

Note

Before using this information and the product it supports, read the information in "Notices" on page 134.

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

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Getting Started

This procedure describes how to upgrade a Sun Microsystems SPARC- or UltraSPARC server to release 4.1 of the IBM® FileNet® Image Services for Solaris® with Oracle 32-bit or 64-bit software or IBM DB2® database software.

The Sun server must also be running version 9 or higher of the Solaris Operating System.

This document is intended for the System Administrator responsible for configuring and updating the Solaris Operating System (and related software) on Sun stations and servers.

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. Bluwashing. |
| 4.1 | June 2007 | Initial release. |

Required Skills

Upgrade by a **FileNet Certified Professional (FCP)** recommended.

The procedures included in this document assume you are familiar with the following topics:

- The Solaris operating system
- The Solaris administration utilities such as the Solaris Management Console (SMC)
- Peripheral device configuration methods (for example tape drives, printers, and storage libraries)

- 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 Image Services 4.1 upgrade

This release of Image Services software includes the following features:

New MKF Security Database Schema

Image Services 4.1* includes a schema change to the MKF Security database to provide for enhanced user security. For this schema update to occur, specific MKF configuration changes must be made and software dependencies must be verified by your service representative before you install IS 4.1.

Important

Contact your service representative to schedule the MKF configuration changes for your IS system.

If you are updating from IS 4.0 SP5, your MKF Security database has already been updated.

*or if the system was initially installed at IS 4.0.

InstallShield Upgrade Installer

This version of Image Services incorporates a new InstallShield Multi-Platform Upgrade Installer. Before upgrading the Image Services software, the Upgrade 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 outside the installer, and then go forward to run that check again. The server must pass the System Check successfully before the Upgrade Installer upgrades the Image Services software.

IBM DB2 Universal Database Software

This release of Image Services supports IBM DB2 Universal Database™ V8.1/V8.2. The DB2 databases are site-controlled and must reside on remote AIX® 5.2/5.3 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 22.](#)**

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.

Note The Oracle media are not supplied by IBM.

SLAC Key Automation

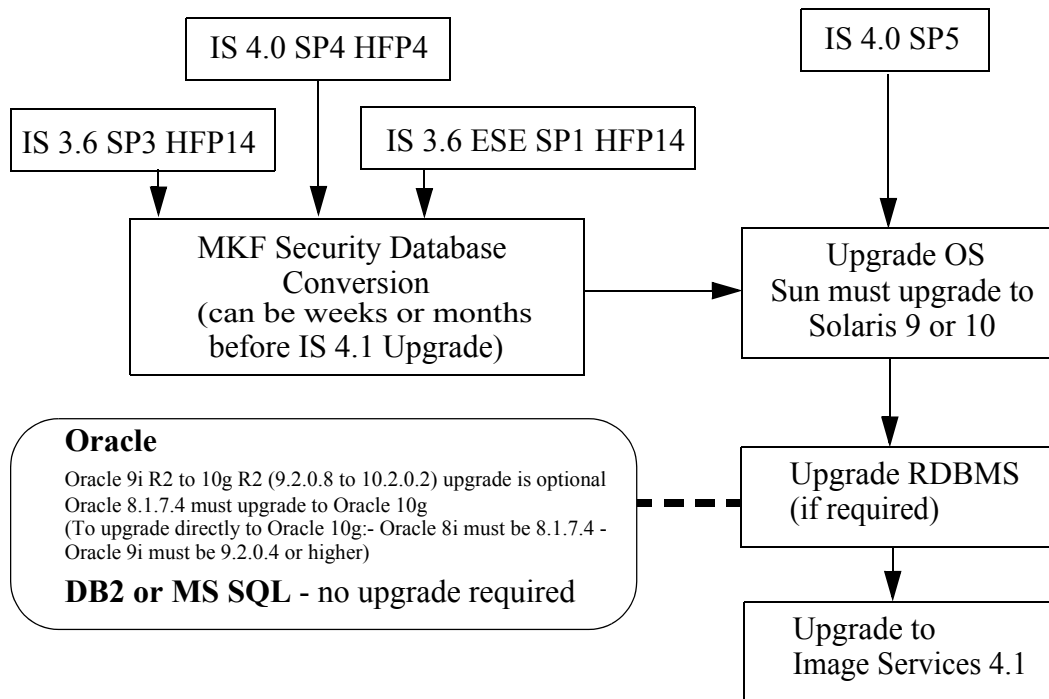
In past IS releases, you had to install a Software License Access Control (SLAC) Key that was included with the IS software. Beginning with IS 4.1, this key is installed automatically by the Upgrade Installer.

Upgrade Paths

Because of the wide variety of possible system configurations, the following upgrade starting points have been tested and approved to simplify the upgrade process.

- **IS 3.6/Oracle 8i (8.1.7.4)**
- **IS 3.6 ESE/Oracle 8i (8.1.7.4)**
- **IS 4.0 SP4/Oracle 9i (9.2.0.4) or higher**
- **IS 4.0 SP4/DB2 8.1 FixPak12/DB2 8.2 FixPak5 or higher**
- **IS 4.0 SP5/Oracle 9i (9.2.0.4) or higher**
- **IS 4.0 SP5/DB2 8.1 FixPak12/DB2 8.2 FixPak5**

Upgrade Paths



Important

If the server has a release of FileNet Image Services software prior to IS 3.6 (such as IDMIS 3.5.0), you need to upgrade to the most recent version of IS 3.6 before continuing with this procedure.

If the server has an Oracle release prior to 8.1.7.4, you must upgrade to Oracle 8.1.7.4 or higher before continuing with this procedure.

Oracle 8i servers must be upgraded to Oracle 10g R2. Upgrades to Oracle 9i are not supported.

Oracle 9i servers can remain at Oracle 9i or optionally upgrade to Oracle 10g R2.

IBM Information Management Support

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

Some of the documents that you can download from the IBM support page 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, click the Doc Link for the appropriate component product to display the document list.
 - b Click the icon in the appropriate release column to access the document you need.

Release Notes for Image Services 4.1

The latest Release Notes file can be retrieved at any time from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22.**](#)

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

Release Dependency Spreadsheet

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

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

Note

If the Image Services Toolkit (ISTK) is installed on the same server as Image Services, the Toolkit must be version 4.0 or higher. Verify that any IS Toolkit SCRs listed in the Release Dependency spreadsheet have been downloaded and installed.

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 upgrade. The System Administrator is responsible for obtaining and installing these patches. The Operating System Notes are available from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22.**](#)

Upgrade Prerequisites

The prerequisites for updating Image Services software are included in the following sections. It is very important that you complete all prerequisite steps and gather all pertinent information. If you do not gather this information now, you will not be able to complete this upgrade procedure correctly.

Minimum Hardware Requirements

Server Hardware

- SUN Microsystems SPARC- or UltraSPARC server (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 for each processor in the server.

Use the following commands to check your system requirements.

| System Item | Command |
|-----------------------|------------------------------------|
| RAM | <code>prtconf grep Memory</code> |
| Free Disk Space in KB | <code>df -k</code> |

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.

The System Administrator and Database Administrator must refer to the Solaris and RDBMS documentation for space requirements for these products.

Available File System Space for Image Services Software

The FileNet Image Services software needs the minimum amounts of free disk space in the file systems shown here:

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

Note If /fnsw/local is not a separate file system, the upgrade 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 tell the Installer to use another directory that does have enough space.

Space for RDBMS Software

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

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

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

To download IBM FileNet documentation from the IBM Support page, see **[“Accessing IBM FileNet Documentation” on page 22.](#)**

Solaris Operating System

The Image Services 4.1 software is compatible with:

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

If an earlier version of Solaris is currently installed on the server, the System Administrator must upgrade to Solaris 9 or 10 at the appropriate time (described in Chapter 2 of this procedure). If the server is a stand-alone system, the server must be configured as a networked, stand-alone system. In addition, you must have at least the Developer System Support packages installed.

Tip

Be sure to check the IBM Web site for any operating system patches that may be required for compatible operation with Image Services 4.1.

Software Requirements

To perform the upgrade to Oracle 9i or 10g or DB2 V8.1 or V8.2 and Image Services 4.1, you'll need the following software media:

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

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

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

Oracle RDBMS Software

Note The Oracle software media are not supplied by IBM.

Refer to the *Guidelines for Installing and Updating Oracle Software for UNIX Servers* for more information.

Note If the **database administrator** or **system administrator** wants to install Oracle9i or Oracle 10g before the service representative arrives to upgrade the Image Services software see *Guidelines for Installing and Updating Oracle Software for UNIX Servers*. Use these guidelines to upgrade the Oracle RDBMS.

To download IBM FileNet documentation from the IBM Support page, see **[“Accessing IBM FileNet Documentation” on page 22.](#)**

Volume Management Software Media

Volume management software is included with several Sun/Solaris products or it may be purchased separately.

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

- VERITAS Volume Manager *4.1 or 5.0* for Solaris 9 - available from Sun or directly from VERITAS.
- Solaris Volume Manager

Note Solaris 10 Host running VERITAS Volume Manager may fail to boot,
See Sun Alert Notification: 102613

Additional Requirements

The following table lists the documents, media, and server resources required to successfully upgrade your Image Services software to

release 4.1. Each requirement is described in detail later in this document.

Table 1-1: Additional Requirements

| Prerequisites | Comments |
|---|---|
| Read FileNet Release Notes. | Available at the Customer Support Web site at the IBM Support page. |
| Install Solaris patches, if needed. | Check Customer Support at the IBM Support page for patches that might be required prior to this upgrade. |
| Install the Pre-upgrade Show Stopper fixes that were identified in the Release Notes. | It is mandatory to have the appropriate show stopper fixes installed when you start your upgrade. Otherwise, your upgrade will fail. The fixes are available at the IBM Support page and on the Tech Info CD, which is distributed to your service representative. |
| Back up the entire system. | Include FileNet datasets, cache, and Solaris OS. |
| Obtain proper software for Image Services and Oracle or DB2. | Refer to the section, <u>“Software Requirements” on page 31</u> |
| For Servers With Oracle: | |

Table 1-1: Additional Requirements, Continued

| Prerequisites | Comments |
|---|---|
| Create a new file system for Oracle 10g, if necessary. | Do not use your current Oracle file system for the new version of Oracle. (Must have at least 3.5 GB of free space) |
| Create a home directory for the oracle user, if necessary. | Do not use /usr/oracle or the same directory where Oracle software is stored. |
| Verify/Add sufficient contiguous Oracle System tablespace. | Do this immediately prior to running the upgrade. |
| For Servers With DB2: | |
| Create a new file system for DB2 V8.1/ V8.2. | Do not use your current DB2 file system for the new version of DB2. |

Related Documentation

As you read this procedure, you will see references to other documents you might need to review. Keep these documents available in case you need to use them during this upgrade.

The following documents are part of the Image Services 4.1 Documentation set:

- *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 IBM FileNet documentation from the IBM Support page, see **[“Accessing IBM FileNet Documentation” on page 22.](#)**

Preparing for the Upgrade

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 your service representative to schedule the installation and access the team's latest list of current scheduling procedures.

- Schedule the upgrade and review the current scheduling procedures.

- Copy the Image Services CDB file. Send it to your service representative.
- Run spacerpt. Send the results to your service representative, and keep a printed copy for comparison after the upgrade is complete.
- c You can send files or other output using e-mail or you can FTP the files, copy them to physical media, and mail them.

Copy the Image Services .CDB File

Your service representative will need to inspect your Image Services CDB file before you begin the upgrade. This file allows your service provider to check the configuration for database integrity.

The CDB file is built by the configuration editor (fn_edit) and is stored in the /fnsw/local/sd/conf_db directory. The naming convention is **IMS_n.cdb** where 'n' is a sequentially assigned number that is increased incrementally each time the CDB file is rebuilt. You will likely find several versions of the CDB file.

Copy the most recent CDB file (the one with the highest “n” number) and send it to your service representative.

Copy the MasterSnmpd_start File

Make a backup copy the **/fnsb/bin/MasterSnmpd_start** file. SNMP is the Simple Network Management Protocol. See the *SNMP Reference Manual* for more information.

To download this document from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22.**](#)

Installing the new version of Image Services software overwrites the current version of this file. At the end of this upgrade procedure, you’ll compare the newly installed version against this saved version.

For example, as the FileNet software user such as **fnsb**, save the current file by entering:

```
cp /fnsb/bin/MasterSnmpd_start /tmp/MasterSnmpd_save
```


Run spacerpt (Oracle only)

This procedure is not required for DB2.

Your service representative will need to inspect your database configuration to verify that the Oracle RDBMS objects are correct.

You must know the f_maint password to run spacerpt.

- 1 As the FileNet software user, verify that Oracle is up by entering:

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

If Oracle is running, you will see at least four Oracle processes. If not, start the Oracle software.

- If Oracle is Site-controlled, ask the DBA to start Oracle.
- If Oracle is FileNet-controlled and there are no Oracle processes running, start Oracle by entering:

```
fn_util startddb
```

- 2 As the FileNet software user, run spacerpt and send the output to an output file by entering:

spacerpt > <output_file_name>

where <output_file_name> can be any name you choose.

- 3 To stop Oracle:

- For Site-controlled Oracle, ask the DBA to stop Oracle.
- For FileNet-controlled Oracle, enter:

fn_util stoprdb

- 4 Send the output file to your service representative. Also print a copy of this file and keep it in a safe place. Compare this copy with the spacerpt run at the end of this upgrade procedure.

Backup the /fnsw/etc/serverConfig File

- 1 Logon as the FileNet software user such as **fnsw**.

- 2 Make a copy of the `/fnsw/etc/serverConfig` file by entering commands similar to the following:

```
cd /fnsw/etc  
cp serverConfig serverConfig.save
```

After the upgrade procedure is complete, verify that the server configuration parameters are unchanged by checking the saved file.

Disable FileNet-Related Cron Jobs

Disable any FileNet-related cron jobs for the duration of the upgrade. After the upgrade is complete, you can re-enable the.

The crontab files are located in `/usr/spool/cron/crontabs`.

Shutdown FileNet Software

Notify all users on the system to logout before you continue with the upgrade procedure. Warn them you are about to shutdown the FileNet software and kill all processes.

Exit IS Toolkit Applications

Exit from any Image Services Toolkit (ISTK) applications currently running on the server. (Later in this procedure you will run the `killfns` command, which clears the Image Services shared memory.)

As a user with **root** privileges, enter:

```
/fnsw/client/bin/wal_purge
```

Stop FileNet Software

Note

In a multi-server system, you must stop the FileNet software in the following order:

- 1 - the application server(s)

2 - the storage library server(s)

3 - the root server

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

- 1 As the FileNet software user, shut down the FileNet Image Services software by entering:

initfnsw -y stop

- 2 Kill all remaining FileNet processes displayed by entering:

killfnsw -DAy

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

The -A option removes all IPC segments.

The -y option automatically answers Yes to subsequent **killfns** prompts.

- 3 To check that all the Image Services processes have been killed, enter:

```
ps -ef | grep fns
```

Note Also use the grep command to check for active COR_Listen processes.

- 4 If any fns processes remain active, including TM_daemon, kill each one explicitly by entering:

```
kill <process_id>
```

Verify the System Serial Number

Use the **ssn** command to display the system serial number. As a user with **root** privileges, enter:

ssn

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.

Modify the /etc/inittab File

Edit the /etc/inittab file to prevent the network protocol configuration process from broadcasting error messages during the configuration process.

- 1 As a user with **root** privileges, change to the /etc directory by entering the following command:

cd /etc

- 2 Use a text editor (for example, **vi**), to edit the inittab file.

- 3 Locate and comment out (by adding a# before) the following line:

```
fn:3wait:/bin/sh /etc/rc.initfnsw </dev/console> /dev/console2 >&1
```

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 34.**

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

Check FileNet Logical Volume Sizes

Server Types

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

Verify that the **fns**, **local**, and **oracle** file systems are not being accessed by anyone. Otherwise, the following steps will fail.

The steps in this section ensure that the **fns** and **local** logical volumes have enough disk space.

- 1 As a user with **root** privileges, launch the volume management software by entering the appropriate command.
- 2 Select the appropriate disk group icon (for example, **fndg**).
- 3 Select the **/fns** volume.
- 4 Compare the logical volume sizes displayed with sizes shown in the following table. Your logical volume sizes must be equal to or greater

than the sizes in the table. (If any logical volumes are larger than the sizes shown, do not decrease them.)

Table 2-2: Logical Volume Sizes for /fnsw and /fnsw/local

| Logical Volume Names | New Logical Volume Sizes | Free Space | Mount Points |
|----------------------|--------------------------|------------|--------------|
| fnsw | 500MB | 300MB | /fnsw |
| local | 500MB | 395MB | /fnsw/local |
| tmp | 350MB | 350MB | /var/tmp |

If you need to increase the size of either of these logical volumes to match the sizes shown in the table, you'll have that opportunity when you upgrade the Image Services software later in this procedure.

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 **[“Check Solaris 10 Kernel Limits” on page 54.](#)**

Check 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, **“Upgrade Solaris Operating System (if necessary)” on page 60.**

Check 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
```

Upgrade Solaris Operating System (if necessary)

If necessary, the System Administrator must upgrade the server to Solaris 9 or 10 before installing Image Services 4.1. DO NOT install the Image Services 4.1 software until the Solaris Operating System has been successfully upgraded.

Important

Check the at the IBM Support page for any operating system patches that are required for compatible operation with Image Services 4.1.

Debugging Software (Optional)

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

To determine if the debugger is already installed, as a user with **root** privileges, enter the following command on each server:

pkginfo | grep SPROdbgr

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.”

Updating Relational Database Software

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

Application server with WorkFlo Queue services or SQL services.

If you are configuring a Storage Library server or an Application server that does not require Oracle, skip to **Chapter 4, “Updating Image Services Software,” on page 68.**

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

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

- **“Oracle 9i and Oracle 10gR2” on page 64**
- **“IBM DB2 V8.1 and DB2 V8.2” on page 66.**

Oracle 9i and Oracle 10gR2

For information on updating Oracle RDBMS software, refer to *Guidelines for Installing and Updating Oracle 9i and 10g Software for UNIX Servers*

To download this document from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22.**](#)

- If the Oracle software and datasets are going to 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.

The Oracle Guidelines document can be given to the Database Administrator.

CAUTION

DO NOT start the Image Services software until after it has been upgraded and configured.

After this has been done, you're ready to upgrade the FileNet Image Services software. Continue with **Chapter 4, "Updating Image Services Software," on page 68.**

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 *Guidelines for Installing and Configuring DB2 Software*

To download this document from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22.**](#)

- 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.

The DB2 Guidelines document can be given to the Database Administrator.

CAUTION

DO NOT start the Image Services software until after it has been upgraded and configured.

After this is done, you're ready to install the FileNet Image Services software. Continue with **Chapter 4, "Updating Image Services Software," on page 68.**

Updating Image Services Software

This chapter contains procedures to upgrade the Image Services software on your system. It assumes that compatible versions of Solaris and relational database software have already been installed.

Server Types

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

This chapter covers software upgrade issues that include:

- Updating FileNet Image Services software
- Updating the user environment templates
- Setting file ownerships and permissions
- Performing additional relational database tasks

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.

Load the Image Services Software

Note If you're going to run the Upgrade Installer from a network drive, skip to section, **"Run the IS Upgrade Installer" on page 70.**

- 1 As a user with **root** privileges, start CDE or X Windows (if you have not already done so).
- 2 If you are installing from a CD, insert the FileNet **Image Services & COLD 4.1 for Solaris** CD-ROM into the drive. If you're using CDE, the File Manager window displays automatically.

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

Run the IS Upgrade Installer

The IS Upgrade 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.

Note

The Image Services software can be running while performing only the System Check. To run both the System Check and the Upgrade Installer, the FileNet Image Services software must **not** be running.

The 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/4.1.0/` 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, verify that you allow access to the host display by entering this command at the remote terminal:

```
xhost +
```

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

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

Tip You can 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 Upgrade 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 from the CD-ROM and modified. Be sure to 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. Adding **-is:tempdir <directory>** to the command line overrides 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 screens. It might take a few minutes for them 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** The installer allows you to choose either a Fresh Install or an Upgrade. Select the Upgrade option.

Image Services

The installer has detected an existing copy of Image Services on this computer. Choose how you wish to proceed then click Next.

☐ Fresh Install



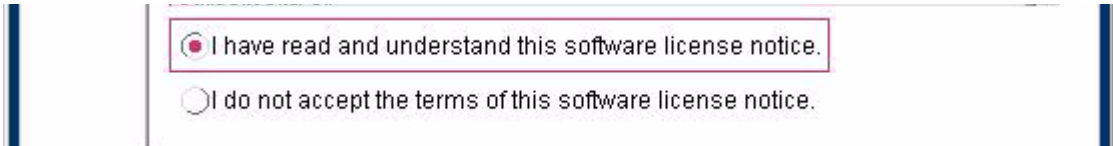
Install a fresh copy of Image Services 4.1.

☒ Upgrade



Upgrade to Image Services 4.1.

8 Read and accept the Notice to End Users.



☒ I have read and understand this software license notice.

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

9 Select the parts of the Image Services installation you want to perform. Run either the System Check by itself or the System Check and Install Image Services.

Note You can run a System Check with Image Service running, but if you choose the System Check and Install Image Service option, you will need to shutdown Image Services.



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

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

- Hardware checks
- Operating System checks

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

Some 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

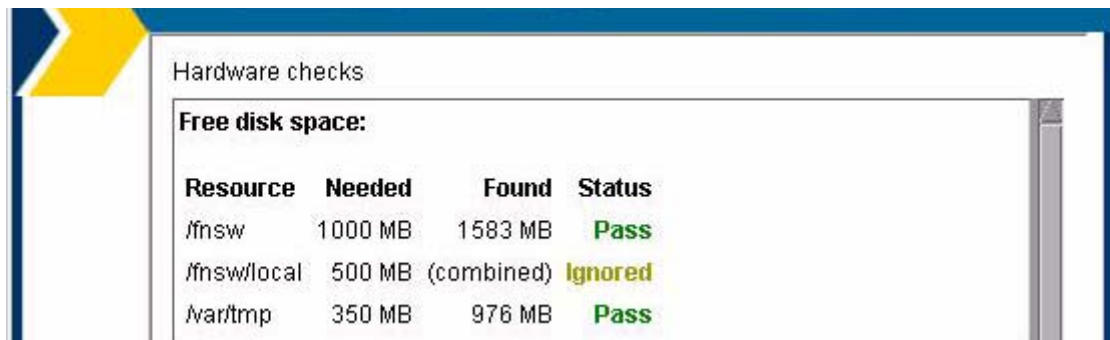
The first System Check screen displays:

- 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 [**“Minimum Hardware Requirements” on page 26**](#) 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.



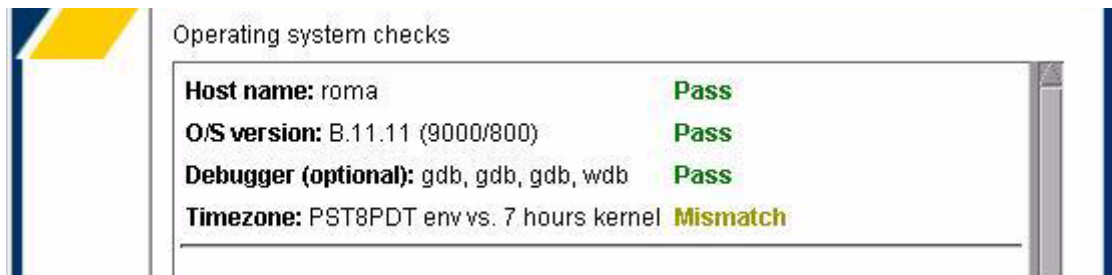
Click **Next** when you're ready to continue.

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.

Finishing the System Check

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



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

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

- If the System Check completed successfully and you selected the option to install Image Services software, the Installer continues automatically. Skip to the section, **“Upgrading Image Services” on page 87.**
- If the System Check did not pass all its tests, return to the previous chapter to resolve the inconsistencies.

Rerunning the Upgrade Installer

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

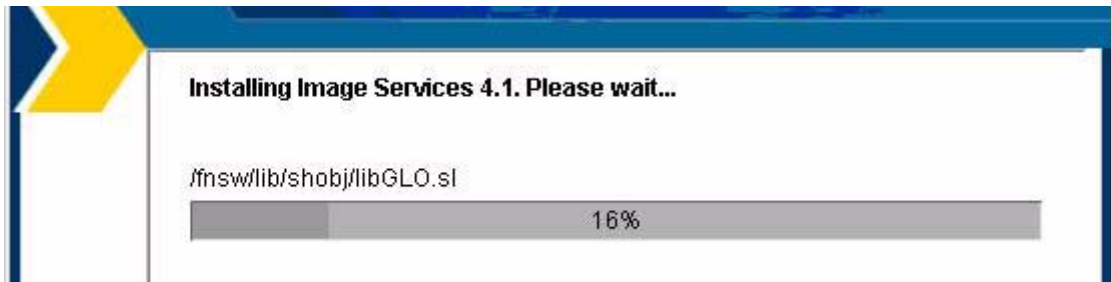
After you have made the changes required by the System Check, return to **“Run the IS Upgrade Installer” on page 70** and run the System Check again.

Upgrading Image Services

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



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



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

- 3 Read the important note that displays to warn you that your original configuration files have been modified. You must manually incorporate any changes from the backup directory into the updated files as described in the next chapter.

- 4 When the software upgrade is finished, the Upgrade Installer creates an uninstaller (/fnsw/etc/uninstaller/uninstall_is.bin), and then verifies the version information.
- 5 Next you are reminded to check the Upgrade Installer log and the Customer Support Web site.



- 6 The final screen prompts you to restart your computer so that the upgrade can take effect.

Unmount the Image Services CD-ROM

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.

Configure the Image Services Software

Server Types

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

The following sections describe the configuration tasks you need to perform after the Image Services 4.1 software has been installed.

Install the Required Pre-Startup Fixes

At this time, install only the fixes that directly relate to Image Services 4.1 upgrade issues.

Note These are only the fixes required to start the Image Services software successfully. Install any other fixes after the upgrade has been successfully completed. This would include any mod and Fix Pack updates.

Retrieve these fixes from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22**](#) or from the Tech Info CD.

Install User Environment Templates

If you did not upgrade your RDBMS software, you can skip to [**“Verify TCP/IP Port Settings” on page 103**](#).

In this section you will use the **inst_templates** script to set up profile and environment files that are customized for Image Services. (You

must run **inst_templates** as both the FileNet software user (**fns**) and a user with **root** privileges.)

The install templates program creates or modifies environment files (for example, .cshrc, .login, .profile, and others). You will be asked before each file is modified if you want to proceed with the change to the file.

- If you accept the change (by entering **y**), the existing file is renamed with a old.n extension (where n is incremental). A new file is created using the original file name. (You will be prompted for a response only if a file already exists.)
- If you decline the change (by entering **n**), the file will not be changed or moved.

Set Up FileNet Software User Environment

- 1 Logon as a FileNet software user such as **fns**w. (DO NOT **su** to **fns**w.)

Note After you logon as the FileNet software user, verify that the home directory for this user exists. If the directory does not exist, create the directory manually before performing the steps in this section.

- 2 Enter the following command:

/fnsw/etc/inst_templates

- 3 Enter **y** (Yes) to confirm all prompts that display.
- 4 On servers with Oracle software, verify that the ORACLE_HOME is set correctly and that the ORACLE_SID variable is set correctly in the .profile and .cshrc files. Be aware that this may have changed if you upgraded your RDBMS.

Set Up “root” User Environment

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

- 2 On servers with Oracle software, verify that the ORACLE_HOME and the ORACLE_SID variables are set correctly in the /etc/rc.inittfnsf file.

Note Complete the remaining steps in this section only if you do not have a specialized root environment already established on your system (for example, a .login file with specific system-related entries). If you already have a **root** environment established, skip the rest of this section.

- 3 Enter the following command:

/fnsf/etc/inst_templates

- 4 Enter **y** (Yes) to confirm all prompts that display.

Set Up RDBMS (oracle) User Environment (if applicable)

If the Oracle RDBMS is FileNet-controlled, or if the Database Administrator wants the RDBMS user to use FileNet environment variable settings, complete the steps in this section. For example:

- 1 Logon as an RDBMS user, such as **oracle**.
- 2 Enter the following command:

`/fns/etw/inst_templates`
- 3 Enter **y** (Yes) to confirm all prompts that display.

Reset the Environment Variables

If you initially logged in to CDE as one of these three users, a user with **root** privileges, the FileNet software user such as **fns**, or **oracle**, you must log completely out of CDE and log back in again to reset the environment variables.

Otherwise, close all the current windows for these users and open new ones, which will have the new environment variable settings.

Set File Ownerships and Permissions

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

Tip The **fn_setup** program attempts to set the permissions for all files under **/fnsw** and **/fnsw/local** directories using a **permission_table** that is updated with each new Image Services release. If non-FileNet files are placed in the **/fnsw** directory structure, a **local_permission_table** 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 22.**](#)

Even though **fn_setup** runs as a user with **root** privileges, **fn_setup** might not be allowed to set permissions on some secured files.

If `fn_setup` encounters a file on which it is not allowed to set permissions, it logs an error and continues.

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

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

fn_setup

- 2 Reply to the prompts with the requested information. If the default value shown in brackets is correct, press **Return** to continue.
 - a The NCH server is generally the Root server. If you are updating a separate Storage Library server or an Application server, select 2=no.

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

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

`Enter NCH server name [sunrise: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 [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 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), or SQL services. If you

are updating a separate Storage Library server, or an Application server without one of these services, select 0=none.

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

- e If a relational database exists on the server, enter the full pathname of the directory where the RDBMS software is located.

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

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

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

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

```
This is the setup configuration:
NCH server name:  sunrise:YourCorp
SSN:  11008016xx
Relational database type:  oracle
Relational database home:  /usr/ora/920
Relational database user ID:  oracle
Relational database group ID:  dba
Do you want to continue (y/n) [y]:
```

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

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

For example:

```
fn_setup: Creating file /fnsw/local/setup/config
fn_setup: Creating file /fnsw/local/sd/root_station
fn_setup: Creating file /fnsw/local/ssn
fn_setup: Creating file /fnsw/local/sd/nch_domain
fn_setup: Running "nch_update sunrise:YourCorp"
fn_setup: Changing permission on FileNet software and
databases
```

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

5 Review the `fn_setup` log file by entering:

`less /fnsw/local/logs/fn_setup/fn_setup.log`

- If `fn_setup` logged no errors, it finished successfully, you can skip to the next section, **[“Verify TCP/IP Port Settings” on page 103.](#)**
- If `fn_setup` returns any errors that do not pertain to optical libraries, you need to troubleshoot the cause of the error and return to Step 1 to run `fn_setup` again.

- If **fn_setup** returned errors pertaining **only** to the optical libraries, as shown in this example, you need to remove the old device links.

```
fn-setup: Cannot set /fnsw/dev/1/osara to have permission mode: 0770
fn-setup: Cannot set /fnsw/dev/1/osara to have owner/group: 80/80
fn-setup: Cannot set /fnsw/dev/1/oddal to have permission mode: 0770
fn-setup: Cannot set /fnsw/dev/1/oddal to have owner/group: 80/80
fn-setup: Cannot set /fnsw/dev/1/osara to have permission mode: 0770
fn-setup: Cannot set /fnsw/dev/1/osara to have owner/group: 80/80
```

These errors are caused by a change in the optical library driver addressing formulas. New drivers were generated when you installed the Image Services software earlier.

- 6 Remove the old device links by following these steps:
 - a Change to the /dev directory and list the fnsod entries.

```
cd /dev
ls -l fnsod*
```

- b Look at the dates of each of the entries. The dates of the newly installed fnsod device links will reflect the date that Image Services software was just upgraded. The old fnsod links will have dates reflecting the previous upgrade, or older.
- c As a user with **root** privileges, remove all the old fnsod device links. For example,

rm fnsod.0,1,2,0

Later in this chapter, you can reconfigure the storage libraries to use the new device links. For now, continue with the next section.

Verify TCP/IP Port Settings

In this section, you will change the **/etc/rc2.d/S69inet** file, to improve the throughput of your FileNet system. The modification expands the number of available ephemeral ports and reduces the time-out delay. These modifications are not required, but have been found to be optimal when running FileNet software.

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

- 1 Make a backup copy of the **`/etc/rc2.d/S69inet`** file before you modify it.
- 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_interval 30000
```

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

Reboot the Server

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

/etc/shutdown -i6 -g0 -y

After the server has restarted, log on as a user with **root** privileges.

Additional Relational Database Tasks

Server Types

Perform the steps in this section on these servers:

Root/Index server during a Dual server installation.

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

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

For FileNet Systems with Remote Oracle Servers

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

- 1 As the FileNet software user such as **fnsw**, copy the following script from the Image Services server to the corresponding directories on the Oracle server:

/fnsw/oracle/FileNet.sql

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

SQL>@FileNet.sql

For All FileNet Systems

Note If the IS system is configured with a site-controlled relational database (on a local or on a remote database server), make sure that the relational database is up before running `fn_setup_rdb`.

As the FileNet software user such as **fnsw**, enter the following command on the Image Services server:

fn_setup_rdb -u

Follow the prompts to enter information for your relational database.

Configure Optical Libraries (if necessary)

If you encountered **fn_setup** errors pertaining to the optical libraries earlier in this procedure, you can now reconfigure them automatically or manually. If **fn_setup** ran successfully, skip to the section, **“Completing the Upgrade” on page 113.**

Launch the Configuration Editor

As the FileNet software user, start the Configuration Editor by entering:

fn_edit &

Automatically Configure a Storage Library or ODU

Storage libraries can be configured automatically if they are physically connected to the server on which you're running **fn_edit**, and if they are fully powered on.

To configure a storage library automatically, follow these steps:

- a On the Procedures tab, scroll through the list of available procedures and select **Automatically Configure a Storage Library**.

fn_edit gets all the information it needs directly from the storage library or ODU, and does not display any messages unless it encounters an error.
- b After the storage library has been configured, skip to the section, **“Verify Storage Library Information” on page 110.**

Manually Configure a Storage Library or ODU

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

- a On the Procedures tab, scroll through the list of available procedures and select **Manually Configure a Storage Library**.
- b Respond to the prompts with the appropriate information. You will be asked to supply the following details:
 - Library type

- Library number
- Number of optical drives in the library
- Types of optical drives in the library
- Position of the optical drives in the library
- SCSI address of each optical drive and the library's robotic arm.

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

Verify Storage Library Information

To view the result of the procedure and to see information on other storage libraries already configured on the system, select the Storage Libraries tab.

Exit the Configuration Editor

Now you can exit **fn_edit** by selecting Exit from the File pull-down menu. If you haven't made any changes, it's not necessary to save the file as in past upgrades.

Build System Configuration Files

- 1 Still as the FileNet software user, rebuild the system configuration files by entering:

fn_build -a

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

CAUTION

If errors were reported, identify and correct the cause of the errors before continuing with the next section.

Create Links for Optical Drivers

If you reconfigured the Storage Libraries earlier in `fn_edit`, now you need to update the library links. If you did not reconfigure the storage libraries, you can skip this section.

- 1 As the FileNet software user, create the links by entering:

fn_util mk_links

- 2** Now you can run fn_setup again:

fn_setup

- 3** When you view the fn_setup.log file, there must be no errors.

less /fnsw/local/logs/fn_setup.log

Completing the Upgrade

In this chapter you will finish the Image Services software upgrade.

Verify the `/fnsw/etc/serverConfig` File

Server Types

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

In the Image Services 4.1 release, the processes that use the server-Config file have been designed to search for a file named server-Config.custom first, and if it does not exist, to use the default serverConfig file.

At the beginning of this upgrade procedure, you made a backup copy the **`/fnsw/etc/serverConfig`** file.

As the FileNet software user such as **fns**w, compare the file you saved (/fns/w/etc/serverConfig.save, for example) with the newly installed serverConfig file by entering the following commands:

```
cd /fns/w/etc
diff serverConfig serverConfig.save | more
```

- If the file serverConfig.save contains parameters that are different from the new serverConfig, use your preferred text editor, such as **vi**, to edit the serverConfig.save file.

If any values in the new serverConfig file are higher than those in the serverConfig.save file, **always keep the higher value**.

Rename the resulting file **serverConfig.custom**.

Verify the MasterSnmpd_start File

At the beginning of this upgrade procedure, you made a backup copy the **/fns/w/bin/MasterSnmpd_start** file.

View the file you saved (/tmp/MasterSnmpd_save, for example) and check the destination (IP address or server name) of the System Administrator's SNMP Management station.

In the newly installed MasterSnmpd_start file, the destination address is set to "local" by default, so you might need to edit this file to insert the correct destination. For example, you would change:

```
trap_host="local"
```

to either:

```
trap_host="135.10.0.44"   -or-  
trap_host="solstice"
```

where "135.10.0.44" is the IP address of SNMP Management station
and "solstice" is the DNS resolvable server name of the station.

If the destination address is not set correctly, the SNMP Management station will no longer receive event notifications (traps).

Improvement for Solaris 10 Users

If you are using SNMP and have upgraded to Solaris 10, you can remove any modifications you made to the `init.snmpdx` and `MasterSnmp_start` files because of Solaris 9. Solaris 10 has different functionality in regards to `init.snmpdx`. As a result, modification to the `init.snmpdx` and `MasterSnmp_start` files is no longer necessary.

Reboot the Server

Reboot the system by entering the following commands:

```
shutdown -i6 -g0 -y
```

The system will shutdown and reboot automatically. When the server finishes booting, logon as a user with **root** privileges.

Set the DISPLAY Variable (Optional)

The DISPLAY environment variable, normally set by the system, is lost when the following circumstances occur:

- A user switches user (**su**) from another logon (typically **root**).
- A user performs an **rlogin** from another system.
- A user resets the default host from an Xstation connected to another system.

If there appears to be no automatic way of correctly setting this variable, perform the following steps:

- 1 As a user with **root** privileges, check the value of the DISPLAY variable by entering:

```
echo $DISPLAY
```

- 2 If the DISPLAY variable has a value, the value will display. If the variable has no value, or was never set, you'll either see an empty line (Korn shell) or an error message (C shell).

If you receive either an empty line or an error message, enter the following (depending on the shell you are using):

- 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.

Note

You must verify the value of the DISPLAY variable before attempting to use the COLD software.

If the DISPLAY environment variable is not set, Motif fails with errors and exits. What must happen is that COLD verify that DISPLAY is set, and if not, log an error message, then stop.

Start the Image Services 4.1 Software

- 1 Logon as the FileNet software user such as **fnsfw**, and enter the following command to stop all FileNet processes:

killfnsfw -DAy

- 2 Start the upgraded FileNet application software by entering:

Xtaskman &

The FileNet Task Manager interface displays.

- 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.
- 5 From the Event Logs window, select the DISPLAY menu. Select Dynamic. (The Dynamic option enables screen refreshes each time the messages are logged.) Switch to the FileNet Task Manager 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. Once the FileNet software startup process finishes, the CLOSE button is highlighted.

- 7 Select CLOSE.

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

Run spacerpt (Oracle only)

On Servers with Local Oracle Databases

If the Oracle databases, either Site-controlled or FileNet-controlled, are on the same server as Image Services, you can run **spacerpt** after the upgrade and compare the results to the **spacerpt** you ran before the upgrade.

- 1 Test the f_maint password by running **spacerpt**. At the system prompt, enter as the FileNet software user such as **fns**w:

- In the Bourne or Korn shell:

spacerpt > <output_file_name> 2&1

- In the C shell:

spacerpt > & <output_file_name> &

where <output_file_name> can be any name you choose.

Spacerpt verifies that:

- the FileNet logon and security are intact
- the Advanced internal database structure is intact
- the FileNet metadata are intact

- 2 If **spacerpt** does not run, verify that the f_maint password has been set and exported correctly. See **[“Run spacerpt \(Oracle only\)” on page 41.](#)**

- 3 Send the output file to your service representative. Compare the **spacerpt** output to the **spacerpt** output you ran before the Image Services upgrade.

On Servers with Remote Oracle Databases

If the Oracle databases are located on a remote Oracle server, you cannot run **spacerpt** directly because Oracle OS authentication prevents it. Instead, you must modify two script files and login to sqlplus to get space information.

- 1 Copy the following files from the /fnsw/oracle Image Services server to the /fnsw/oracle directory on the remote Oracle server:

/fnsw/oracle/spacerpt_summary.sql
/fnsw/oracle/spacerpt_extended.sql

- 2 On the remote Oracle server, use your preferred text editor, such as **vi**, to modify these two files. Remove the first line of each file:

/ as sysdba

- 3 Exit and save your changes.

Now you can run the **spacerpt** scripts successfully on the remote Oracle server.

- 4 Login to sqlplus to run the scripts:

sqlplus

- 5 When you're prompted, enter the user name **f_maint** and the f_maint password. See [**“Run spacerpt \(Oracle only\)” on page 41.**](#)

- 6 To run **spacerpt**, enter the following command at the SQL> prompt:

@/fnsw/oracle/spacerpt_summary.sql

- 7 For a more detailed report, enter:

@/fnsw/oracle/spacerpt_extended.sql

- 8 Send the summary report to your service representative. Compare the **spacerpt** output to the **spacerpt** output you ran prior to updating Image Services.

Test the Upgraded Image Services and User Applications

Verify the upgraded Image Services software is running properly by testing the system in native mode. Native mode is when Image Services products are tested with customer- and vendor-written APIs disabled. Scanning, indexing, committing, faxing, and printing are achieved through the manual selection of these processes through FileNet Capture Professional or Workforce Desktop.

Native mode is preferred in this case for two reasons:

- Only Image Services errors will be displayed. API-oriented errors can be tested after Image Services processes have been tested.
- Image Services errors will display during their specific stage of document entry or retrieval. This reduces your troubleshooting time.

If the optional COLD software is installed, test it by running the COLD preview.

Also test any user applications on the server to verify that they run successfully.

Re-enable Cron Jobs

Re-enable cron jobs if you disabled them before starting the upgrade.

Remove the oratmp Volume

The oratmp volume was used temporarily during the upgrade of the Oracle software and it's no longer needed. Use the Volume Management software to remove this volume.

Configure the System Information Messenger

Server Types

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

The System Information Messenger is a utility that automatically collects performance statistics, license usage data, system configuration data, and software registration information from the server and makes the data available to your service representative.

Determine if SIM is enabled by checking for an active entry for **/fnsw/support/fnlSSIM** in the root crontab file.

- If SIM is not enabled, follow the instructions in the *System Information Messenger Manual* to enable and configure the software.

To download this document from the IBM Support page, see [**“Accessing IBM FileNet Documentation” on page 22.**](#)

- If SIM is already enabled, perform the following steps to update the configuration files to the latest release format:
 - As a user with **root** privileges, enter:

ISRegstr

Follow the on-screen prompts to review and update all user settings. If user settings do not need modification, just press return to accept currently defined information.

At the end, answer **Y** to the prompt "Would you like to update this information?". Answer **Y** even if no user settings were modified.

- As a user with **root** privileges, enter:

ISSIMcfg

Follow the on-screen prompts to update all user settings. If user settings do not need modification, just press return to accept currently defined information.

At the end, answer **Y** to the prompt "Would you like to update this information?". Answer **Y** even if no user settings were modified.

Install Remaining Fixes

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

Now install the remaining fixes that apply to the Image Services 4.1 release. Be sure to read the README file on the Tech Info CD, which contains the fixes that were available when the CD was made. Also retrieve the latest fixes from the from the IBM Support page, see [“Accessing IBM FileNet Documentation” on page 22](#).

Adapt System for Xstation Use (Optional)

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 +

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-only systems).

If you will be configuring and setting up an MSAR System, refer to the *MSAR Procedures and Guidelines* document for information.

To download this document from the IBM Support page, see **[“Accessing IBM FileNet Documentation” on page 22.](#)**

Make System Backups

At this time, you must make a full system backup.

Server Types

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

Make backups of your system configuration. For complete information on creating system backups, refer to:

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

To download IBM FileNet documentation from the IBM Support page, see [**"Accessing IBM FileNet Documentation" on page 22.**](#)

Return to Production Mode

You are now finished with the FileNet Image Services upgrade procedure, and you can return the server to normal operation.

Remove Previous Oracle File System (Optional)

After the upgraded FileNet Image Services and Oracle RDBMS software have been running successfully for several months, the Database Administrator or your service representative can remove the old version of Oracle as long as no other applications are using it.

Appendix A – Uninstalling Image Services

If you need to remove the Image Services software from your server, follow these steps:

- 1 Log on as a user with **root** privileges.
- 2 Stop the Image Services software.
- 3 Back up any log files or other data in the /fnsd and /fnsd/local directories that you want to save.
- 4 Run the uninstall program by entering:
 - Graphical mode – standard, graphical interface:
/fnsd/etc/uninstaller/uninstall_is.bin &
 - Console mode – plain text interface:
/fnsd/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` command if you decide to uninstall the Image Services software. You cannot use the Operating System tools to remove Image Services.

- 5** The uninstall program will lead you through the necessary steps and prompt you when finished.

Note

The uninstaller leaves certain critical directories intact to protect existing data.

- 6** After the uninstaller has finished, go to the `/fnsw` directory and examine the remaining contents. Manually remove any unwanted files and directories.

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