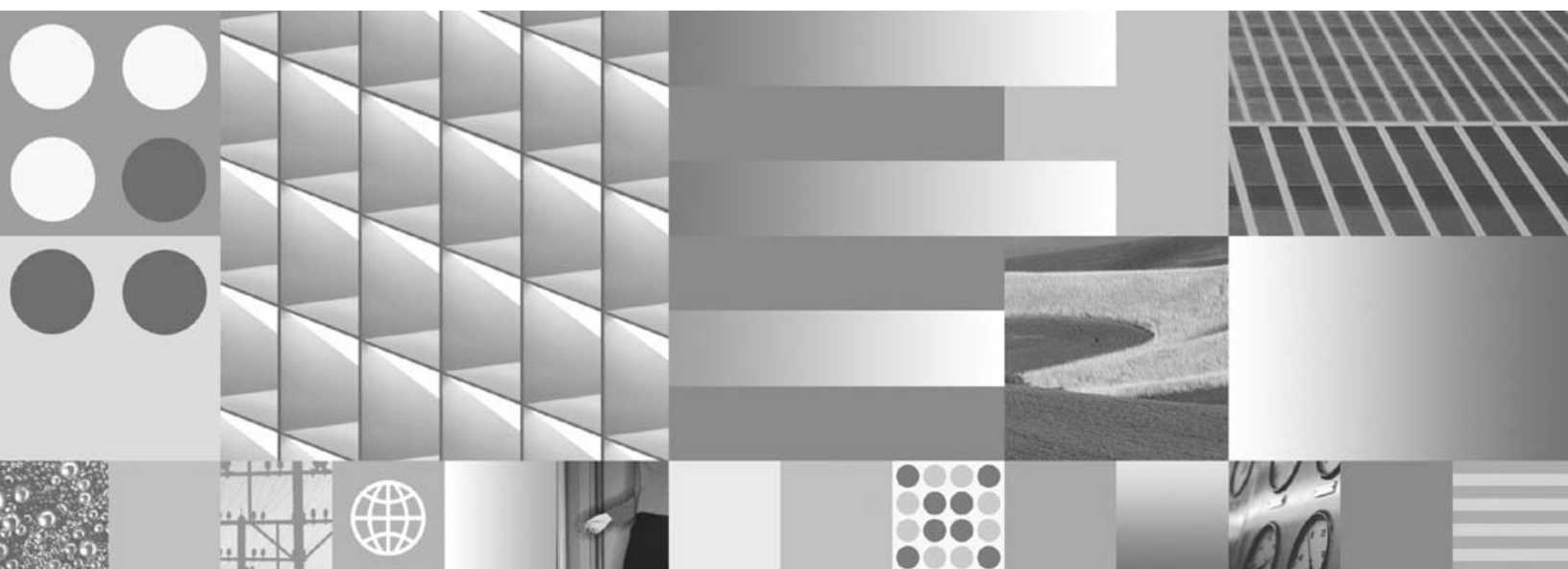


Installation and Configuration Procedures for Solaris



Installation and Configuration Procedures for Solaris

Note

Before using this information and the product it supports, read the information in "Notices" on page 322.

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.

© **Copyright International Business Machines Corporation 1984, 2008. All rights reserved.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

1	Getting Started	19
	Overview	19
	Document revision history	20
	Required Skills	21
	Comments and Suggestions	22
	New Features of the IS 4.1 Installation	22
	InstallShield Installer	22
	IBM DB2 Universal Database Software	23
	Oracle Database 10g Software	24
	Improved Support for Oracle Features	25
	System Serial Number	25
	SLAC Key Automation	26
	Support for User-defined Passwords	27

IBM Customer Service and Support 27

Accessing IBM FileNet documentation 28

Release Notes for Image Services 4.1 29

Release Dependency Spreadsheet 29

Operating System Notes 30

Installation Prerequisites 30

Minimum Hardware Requirements 31

Server Architecture 31

Server Memory 31

Total Swap Space 32

Total Disk Space 32

Available File System Space for FileNet Software 33

Space for RDBMS Software 34

Software Requirements 35

Server Naming Convention 35

Object Name 36

Domain Name 36

Organization Name 37

Solaris Operating System 38

TCP/IP Address 38

Debugging Software (Optional)	39
Image Services Software	40
IBM DB2 Universal Database Software	40
For the DB2 Database Server	40
Oracle RDBMS Software	41
Volume Management Software Media	41
National Language Support	42
Related Documentation	46

2 System Administrator Tasks 47

System Administrator Checklist	47
Operating System Requirements	48
Check Server Memory	48
Check Solaris Operating System Version	50
Verify/Change the Operating System Kernel Limits	50
Checking Solaris 9 Kernel Limits	52
Solaris 9 Kernel parameters in /etc/system	53
Checking Solaris 10 Kernel Limits	54

Verify National Language Character Set and Time Settings 60

Start Solaris X Windows (if necessary) 63

Add Peer Systems to the /etc/hosts File 64

Create FileNet Users and Groups 67

Users and Groups on Solaris 9 68

Users and Groups on Solaris 10 72

Set Up Password for the FileNet Software User 75

Verify Volume Management Software 76

Create Logical Volumes for Image Services 77

Set Up Links Required for Image Services 79

On a Combined (Root/Index/Storage Library) Server 82

On a Root/Index Server 82

On a Storage Library Server 83

3 Preparing for the Installation 85

Installation Worksheet 86

System Information 86

Peer System Information	88
Printer Information	89
Storage Library Information	91
Optical Drive Information	95
Cache Percentages	96
Install Relational Database Software	97
IBM DB2 V8.1 and DB2 V8.2	98
DB2 Database Information	99
Oracle 9i and Oracle 10g	101
Oracle Database Information	102
Oracle Variables	102
Tablespace Names and Sizes	103

4 Installing FileNet Image Services Software 104

Check the Connection to the Remote Oracle Database	105
Check the Link to the DB2 Database	106
Load the Image Services Software	107

Run the Image Services Installer 108

Launch the Image Services Installer 109

Hardware Checks 119

Operating System Checks 121

FileNet Users and Groups Check 124

Finishing the System Check 126

Rerunning the Image Services Installer 127

Installing Image Services 4.1 128

Unmount the Image Services CD-ROM, if necessary 130**Install the Required Pre-Startup Fixes 130****Install the User Environment Templates 131**

Set Up the FileNet Software User Environment 133

Set Up the root Environment (Optional) 135

Verify/Modify root User Parameters 137

Set File Ownerships and Permissions 138**Modify TCP/IP Port Settings (optional) 145****Reboot the Server 147****Configure tty Ports (Optional) 148**

Configure the Optical Device Port on Solaris 9	149
Configure the Optical Device Port on Solaris 10	150

Continue With Server Configuration 152

5 Configuring FileNet Image Services Software 153

Logon to the Configuration Database 153

Select and Configure the Relational Database Instance (if applicable)	159
---	-----

DB2 V8.x 160

Verify the Database and User Tablespace Names	160
---	-----

Oracle 9i/10g 163

Verify the Tablespace Names	163
-----------------------------	-----

Verify the Image Services Character Set	165
---	-----

Modify Dataset File Sizes	166
---------------------------	-----

Configure Logical Cache (Optional)	168
------------------------------------	-----

Configure System Document Services Parameters (Optional)	169
--	-----

Configure the MKF Database Parameters	170
---------------------------------------	-----

Configure Network Parameters	171
------------------------------	-----

Exit the System Configuration Editor	172
--------------------------------------	-----

Edit Volume Daemon Configuration File (Solaris 9 Only) 173

Build and Initialize the Root Server 174

Verify Oracle Variables on the Root Server 174

Initialize FileNet and RDBMS Databases on the Root Server 177

Bring Up FileNet Software on the Root/Index or Combined Server 178

Verify Storage Library Device Drivers on a Combined Server 182

Connect Storage Library Device(s) 182

Verify/Configure Storage Library Device(s) 184

Configure Storage Library Device(s) on the Combined Server 186

Manually Configure an Optical Disk Unit (ODU) 187

Exit the Configuration Editor 188

Rebuild the System Configuration Files 188

Modify the /etc/inittab File on the Root Server (Optional) 188

**Configure RES, Cross-Committal,
or Multi-Committal Systems 191**

6 Completing the Installation 193

Overview 193

Verify Window Manager Selection	194
Software Tuning for COLD Users (Optional)	195
Adapt System for Xstation Use (Optional)	197
Configure the System Information Messenger	198
Support for PCI-X Dual Channel SCSI Adapter	199
Install Service Packs and Fix Packs (Optional)	200
MSAR Systems	200
Bring Up the FileNet Software	201
Make System Backups	203
Begin Production Mode	204

Appendix A – Adding an Application Server 205

Before You Begin	206
Installation Prerequisites	206
Install Relational Database Software (if applicable)	207
IBM DB2 V8.1 and DB2 V8.2	207

Oracle 9i and Oracle 10g	208
Install Image Services Software	208
Configure the Root Server	209
Define the New Application Server	210
Select and Configure the Relational Database Instance (if applicable)	211
DB2 V8.1/V8.2	213
Verify the Database and User Tablespace Names	213
Oracle 9i/10g	215
Verify the Tablespace Names	215
Add Server Services	217
Add Batch Entry Services	218
Add Print Services and Printer	221
Add Cache Services	222
Add Structured Query Language (SQL) Services	224
Add WorkFlo Queue Services (WQS)	225
Add VWServices	227
Exit the Configuration Editor	227
Rebuild the Root Server's Configuration Files	227
Configure the Application Server	229

Set Ownerships and Permissions	230
Build Configuration Files on the Application Server	236
Create Logical Volumes	237
Change Volume Settings	239
Set Up Links Required for Image Services	240
Initialize Application Server Datasets	245
Configure FileNet Datasets on the Application Server	245
On Application Servers with DB2 Client Software	246
On Application Servers with Oracle Software	246
Initialize the FileNet Databases	249
Reset File Ownerships and Permissions	250
Bring Up FileNet Software	250
Modify the /etc/inittab File (Optional)	252
Make System Backups	254
Begin Production Mode	254

Appendix B – Adding a Storage Library Server 255

Before You Begin	255
Multiple Storage Library Server Uses	256
Prepare Storage Library Server(s)	258
Install Image Services Software	259
Configure the Root Server	261
Clear the Transient Database	261
Add Storage Library Server(s)	264
Rebuild Configuration Files on Root Server	268
Configure Storage Library Server(s)	271
Set File Ownerships and Permissions	271
Build and Initialize the Storage Library Server	274
Create Logical Volumes	275
Set up Links Required For Image Services	277
Start Databases and Network Software	282
Add New Storage Library Server(s)	285
Restart FileNet Software	289
Connect Storage Library Device(s)	290

Configure the Storage Library Device(s) 292

Modify the /etc/inittab File 295

Storage Library Server Utilities (Optional) 296

Moving Disks Between Storage Library Servers (Optional) 297

Deleting a Storage Library Server (Optional) 299

Make System Backups 304

Appendix C – National Language Support 305

Configuring the Sun Server 306

International/Localized Environment 306

Non-localized Environment 310

Configuring the Type 5 Keyboard 312

Appendix D – Uninstalling Image Services 313

Appendix E – Support for PCI-X Dual Channel Ultra320 SCSI (LVD/SE) Adapter 315

Creation of Invalid Device Links 315

Error Following Fix of Invalid Device Links 319

Notices 322

Trademarks 327

U.S. Patents Disclosure 329

Index 330

Getting Started

This document explains how to install and configure IBM® FileNet® Image Services version 4.1 software with either Oracle 9i/10g RDBMS software or IBM DB2® RDBMS software on SUN Microsystems SPARC or UltraSPARC based servers running version 9 or 10 of the Solaris Operating System.

Overview

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

- Installing and configuring Image Services on either a Combined server system, Dual servers System, or Remote Entry System (RES)

- Adding a single Storage Library server to an existing Root/Index server
- Installing and configuring multiple Storage Library servers on an existing system
- Installing and configuring (adding services) on an Application server to an existing system

Document revision history

IS version	Date	Comment
4.1	June 2008	Documentation refresh. Updated the section on kernel parameters, updated SSN origin information.
4.1	Nov. 2007	Documentation refresh. Bluewashing.
4.1	June 2007	Initial release.

Required Skills

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

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

The procedures assumes you have knowledge of:

- UNIX®, especially the Solaris Operating System
- The Solaris administration utilities such as the Solaris Management Console (SMC)
- Peripheral device (for example tape drives, printers, or optical disk systems) configuration methods

- Solaris and VERITAS volume Manager configuration methods, and an understanding of general logical volume management concepts
- A text editor such as **vi**.

Comments and Suggestions

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

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 version of Image Services incorporates a new InstallShield Multi-Platform Installer. Before installing the Image Services software, the Installer performs a series of system configuration checks to verify the 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 run that check again. The server must pass the Installer System Check successfully before the Image Services software is installed.

IBM DB2 Universal Database Software

In this release, Image Services supports IBM DB2 Universal Database[™] V8.1/V8.2. The DB2 databases are site-controlled and must reside on remote AIX 5.2/5.3 servers or Solaris 9/10 servers. Image

Services on the Sun server accesses the remote DB2 database by using DB2 client software installed on the IS server.

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

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

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 (SPARC 64-bit). The Oracle 10g software is supplied on DVD media. All installations of Oracle are Site-controlled.

See *Guidelines for Installing and Updating Site-Controlled Oracle 9i and 10g Software on UNIX Servers* for more information.

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

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

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.

System Serial Number

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

When installing new Image Services systems, you are now required to construct your own SSNs using any combination of numeric digits that you choose. The valid range of SSNs is 1000 through 2147483646.

This identifier is vital to Image Services, as the SSN is included in the metadata of each committed record. Each IS system must have its

own unique SSN to configure peer systems in a cross-system committal environment, and to prevent potential problems if media are ever transferred from one IS system to another.

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

SLAC Key Automation

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

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 Customer Service and Support

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

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

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

Accessing IBM FileNet documentation

To access documentation for IBM FileNet products:

- 1 Navigate to the Information Management support page (www.ibm.com/software/data/support).
- 2 Select the appropriate IBM FileNet product from the “Select a category” list.
- 3 From the Product Support page, click **Product Documentation** under Learn.
- 4 From the Product Documentation page
 - a If necessary, display the document list by clicking the Doc link for the appropriate component product.
 - b Click the icon in the appropriate release column to access the document you need.

Release Notes for Image Services 4.1

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

Release Dependency Spreadsheet

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

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

Note

When running Image Services and the Image Services Toolkit on the same server, the Image Services Toolkit must be version 4.1 or later.

Operating System Notes

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

Installation Prerequisites

The prerequisites for an installation are outlined in the following sections. You will be asked to gather specific information in the following sections. After you find each piece of information, enter it in the appropriate space in the **[“Installation Worksheet” on page 86.](#)**

Server Types

This section and its sub-sections pertain to both the Root/Index server and the Storage Library server during a Dual server install, or on the Root/Index/Storage Library server during a Combined or Entry server install.

Minimum Hardware Requirements

Server Architecture

- SUN Microsystems SPARC- or UltraSPARCserver (32-bit or 64-bit processors)

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

Server Memory

- Root/Index and Application Servers with Oracle:
9i - 512 MB memory for each processor in the server.
10g - 1024 MB memory for each processor in the server.
- Root/Index and Application Servers with DB2:
512 MB memory or more for each processor in the server.

- Storage Library and Application Servers without RDBMS:
512 MB memory or more for each processor in the server.

Total Swap Space

The recommended swap space is based on the amount of server memory. See the following table:.

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

Total Disk Space

For FileNet Image Services software and minimum datasets only:

- At least **1.0 GB**

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

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

Available File System Space for FileNet Software

The FileNet software needs the minimum amount of free disk space in the file systems shown here to install the Image Services software.

- **500 MB** minimum space in /fnsw
- **500 MB** minimum space in /fnsw/local

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

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

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

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

Space for RDBMS Software

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

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

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

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

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

Software Requirements

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

Server Naming Convention

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

Note

Do not use non-alphanumeric characters and hyphens.

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

object:domain:organization

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

Object Name

An **object** is a resource like a tape, printer, database, software service, logon name, and so on. Some objects have names pre-defined 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 might 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.

Solaris Operating System

Your server must already be running one of the following Solaris releases:

- Solaris® version 9 (32-bit or 64-bit) or 10 (64-bit) Operating System
- You must have the Developer System Support packages installed.

For the DB2 graphical tools, *Guidelines for Installing and Configuring IBM DB2 Software*.

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

TCP/IP Address

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

Debugging Software (Optional)

Debugging software is recommended for Image Services 4.1 and, if installed, must be installed on each Image Services server. A debugger enables your service representative to troubleshoot both FileNet and Solaris-related problems.

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

pkginfo | grep SPROdbx

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

Note

A command-line debugger is included with SunStudio 10 or 11, Compiler Collection, which includes C, C++ and Fortran compilers “for the creation of high-performance, high-quality applications for the Solaris SPARC system.”

Image Services Software

FileNet Image Services & COLD™ 4.1 for Solaris. This is the Image Services 4.1 software including COLD 4.1 software.

IBM DB2 Universal Database Software

For the DB2 Database Server

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

Note If the **database administrator** or **system administrator** wants to install DB2 before the installation of the Image Services software, see the *Guidelines for Installing and Configuring IBM DB2 Software*. Use these guidelines to install and configure the IBM DB2 software.

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

Oracle RDBMS Software

Refer to the *Guidelines for Installing and Updating Site-Controlled Oracle 9i and 10g Software on UNIX Servers* for more information.

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

Volume Management Software Media

For Solaris 9 and Solaris 10 you need one of the following:

- VERITAS Volume Manager 4.1, or 5.0 for Solaris - available from Sun or directly from Veritas.
- Solaris Volume Manager

Note

Solaris 10 Host running VERITAS Volume Manager could fail to boot.
See Sun Alert Notification: 102613

National Language Support

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

Choose the same character set when you install the Image Services, operating system, and the RDBMS software.

When you install the Image Services software, select the appropriate character set on both the System Attributes tab in the System Configuration Editor and on the Relational Databases/DB2 tab or the Relational Databases/Oracle tab.

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

Note Folders are created and named using Desktop client software. Because the folders are stored in the index database, their names must also use the Windows code page character set that is the equivalent of the character set used by Oracle or DB2 and IS on the Image Services server.

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

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

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

Table 1-1: Character Sets

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

Table 1-1: Character Sets

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

** Microsoft does not have character set code pages that correspond to ISO 8859-3 and ISO 8859-10. If your FileNet Image Services system configuration includes Microsoft Windows clients or workstations, choose an ISO character set for Oracle or DB2 and Image Services that has a corresponding Windows code page.

Related Documentation

The following documents contain information related to the installation of Image Services on Sun/Solaris. Locate these documents in the FileNet documentation, and print or read them before you install the Image Services software.

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

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

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. <input type="checkbox"/> Check Server Memory | 5. <input type="checkbox"/> Add Peer Systems to the /etc/hosts File |
| 2. <input type="checkbox"/> Check Solaris Version | 6. <input type="checkbox"/> Create FileNet Users and Groups |
| 3. <input type="checkbox"/> Check Kernel Limits | 7. <input type="checkbox"/> Install Volume Management Software |
| 4. <input type="checkbox"/> Verify National Language Character Set | 8. <input type="checkbox"/> Create Logical Volumes for Image Services |
| | 9. <input type="checkbox"/> Set Up Links for Image Services |

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

In this chapter you will gather pertinent information, configure the operating system to optimize the system for the Image Services software. In addition, you will install and configure the volume management software.

Operating System Requirements

Server Types

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

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

Check Server Memory

Verify that the server has the appropriate amount of RAM:

512 MB or more memory for each processor on Root/Index servers or Application servers with Oracle 9i.

1024 MB or more memory for each processor on Root/Index servers or Application servers with Oracle 10g.

500 MB or more memory for each processor on Root/Index servers or Application servers with DB2.

500 MB or more memory for each processor on Storage Library servers or Application servers without RDBMS.

Use the following commands to check your system requirements.

System Item	Command
RAM	prtconf grep Memory
Free Disk Space in KB	df -k

Enter the server's memory in the **"Installation Worksheet" on page 86.**

Check Solaris Operating System Version

Your server must already be running the following Solaris release:

- Solaris® version 9 or 10 Operating System (32-bit or 64-bit)

After installing the Solaris operating system, locate the Image Services Compatibility matrix. Select your operating system from the list and review the patch requirements. Verify that you have the latest release level. For example:

- Solaris 9 09/06 Release
- Solaris 10 11/06 Release

Verify/Change the Operating System Kernel Limits

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

Regardless of which version of Solaris you are running, complete the following steps:

- 1 Edit the `/etc/logindevperm` file, using your preferred editor (such as, **vi**):

vi /etc/logindevperm

- 2 Append the following line to the end of the file:

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

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

- 3 Exit the file and save your changes.

If you are using Solaris 9, continue with the next sub-section. If you are using Solaris 10, skip to **[“Checking Solaris 10 Kernel Limits” on page 54.](#)**

Checking Solaris 9 Kernel Limits

- 1 Make a copy of the **system** file (with a new name). Logon the server as a user with **root** privileges, and enter a command similar to the following:

cp /etc/system /etc/system.save

- 2 Edit the /etc/system file, using your preferred editor (for example, **vi**):

vi /etc/system

- 3 Enter the parameters listed below (if necessary), and be sure that they are set to at least the values shown. (If your values are higher, enter the actual values needed for your system.)

CAUTION

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

Solaris 9 Kernel parameters in /etc/system

```
set semsys:seminfo_semmap=50
set semsys:seminfo_semmni=2000
set semsys:seminfo_semmns=2000
set semsys:seminfo_semmnu=500
set semsys:seminfo_semmsl=512
set semsys:seminfo_semopm=256
set semsys:seminfo_semume=500
set semsys:seminfo_semvmx=32767
set semsys:seminfo_semaem=16384
set shmsys:shminfo_shmmax=4294967295
set shmsys:shminfo_shmmni=2000
set msgsys:msginfo_msgmni=2048
set max_nprocs=400
set fnsod:sod_Debug=0
set rlim_fd_max=1024
set rlim_fd_cur=256
set noexec_user_stack=1
```

DB2 also requires these settings:

```
set msgsys:msginfo_msgmax=65535  
set msgsys:msginfo_msgmnb=65536
```

Continue with the section, **“Verify National Language Character Set and Time Settings” on page 60.**

Checking Solaris 10 Kernel Limits

Solaris 10 provides the Resource Control Facility feature for setting kernel parameters. Refer to the Solaris 10 documentation on the Sun Web site for information about this feature. The values of the parameters in the project file override the values of the parameters in the /etc/system file. Make sure that the values of the parameters in the project file are the same as or greater than the values of the parameters in the /etc/system file.

- 1 Since a project is dependent upon a user or a group, logon as a FileNet software user (for example, fnsw) to get the resource controls for that user. Then enter the following command at the shell prompt:

```
prctl $$
```

- 2 Make sure the values are set as indicated in the **Solaris 10 for IS** column of the table below. If you have not specified kernel parameters in the `/etc/project` file, the system will use the default values. In most cases these default values will be adequate.

Note All IPC kernel parameters in the `/etc/system` file are obsolete and it is fine to have obsolete parameters in the `/etc/system` file on a Solaris 10 system. These parameters are used to initialize the default resource control values as in previous Solaris releases. Refer to the *Solaris Tunable Parameters Reference Manual* on the Sun Web site for details.

Parameter Name	Solaris 10 Default	Solaris 10 for IS
max-sem-nsems	512	512
max-sem-ops	512	512
max-sem-ids	128	2048
max-shm-ids	128	2048
max-msg-ids	128	2048
max-shm-shmemory	1/4 Physical memory	4GB

Parameter Name	Solaris 10 Default	Solaris 10 for IS
max_nprocs	10 + (16 x maxusers)*	default
Rlim_fd_max	65536	65536
Rlim_fd_cur	256	256
Noexec_user_stack	0	1
max-msg-qbytes	65536	65536

Recommended kernel parameter values for IS 4.1 and later with Solaris 10

*maxusers - 2048 or server physical memory (in MB), whichever is less.

- 3 Make a copy of the **project** and the **system** file (with a new name). Logon the server as a user with **root** privileges, and enter:

```
cp /etc/project /etc/project.save  
mv /etc/system /etc/system.save
```

- 4 View the current settings for the FileNet software user and the Oracle user.

For FileNet software user, enter:

su - fnsw
projects -l

For Oracle user, enter:

su - oracle
projects -l

- 5 If a project does not exist for the FileNet software user, such as **fnsw**, enter a command similar to the following to create the necessary parameter:

projadd -U fnsw -K "project.max-shm-memory=(priv,4GB,deny)" user.fnsw

- 6 If a project does exist for the FileNet user, such as **fnsw**, enter a command similar to the following to modify it:

projmod -sK "project.max-shm-memory=(priv,4GB,deny)" user.fnsw

Update other kernel parameters required for the FileNet software user, such as **fnsw**, in `etc/project`. Their values should match the values in the Solaris for IS column of the table. As an example:

```
projmod -sK "project.max-shm-ids=(priv,2048,deny)" user.fnsw  
projmod -sK "project.max-msg-ids=(priv,2048,deny)" user.fnsw  
projmod -sK "project.max-sem-ids=(priv,2048,deny)" user.fnsw
```

- 7 If a project does not exist for the RDBMS software user, such as **oracle**, enter a command similar to the following to create one:

```
projadd -U oracle -K "project.max-shm-memory=(priv,4GB,deny)" user.oracle
```

- 8 If a project does exist for the RDBMS user, such as **oracle**, enter a command similar to the following to modify it:

```
projmod -sK "project.max-shm-memory=(priv,4GB,deny)" user.oracle
```

- 9 Edit the `/etc/system` file, using your preferred editor (for example, **vi**). Make sure to also add the additional values required by your system's existing applications.

vi /etc/system

Add the following value to the file:

```
set noexec_user_stack=1
```

- 10 Exit the file and save your changes.
- 11 Verify the new active kernel values for both FileNet and Oracle users match the **projects -l** output you saw in **Step 4 on page 56**.

For FileNet software user, enter:

```
su - fnsw  
prctl $$
```

For Oracle user, enter:

```
su - oracle  
prctl $$
```

- 12 Verify the /etc/system file by entering:

more /etc/system

Verify National Language Character Set and Time Settings

The NLT library does not support the UNIX substitution string “%r” mask. When the mask is set to “%r”, Image Services defaults to a good mask. However, when the IS software posts messages to the log file, NLT errors are reported for each new message.

The default time mask varies on UNIX depending on the LANG and LC_TIME environment settings. Verify the current time format setting by entering:

```
locale -k t_fmt
```

The result might appear similar to this:

```
t_fmt="%r"
```

This example illustrates an incorrect mask. To change the default mask to one that can be used with the NLT library, reset the LC_TIME environment setting.

The LC_TIME setting must be configured for the entire system, so change the /etc/profile file (or each user's .profile file) to include the following lines:

```
LC_TIME=C
export LC_TIME
```

After you make this change, verify that the environment is correct for each user by logging in and running the **locale** command again:

- To check the time format, enter:

```
locale -k t_fmt
```

The result is:

```
t_fmt="%H:%M:%S"
```

Note the new value shown for t_fmt. This is the correct output.

- To check the character set settings, enter:

```
locale
```

The result looks like this:

```
LANG=  
LC_CTYPE="C"  
LC_NUMERIC="C"  
LC_TIME=C  
LC_COLLATE="C"  
LC_MONETARY="C"  
LC_MESSAGES="C"  
LC_ALL=
```

Note that “C”, the system default, is being used. This is also the correct output. Be sure the character set specified on your server is appropriate for your locale.

Start Solaris X Windows (if necessary)

Server Types

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

Note

If X Windows or CDE is already running, you can skip this section.

- 1 Logon the server as a user with **root** privileges, and start the Solaris X Windows environment by entering the following command:

`/usr/openwin/bin/Xsun`

X Windows starts immediately.

Tip

When necessary, you may use the built-in text editor provided with the Solaris 10 Operating System until you install the Image Services software.

After the Image Services software is installed, **DO NOT** attempt to start X Windows using the command shown above.

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, **“Verify Volume Management Software” on page 76.**

You must include the names and IP address of each workstation/server with which you want to communicate. Without a description of other workstations/servers included in the /etc/hosts file, your host will not communicate with other systems. In addition, verify that the name and address of your host is included in the /etc/hosts file on your system.

- 1 Logon as a user with **root** privileges.

- 2 Edit the /etc/hosts file, using your preferred editor (for example, **vi**):

vi /etc/hosts

- 3 Verify that the word "localhost" displays on a line along with an IP address. If "localhost" does not appear on a line as shown in the example below, the FileNet software will not work.
- 4 Also, verify that there is a line containing the name(s) and IP address of your server.

If there is no current entry for your server name, you must add your server/host name and IP address to the file.

Note The screen shown is an example screen. Enter the appropriate information for your system.

```
# @(#)hosts      Revision: 2.1    2004/02/18 21:02:29
#ident  "@(#)cmd-inet:etc/hosts 1.1"
#
# Internet host table
127.0.0.0 loopback
127.0.0.1 localhost
135.0.0.150 <your server name>
135.0.0.151 athena
135.0.0.152 medea
135.0.0.154 theseus
135.0.0.156 perseus
```

You can configure a total of 16 peer systems.

Note While the /etc/hosts file is open, also add the server/host name and IP address of any other server that you will need to communicate with.

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.

Note

On servers with Oracle software, add the FileNet software user such as **fns** to the <dba group> that administers the database.

Users and Groups on Solaris 9

In this section, you will use the **admintool** to create groups and users (with the appropriate IDs) for FileNet administration. (There will be a directory in the root file system called **home**. Solaris uses this directory for the user's home directory. If you want to use this, you will have to make a filesystem for it.) Refer to Solaris documentation for more information.

- 1 Verify that you are logged on as a user with **root** privileges and that you are running X Windows.
- 2 Open a window and launch the **admintool** by entering:

admintool &

The Admintool:Users window displays.

- 3 From the Admintool:Users window, select the **Browse** option, then select Groups.
- 4 Select **Edit** and then select **Add**.

- 5** Enter the Group name for the group you are creating. a group ID will be assigned automatically. Click **OK** to accept the new group. Repeat Steps 3 and 4 to create the following groups:

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

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

From the Admintool window, select the **Browse** option, then select Users.

- 6 Select **Edit** and then select **Add**.
- 7 Enter the User name, primary and secondary group, and login shell for each user.
- 8 Set the password for the user. (Select the Normal password option.)

- 9 Create the home directories for the appropriate users. (For example, the fnsw home directory could be /home/fnsw.)
- 10 Click **OK** to accept the new user. Repeat steps 6 through 10 to create the FileNet software user, such as fnsw:

User Name	Group Assignment
fnsw (for example)	Primary Group: fnusr Secondary Group: fnadmin, fnop

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

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

- 11 Exit the **admintool**.

Users and Groups on Solaris 10

In this section, you will use the **Solaris Management Console (SMC)** to create groups and users (with the appropriate IDs) for FileNet administration. Refer to Solaris documentation for more information.

- 1 Verify that you are logged on as a user with **root** privileges.
- 2 Open a window and launch the **Software Management Console** tool by entering:

smc &

The main SMC screen displays.

- 3 From the main SMC window, expand **This Computer**, then expand **System Configuration**.
- 4 Create the users and groups from the following table.

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

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

- 5 Create the home directories for the appropriate users. (For example, the fnsw home directory could be /home/fnsw.)
- 6 Click **OK** to accept the new user. Repeat steps to create the FileNet software user, such as fnsw:

User Name	Group Assignment
fnsw (for example)	Primary Group: fnusr Secondary Group: fnadmin, fnop, <dba group>

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

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

7 Exit **SMC**.

Set Up Password for the FileNet Software User

Note Skip the steps in this procedure if you set the user passwords while creating users in **[“Create FileNet Users and Groups” on page 67.](#)**

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

- 1 To set up the FileNet software user (**fns**w) password, at the system prompt enter:

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

Verify Volume Management Software

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

- VERITAS Volume Manager or Solaris Volume manager as mentioned in **Chapter 1, “Volume Management Software Media,” on page 41.**

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

Create Logical Volumes for Image Services

Create the following file systems and volumes using either the virtual administrator or the storage administrator. The sizes shown in the following table are **minimum** sizes. Refer to **“Table 2-1 FileNet Volumes” on page 78** and for the appropriate sizes for this FileNet system.

Note **For Sites with Disk Arrays ONLY:** Disk arrays managed by the Veritas volume management software, do not always “grow” to an even MB boundary. You must verify the new size, after “growing” a volume, by displaying the volume information. The new volume size will display in Kilobytes if it did not “grow” to an even Megabyte boundary. Previous installations with a disk array (configured for RAID-5) have determined

that the correct procedure for accurately “growing” a volume to an even Megabyte boundary is to make the new volume size evenly divisible by seven. It is uncertain if the suggestion is applicable for all disk arrays. (Check the most current version of the Release Notes for more information.)

Table 2-1 FileNet Volumes

Volume Name	Mount Point	Minimum Size	Actual Size You Create	User	Group	Mode
fnsw	/fnsw	500m		fnsw	fnusr	775
local	/fnsw/local	500m		fnsw	fnusr	775
vartmp	/var/tmp	500m		fnsw	fnusr	775
fn_cache0	n/a	100m		fnsw	fnusr	664
fn_permanent_db0	n/a	100m		fnsw	fnusr	664
fn_permanent_rl0	n/a	64m		fnsw	fnusr	664
fn_transient_db0	n/a	320m		fnsw	fnusr	664
fn_transient_rl0	n/a	256m		fnsw	fnusr	664

Table 2-1 FileNet Volumes, Continued

Volume Name	Mount Point	Minimum Size	Actual Size You Create	User	Group	Mode
fn_sec_db0	n/a	64m		fnsu	fnusr	664
fn_sec_rl0	n/a	64m		fnsu	fnusr	664

Tip

The Actual Size You Create each volume is determined by FileNet's SCoT planning tool.

Set Up Links Required for Image Services

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 link the Image Services and RDBMS database names to their volume names by creating the **filenet.links** file, entering the correct soft link information, and executing the file.

- 1 Verify that you're logged on as a user with **root** privileges.
- 2 Enter the following commands to create, and go to the `/fnsw/dev/1` directory:

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

Note The `/dev` and/or `/1` directories may already exist. If you get a message similar to the following: `mkdir: cannot create dev: File exists`, one or both of the directories already exist.

- 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/vx/<disktype>/<diskgroup>/<logical volume>  
dbname
```

where **<logical volume>** is the disk location of the volume and **dbname** (plus the path, **/fnsd/dev/1**) is the data base name.
For example:

```
ln -s /dev/vx/rdisk/fndg/fn_cache0 /fnsd/dev/1/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** must contain link information similar to the following:

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

```
In -s /dev/vx/rdisk/fndg/fn_cache0 /fnsd/dev/1/cache0
In -s /dev/vx/rdisk/fndg/fn_permanent_db0 /fnsd/dev/1/permanent_db0
In -s /dev/vx/rdisk/fndg/fn_permanent_r10 /fnsd/dev/1/permanent_r10
In -s /dev/vx/rdisk/fndg/fn_transient_db0 /fnsd/dev/1/transient_db0
In -s /dev/vx/rdisk/fndg/fn_transient_r10 /fnsd/dev/1/transient_r10
In -s /dev/vx/rdisk/fndg/fn_sec_db0 /fnsd/dev/1/sec_db0
In -s /dev/vx/rdisk/fndg/fn_sec_r10 /fnsd/dev/1/sec_r10
```

On a Root/Index Server

```
In -s /dev/vx/rdisk/fndg/fn_sec_db0 /fnsd/dev/1/sec_db0
In -s /dev/vx/rdisk/fndg/fn_sec_r10 /fnsd/dev/1/sec_r10
```

On a Storage Library Server

```
ln -s /dev/vx/rdisk/fndg/fn_cache0 /fnsd/dev/1/cache0
ln -s /dev/vx/rdisk/fndg/fn_permanent_db0 /fnsd/dev/1/permanent_db0
ln -s /dev/vx/rdisk/fndg/fn_permanent_r10 /fnsd/dev/1/permanent_r10
ln -s /dev/vx/rdisk/fndg/fn_transient_db0 /fnsd/dev/1/transient_db0
ln -s /dev/vx/rdisk/fndg/fn_transient_r10 /fnsd/dev/1/transient_r10
```

- 4 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 /fnsd/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.

Note To display the volume owner and group use information, enter the following command:

ls -lL

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

The directory must 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.

Preparing for the Installation

This chapter contains a worksheet to record system information for your service representative to use during the Image Services Software Installation and Configuration.

Server Types

Perform the steps 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 during an Application server installation.

Installation Worksheet

The following sections contain tables intended to allow you to organize the necessary information in a single place for easy reference during the installation process.

System Information

- 1 Version of the Solaris Operating System: _____
(must be Solaris 9 or 10 OS, either 32-bit or 64-bit)
- 2 Character set used by the operating system: _____
(for example, USASCII7, ISO8859-2, ISO8859-2, and so on)

3 Record the appropriate server information in the table below.

Table 3-1: Server Information

Installation Information	System Information
Server Memory	
Server IP Address	
Network Address	
System Serial Number (ssn) (Valid range: 1000 - 2147483646)	
Domain Name	
Organization Name	

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.

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

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 IP address must contain four numbers separated by decimals (for example, **197.0.0.146**).

Table 3-2: Peer System Information

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

Table 3-2: Peer System Information, Continued

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

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

Printer Information

Record the information for each printer on your system in the table below. The IP address(es) must contain four numbers separated by decimal points (for example, **197.0.0.146**).

Table 3-3 Printer Name, Type, and Address

NCH Name	Printer Type	Printer Server IP Address

Table 3-3 Printer Name, Type, and Address, Continued

NCH Name	Printer Type	Printer Server IP Address

Storage Library Information

- 1 Determine the following Sun optical device SCSI parameters. The table below provides a description of each SCSI parameter and provides space to record the correct setting for your system.

Table 3-4: Storage Library Information

SCSI Parameter	Setting	Parameter Description
System Board Number		The System Board Number corresponds to the system board that the SCSI bus is connected to. (Only SPARCserver 1000 and 2000 models currently utilize multiple system boards.)
SBus Slot Number		The SBus Slot Number is the slot number that the SCSI controller connected to the particular device resides in within the server. (Some servers also provide an integrated SCSI controller that does not utilize a SBus slot; however, these integrated SCSI controllers always are assigned a SBus Slot Number which may vary depending on the server model.)

Table 3-4: Storage Library Information, Continued

SCSI Parameter	Setting	Parameter Description
SCSI Target Number		The SCSI Target Number is the SCSI Target ID that the device has been configured for. (This value is determined by inspecting switches or control panels on the particular device.)
SCSI Logical Unit Number (LUN)		The SCSI Logical Unit Number is the SCSI LUN that the device has been configured for. (This value is determined by inspecting switches or control panels on the particular device.)

Note During the **fn_edit** configuration process, you might need to enter one or more values for these parameters.

- 2 The following table shows acceptable values for the System Board and SBus Slot Number attributes by SPARCserver Model.

Table 3-5: System Board Information

Model	System Board Number	Internal SCSI Board Slot	SBUS Slot Number
SPARCserver 5	0	0	1-3
SPARCserver 20	0	15	0-3

If necessary, refer to the Sun server specific documentation to determine how the physical SBus slots or System boards are numbered. (For SPARCserver 1000 and 2000 models, refer to your Sun documentation.)

- 3 Record the appropriate Storage Library device information for each Storage Library device on your system in the table below using the two previous tables.

Table 3-6: Storage Library Device Information

Storage Library Device (SLD) Information	SLD 1	SLD 2	SLD 3	SLD 4
Storage Library Type (ODU, OSAR 96, OSAR 125, and so on)				
RS-232 Port Number (1-9)				
System Board Number				
SBUS Slot Number				
SCSI Target Number				
SCSI Logical Unit Number				

Record the path for the Storage Library Device Driver here: _____.

Optical Drive Information

Record the appropriate Optical Drive information for each optical drive on your system in the table below.

Table 3-7: Optical Drive Information

Optical Drive Information	Drive 1	Drive 2	Drive 3	Drive 4
Drive Type (Hitachi_I, and so on)				
SCSI Adapter Number (0-3)				
SCSI ID Number (0-6)				
Logical Unit Number (0-3)				

Record the path for the Optical Drive Driver here: _____.

Cache Percentages

You must determine the minimum and maximum cache sizes (in %) for the following caches. Record the cache information you gather in the table below.

Table 3-9: Cache Information

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

Use SCouT to find this information.

Install Relational Database Software

Server Types

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

Root/Index server during a Dual server installation.

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

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

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

Image Services for the Solaris Operating Environment 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:

- [“IBM DB2 V8.1 and DB2 V8.2” on page 98.](#)
- [“Oracle 9i and Oracle 10g” on page 101](#)

IBM DB2 V8.1 and DB2 V8.2

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

For information on updating IBM DB2 software, refer to the *Guidelines for Installing and Configuring IBM DB2 Software*. To download this document from the IBM support page, see [“Accessing IBM FileNet documentation” on page 28.](#)

- The **DB2 server** software must be installed on a dedicated remote AIX or Solaris server. Also, the DB2 database for Image Services must be created on the remote AIX or Solaris server. Refer to **Chapter 2, “Guidelines for Installing DB2 ESE V8.1.x Server Software”** for further information.
- The **DB2 client** software must be installed on the Solaris Image Services server and linked to the remote DB2 database. Refer to

Chapter 3 “Guidelines for Installing DB2 V8.1.x Client Software” for details.

Give the DB2 Guidelines document to the Database Administrator.

DB2 Database Information

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

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

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

f_sw password: _____

f_sqi password: _____

f_maint password: _____

f_open password: _____

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

User Tablespace Location: _____
(for example, userspace1)

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 104.**

Oracle 9i and Oracle 10g

For information on installing Oracle RDBMS software, refer to *Guidelines for Installing and Updating Site-Controlled Oracle 9i and 10g Software on UNIX Servers*. To download this document from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 28.**](#)

- If the Oracle software and datasets will reside on the local FileNet Image Services server, refer to **Chapter 2, “Installation Guidelines for Servers with Local Oracle Databases.”**
- The Database Administrator also has the option of installing Oracle software and datasets on a dedicated remote Oracle server. Refer to **Chapter 3, “Installation Guidelines for Remote Oracle Database Configurations”** for further information.

Give the Oracle Guidelines document to the Database Administrator.

Oracle Database Information

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

Oracle Variables

\$ORACLE_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	
fntrp_ts		400	
fnusr_ts (optional for WorkFlo Queue Services)		200	
fnidx_ts (optional for indexes)		200	

After you have this information, you're ready to update the FileNet Image Services software. Continue with **Chapter 4, "Installing FileNet Image Services Software," on page 104.**

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, add this user to the **fnadmin** and **fnop** groups, if necessary.

Check the Connection to the Remote Oracle Database

Server Types

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

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

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 DB2 Client and the remote DB2 database.

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

db2

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

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

Load the Image Services Software

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 section, **"Run the Image Services Installer" on page 108.**

- 1 Log on as a user with **root** privileges, and start X Windows.
- 2 If you have the software on CD-ROM, insert the **FileNet Image Services** CD-ROM into the CD-ROM drive. The File Manager window displays automatically. If you are using the CDE, the File Manager might not display automatically.

Note **COLD 4.1** is included as part of the FileNet Image Services software. However, you must be licensed to use the COLD application.

Run the Image Services Installer

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

The IS Installer performs two tasks.

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

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

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

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

Launch the Image Services Installer

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

- In the Bourne or Korn shell, enter:

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

- In the C shell, enter:

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

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

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

```
xhost +
```

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

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

Tip Test your DISPLAY setting by entering:

`xclock &`

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

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

Use your preferred text editor to make any appropriate changes and save the file. The options and their default values are fully described in the file.

- 5 As a user with **root** privileges, change to the directory where the IS software is located and enter the appropriate command to invoke the Installer.

- Graphical mode – standard, graphical interface:

`./is_4.1.0_sun.bin &`

- Console mode – plain text interface:

`./is_4.1.0_sun.bin -console`

- Silent mode - no screen display. If you copied and modified the options.txt file, the command might look like this:

`./is_4.1.0_sun.bin -silent -options /tmp/options.txt`

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

Note

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

If you determined earlier that the /var/tmp directory does not have enough space, specify an alternate directory. Add

-is:tempdir <directory> to the command line to override the default /var/tmp directory, as long as the <directory> you specify already exists. This optional temporary directory must be outside the /fnsw directory structure. For example, you might enter:

./is_4.1.0_sun.bin -is:tempdir /othertmp

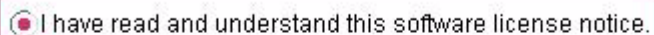
where /othertmp is the specific temporary directory you want to use.

- 6 In graphical mode, you'll see the following Welcome screen. It might take a few minutes to display. In the meantime, a series of dots displays in the console window.

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




- 7 Read and accept the Notice to End Users to start the Installer.



☒ I have read and understand this software license notice.

☐ I do not accept the terms of this software license notice.

- 8 Select the parts of the Image Services installation you want to perform. Run either the **System Check only** or the **System Check and Install Image Services**.



Select the parts of Image Services installation you wish to perform:

Image Services 4.1

☐ System Check only

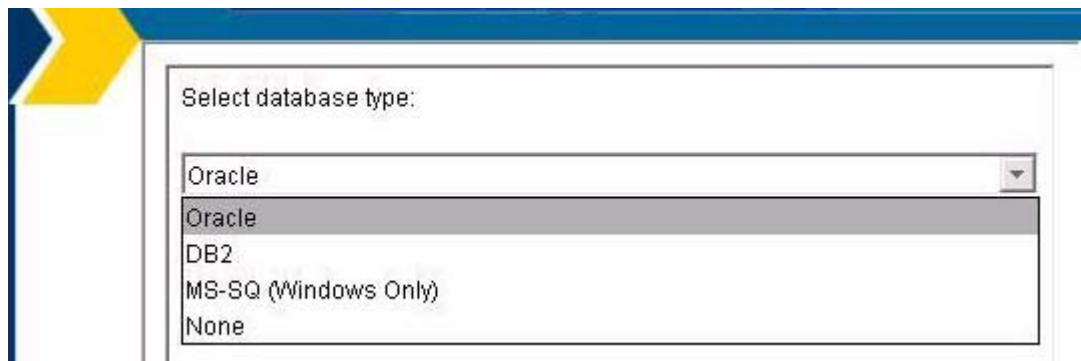
☒ System Check and Install Image Services

The System Check option will perform the system checks required to install the Image Services software without installing the software.

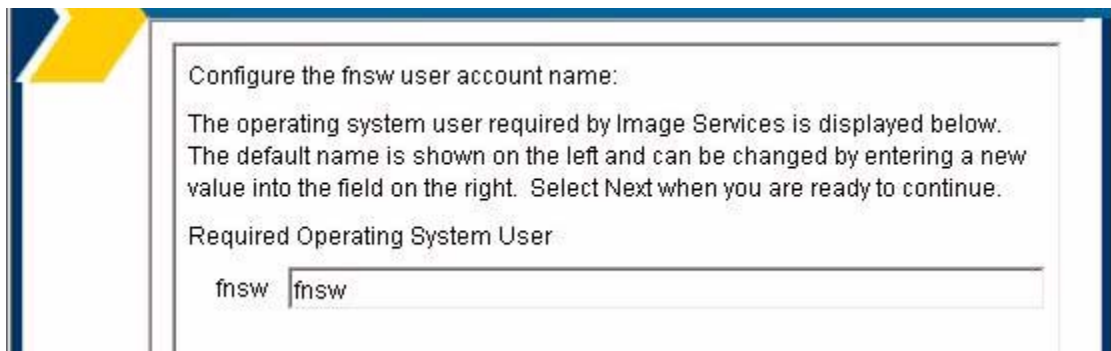
Select the appropriate radio button and click **Next**.

- If you select **System Check only**, skip to [Step 11 on page 117](#).
- If you select the **System Check and Install Image Services** option, continue with the following steps.

- 9 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.



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



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

11 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.

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

Some Installer 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
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:

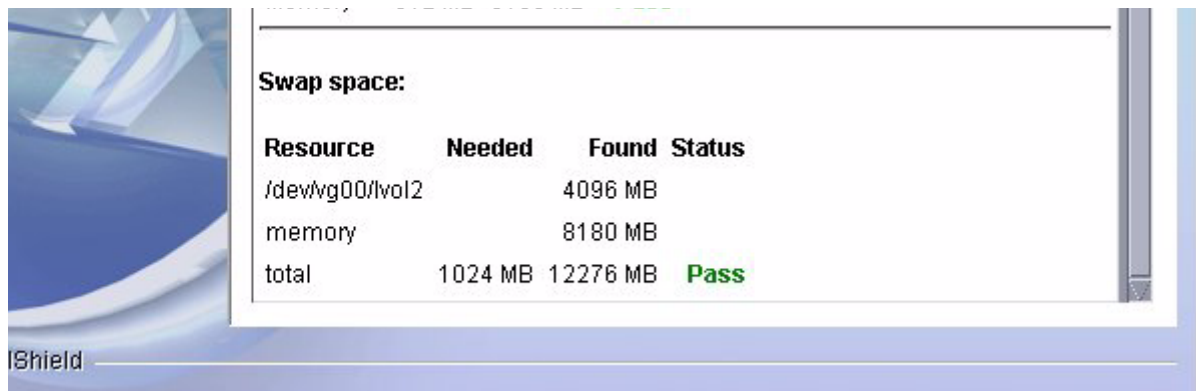
- Free disk space
- Memory
- Swap Space

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, correct it in another window while the Installer is still running.

- a Open another X Window on the desktop and make the necessary change. Refer to [**“System Administrator Tasks” on page 47**](#) for more information.
- b Then, click the **Back** button on the Installer display to return to the previous screen, and click **Next** again to rerun the check.





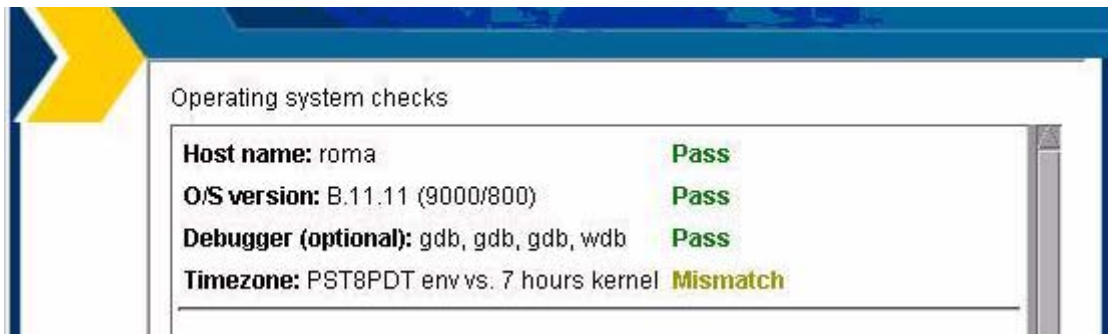
Click **Next** to continue.

Operating System Checks

The Operating System Checks screen displays:

- Host name
- O/S version

- Debugger
- Kernel parameters



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

Kernel parameters:

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

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

Then, in a separate window, edit the `etc/system` file. For example, if `nprocs` is too small, you would enter:

set max_nprocs=400

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

FileNet Users and Groups Check

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

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



FileNet users and groups check

FileNet groups:

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

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

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

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

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

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

Click **Next** to continue.

Finishing the System Check

If the System Check passed all its tests, but generated warnings for the swap space, debugger, or kernel parameter tests, check the log file if you're not sure which additional items you need to correct.

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

- If the Installer System Check completed successfully and you selected the option to install Image Services software, the Installer continues automatically. See the section, **“Installing Image Services 4.1” on page 128.**
- If the Installer System Check did not pass all its tests, return to the previous chapter to resolve the inconsistencies.

Rerunning the Image Services Installer

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

After you have made the changes required by the Installer System Check, return to **“Run the Image Services Installer” on page 108** 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 Service 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 could take longer.)

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

Unmount the Image Services CD-ROM, if necessary

Server Types

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

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

```
cd  
eject
```

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

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 Ser-

vices 4.1 fix packs in a later section.) Search through the Release Notes file for the key words **PRE-STARTUP** and **REQUIRED**.

Note

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

Install the User Environment Templates

Server Types

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

In this section you'll use the **inst_templates** script to set up profile and environment files that are pre-customized for Image Services. 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 extension and the new files are created using the original file name.

- 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** (No) to each of the prompts. 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 the FileNet Software User Environment

The FileNet software user, such as **fns**w, must have its own FileNet environment variables set. Depending upon the shell you are using, an appropriate environmental setup can be installed by copying the corresponding template file from /fns/w/etc. After they've been copied, you can add your own preferences to these files.

- 1 In a CDE window, logon as a FileNet software user such as **fns**w. You might be prompted to change the password again. You can type in the same password or a different one.
- 2 Enter the following command to copy all of the template files into the correct directory, and set up the FileNet software user environment:

/fns/w/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 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) [**2**]:

Note

If you're planning to use an existing DB2 or Oracle 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 [**fns**]:

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

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

Enter the relational database home directory [/home/fnsf/sqllib]:

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

Set Up the root Environment (Optional)

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

The **root** user might need its own FileNet environment variables set. You need to complete this section if you do not have a specialized root

environment already established on your system (For example, a .login file with specific system-related entries). Otherwise, skip this section.

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

- 1 Logon as a user with **root** privileges.
- 2 Enter the following command to copy all of the template files into the current directory, and 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 on this server.
- 3 When inst_templates is finished, log out to the system prompt and log back in as a user with **root** privileges to put the templates into effect.

Verify/Modify root User Parameters

You must add the path to the volume management software in the login files for the a user with **root** privileges. To modify the system setting, complete the following steps:

- 1 Verify that you are logged on as a user with **root** privileges.
- 2 Using a preferred editor (for example, **vi**), edit either the `.cshrc` (csh) or `.profile` file by entering a command similar to the following:

vi <filename> (for example, `.cshrc` or `.profile`)

- 3 Add/verify the following line in the `PATH` variable:

/opt/VRTSvmsa/bin (for VERITAS 3.1)

Note If the `PATH` variable already includes the appropriate entry, exit the editor without saving changes and skip to the next section.

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

- 5 Logout as a user with **root** privileges, and logon again as root for the changes to take effect.

Note After you've set up the Image Services environment by running **inst_templates**, use **xinit** (not `/usr/openwin/bin/openwin`) to start X Windows.

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.

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` must specify the appropriate permissions for these files. See Chapter 3, "Directories and Files," of the *System Administrator's Companion for*

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

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

/fnsw/bin/fn_setup

- 3 Reply to the prompts with the requested information. If the default value shown in brackets is correct, press **Return** to continue.
 - a The NCH server is generally the Root server. If you are installing 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 [clark:FileNet]:

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

Enter system serial number [11008016nn]:

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) [2]:
```

Note

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

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

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

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

Note

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

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

```
Enter the RDBMS user ID [db2usr]:  
Enter the RDBMS group ID [db2grp]:
```

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

```
This is the setup configuration:  
NCH server name:  clark:FileNet  
SSN:  11008016xx  
Relational database type:  DB2  
Relational database home:  /opt/IBM/db2/V8.1  
Do you want to continue (y/n) [y]:
```

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

You then receive messages similar to the following:

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

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

- 6 When **fn_setup** is finished, it exits automatically to the system prompt.
 - a If a problem occurs during **fn_setup**, check the `/fnsw/local/logs/fn_setup/fn_setup.log` file to determine what went wrong. After you have corrected the problem, go back to Step 1 and run **fn_setup** again.
 - b If there were no problems, continue with the next section.

Modify TCP/IP Port Settings (optional)

Server Types

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

In this section, you will set up the **/etc/rc2.d/S69inet** file to improve the throughput of your FileNet system. This addition expands the number of available ephemeral ports and reduces the time-out delay. This addition not required, but has been found to be optimal when running FileNet software. Unless you have set these options for other system reasons, we recommend that you make these changes.

- Ephemeral ports are temporary ports assigned by a server's IP stack, and are assigned from a designated range of ports for this purpose. When network traffic is extremely heavy, it's possible to run out of ephemeral ports unless you specify a wider range of port numbers in **/etc/rc2.d/S69inet**.
- The **tcp_time_wait_interval** parameter determines the length of time the server waits before reusing a closed ID socket. Although the default value is typically around 240000 milliseconds (four min-

utes), this parameter can safely be reduced to as little as 30000 milliseconds (30 seconds) on high-speed networks.

- 1 If you are a Solaris 9 user, make a backup copy of the **/etc/rc2.d/S69inet** file before you modify it. If you are a Solaris 10 user, create a new, blank **/etc/rc2.d/S69inet** file.
- 2 As a user with **root** privileges, verify you have write permission on the this file by entering:

```
chmod 754 /etc/rc2.d/S69inet
```

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

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

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

Note If this does not work, Sun suggests Solaris 10 users use SMF (Service Management Facility) manifest files. You can download and enable the sample manifest files (network-anon.xml) from **<http://opensolaris.org/os/community/smf/manifests/>**. If you have questions, please contact Sun technical support.

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:

```
/etc/shutdown -i6 -g0 -y
```

The system will shutdown and reboot automatically. (Image Services error messages will display during the reboot because the system has not been fully configured.)

Configure tty Ports (Optional)

Server Types

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

If your site has already configured a tty port for the modem or the optical disk device used for Image Services, skip this section.

If you are using a FileNet OSAR (64, 90, 96, and so on), use the **admintool** (Solaris 9) or the **SMC** (Solaris 10) to configure a tty port for a modem or for the optical disk device arm.

Note If you are using a multi-port serial/parallel board in your server, insure that the board is configured for RS232 protocol. In addition, OSAR arms and modems must address serial ports **ttty00** through **ttty07**.

Configure the Optical Device Port on Solaris 9

- 1 Logon as a user with **root** privileges.
- 2 In X Windows, open a new window and enter the following command:

admintool &

The Admintool window displays.

- 3 From the Admintool window, select the Browse menu option, then select Serial Ports.
- 4 Select the tty port number you wish to use (a or b).
- 5 Select Edit.

- 6 Select Modify. (The Admintool: Modify Serial Port window displays.)
- 7 From the Admintool: Modify Serial Port window, select Template. (A pull-down list displays.)
- 8 From the pull-down list, select Dial-out only.
- 9 In the Detail section, select Expert.
- 10 In the Options section, select Software Carrier.
- 11 Select Apply to configure the port.
- 12 Select **OK**.

Configure the Optical Device Port on Solaris 10

- 1 Logon as a user with **root** privileges.
- 2 In X Windows, open a new window and enter the following command:

smc &

The main SMC screen displays.

- 3 From the main SMC window, expand **This Computer**, then expand **Devices and Hardware**.
- 4 From the SMC window, select Serial Ports.
- 5 In the right pane, select the tty port name you want to use (a or b) and right-click on that port name.
- 6 Select Configure and choose the Modem (Dial Out) template from the list of choices.
- 7 Click **OK** to close the dialog.
- 8 Right-click the tty port name again and select Properties.
- 9 Select the Advanced tab and at the Carrier Detection: option click the Software radio button.
- 10 Click **OK** to close the dialog.

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 153.**

If you're adding an **Application server**, skip to the section, **“Configure the Root Server” on page 209** in Appendix A.

If your adding a **Storage Library server**, skip to the section, **“Configure the Root Server” on page 261** in Appendix B.

Configuring FileNet Image Services Software

In this chapter you will configure the FileNet Image Services software installed on your system. After the software is configured, you will initialize the database tables for use with the Image Services software.

Logon to the Configuration Database

Server Types

Perform the steps in this section on these servers:

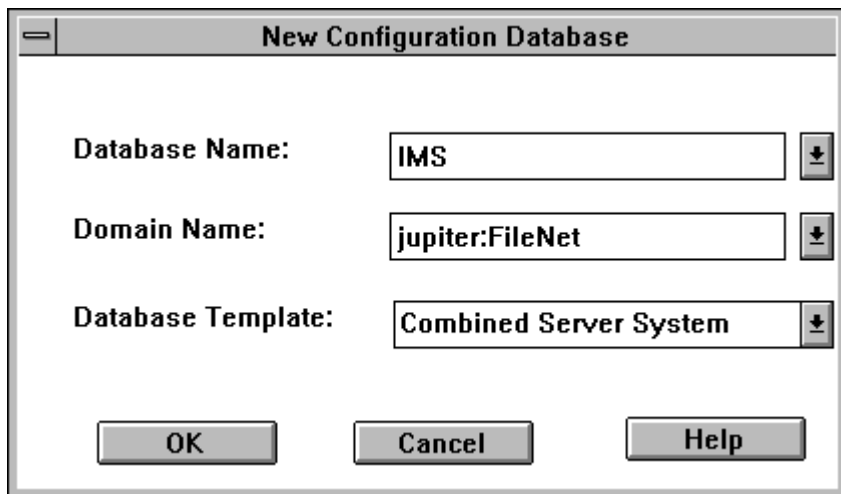
Root/Index server during a Dual server installation.

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

Application server running WorkFlo Queue Services or SQL Services.

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

fn_edit &



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

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

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

CAUTION

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

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

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

- 6 You will receive several query prompts. The prompts you receive depend on which template you selected earlier. Refer to the **“Installation Worksheet” on page 86** to provide the appropriate answers.

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

When you're prompted for information about your relational database management system, DB2 or Oracle, 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 the **“DB2 Database Information” on page 99** or the **“Oracle Database Information” on page 102**.

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

- Select the relational database type (Oracle 9i/10g, DB2 V8.1/V8.2).

- 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.

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

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

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

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

Select and Configure the Relational Database Instance (if applicable)

Important

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

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

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

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

The Database Administrator has probably already supplied this infor-

mation in the section, **“Install Relational Database Software” on page 97** in Chapter 3.

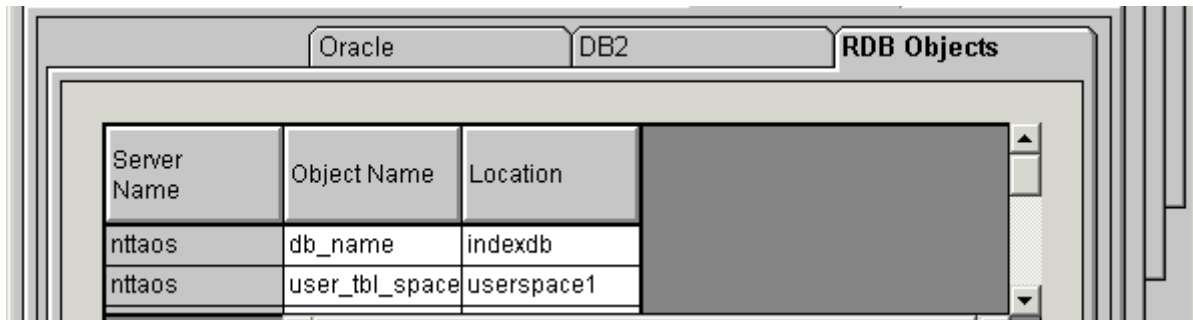
Continue with the appropriate sub-section:

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

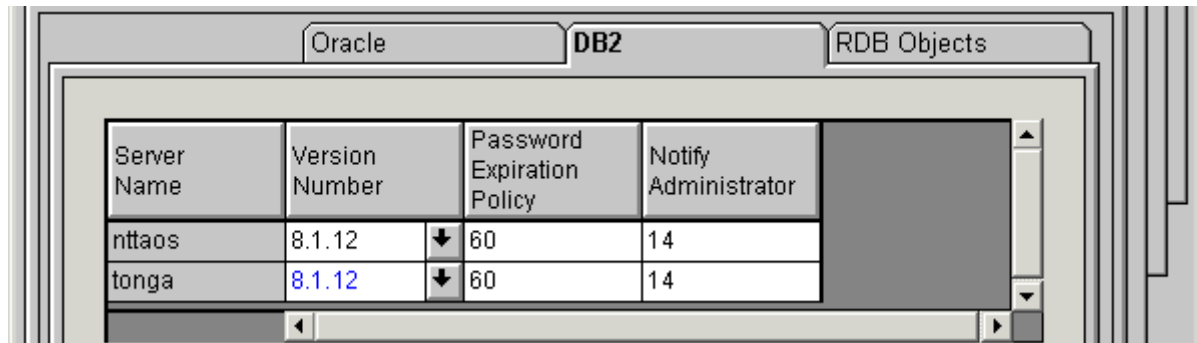
DB2 V8.x

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:



The screenshot shows a configuration window with tabs for 'Oracle', 'DB2', and 'RDB Objects'. The 'DB2' tab is selected, displaying a table with the following data:

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

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

Note

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

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

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

- 4 Skip to the section, **[“Verify the Image Services Character Set” on page 165.](#)**

Oracle 9i/10g

Verify the Tablespace Names

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

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

- 2 In the Location column of the RDB Objects window, click on a cell and replace the default FileNet tablespace names with the site-specific tablespace names. While replacing the tablespace names, use the following criteria:
- Change all occurrences of **fnsys_ts** to the name of your dedicated FileNet default tablespace for FileNet tables.
 - 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 to 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 the Version is **9.2.0.8**, or **10.2.0.2** or later.

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 DB2 or Oracle character set; for example, ISO 8859-2. Refer to the **“Installation Worksheet” on page 86.**

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 from the main edit menu 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 **“Create Logical Volumes for Image Services” on page 77** 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 is **16 GB** for dataset caches.
- If you need a larger cache, you need to run the Add Additional Dataset procedure under the Procedures tab.
- You can have a total of 255 more dataset volumes, each 16 GB in size.

Note

Supporting 255 cache dataset volumes, each 16 GB in size, allows for terabyte caches. The maximum cache size is 4080GB, or 4 terabytes. Refer to the **[“Installation Worksheet” on page 86](#)** for previously defined or calculated dataset sizes.

Configure Logical Cache (Optional)

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

Note Refer to the **“Installation Worksheet” on page 86** for information concerning your cache percentages.

- 3 To modify the minimum or maximum allocation for each cache configured, click on the white box below the minimum or maximum column of each cache allocation you want to change, and enter the new value into the field.
- 4 The Locked, Daemon, and Write Threshold (%) values are set to default values. It is recommended that these values are left set to their default values.

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

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

Configure System Document Services Parameters (Optional)

- 1 Click on the System Application Services tab in the FileNet 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. You can change document and surface id ranges in this menu.

Note Click Help if you have any questions on the parameter values.

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

These parameters are set to default values by the software. To change any of these parameters, click on the field of each parameter you want to change, and type in the new value.

Configure the MKF Database Parameters

Server Types

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

- 1 Click on the MKF Databases Tab in the FileNet System Configuration Editor window.
- 2 The MKF database parameters are set to default values by the software. These parameters must 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 GB. Click Help if you have any questions on the parameter values.

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

Configure Network Parameters

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

Before beginning the steps included in this section, you must know the server's TCP/IP address. (Refer to the [**"Installation Worksheet" on page 86**](#) for this information.)

To configure the network parameters, complete the following steps:

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

You can enter up to eight IP 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

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

Edit Volume Daemon Configuration File (Solaris 9 Only)

To avoid receiving an error message unformatted media, complete the following steps. Solaris 9 is confusing unlabelled media in a storage library with unformatted media causing the user to receive a message similar to the following:

```
Media format - /vold/dev/rdisk/clt4d0/unknown_format
```

- 1 Change directory to /etc and edit the vold.conf file using a text editor.
- 2 Comment out the **rmdisk** line in the file.

```
#ident  "@(#)vold.conf 1.26  00/07/17  SMI"
#
#Volume Daemon Configuration file
.
.
#Devices to use
use cdrom drive /dev/rdisk/c*s2 dev_cdrom.so cdrom%d
use floppy drive /dev/rdiskette[0-9]dev_floppy.so flopp
#use rmdisk drive /dev/rdisk/c*s2 dev_rmdsk.so rmdsk%d
```

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)

Verify Oracle Variables on the Root Server

Note

This section applies to both local and remote Oracle instances.

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

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

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

As each user, enter the following commands:

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

- 2 Compare the output of the above command to the setting determined in **“Oracle Variables” on page 102**. If the ORACLE_SID and the ORACLE_HOME are not set correctly, see the Database Administrator for the system to have the settings changed.

CAUTION

In addition, the Database Administrator must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. Refer to the Tablespace table in **“Tablespace Names and Sizes” on page 103** for this information.

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

3 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 **fns**w, run the following command on the IS server:

fn_oracle setquotas

This command creates the /fns/w/local/oracle/ora_users.sql file.

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

/fns/w/oracle/FileNet.sql

/fns/w/local/oracle/ora_users.sql

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

```
SQL>@FileNet.sql
```

(grants privileges to FileNet Image Services users)

```
SQL>@ora_users.sql
```

(assigns quotas, default tablespaces, and temporary tablespaces)

Initialize FileNet and RDBMS Databases on the Root Server

Use the procedures below to initialize the FileNet databases.

As the FileNet software user such as **fnsw**, initialize the index database and all the MKF databases (includes permanent, transient, and security databases) by entering the following commands on the Image Services server:

```
fn_setup_rdb -f
```

```
fn_util init > /fnsw/local/logs/init.log
```

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

Note View the **init.log** file after initializing to verify that there were no errors in the database initialization process.

Bring Up FileNet Software on the Root/Index or Combined Server

- 1 As the FileNet software user such as **fnsfw**, and enter the following command to bring up the FileNet software:

initfnsfw start

Note Before starting the Task Manager interface, verify that the DISPLAY variable is set (for example, export DISPLAY="domain:0" for bsh, or setenv DISPLAY domain:0 for csh. (For more information on setting the DISPLAY variable, see [**"Software Tuning for COLD Users \(Optional\)" on page 195**](#). After you have set the system variables, return to this section.

Important

For Remote Oracle databases: If the Oracle database is located on a remote server, Verify that the oracle instance is running.

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

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

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

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

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

CAUTION

The Database Administrator must start the RDBMS software before attempting to start the FileNet Image Services software for the first time. If the DB2 or Oracle 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.

- 2 Start the updated FileNet application software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

- 3 After the **TM_daemon** 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 FileNet software starts. After the FileNet software startup process finishes, the CLOSE button is highlighted.
- 7 Select the CLOSE button. (The Current Status window closes.)
- 8 Review the contents of the Event Log window to verify that there are no error messages from the software startup.

Verify Storage Library Device Drivers on a Combined Server

Server Types

Perform the steps in this section on these servers:

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

If you're configuring a Root/Index server, skip to the section, **[“Modify the /etc/inittab File on the Root Server \(Optional\)” on page 188.](#)**

If you're configuring a cache-only or MSAR system (no optical devices attached to the Storage Library server), skip to the section, **[“Configure Storage Library Device\(s\) on the Combined Server” on page 186.](#)**

Connect Storage Library Device(s)

- 1 Logoff the system, and power off your server.

- 2 Connect the optical storage device to the appropriate SCSI port on your server.
- 3 Power on the optical storage device. (If necessary, wait for the optical device to enter the ready state before continuing with the next step.)
- 4 Power on your server. After the server finishes booting, logon as a user with **root** privileges.

CAUTION

If you have an HP 600FX (configured in multi-LUN mode) connected to your server, do not use **probe-scsi-all** to interrogate the SCSI bus device status. The command will cause errors, and will not detect devices properly.

- 5 At the system prompt, enter the following command:

reboot -- -r

All currently connected optical devices must be configured automatically after the system restarts.

- 6 After the station finishes booting, logon as a user with **root** privileges.
- 7 Verify that all devices are configured properly. List the currently installed optical device drivers by entering the following commands:

ls /dev/fnsod*

You must receive output similar to the following:

```
/dev/fnsod.0,2,5,0  
/dev/fnsod.0,2,6,0
```

Verify/Configure Storage Library Device(s)

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

Note

If you select the Manually configure optical library option from the Procedure list, then consult your Help Text to configure the optical library.

The id format for both the optical library arm and drive devices must be:

<#> <#> <#> <#> for example: **1 2 3 4** where:

The **first** number is the **SCSI adapter id**

The **second** number is the **bus id**

The **third** number is the **device id**

The **fourth** number is the **LU#**

Use the **probe-scsi-all** tool to retrieve the scsi parameter output for the optical devices connected to your system. (If you have an HP 600FX connected to your server, DO NOT use the **probe-scsi-all** command. The command will cause errors, if the device is configured in multi-LUN mode.)

Refer to the **[“Installation Worksheet” on page 86](#)** for information concerning your optical library devices.

Configure Storage Library Device(s) on the Combined Server

Note If there are no physical storage libraries attached to the server (as in an MSAR or cache-only system), skip to the next section, **“Modify the /etc/inittab File on the Root Server (Optional)” on page 188.**

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

- 1 As the FileNet software user such as **fnsw**, launch the FileNet Configuration Editor by entering:

fn_edit &

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

The FileNet System Configuration Editor window displays.

- 3 From the Procedures tab in the FileNet System Configuration Editor window, locate and select the Automatically configure storage library procedure from the list of available procedures.
- 4 Select Run.
- 5 Check the Storage Libraries tab to verify that the correct Storage Library devices were configured.

Manually Configure an Optical Disk Unit (ODU)

To manually configure the ODU on your system, perform the following steps:

- 1 Select the Procedures tab from the FileNet System Configuration Editor window.
- 2 Select the Manually configure storage library option from the procedures list. Click Run. (A new dialog box displays.)
- 3 From the new dialog box, locate and highlight the HP Optical Drive Unit option. Click OK.

- 4 Respond to the prompts as appropriate for your system.

Exit the Configuration Editor

Exit the Configuration Editor and save your changes.

Rebuild the System Configuration Files

To put your changes into effect, stop the FileNet software and rebuild the system files by entering the following commands as a user with **root** privileges:

```
killfns -DAy  
fn_build -a
```

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

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

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

If the Relational Database is not available when the Image Services software starts, the Image Services software generates error messages. If you receive error messages of this type, start the DB2 or Oracle software, and then restart the Image Services software.

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

cd /etc

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

Important If this command is re-enabled, the Database Administrator must ensure the DB2 or Oracle software is up and running before the FileNet Image Services software restarts.

- 3 Locate and re-enable (by removing the `:` symbol) the following line:

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

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

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

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

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

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.

Completing the Installation

Overview

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

- Verify Window Manager Selection for Exceed
- Software tuning for COLD users
- Adapting the system for Xstation use
- Configuring the System Information Messenger
- Support for PCI-X Dual Channel SCSI Adapter
- Install any remaining fixes
- Making system backups

Verify Window Manager Selection

Server Types

Perform the steps in this section on the PC workstations that log in remotely to the Sun server.

To verify that the Storage Administrator screens display correctly, follow these steps:

- 1 Click the Start menu, point to Programs, Exceed, and click on Xconfig.
- 2 When the Xconfig window displays, double-click the Window Mode icon (Exceed 5.1.3) or the Screen Definition icon (Exceed 6.0).
- 3 In the resulting window, verify that the Window Manager selection is set to **Native**.
- 4 If necessary, select the correct option from the pull-down menu.
- 5 Click **OK** to close the window.

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, could 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 must 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 with errors. Instead, COLD should verify that DISPLAY is set, and if not, log a clear error message, then stop.

Adapt System for Xstation Use (Optional)

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

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

If you plan to run Xapex from an Xstation, you must modify certain system parameters. (The modified parameters disable your access control option and allow you to run applications from an Xstation.) To modify the appropriate parameters, enter commands similar to the following:

```
cd /usr/lib/X11
xset q
```

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

Note

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

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

Configure the System Information Messenger

Server Types

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

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

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

Support for PCI-X Dual Channel SCSI Adapter

Some HP optical libraries have been found to have specific issues when configured on Solaris 10 using the PCI-X Dual channel Ultra320 SCSI (LVD/SE) Adapter. This configuration works correctly on Solaris 9 and diagnostic information has been submitted to Sun service. A patch was not yet available at the time of this release, but there are workarounds for a couple of issues. For more information, see [**“Appendix E – Support for PCI-X Dual Channel Ultra320 SCSI \(LVD/SE\) Adapter” on page 315.**](#)

Install Service Packs and Fix Packs (Optional)

Server Types

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

Now you can install any Fix Packs or Service Packs that apply to Image Services 4.1. Read the accompanying README file, which contains the instructions for installing the software.

MSAR Systems

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

To configure an MSAR System, refer to the *MSAR Procedures and Guidelines* document for information.

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

Bring Up the FileNet Software

Server Types

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

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

killfnsf -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 mes-

sages. If you receive Image Services error messages, start the RDBMS software and restart the Image Services software.

- 3 After the **TM_daemon.exe** message displays in the Process table, select the Monitor menu.
- 4 From the Monitor menu, select the Event Logs option. (The FileNet Event Logs window displays.)
- 5 From the Event Logs window, select the DISPLAY menu, and select Dynamic. (The Dynamic option enables screen refreshes each time the messages are logged.) Return to the FileNet Task Manager window, but do not close the Event Logs window.
- 6 From the FileNet Task Manager window, select START.

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

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

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

Make System Backups

Server Types

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

Regular backups of the system configuration files and data are required.

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

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

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

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

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

Begin Production Mode

This concludes the Image Services 4.1 Installation and Configuration Procedures for the Solaris Operating System. The FileNet Image Services system is now ready to put into production.

Appendix A – Adding an Application Server

This appendix describes how to add an Application server to your Image Services system. Perform all of the steps in this appendix on the Application server unless stated otherwise.

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

- Add services to an existing server (for example, adding Batch Entry Services to an existing Application server). See the section, **“Add Server Services” on page 217.**
- Reconfigure an old server because the functions it performs are no longer required. (Reconfiguring an old server must 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 DB2 Relational or Oracle 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:

- If you're configuring an Application server with only Batch, Print, and/or Cache Services, which do not require RDBMS software, skip to **“Install Image Services Software” on page 208.**
- If the DB2 or Oracle relational database software is already installed, you can also skip to **“Install Image Services Software” on page 208.**
- If you are configuring an Application server with either WorkFlo Queue Services, SQL Services, or VWServices, continue with the next section to install the DB2 or Oracle software.

Install Relational Database Software (if applicable)

Server Types

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

IBM DB2 V8.1 and DB2 V8.2

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

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

Oracle 9i and Oracle 10g

For guidelines on installing Oracle RDBMS software on the Application server, refer to the *Guidelines for Installing and Updating Site-Controlled Oracle 9i and 10g Software on UNIX Servers*. To download the guidelines from the IBM support page, see [“Accessing IBM FileNet documentation” on page 28.](#)

Install Image Services Software

Server Types

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

Install the Image Services 4.1 software on the Application server by completing the procedures in [Chapter 4, “Installing FileNet Image Services Software,” on page 104.](#)

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

Configure the Root Server

Server Types

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

Root/Index server during a Dual server installation)

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

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

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

fn_edit &

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

The FileNet System Configuration Editor window displays.

- 4 Click the **Procedures** Tab in the System Configuration Editor Window.
- 5 Select the Add an Application Server option from the procedure list and click **Run**.

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

- 6 In the new dialog box, enter the name of the new Application server. The server name of the Application server is user-defined. Click **Next**.
- 7 At the prompt. “Is this a Windows Application Server?”, answer **Yes** if the new Application server is a Windows NT® server. The default is **No**.
- 8 Enter the network address of the Application server (refer to the **“Installation Worksheet” on page 86**). Click **Next**.
- 9 To add additional Application servers to your system, click on the Procedure Tab in the System Configuration Editor window and repeat Steps 5 through 8.

Select and Configure the Relational Database Instance (if applicable)

Note This procedure assumes that the tablespaces and databases that you specify in the System Configuration Editor either already exist or that

you will create them before you initialize the FileNet databases.

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

For **Oracle**, see *Guidelines for Installing and Updating Site-Controlled Oracle 9i and 10g Software on UNIX Servers* for more information.

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

The Database Administrator has already supplied this information in the section, [“Install Relational Database Software” on page 97.](#)

Continue with the appropriate sub-section:

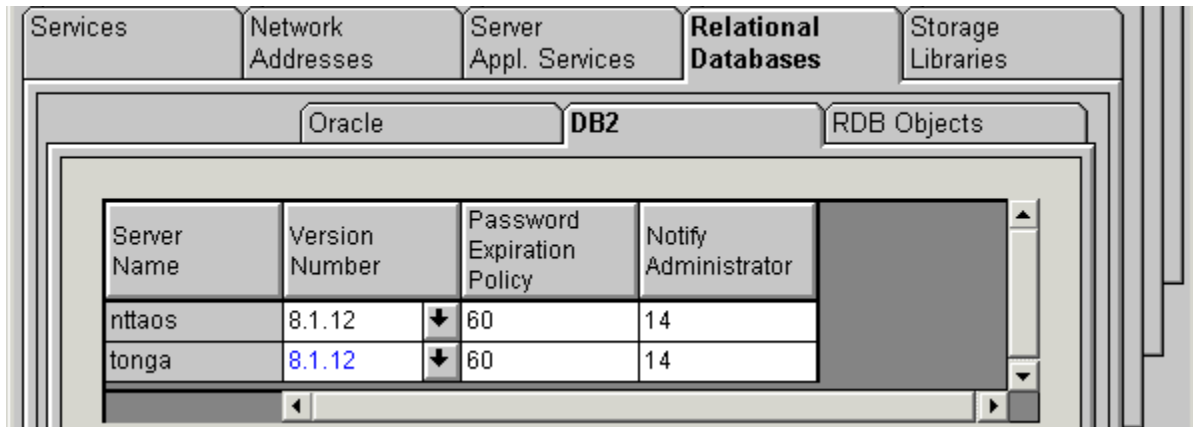
- [“DB2 V8.1/V8.2” on page 213](#)
- [“Oracle 9i/10g” on page 215](#)

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 equals "Never Expires."

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

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

- 4 Skip to the section, **[“Add Server Services” on page 217.](#)**

Oracle 9i/10g

Verify the Tablespace Names

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

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

- 2 In the Location column of the RDB Objects window, click on a cell and replace the default FileNet tablespace names with the site-specific tablespace names. While replacing the tablespace names, use the following criteria:
- Change all occurrences of **fnsys_ts** to the name of your dedicated FileNet default tablespace for FileNet tables.

- 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 to 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 the Version is **9.2.0.8**, or **10.2.0.2** or later.

Add Server Services

Server Types You must configure all Application server services 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 On the Procedures tab, use the scroll bar to locate the Add a Service to a Server procedure from the list of available procedures.

- 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_r10**.
- 8 Enter the size of the transient dataset sizes. (The defaults are as follows: transient_db0 -3 20 MB and transient_r10 - 256 MB.)

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

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

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

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

- 10 Enter the number of BES commitment processes. Choose **2** (the default) or **4**.
- 11 If this is the last service you’re adding to the Application server, skip to the section, [**“Exit the Configuration Editor” on page 227.**](#)

Add Print Services and Printer

- 1 From the Procedures tab, using the scroll bar, select the Add a Service to a Server procedure from the list of available procedures.
- 2 Click Run. (A dialog box displays prompting you for the domain name in which the Application server resides.)
- 3 Select the Application server domain name. (A new dialog box displays containing a list of services that can be added to an Application server.)
- 4 From the list of available services, choose Print Services.
- 5 Click **Yes** to add Print Services. (If you select Yes, default settings are automatically entered into the system. You can change the settings later, if necessary.)
- 6 From the Procedures tab, using the scroll bar, select the Add a printer procedure from the list of available procedures.
- 7 Click **Yes** if this is your default printer.

- 8 Enter a printer name. Click **OK**. (The printer name can be user defined.)
- 9 Enter the Network Clearing House (NCH) Printer name (for example, LJ5SiMX).
- 10 Enter the network address for the printer (for example, 10.0.85.245).
- 11 Select the Printer paper size.
- 12 Select the printer Eject Tray (default: Default)
- 13 Add other printers as necessary by repeating steps 6 through 12.
- 14 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 227**.

Add Cache Services

If you have already added Batch Entry services, and have set up the appropriate default caches for Caches Services (as well as Batch

Entry services), you DO NOT need to complete this section. You have already configured Cache Services.

- 1 From the Procedures tab, using the scroll bar, select the Add a Service to a Server procedure from the list of available procedures.
- 2 Click Run. (A dialog box displays prompting you for the domain name in which the Application server resides.)
- 3 Select the Application server domain name. (A new dialog box displays containing a list of services that can be added to an Application server.)
- 4 From the list of available services, choose Cache Services.
- 5 Click **OK**.
- 6 If this is the last service you're adding to the Application server, skip to the section, **[“Exit the Configuration Editor” on page 227.](#)**

Add Structured Query Language (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 FileNet 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 **For Oracle servers**, go to the RDB Object Tab and verify that the correct tablespace name associated with the Application server appear.
- 6 **For DB2 servers**, complete the following when prompted:

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

- 7 If this is the last service you're adding to the Application server, skip to the section, **"Exit the Configuration Editor" on page 227.**

Add WorkFlo Queue Services (WQS)

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

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

- 1 Click on the Procedures tab in the FileNet 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 Service.
- 5 **For Oracle servers**, go to the RDB Object Tab and verify that the correct tablespace name associated with the Application server appear.
- 6 **For DB2 servers**, complete the following when prompted:
 - f_sw password
 - f_maint password
 - f_sqi password
 - DB2 Database Alias Name
 - User Tablespace Location
- 7 If this is the last service you're adding to the Application server, skip to the section, **[“Exit the Configuration Editor” on page 227.](#)**

Add VWServices

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

Exit the Configuration Editor

- 1 From the System Configuration Editor window, click on File and click on Exit.
- 2 Click **Yes** to save the configuration and exit the System Configuration Editor.

Rebuild the Root Server's Configuration Files

Server Types

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

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

initfnsw -y stop

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

fn_build -a

This will generate configuration files used by components of the Image Services software. Running **fn_build** automatically creates the Network Clearinghouse database file (/fnsw/local/NCH_db0) if the program does not find an existing file.

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

initfnsw start

Configure the Application Server

Server Types

Perform all of the procedures in this section (and associated sub-sections) on the **Application server**. FileNet Image Services software must be up and running on the Root server.

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

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

Important

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

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

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

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

Set Ownerships and Permissions

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 86](#)** for the appropriate information.

- 1 Verify that you are logged on as a user with **root** privileges (**the first time**).

- 2 Run **fn_setup** by entering the following command:

/fnsw/bin/fn_setup

Answer all the prompts with appropriate information for this server.

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

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

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

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

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

`Enter system serial number [1234567890]:`

Important

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

- d Relational databases are only configured on servers with Index services, WorkFlo Queue Services (WQS), VWServices, or SQL services. If you are configuring an Application server without one 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 RDBMS instance, accept the default RDBMS-related values listed at each prompt.

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

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

Enter the RDBMS home directory [/home/fnsf/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.

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

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

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

```
This is the setup configuration:
NCH server name:  hpvenice:YourCorp
SSN:  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]:
```

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

You then receive messages similar to the following:

```
fn_setup: Creating file /fnsw/local/setup_config
fn_setup: Changing permission on FileNet software and
databases
```

When **fn_setup** is finished, the system prompt will display.

Build Configuration Files on the Application Server

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

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

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

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

```
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.

Create Logical Volumes

Server Types

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

To create the appropriate volumes, complete the following general instructions. (These general instructions are valid for the partitions shown below.)

1 As a user with **root** privileges, use the Volume Manager.

Tip To place the file system on a specific disk, click the disk on which you want to configure the file system.

- 2 Create the necessary volumes by entering the appropriate information for each volume needed in your system.

Place the volume on any disk with available space. However, be aware that these Image Services data bases are raw data volumes. The table below shows the volume sizes recommended by FileNet, and provides space to record your own volume sizes.

Volume Name	Minimum Size	Your Size (in MB)
fn_cache0	100m	
fn_transient_db0	320m	
fn_transient_rl0	256m	

Change Volume Settings

After you have created the appropriate volumes, you must configure the remaining volumes for proper operation. (Use the settings shown in Step 3 for each volume you modify.)

- 1 Select the **fn dg** disk group.
- 2 Select the volume you wish to configure (for example, fn_cache0).
- 3 A new menu displays. From the new menu change the following settings:

Parameter	Setting
User	fnsw
Group	fnusr
Mode	664

- 4 Select Apply to save and exit.
- 5 Repeat steps 2 through 4 for each volume that needs to be changed.

- 6 After you have modified all of the necessary volumes, exit the Veritas software.

Set Up Links Required for Image Services

Server Types

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

In this section you will link the Image Services and RDBMS data base names to their partitions by creating the **filenet.links** file and entering the correct soft link information into the new file.

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

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

Note

The `/dev` and/or `/1` directories may already exist. If you get a message similar to the following: `mkdir: cannot create dev: File exists`, one or both of the directories already exist.

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

Include a soft link command for each of the data bases that you created in the previous section. Link the data base name to the logical volume where you placed the data base by entering a command structured similar to the following, depending on the volume management software you are using:

VERITAS Volume Manager

```
In -s /dev/vx/<disktype>/<diskgroup>/<logical volume> dbname  
(with path, /fnsd/dev/1)
```

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

```
In -s /dev/vx/rdisk/fndg/fn_cache0 /fnsd/dev/1/cache0
```

Solaris Volume Manager

```
In -s /dev/md/rdisk/d###/ dbname (with path, /fnsd/dev/1)
```

where **md** stands for meta device, **d##** is the disk location of the partition and **dbname** is the database name. For example:

In -s /dev/md/rdisk/d1 /fnsd/dev/1/cache0

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.)

Note

In the **filenet.links** file, you MUST have unique logical volume assignments for all partitions.

Verify that no two partitions share the same logical volume assignment and that no partition is assigned to a logical volume occupied by the any part of the operating system.

Your file must look similar to the following, depending on the volume management software you are using:

VERITAS Volume Manager

```
In -s /dev/vx/rdisk/fndg/fn_cache0 /fnsd/dev/1/cache0  
In -s /dev/vx/rdisk/fndg/fn_transient_db0 /fnsd/dev/1/transient_db0  
In -s /dev/vx/rdisk/fndg/fn_transient_rl0 /fnsd/dev/1/transient_rl0
```

Solaris Volume Manager

```
In -s /dev/md/rdisk/d1 /fnsd/dev/1/cache0  
In -s /dev/md/rdisk/d1 /fnsd/dev/1/transient_db0  
In -s /dev/md/rdisk/d1 /fnsd/dev/1/transient_rl0
```

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

```
chmod 755 filenet.links
```

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

- 5 Execute the **filenet.links** file.

- 6 Examine the contents of the /fnsw/dev/1 directory.

Note To display the volume owner and group use information, enter the following command:

ls -lL

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

The directory must contain the linked directories specified in the **filenet.links** file. If not, verify the permission on the **filenet.links** file, and execute the file again.

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 **“Initialize the FileNet Databases” on page 249.**

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

Configure FileNet Datasets on the Application Server

Skip to the appropriate section:

- **“On Application Servers with DB2 Client Software” on page 246**
- **“On Application Servers with Oracle Software” on page 246**

On Application Servers with DB2 Client Software

Note This section applies only to remote DB2 instances.

Ask the **Database Administrator** to start the DB2 software before initializing the FileNet databases.

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

Skip to the section, [**“Initialize the FileNet Databases” on page 249.**](#)

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 102**. If the ORACLE_SID and the ORACLE_HOME are not set correctly, see the Database Administrator for the system to have the settings changed.

CAUTION

In addition, the Database Administrator must create the default tablespaces with the names you entered in the FileNet System Configuration Editor. Refer to the Tablespace table in **“Tablespace Names and**

Sizes” on page 103 for this information.

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

3 Remote Oracle Servers Only:

Important

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

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

fn_oracle setquotas

- 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 this script on the remote Oracle server:

SQL>@**FileNet.sql**

(grants privileges to FileNet Image Services users)

SQL>@**ora_users.sql**

(assigns quotas, default tablespaces, and temporary tablespaces)

Initialize the FileNet Databases

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

fn_util init

The **fn_util init** will initialize the FileNet databases for this Application server. After the databases are initialized, the program checks for the presence of transient.ddl file in the /fns/w/local/sd/1 directory.

Reset File Ownerships and Permissions

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

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

`/fnsw/bin/fn_setup`

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

Bring Up FileNet Software

Server Types

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

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

killfnsw -DAy

- 3 Start the updated FileNet Application server software:

Xtaskman &

The FileNet Task Manager interface displays.

CAUTION

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

- 4 After the **TM_daemon** 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.

Modify the `/etc/inittab` File (Optional)

You must edit again the `/etc/inittab` file to allow the Image Services software to automatically start during the boot process.

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

If the Relational Database is not available when the Image Services software starts, the Image Services software generates error messages. If you receive error messages of this type, start the DB2 software, and then restart the Image Services software.

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

cd /etc
- 2 Using a preferred editor (for example, **vi**), open and edit the inittab file.
- 3 Locate the following line:

fn:3wait:/bin/sh /etc/rc.initfnsw </dev/console>/dev/console>&1
- 4 Remove the **#** sign from the beginning of the line. Save the change and exit the text editor.

Make System Backups

Server Types

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

Make complete system backups for the Root/Index server and the Application server. To make complete backups of your system configuration, 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 28.**](#)

Begin Production Mode

After you've backed up the system, the Application server is ready for production.

Appendix B – Adding a Storage Library Server

This Appendix describes how to configure multiple Storage Library servers on your system, and it is structured for use with some of the procedures already documented in the main body of this installation procedure. Where necessary, this appendix references procedures (by section name and page number) of the procedure you must perform. Some procedures necessary for adding multiple Storage Libraries are not documented elsewhere and have been included (in the appropriate sections) only in this appendix.

Before You Begin

To successfully complete the instructions in this appendix, you must have already gathered the information requested in the **“Installation Worksheet” on page 86** relevant to the Storage Library server(s).

If you have not completed the sections referenced above for all Storage Libraries, complete those sections before beginning the referenced sections or procedures included in this appendix.

Multiple Storage Library Server Uses

FileNet storage library software files and retrieves document images. The software controls every activity in the optical disk library to verify that all documents are stored and retrieved from the optical disks in an orderly and consistent manner.

The Storage Library server keeps track of the name and location of every document stored in the optical disk library. In addition, the server contains one or more magnetic disk drives to store images temporarily before they are written to optical disk permanently.

Multiple Storage Library servers can be setup on a system to enhance capacity and/or performance. Before you install and configure more than one Storage Library server on your system, review the following considerations:

- 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.
- If you already have as many optical disk libraries on a server as possible, or if you cannot physically fit another optical disk library in close enough proximity to the existing server, you need another server to add an optical disk library to the system and to allow the system to handle more disks on-line.
- If the CPU, I/O bus, or magnetic disks on a Storage Library server are already at their maximum throughput, adding an optical library server will increase performance. If, however, the existing server has not reached its performance limit, adding another optical library server will decrease performance slightly because of the overhead of controlling a second server.

Prepare Storage Library Server(s)

Server Types

Perform the referenced procedures listed below, in the order in which they appear, only on the **Storage Library server(s)** (unless instructed otherwise).

Note

You do not have to install RDBMS software on Storage Library server(s). Some of the referenced procedures contain information related to installing and configuring RDBMS software, ignore all procedures related to RDBMS configuration unless specifically instructed to perform an action.

- 1 Modify the server resources (if you have not already done so) by completing **[“Verify/Change the Operating System Kernel Limits” on page 50.](#)**
- 2 Verify that the /etc/host file contains the correct host names for the Root/Index and the Storage Library server(s) by completing **[“Add Peer Systems to the /etc/hosts File” on page 64.](#)**

- 3 Create the FileNet software user such as **fns**w and the **fnusr**, **dba**, **fnadmin**, and **fnop** groups by completing the relevant portion of **“Create FileNet Users and Groups” on page 67.**
- 4 Set the FileNet software user password by completing the relevant portion of **“Set Up Password for the FileNet Software User” on page 75.**
- 5 Install volume management software on the Storage Library server(s) by completing **“Verify Volume Management Software” on page 76.**
- 6 Create the Image Services file systems by completing **“Create Logical Volumes for Image Services” on page 77.**

Install Image Services Software

- 1 Install the Image Services software on the Storage Library server(s) by completing the section **“Load the Image Services Software” on page 107** and **“Run the Image Services Installer” on page 108.**

- 2 Install show stopper fixes on the Storage Library server(s) by completing **“Install the Required Pre-Startup Fixes” on page 130.**
- 3 Set the user environment setting by completing **“Set Up the FileNet Software User Environment” on page 133**, **“Set Up the root Environment (Optional)” on page 135**, and **“Verify/Modify root User Parameters” on page 137.**
- 4 Reboot the server by entering the following commands:

shutdown -i6 -g0 -y

The system displays several status messages and reboots automatically.

- 5 Continue with the next section. Perform the procedures only on the server indicated at the beginning of each section. (You may not need to perform some of the procedures included in this appendix.)

Configure the Root Server

Server Types

Perform all of the procedures in this section (and associated sub-sections) on the **Root server**, unless specifically instructed to perform them on a different server.

Clear the Transient Database

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

- 1 Verify that the FileNet Image Services software is up and running by entering the following command:

whatsup

You will receive a display similar to the following:

PROCESSES							
USER	PID	PPID	C	STIME	TTY	TIME	CMD
fns	12427	1	0	4:54:16	-	0:00	COR_Listen -px -s5 -d20
fns	21133	1	0	4:54:16	-	0:00	COR_Listen -px -s1099
fns	21385	1	0	4:54:16	-	0:00	COR_Listen -pt -d20
fns	22708	19844	0	4:55:18	-	0:00	CSM_daemon
fns	14810	1	0	4:58:16	-	0:00	CSMs
fns	15256	1	0	4:54:43	-	0:00	DOCs
fns	16275	1	0	4:54:14	pts/1	0:00	INXbg -s IndexServer
fns	16515	1	0	4:54:55	-	0:00	MKF_clean
fns	11420	1	0	4:54:53	pts/1	0:00	PRI_daemon
fns	12193	1	0	4:55:10	-	0:00	PRI_fetch 0

- 2** Print or delete all outstanding print requests.
- 3** Commit or delete all uncommitted batches.
- 4** Examine the remaining contents of cache by entering the following command:

CSM_tool

Note FileNet Image Services software must be running for **CSM_tool** to work properly.

- 5 To obtain statistics on `bes_cache`, `page_cache`, and `print_cache`, enter the following at the **CSM_tool** prompt:

st

No locked objects display in any cache. (Locked objects represent uncommitted batches, unwritten images, and pending print jobs.)

Note If you have any FAX servers, there will be two locked objects per FAX server in `print_cache`. 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)

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

fn_edit &
- 3 Verify that the domain information is correct. (The two-part domain name is structured as follows: <Domain>:<Organization>.)
- 4 Click on the Procedures tab in the FileNet Image Services System Configuration Editor window.
- 5 Select the Add a Storage Library Server procedure from the Select a procedure to run list box, then click Run.
- 6 Enter the name of the server.
- 7 Enter the domain name of the Storage Library server.

- 8 Enter the network address of the Storage Library server.
- 9 Enter the path for the cache dataset (default: /fnsd/dev/1/cache0).
- 10 Enter the cache dataset size.
- 11 Enter the path for the transient dataset (default: /fnsd/dev/1/transient_db0).
- 12 Enter the dataset size for the transient dataset.
- 13 Enter the path for the transient database redo log (default: /fnsd/dev/1/transient_rlog).
- 14 Enter the dataset size for the transient database redo log.
- 15 Respond to the Do you want to use fast batch committal? prompt by clicking **yes** or **no**. (If you select yes, default settings are automatically entered into the system. You can change the settings later if necessary.)

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

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

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

- 16 Enter the number of BES commitment processes.
(Choose 1 - 4.)
- 17 Enter the path for the permanent dataset (default: /fnsw/dev/1/permanent_db0).
- 18 Enter the dataset size for the permanent dataset.
- 19 Enter the path for the permanent database redo log (default: /fnsw/dev/1/permanent_rlog).

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

21 You can verify that you have entered the information correctly by clicking on the Network Addresses tab in the FileNet Image Services System Configuration Editor window. You see the Storage Library server listed.

Click on the Datasets tab to see the datasets you added to the Storage Library server including cache0, transient_db0, transient_rl0, permanent_db0, permanent_rl0. (In addition, click on Server Application Services tab; you see the Storage Library server listed.)

22 From the FileNet Image Services System Configuration Editor window, Click on the File pull down and click on the Exit option.

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

Rebuild Configuration Files on Root Server

- 1 Logon as the FileNet software user such as **fns**w.
- 2 Verify that the FileNet Image Services software is not running.

/fnsw/bin/fn_setup

Accept the default value at each prompt.

- 3 Enter the following command:

initfnsw -y stop

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

fn_build -a

This will generate configuration files used by components of the Image Services software. Running **fn_build** automatically creates the Network Clearinghouse database file (/fns

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

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

- 5 Start the X Windows environment (if you have not already) by entering the following command:

xinit

- 6 Start the FileNet application software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

- 7 From the FileNet Task Manager window, select RESTART.

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

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

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

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.

If you have configured an Optical Disk Library, but haven't physically connected the hardware, you may see the error tuple 30,0,2 after the system boots. Ignore the error message, the condition is corrected after the hardware is connected.

Configure Storage Library Server(s)

Set File Ownerships and Permissions

Server Types

Perform the steps in this section on the **Storage Library server(s) you are adding**.

In this section, you use the **fn_setup** tool to set the file ownership and permissions on the **Root** server. You will be asked for system-specific information.

- 1 Logon as a user with **root** privileges.
- 2 Run the **fn_setup** utility by entering the following command:

`/fnsb/bin/fn_setup`

Answer the prompts with information related to your system.

- a The NCH server is the generally the Root server. On a Storage Library 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. On a Storage Library server, enter the name of the Root server.

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

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

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

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 poten-

tial 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. On a Storage Library server, select **0**=none.

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

- 3 Indicate that you want to continue when prompted.
- 4 When **fn_setup** is finished, you will receive a message indicating “exit status = 0 (success)(this is not an error.)” If necessary, press **Return** to go the system prompt.

Build and Initialize the Storage Library Server

Server Types

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

This procedure will build the Storage Library server's configuration files and initialize the new server. The same version of Image Services software must already be installed on both the Root server and new Storage Library server(s). There must also be no NCH database already existing on the new Storage Library server(s).

Note

Verify that the FileNet software is running on the Root server before proceeding. (You can do a **whatsup** on the Root server.)

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

```
initfnsnw -y stop  
killfnsnw -DAy
```

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

fn_build -a

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

Create Logical Volumes

Server Types

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

You can use VERITAS Volume Manager or Solaris Volume Manager to create the new volume group.

Create the following file systems and volumes using either the virtual administrator or the storage administrator. The sizes shown in Table B-1 are **minimum** sizes.

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

Table B-1 FileNet Volumes

Volume Name	Mount Point	Minimum Size	User	Group	Mode
fn_cache0	n/a	100m	fnsww	fnusr	664
fn_permanent_db0	n/a	100m	fnsww	fnusr	664
fn_permanent_rl0	n/a	64m	fnsww	fnusr	664

Table B-1 FileNet Volumes

Volume Name	Mount Point	Minimum Size	User	Group	Mode
fn_transient_db0	n/a	320m	fnswh	fnusr	664
fn_transient_rl0	n/a	256m	fnswh	fnusr	664

Set up Links Required For Image Services

Server Types

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

In this section you will link the Image Services and RDBMS data base names to their partitions by creating the **filenet.links** file and entering the correct soft link information into the new file.

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

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

Note The /dev and/or /1 directories may already exist. If you get a message similar to the following: mkdir: cannot create dev: File exists, one or both of the directories already exist.

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

Include a soft link command for each of the data bases that you created in the previous section. Link the data base name to the logical volume where you placed the data base by entering a command structured similar to the following, depending on the volume management software you are using:

VERITAS Volume Manager

```
In -s /dev/vx/<disktype>/<diskgroup>/<logical volume> dbname  
(with path, /fnsw/dev/1)
```

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

```
In -s /dev/vx/rdisk/fndg/fn_cache0 /fnsw/dev/1/cache0
```

Solaris Volume Manager

```
In -s /dev/md/rdisk/d###/ dbname (with path, /fnsw/dev/1)
```

where **md** stands for meta device, **d###** is the disk location of the partition and **dbname** is the database name. For example:

```
In -s /dev/md/rdisk/d1 /fnsw/dev/1/cache0
```

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.)

Note In the **filenet.links** file, you MUST have unique logical volume assignments for all partitions.

Verify that no two partitions share the same logical volume assignment and that no partition is assigned to a logical volume occupied by the any part of the operating system.

Your file must look similar to the following, depending on the volume management software you are using:

VERITAS Volume Manager

```
In -s /dev/vx/rdisk/fndg/fn_cache0 /fnsd/dev/1/cache0
In -s /dev/vx/rdisk/fndg/fn_permanent_db0 /fnsd/dev/1/permanent_db0
In -s /dev/vx/rdisk/fndg/fn_permanent_r10 /fnsd/dev/1/permanent_r10
In -s /dev/vx/rdisk/fndg/fn_transient_db0 /fnsd/dev/1/transient_db0
In -s /dev/vx/rdisk/fndg/fn_transient_r10 /fnsd/dev/1/transient_r10
```

Solaris Volume Manager

```
In -s /dev/md/rdisk/d1 /fnsd/dev/1/cache0
In -s /dev/md/rdisk/d1 /fnsd/dev/1/permanent_db0
In -s /dev/md/rdisk/d1 /fnsd/dev/1/permanent_r10
In -s /dev/md/rdisk/d1 /fnsd/dev/1/transient_db0
In -s /dev/md/rdisk/d1 /fnsd/dev/1/transient_r10
```

- 3 Save the changes.

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

chmod 755 filenet.links

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

- 5 Execute the **filenet.links** file.
- 6 Examine the contents of the `/fnsw/dev/1` directory.

Note To display the volume owner and group use information, enter the following command:

ls -lL

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

The directory must contain the linked directories specified in the **filenet.links** file. If not, verify the permission on the **filenet.links** file, and execute the file again.

Start Databases and Network Software

Server Types	Perform all of the procedures in this section on all of the Storage Library servers on the system.
---------------------	---

Note	Before proceeding with this procedure, verify that the Image Services software is running on the Root server.
-------------	---

- 1 On the Storage Library server, logon as the FileNet software user such as **fns**.
- 2 Enter the following commands:

```
fn_util inittrans  
fn_util initperm
```

The **fn_util inittrans** and **fn_util initperm** scripts initialize the transient and permanent databases on the Storage Library server. (After the databases are initialized, the scripts check for the presence of permanent.ddl and transient.ddl files in the /fns/local/sd/1 directory.)

Note If you are attaching an existing Storage Library server to a new system, you may receive the following message:

```
63,0,10 <fnsw> ds_init (14983) ... CRITICAL
The Scalar Numbers Table is behind the snt.chkpt file.
```

This message indicates the scalar numbers table and the checkpoint file are out of synchronization. Continuing in this condition may cause multiple documents to be committed with the same document ID. To solve this problem, you need to run the following commands to start the permanent database and update the scalar numbers table:

```
fn_util startdb
SNT_update
```

Document Services will not function until this problem is resolved. After SNT_update is finished, run fn_util init again.

- 3 Start the FileNet application software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

- 4 From the FileNet Task Manager window, select RESTART.
- 5 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.
- 6 Enter the following command on ALL Storage Library server(s):

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 New Storage Library Server(s)

Server Types

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

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 presence of 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 At the system prompt, enter the following command:

Xtaskman &

- 2 Click Backup. (This starts the COR.listen processes.)

- 3 Obtain the server id assigned to each new Storage Library server using one of the following bulleted methods:
- The server ID is assigned and viewed using the **fn_edit** utility; run **fn_edit**. Click on the Server Application Services tab, then the Scheduling sub-tab. Scroll to the right to see the OSAR 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 above example, the **nch_tool** command would be:

listprop OsarServer2

- 4 To run **add_osvr**, enter the following from any station with Storage Library Services:

add_osvr <server id 1> <server id 2> ... <server id n>

where **<server id 1> <server id 2> ... <server id n>** are the Storage Library server identification numbers of the servers you are adding. (These are not the station numbers.) Enter a space between each server id.

Entering **add_osvr** with no parameters displays a description of the program and a usage statement. After the **add_osvr** utility has completed successfully, you will see the following prompt:

```
program terminated successfully
```

Note If the system crashes or is rebooted while **add_osvr** is running, you can rerun the program. If **add_osvr** fails for any reason, correct the problem and rerun the program.

DO NOT run any other programs until **add_osvr** completes successfully. If the process cannot be completed, restore your system from the backup tape.

Restart FileNet Software

Server Types

Perform all the steps in this section on all of the **root server** first and then on each **Storage Library server** added to the system.

Perform the procedure in this section on the Root server first, and then on each Storage Library server added to the system.

- 1 On the Storage Library server, logon as the FileNet software user such as **fns** (if you aren't already).
- 2 Start the FileNet application software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

- 3 From the FileNet Task Manager window, select RESTART.

You will receive system messages in the Current Status window as the FileNet software starts.

Connect Storage Library Device(s)

Server Types

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

- 1 Stop the FileNet software by entering the following command:

initfnsw -y stop
- 2 Logoff the system, and power off your server.
- 3 Connect the optical storage device to the appropriate SCSI port on your server.
- 4 Power on the optical storage device. (If necessary, wait for the optical device to enter the ready state before continuing with the next step.)
- 5 Power on your server. After the server finishes booting, logon as a user with **root** privileges.

CAUTION

If an HP 600FX (configured in multi-LUN mode) is connected to the server, do not use **probe-scsi-all** to interrogate the SCSI bus device status. The command will cause errors, and will not detect devices properly.

- 6 At the system prompt, enter the following command:

reboot -- -r

All currently connected optical devices must be configured automatically after the system restarts.

- 7 After the server finishes booting, logon as a user with **root** privileges.
- 8 Verify that all devices are configured properly. List the currently installed optical device drivers by entering the following commands:

ls /dev/fnsod*

You must receive output similar to the following:

```
/dev/fnsod.0,2,5,0  
/dev/fnsod.0,2,6,0
```

Configure the Storage Library Device(s)

Server Types

Perform all of the steps in this section on **all Storage Library servers to which you added optical peripherals**.

Perform the procedure in this section on all Storage Library servers to which you added optical peripherals.

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

fn_edit &

- 3 Verify that the database and domain names are correct, and click **OK**. (The two-part domain name is structured as follows:<Domain>:<Organization>.)
- 4 From the FileNet Image Services System Configuration Editor window, select the Procedures tab.
- 5 Locate and select the Automatically Configure A Storage Library procedure from the list of available procedures.
- 6 Select Run.
- 7 Check the Storage Libraries tab to verify that the correct Storage Library devices were configured. Save the changes to the configuration database, and exit the Configuration Editor.
- 8 Build the system configuration files by entering:

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 the FileNet software user such as **fns** 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 re-saved, you may see a warning message. If so, add or change the preferred library information to match the current storage library configuration.

Modify the /etc/inittab File

Server Types

Perform all of the steps in this section on **all Storage Library servers to which you added optical peripherals**.

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

cd /etc
- 2 Using a preferred editor (for example, **vi**), open and edit the inittab file.
- 3 Locate the following line:

fn:3wait:/bin/sh /etc/rc.initfnsw </dev/console>/dev/console>&1
- 4 Remove the **#** sign from the beginning of the line. Save the change and exit the text editor.

Storage Library Server Utilities (Optional)

This section briefly describes the function and usage of the following Storage Library server utilities and is not part of the procedure:

- **move_disk**: allows you to move optical disks from one optical disk library to another.
- **del_osvr**: 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 on saving media families.

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

Moving Disks Between Storage Library Servers (Optional)

Run the **move_disk** utility if you want to move optical disks from an Optical Disk Library attached to your old Storage Library server to an Optical Disk Library attached to your new Storage Library server in order to balance disks equally between each server.

The **move_disk** utility does the following:

- Reads optical disk information from the Storage Library server database where it currently resides.
- Inserts the optical disk information into the destination Storage Library server database.
- Updates the surface locator table to point to the new location of the optical disk.

- Deletes the optical disk information from the source Storage Library server database where the disk previously resided.

To run **move_disk**, follow these steps:

- 1 Eject all disks to be moved from the Optical Disk Library as described in the “Storage Library Control” chapter of the *Image Services System Administrator’s Handbook*.

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

- 2 Run the **move_disk** utility from the source Storage Library server attached to the Optical Disk Library where the disks currently reside. Enter a command structured similar to the following:

```
move_disk <surfid 1> ... <surfidn> <dest_server_name>
```

where **<surfid 1> ... <surfidn>** represents the surface ids and **<dest_server_name>** represents the server id of the Storage Library server attached to the Optical Disk Library 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 is described in the “Storage Library Control” chapter of the *Image Services System Administrator’s Handbook*.

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

Deleting a Storage Library Server (Optional)

Use **del_osvr** to delete a Storage Library server utility. This utility removes a Storage Library server from a system and moves references to the optical disks from the deleted Storage Library server to a remaining Storage Library server.

The **del_osvr** utility does the following:

- Checks the Storage Library server for documents not written yet. If it finds any unwritten documents, it notes the problem and terminates. You must then either start the Storage Library server and let it finish the outstanding write_requests, or run **WRT_clean** to

remove them. Refer to the *Image Services System Tools Reference Manual* for information about **WRT_clean**.

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

- Copies all optical disk database information from each Storage Library server being deleted to the destination Storage Library server. It then deletes this information from each Storage Library server being deleted.
- Updates the family disk information on each deleted Storage Library server to remove all current, past, and future 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 referenced by a family are deleted, that family will be changed to reference all remaining Storage Library servers.

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

- 1 Backup the system to tape.

CAUTION

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 incomplete attempt to delete a Storage Library server.

- 2 Verify that there are no pending write requests for the Storage Library server to be deleted. If pending write requests exist, delete them.
- 3 Eject all disks out of the Optical Disk Library(s) on Storage Library server being deleted.
- 4 Stop the FileNet software on all Storage Library servers:

initfnsw -y stop

- 5 Run the **fn_util startdb** on every Storage Library server to start up the permanent and transient databases by typing the following:

fn_util startdb

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

del_osvr <svrid1> <svrid2> ... <svridn> <dest_server_num>

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 receiving the 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, run the **move_disk** utility to move optical disks, and 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.

Make System Backups

Make complete system backups for the Root/Index server and Storage Library server(s). To make complete backups of your system configuration, 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 28.**](#)

After you have backed up the system configuration on the appropriate server, you will have successfully added multiple Storage Library servers to your system.

Appendix C – National Language Support

This appendix contains steps for setting up a Sun SPARC- or UltraSPARCstation with a Type 5 keyboard so that you may enter characters for any of the supported languages.

The following prerequisites must be met to complete the National Language Support (NLS) environment setup:

- You must have a Sun SPARC- or UltraSPARCstation with a Type 5 keyboard.
- You must be running the OpenWindows 3.3 (or higher) application on the station.
- You must have installed the Feature Package (for the locale in which you intend to run) on your SPARC- or UltraSPARCstation.

Refer to your Solaris documentation for in-depth instructions for setting up the server for National Language Support.

Note Typically, the Sun SPARC- or UltraSPARCstation is configured with a Type 4 keyboard. You must order the Type 5 keyboard separately. You may perform the steps in this appendix on any SPARC- or UltraSPARCstation; however, only the Type 5 keyboard supports imaging software.

Configuring the Sun Server

Configure your Sun SPARC- or UltraSPARCstation for either an International/Localized environment or a Non-localized environment.

International/Localized Environment

- 1 The default locale installed (as part of the operating system installation) is English (locale "C"). Select the Alternate Language option from the Custom Install Configuration menu during the installation of the operating system to specify which of the available system-wide localizations will be installed in addition to the default locale.

Note Refer to the section discussing Locale in the System Configuration and Installation Guide (depending on the version of Solaris installed) for instructions on how to install alternate languages.

- 2 Verify that the Feature Package, for the locale in which you plan to run, is installed. For example: the Japanese Feature Package (JFP) for Japan, the Korean Feature Package for Korea, and so on. These packages consist of extensions for Solaris and incorporate numerous facilities for handling local linguistic and cultural conventions.

Verify that the following directory exists:

`/usr/openwin/lib/locale/<locale>`

where **`<locale>`** is the language in which you want to run. For example: `de` (German), `fr` (French), and so on.

If this directory does not exist, refer to the OpenWindows Localization Feature Package for the specific language, or have your Sun system administrator install the package.

- 3 Verify that the following lines appear in the `~/.Xdefaults` and `~/.OWdefaults` files:

OpenWindows.Basic Locale
OpenWindows.DisplayLang
OpenWindows.InputLang
OpenWindows.NumericFont
OpenWindows.TimeFormat

If the entries do not exist, refer to the section discussing Locale in your Solaris documentation for instructions.

- 4 If you need a particular font for a particular locale, you can make the font available by adding locale-specific font resources to the `~/.Xdefaults` file, as follows:

OpenWindows.RegularFont.<locale> <fontID>
OpenWindows.BoldFont.<locale> <fontID>
OpenWindows.MonospaceFont.<locale> <fontID>

where **<locale>** is the basic local setting and **<fontID>** is the font or font set.

- 5 You must set up the LANG variable in your shell environment files using your preferred editor. From your .HOME directory, edit the necessary files by completing one of the following:

Important!

Verify that the language you select here matches the language that was selected when the relational database software was installed.

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

```
LANG=language  
export LANG
```

where **language** is the native language (locale) in which you want your server to operate.

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

```
setenv LANG <language>
```

where **<language>** is the native language (locale) in which you want your server to operate.

Non-localized Environment

To use 8-bit characters, the Solaris 10 OS software must run in a European locale. However, European locales require installation of localization feature packages.

- 1 If these localization packages are not available to you, use the following work-around:

- In **csh** shell, enter:

```
setenv LC_CTYPE iso-8859_1
```

- In **sh** shell, enter:

```
LC_CTYPE=iso_8559_1  
export LC_CTYPE
```

Note The ISO_8859_1 is not a valid setting for the OpenWindows locale X resources. The ISO_8859_1 setting is not a full locale setting but a setting for the LC_CTYPE category only. DO NOT set the LANG environment variable to ISO_8859_1.

- 2 Set the terminal port to allow 8-bit processing for applications (like Command Tool or Shell Tool) by typing:

```
/usr/bin/stty cs8  
/usr/bin/stty -istrip
```

You can insert the above settings in your .login (for csh) or .profile (for sh) file.

- 3 If they exist, remove the following resources from the ~/.Xdefaults or ~/.OWdefaults file:

```
OpenWindows<Basic Locale>  
OpenWindows<DisplayLang>  
OpenWindows<InputLang>
```

OpenWindows<NumericFont>

OpenWindows<TimeFormat>

Configuring the Type 5 Keyboard

The Type 5 keyboard can be configured (through DIP switch settings) for various European and Asian support. (It can also be configured to function as a Type 4 keyboard.) Refer to your Solaris documentation for detailed instructions for setting up the keyboard, or have your Sun system administrator set it up.

Appendix D – Uninstalling Image Services

To remove the Image Services software from your server, follow these steps:

- 1 Verify that you're logged on with **root** privileges.
- 2 Stop the Image Services software.
- 3 Back up any log files or other data in the `/fns` and `/fns/local` directories that you want to save.
- 4 Change to the root directory and run the uninstaller by entering:
 - Graphical mode – standard, graphical interface:
`/fns/etc/uninstaller/uninstall_is.bin &`
 - Console mode – plain text interface:
`/fns/etc/uninstaller/uninstall_is.bin -console`

-
- Silent mode – no screen display:

`/fnsw/etc/uninstaller/uninstall_is.bin -silent`

Important

You must use the `uninstall_is.bin` command if you decide to uninstall the Image Services software. You cannot use the Operating System tools to remove Image Services.

- 5** The uninstaller will lead you through the necessary steps and prompt you when finished.

Note

The uninstaller leaves certain critical directories intact to protect existing data.

- 6** After the uninstaller has finished, go to the `/fnsw` directory and examine the remaining contents. Manually remove any unwanted files and directories.

Appendix E – Support for PCI-X Dual Channel Ultra320 SCSI (LVD/SE) Adapter

Some HP optical libraries have been found to have specific issues when configured on Solaris 10 using the PCI-X Dual channel Ultra320 SCSI (LVD/SE) Adapter. This configuration works correctly on Solaris 9 and diagnostic information has been submitted to Sun service. A patch was not yet available at the time of this release, but there is a work around for each of the following two issues:

Creation of Invalid Device Links

Each time Solaris 10 is rebooted with the reconfigure flag (boot -r) or the /reconfigure file exists on reboot, Solaris 10 will recreated all the device links. This is typically only used when new hardware is added or changed. Solaris 10 has been shown to consistently create invalid device links on reconfigure reboot with attached HP optical libraries.

These invalid device links are associated with device LUNs that do not exist.

Problem

The following is a sample list of the /dev directory for optical device fnsod which has an invalid device entry.

```
ls -al /dev/fnsod*
lrwxrwxrwx  1 root      sys          49 May 18 09:46 /dev/fnsod.8,11,3,0
-> ../devices/pci@8,600000/scsi@1,1/SOD@3,0:8,11,3,0

lrwxrwxrwx  1 root      sys          49 May 18 09:46 /dev/fnsod.8,11,4,0
-> ../devices/pci@8,600000/scsi@1,1/SOD@4,0:8,11,4,0

lrwxrwxrwx  1 root      root         49 May 22 11:28 /dev/fnsod.8,11,4,1
-> ../devices/pci@8,600000/scsi@1,1/SOD@4,1:8,11,4,1
```

In this case, the device fnsod.8,11,4,1 is an invalid device. You would know this by understanding what devices actually exist on a given system. You can find this information from the control panel on the

optical library. In this sample case the device arm is device id 3 Lun 0, and the disk drive is id 4 Lun 0, and id 4 Lun 1 is not a valid device.

Solution

The solution to this problem is to remove and recreate the device links by hand. This is done by logging on as a user with root privileges and issuing the following commands.

```
# rem_drv fnsod
```

```
# rm /dev/rnsod*
```

```
# rm /dev/SOD*
```

```
# /fnsw/bin/fnsod.install
```

You should see the following output which shows only the correct devices were created.

```
Beginning fnsod.install script

No match

Driver (fnsod) not installed.

No match

-rw-r--r--    1 root      sys      2584 May 22 15:01 /kernel/drv/fnsod.conf

-rwxr-xr-x    1 root      sys  132727 May 22 15:01 /kernel/drv/sparcv9/fnsod

Driver (fnsod) installed. Devices:

/dev/fnsod.8,11,3,0  /dev/fnsod.8,11,4,0
```

Error Following Fix of Invalid Device Links

The second problem has been seen on IS startup once the invalid device links are fixed. The IS software will receive an error in the log when attempting to open the library.

Problem

This is a sample error.

```
FCL: unexpected errno 3 performing open_device operation on file: /fnsw/  
dev/1/oddb1
```

Solution

The work around for this is to create /kernel/drv/mpt.conf file which specifically configures the Ultra320 driver to force a bus width of 8 bits. This will not be a problem because these optical libraries can only work in 8 bits and an attempt to negotiate 16 bits is causing the problems.

This is a sample mpt.conf file.

```
name="mpt" parent="/pci@8,600000"  
  
unit-address="4"  
  
target1-scsi-options=0x58  
  
scsi-options=0x178 scsi-initiator-id=7;
```

You will have to change the parent="/pci@8,600000" to match your specific device. To find this device name simply issue the command:

ls -al /dev/SOD*

This is the output which matches the above mpt.conf file.

```
lrwxrwxrwx    1 root      sys          45 May 22 15:02 /dev/SOD.0 -> ../
devices/pci@8,600000/scsi@1,1/SOD@3,0:osar

lrwxrwxrwx    1 root      sys          44 May 22 15:02 /dev/SOD.1 -> ../
devices/pci@8,600000/scsi@1,1/SOD@4,0:odd
```

The mpt.conf file will also need to be owned by a user with root privileges. You can use the following commands to change ownership of the mpt.conf file.

chown root /kernel/drv/mpt.conf

chgrp root /kernel/drv/mpt.conf

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR

PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between indepen-

dently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
J46A/G4
555 Bailey Avenue
San Jose, CA 95141-1003
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been

made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the

names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a

trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

FileNet is a registered trademark of FileNet Corporation, in the United States, other countries, or both.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names may be trademarks or service marks of others.

U.S. Patents Disclosure

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.

Symbols

- /etc/hosts, modifying 65
- /etc/inittab
 - uncomment 189
- /etc/project
 - modifying 56
- /etc/rc.initfnsw 145
- /etc/system
 - modifying 52
 - saving 59
- /fnsw/bin/fn_setup 139

A

- adding users 71, 74
- Application server
 - adding services 217
 - preparing 206

B

- backing up 203

C

- caches
 - terabyte 167

COLD

- media 35
- commands
 - inst_templates 131

D

DB2

- configuring DB2 159, 211
- domain name 36

E

- ephemeral port setting 145

F

- FileNet software user 71, 74
- filenet.links file 80
- fn_edit 154

H

- hardware requirements 31

I

- Image Services
 - media 35

- starting 178, 201, 250
- uninstalling
 - uninstalling IS software 313
- increasing kernel parameters 52, 56
- inst_templates
 - command 131

K

- keyboard
 - Type 5 312

M

- Magnetic Storage and Retrieval (MSAR) 200
- media
 - COLD 35
 - Image Services 4.0 35

O

- object name 36
- Operating system notes 30
- oracle user 71, 74
- Oracle10g
 - configuring Oracle10g 159, 211

- Oracle9i
 - defining Oracle table spaces 163, 215
- organization name 37

P

- patches
 - operating system notes 30
- port, ephemeral
 - modifying 145
- ports
 - tty port 148
- prerequisites
 - debugging software 39
 - disk space 32
 - memory 48
 - server memory 31
 - swap space 32
 - TCP/IP address 38

R

- reboot server(s) 147
- release dependency spreadsheet 29, 30

S

server reboot 147
Storage Library server
 adding multiple servers 256
 server utilities 296
 uses of multiple servers 256
system back ups 203
System Configuration Editor 154

T

terabyte caches 167
tty ports 148
Type 5 keyboards 312

U

user passwords, setting 75
users, adding 71, 74

V

volume manager
 requirements 77

X

Xtaskman 180, 201, 251



Program Number: 5724-R95

Printed in USA

GC31-5554-01

