use the following criteria:

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

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

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

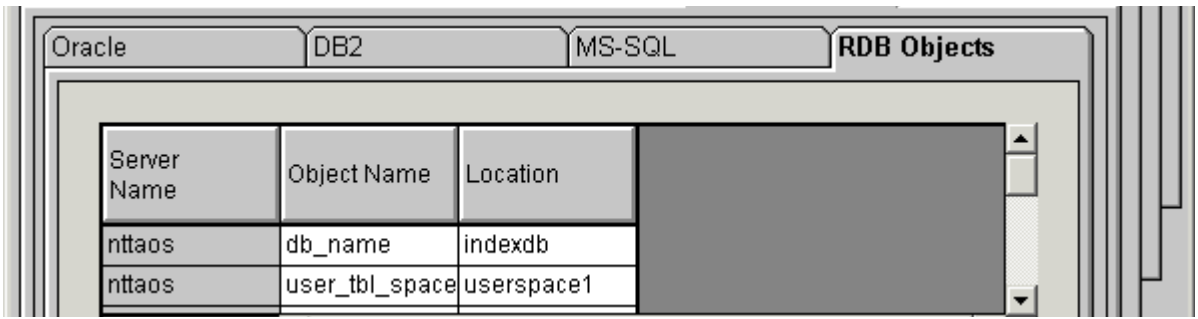
3 On the Oracle subtab, verify that the **Version** is **9.2.0** or **10.2.0.2**.

4 Skip to the section, **"Add Services" on page 201**.

DB2 V8.1 and V8.2

Verify the Database and User Tablespace Names

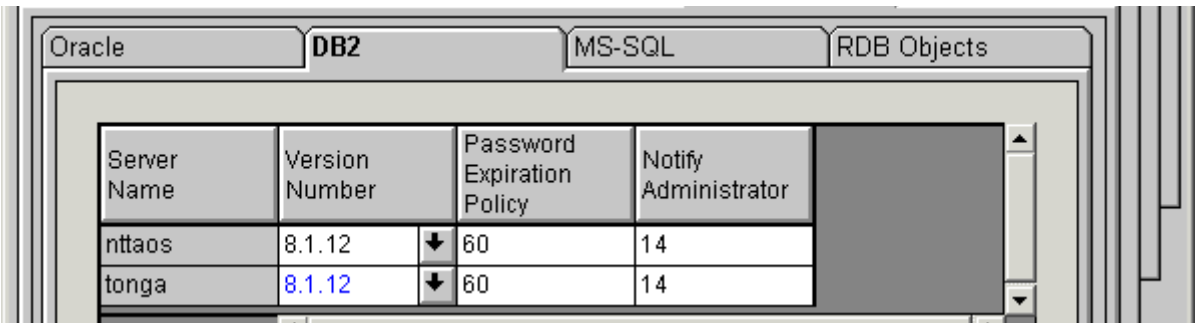
1 Click the Relational Databases tab, then click the RDB Objects subtab.



2 On the RDB Objects subtab, verify the database name and the tablespace name in the Location column:

- **Database name**, such as indexdb.
- **User Tablespace name**, such as userspace1.

3 On the DB2 subtab, verify the following fields:



- **Version** - must be **8.1.12** or later (DB2 version 8.1.0 plus FixPak 12 or later), or **8.2.5** or later (DB2 version 8.2.0 plus FixPak 5 or later). DB2 version 7.2.0 is not supported at this time.

- **Password Expiration Policy** - This field lists the number of days that the f_sw, f_maint, f_sqi, and f_open passwords remain in effect before they expire. The default value is **60 days**. To change the default, enter a new value in this field.

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

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

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

Add Services

Server Types

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

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

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

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

Add Batch Entry Services

1. Click the Procedures Tab in the System Configuration Editor window.
2. Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.
3. Select the Application server domain name when prompted.
4. Choose Batch Entry Services from the list of services that can be added to the Application server.
5. Enter the dataset path for the Image Services cache on your Application server.
   - The default cache path is **/fnsw/dev/1/cache_0.**
6. Enter the size of the cache. (The default is 100 MB.)
7. Enter the transient dataset paths on your Application server.
   - The default transient dataset path is **/fnsw/dev/1/transient_db0.**

- The default transient redolog dataset path is **/fnsw/dev/1/transient_rl0.**

8 Enter the size of the transient dataset sizes. (The defaults are as follows: transient_db0 - 20 MB and transient_rl0 - 40 MB.)

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

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

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

To download these handbooks from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

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10 Enter the number of BES commitment processes. Choose **2** (the default) or **4**.

11 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 210**.

Add Print Services and a Printer

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

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

3 Click on the domain name of the Application server.

4 Choose Print Services. Click **Yes** to add print services.

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

6 Choose Add Printer.

7 Click **Yes** if this is your default printer.

8 Enter 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 Add other printers as necessary.

14 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 210**.

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 210**.

Add SQL Services

Use this procedure to add SQL services.

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

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

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

3 Click on the domain name of the Application server.

4 Choose SQL Services.

5 Complete the following when prompted:

- f_sw password
- f_maint password
- f_sqi password
- DB2 Database Alias Name
- User Tablespace Location

6 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 210**.

Add WorkFlo Queue Services (WQS)

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

Note If you add WorkFlo Queue Services to your system, you MUST install RDBMS client software on the Application server and RDBMS server software on a remote database server.

1. Click on the Procedures Tab in the System Configuration Editor window.
2. Select the Add a Service to a Server option from the Procedure List Box, then click **Run**.
3. Click on the domain name of the Application server.
4. Choose WorkFlo Queue Services.
5. Complete the following when prompted:
   - f_sw password
   - f_maint password

- f_sqi password
- DB2 Database Alias Name
- User Tablespace Location

6 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 210**.

Add VWServices

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

Add Tape Drive (Optional)

Follow these steps to add a tape drive:

1 Click the Tape Drives Tab in the System Configuration Editor window.

2 Click the Procedures tab and run the procedure to Add a Tape Drive.

3 Select the Tape Drives tab to verify that it was configured successfully.

Exit the Configuration Editor

1. From the System Configuration Editor window, click File and click Exit.
2. Click **Yes** 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 277**.

Rebuild the Root Server's Configuration Files

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

1. As the FileNet software user such as **fnsw**, stop the FileNet software:

   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**.

You will now 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

Verify the FileNet software is running on the Root server, and not on the Application server. (You can do a **whatsup** on each 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 146**.

Set File Ownership and Permissions

Server Types

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

In this section, you will 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 **"Installation Worksheet" on page 76** for the correct information.

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

   /fnsw/bin/fn_setup

   Answer all prompts with information related to your system.
3. Respond **no** when asked if this is the NCH 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, 1234567890).

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

6 Relational databases are only configured on servers with Index services, WorkFlo Queue Services (WQS), VWServices, or SQL services. If you are configuring an Application server without one these services, select 0=none; if the server has Oracle software installed, select 1=Oracle; if the server has DB2 software installed, select 2=DB2.

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

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

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

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

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

d If an Oracle relational database exists on the server, enter the user and group IDs at the following prompts.

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

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

```
This is the setup configuration:
     NCH server name:  hpvenice:YourCorp
     SSN:  11008016xx
     Relational database type:  oracle
     Relational database home:  /home/client_920
     Relational database user ID:  oracle
     Relational database group ID:  dba
     Relational database ID:  IDB
Do you want to continue (y/n) [y]:
```

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

When this procedure completes, you are returned to the system prompt.

Build Configuration Files on the Application Server

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

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

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

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

   initfnsw -y stop
   killfnsw -DAy

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

fn_setup_rdb -f

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

- /fnsw/local/sd/root_station
- /fnsw/local/sd/1/as_conf.s

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

Initialize Application Server Datasets

Server Types

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

Note

If there is **NO** relational database software, either server or client, installed on this Application server, skip to **"Set Up Links Required for Image Services" on page 224**.

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

Configure FileNet Datasets on the Application Server

Skip to the appropriate subsection:

- **"On Application Servers with Oracle Software" on page 220**
- **"On Application Servers with DB2 Client Software" on page 223**

On Application Servers with Oracle Software

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

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

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

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

As each user, enter the following commands:

echo $ORACLE_SID
echo $ORACLE_HOME

2 Compare the output of the above command to the setting determined in **"Oracle Variables" on page 90**. If the ORACLE_SID and the ORACLE_HOME are not set correctly, see the Database Administrator for the system to have the settings changed.

CAUTION In addition, the Database Administrator must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. Refer to the Tablespace table in **"Tablespace Names and Sizes" on page 91** for this information.

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

3 **Remote Oracle Servers Only:**

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

a As the FileNet software user, such as **fnsw**, run the following command on the IS server to create the ora_users.sql file:

fn_oracle setquotas

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

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

/fnsw/oracle/FileNet.sql
/fnsw/local/oracle/ora_users.sql

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

SQL>**@FileNet.sql**
(grants privileges to FileNet Image Services users)
SQL>**@ora_users.sql**
(assigns quotas, default tablespaces, and temporary tablespaces)

4 Skip to the section, **"Set Up Links Required for Image Services" on page 224**.

On Application Servers with DB2 Client Software

Verify DB2 instances.

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

2. Connect to the remote DB2 database. As the FileNet software user, such as **fnsw,** do the following:

   $db2 connect to <dbname> user f_sw

   Enter f_sw password to connect.

Note This section applies only to remote DB2 instances.

Verify that the DB2 Home and Instance environment variables are set appropriately for both **root** and the FileNet software user, such as **fnsw**. 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 *Guidelines for Installing and Configuring DB2 Software*. To download the guidelines from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

If DB2_HOME and the DB2_INST are not set correctly, return to **"Install the User Environment Templates" on page 124** and run the **inst_templates** command again.

Set Up Links Required for Image Services

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

1 Verify that you're logged on as the FileNet software user, such as **fnsw**.

2 Change to the /fnsw/dev/1 directory:

cd /fnsw/dev/1

Tip If one or more of the sub-directories in this path don't exist yet, create them with the **mkdir** command.

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

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

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

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

```
ln  -s  /dev/fnvg/rfn_cache0  cache0
```

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

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

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

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

```
ln -s /dev/fnvg/rfn_cache0 cache0
ln -s /dev/fnvg/rfn_perm_db0 permanent_db0
ln -s /dev/fnvg/rfn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/rfn_trans_db0 transient_db0
ln -s /dev/fnvg/rfn_trans_rl0 transient_rl0
ln -s /dev/fnvg/rfn_sec_db0 sec_db0
ln -s /dev/fnvg/rfn_sec_rl0 sec_rl0
```

On a Root/Index Server

```
ln -s /dev/fnvg/rfn_sec_db0 sec_db0
ln -s /dev/fnvg/rfn_sec_rl0 sec_rl0
```

On a Storage Library Server

```
ln -s /dev/fnvg/rfn_cache0 cache0
ln -s /dev/fnvg/rfn_perm_db0 permanent_db0
ln -s /dev/fnvg/rfn_perm_rl0 permanent_rl0
ln -s /dev/fnvg/rfn_trans_db0 transient_db0
ln -s /dev/fnvg/rfn_trans_rl0 transient_rl0
```

4 Close the file and save the changes.

5 Use **chmod** to change the permission of the **filenet.links** file by entering the following:

chmod 755 filenet.links

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

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

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

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

```
ls  -l
```

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

Tip To list the file or directory contents that the link references enter:

```
ls  -lL
```

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

Set File Ownerships and Permissions

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

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

To download this document from the IBM support page, see **“Accessing IBM FileNet documentation” on page 26**.

As the FileNet software user, such as **fnsw**, enter:

/fnsw/bin/fn_setup -d

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

Initialize All Databases

1 As the FileNet software user, such as **fnsw**, initialize all databases configured on your server:

fn_setup_rdb -f

fn_util init

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

2 Check the /fnsw/local/logs/fn_util/fn_util.log file after the fn_util init command is complete. If you see any of the following messages, ignore them:

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

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

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

Start the 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:

```
killfnsw  -ADy
```

3 Start the updated FileNet App software:

```
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.

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.

After the FileNet software startup process finishes, click CLOSE.

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

Make System Configuration Backups

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

To download these documents from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Begin Production Mode

This concludes the Image Services 4.1 Installation and Configuration Procedures for AIX. The Application server is now ready for production.

Appendix B – Adding a Storage Library Server

This appendix describes how to add a Storage Library server.

Overview

Use the instructions in this appendix 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 4.1 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 need another server to add an optical disk library to the system and to allow the system to handle more disks on-line.

- If the CPU, I/O bus, or magnetic disks on a Storage Library server are already pushed to their maximum throughput, adding 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

Enter the number of Storage Libraries you are connecting to the server (1-8): _____ (up to 8 Libraries per server/ 64 Libraries per system)

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

- Storage Library Device Type (for example, ODU, HP Autochanger (AC) Model 20C, and so on.):

  _____

  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).

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

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

  _____

  For Hitachi drives, open the front doors on the Storage Library to find the number (e.g., OD-301) on the label of the drive.

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

For HP Autochanger drives, remove the rear cover of the device and look 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 4.1 on each Storage Library server as described in **“Installing FileNet Image Services Software” on page 95**.

2. After successfully installing Image Services 4.1 on each Storage Library server, set up the installation environment as described in **“Modify Network Options” on page 243**.

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, to do so now.

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

passwd fnsw

2 Enter the password twice.

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 243**.

Reboot the Servers

Server Types

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

You must now 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

Ignore any 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 If any processes are still running, explicitly kill each process:

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

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, start the System Configuration Editor:

fn_edit &

2 Click on OK in the initial dialog box.

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 at the shell prompt.)

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. To download this handbook from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

14 Choose the number of BES commit 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 Verify you have entered the information correctly by clicking on the Network tab in the Configuration Editor window. You will see the Storage Library server listed. In addition, click on Server Application Services Tab to 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 277**.

2 To configure network parameters for TCP/IP refer to **"Configure Network Parameters" on page 157**.

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**, 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 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 will see the error tuple 30,0,2 after the system boots. This is all right 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 must configure a phantom storage library. Skip this section and proceed to **"Finishing Up" on page 257**.

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 146**.

2. On each Storage Library server being added to the system, configure the FileNet datasets.

Configure Third-Party Access to Optical Libraries (Optional)

Image Services normally reserves all of 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 will also be running 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 Stop Image Services 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:

```
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 like this:

```
4,8,0,0
4,8,1,0
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 must contain all of 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 will 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 Verify 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 Storage Library server(s).

1 Stop the FileNet software:

Xtaskman &

Click **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 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 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 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, and so on. The server ID is the second number following Osar-Desc. 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 previous example, the **nch_tool** command would be:

  listprop OsarServer2

3 To run **add_osvr**, enter the following from any server 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 again on the Storage Library server(s).

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

Xtaskman &

Click **Restart**.

Configure Optical Peripherals

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

1. Shutdown your system:

   shutdown -Fr

   Power off the server.

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

3. Power on the AIX server. After the server boots up, **FNPoll** automatically runs to configure the storage library peripherals. You can view messages from **FNPoll** 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:

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 might 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** user.

2 Set the correct permissions:

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, or use a SCSI connection, skip to **"Exit SMIT" on page 268**.

Perform the steps in this section only if the OSAR library uses a serial (RS232) connection to the server.

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. 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 using 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, Continued	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. Click ***Enter***.

Exit SMIT

After completing all the required configuration steps, exit SMIT.

Storage Library Server Utilities (optional)

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

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

The utilities described in this section are optional. Use only as needed. 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–re-save all the media families manually and resolve any errors.

See the Database Maintenance chapter of the *System Administrator's Handbook* for information about saving media families.

To download documents from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

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.

Run **move_disk** as follows:

1. Eject all disks to be moved from the Optical Disk Library.

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 where 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 procedure is described in the “Storage Library Control” chapter of the *Image Services System Administrator’s Handbook*.

To download the handbook from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

Delete a Storage Library Server

Use del_osvr delete a Storage Library server. 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.
- Copies all optical disk database information from each Storage Library server being deleted, to the destination Storage Library

server. It then deletes this information from each, 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 to. If a partially full disk cannot be added to the destination family's current surfaces because the current surface array is full, a message is logged to the system error log.

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

enced 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 encounter a problem, restoring the backup is the only way to return to the original state. There is no 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 out of the Optical Disk Library(s) on the Storage Library server being deleted.

4 Stop the FileNet software on all Storage Library servers:

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 being deleted, and **<dest_server_num>** is the destination Storage Library server information.

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 the disk families.

7 After **del_osvr** completes, run **fn_edit** on the Root server to delete the logical cache allocation and the Storage Library server.

8 In **Xapex**, use Database Maintenance to re-save all media families, and resolve any warning or error messages, 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*

To download these documents from the IBM support page, see **"Accessing IBM FileNet documentation" on page 26**.

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 You can configure Dual server system with one or both servers on more than one network. If you are configuring the Dual server system, with both servers on more than one network, you must complete all of the sections in this appendix on both servers.

Complete all steps 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 on more than one network.

Remove Current Network Interfaces

First, remove the current Ethernet and Token Ring network interfaces.

1 As a user with **root** privileges, shut down all FileNet software to stop all remote network activities. To do this, enter:

Xtaskman

Click Stop.

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

lscfg -v -l ent0

_____

3 Next, to run 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 click 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 for the INTERNET ADDRESS, Network MASK, and BROADCAST ADDRESS fields, if applicable.

en0

INTERNET ADDRESS_____

Network MASK_____

BROADCAST ADDRESS_____

7 Press F3 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 click Enter.

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

10 From the Change/Show a Standard Ethernet Interface menu, write down the current entries in the INTERNET ADDRESS, Network MASK, and BROADCAST ADDRESS field, if applicable.

INTERNET ADDRESS_____

Network MASK_____

BROADCAST ADDRESS_____

11 Press F3 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 click Enter.

13 From the Available Network Interfaces pop-up menu, select the en0 Standard Ethernet Network Interface option and click Enter. This will remove the Standard Ethernet Network Interface. When you receive a message that the network interface has been removed, press F3 to return to the Network Interface Selection menu.

14 From the Network Interface Selection menu, select the Remove a Network Interface option and click Enter.

15 From the Available Network Interfaces pop-up menu, select the tr0 Token Ring Network Interface option and click Enter. This will remove the Token Ring Network Interface. When you receive a message that the network interface has been removed, press F10 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 click Enter.

3. Select the Adapter option and click Enter.

4. Select the Change/Show Characteristics of an Ethernet Adapter option and press Enter.

5. At the Ethernet Adapter pop-up menu, click Enter to select ent0 Available 00-05 Ethernet High-Performance LAN Adapter.

6. At the Change/Show Characteristics of an Ethernet Adapter menu, navigate 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 already 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, click Enter to save the change.

7 Click F3 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 click Enter.

9 Select the Change/Show Characteristics of a Token Ring Adapter option and click Enter.

10 At the Token Ring Adapter pop-up menu, click Enter to select tok0 Available 00-06 Token-Ring High-Performance Adapter.

11 At the Change/Show Characteristics of an Token Ring Adapter menu, navigate to the Enable ALTERNATE TOKEN RING address field and use the Tab key to toggle the 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 already 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 Exit SMIT.

Add Network Interfaces

This section details how to add the network interfaces for both Ethernet and Token Ring.

1 Invoke the Add a Network Interface menu in SMIT with 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 Enter.

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

5 Press F3 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 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, verify the ACTIVATE the Interface after Creating it? field is set to yes. Then press Enter.

9 Exit SMIT.

Reboot the Server

Reboot the server 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,” on page 157**

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This product incorporates technology covered by one or more of the following patents: U.S. Patent Numbers: 6,094,505; 5,768,416; 5,625,465; 5,369,508; 5,258,855.

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