IBM FileNet Image Services
Version 4.1.2

Guidelines for Installing and Upgrading Oracle 11g Software (FileNet-Controlled)

IBM ®

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About This Manual

This document provides procedures and guidelines for installing and upgrading Oracle 11g software in a FileNet-controlled environment for IBM® FileNet® FileNet Image Services systems on both UNIX® and Windows® Server operating systems.

Important   Before installing or upgrading the Oracle software on your FileNet Image Services system, read this document to familiarize yourself with the tasks you will need to perform.

Audience

This manual is written for IS System Administrators and support personnel. We assume that you are familiar with the FileNet Image Services Application Executive (Xapex), which includes Storage Library Control, Background Job Control, and Database Maintenance, as well as the FileNet Image Services System Configuration Editor. We also assume that you are familiar with your operating system environment and workstation operations.

Document revision history

IS version	Date	Comment
4.1.2	Aug. 2010	Increased space requirement for AIX to 7.5 GB in the section, **"Prepare a Location for the Oracle Server Software" on page 20**.
		Expanded the Tip about warning messages that can be ignored on AIX servers on p. 25 and p.29.
		Added instructions for installing Oracle patchset 11.1.0.7.0 on AIX servers in **"Appendix B – Oracle 11g Patch Set and Interim Patch for AIX" on page 51**
		Added the section, **"Verifying the init.ora file" on page 43**
		Updated the **"Notices" on page 64**.
4.1.2	Nov. 2008	Initial release.

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   On the Product Support page, click **Documentation** and then click **Product Documentation**.

4   On the Product Documentation page, locate the document you need, then click the icon in the appropriate release column to access the document.

Conventions used in this manual

The following paragraphs discuss the ways in which we call your attention to information throughout this document.

Typing Instructions

To indicate commands, values, or other information you enter at your keyboard, we use the following indentation and typeface:

help [CSM_exim]

Screen Displays

Windows and screen examples shown in the procedures in this document are from Windows servers. These windows and screens could look different on UNIX servers.

Console Displays

Information you see displayed at your console is shown in this document in the following manner:

```
Surface '3176' : 1 document processed
Local doc_id = '2235007' Original doc_id = '2235007'
Original ssn = '8502'
Primary copy. No tranlog copy exists.
* document successfully deleted from databases. *
* Purging pages from disk... *
* This document has been successfully purged. *
```

Observe Cautions, Important Notes, Notes, and Tips

Important information and warnings appear in cautions, important notes, notes, and tips. Read these items carefully:

CAUTION   Signals possible damaging consequences of an action, such as loss of data or time.

Important   Gives added emphasis to notes that contain particularly vital information that must not be skipped over. While all the information in each section is important, these notes are especially important.

Tip   Introduces an idea that might make your work easier.

Command Syntax

Command syntax definitions are indented:

> **ddexim –e >** *filename*

Optional Parameters

Optional parameters and keywords are within square brackets:

> **ddexim [–e] >** *filename*

Required Parameters

Parameters that require you to provide information are shown in italic type.

For example, for the following command:

> **ddexim –e >** *filename*

you must substitute the name of a file for the parameter in italics, such as:

> **ddexim –e > myfile**

IBM FileNet Education

IBM FileNet provides various forms of education. Please visit the Training and certification page on IBM's Web site at (**www-306.ibm.com/software/sw-training/**).

Feedback

Documentation feedback

Send comments on this publication or other IBM FileNet Image Services documentation 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 help topic title, a chapter and section title, a table number, or a page number).

Consumability survey

You are invited to tell IBM how to improve the consumability of software products. If you want to help IBM make FileNet Image Services easier to use, take the Consumability Survey at **http://www.ibm.com/software/data/info/consumability-survey/**.

1

Installing and Upgrading Oracle 11g Software

This chapter explains how to install Oracle 11g software for a FileNet-controlled RDBMS on IBM® FileNet® FileNet Image Services 4.1.2 servers.

Server Types   Perform the sections in this document only on the following servers:

> **Root/Index** server during a DUAL server installation.

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

> **Application** server during a WorkFlo Queue Services or SQL Services installation.

Do not install relational database software on Storage Library servers or on Application servers that will not be using WorkFlo Queue Services or SQL services.

Tip   The procedures in this section require that you enter commands as a user with **root** privileges, a FileNet sofware user such as **fnsw**, and an **oracle** user. To simplify, open three terminal windows and logon as a different user in each window.

Important   Throughout this document, you will see references using **/opt/oracle/product/11gR1** as a file system home directory, **oracle** as a user (and

also as a directory), and **dba** as a group. This document uses /opt/oracle/product/11gR1, oracle, and dba only as examples. Use file systems, groups, directories, and users on your system in place of the examples.

Supported operating system software

The following operating systems are supported:

- AIX 5L 5.3 and 6.1)

- HP-UX 11i v2 (B.11.23) and HP-UX 11i v3 (B.11.31)

- Solaris 9 and Solaris 10

- Windows Server 2003, Windows Server 2003 R2, and Windows Server 2008

Supported Oracle11g RDBMS software

The following versions of Oracle11g are supported:

- Oracle Database 11g Release 1 (11.1.0.6) for AIX-Based 5L Systems (64-bit)

- Oracle Database 11g Release 1 (11.1.0.6) for HP-UX PA-RISC (64-bit)

- Oracle Database 11g Release 1 (11.1.0.6) for HP-UX Itanium

- Oracle Database 11g Release 1 (11.1.0.6) for Solaris Operating System (SPARC 64-bit)

- Oracle Database 11g Release 1 (11.1.0.6) for Microsoft Windows (32-bit)

Required Oracle 11g Patch Sets

No patch sets are required for Oracle 11g at this time.

Required Oracle 11g interim patches (for AIX and HP Integrity only)

AIX

An interim patch is required for AIX servers to prevent a core dump when FileNet Image Services connects to an Oracle 11gR1 database.

- Oracle Patch Set 11.1.0.7.0
- Oracle Interim Patch 6800649

See **"Appendix B – Oracle 11g Patch Set and Interim Patch for AIX" on page 51**.

HP Integrity

An interim patch is required for HP Integrity servers to replace missing 32-bit libraries in $ORACLE_HOME/lib32.

- Oracle Interim Patch 6661255

See **"Appendix C – Oracle 11g Interim Patch for HP Integrity" on page 58**.

Installation Prerequisites

Follow the guidelines in the section, "Installation Prerequisites" of the *FileNet Image Services Installation and Configuration Procedures for IS 4.1.2*.

To download this manual from the IBM support page, see **"Accessing IBM FileNet documentation" on page 12**.

Upgrade Prerequisites

If you are upgrading from Oracle 9i or Oracle 10g, you must verify that the current version of Oracle is one of the following versions:

- Oracle 9.2.0.4 or later

- Oracle 10.2.0.2.

Follow the guidelines in the section, "Upgrade Prerequisites" of the *FileNet Image Services Upgrade Procedures for IS 4.1.2.*

To download this document from the IBM support page, see **"Accessing IBM FileNet documentation" on page 12**.

Create Users and Groups for fresh installations

If you are installing Oracle on the server for the first time, create a Database Administrator group (such as **dba**) containing an Oracle user (such as **oracle**) using the appropriate system tool for your platform:

AIX　　　**smit** (System Management Interface Tool)

HPUX　　**sam** (System Administration Manager)

SOL　　　**smc** (Solaris Management Console)

WIN　　　**User Profiles tab on the System control panel**

Also create an **fnusr** group containing a FileNet software user, such as **fnsw**. (Consult with the System Administrator to decide on an appropriate FileNet software user name.)

Add the *dba_user* to the **fnusr** group, and add the FileNet software user, such as **fnsw**, to the *dba_group*.

Group Name	Members	Group Description
fnusr	*fnsw*, root, *dba_user*	FileNet User group. Members can operate any FileNet software (including COLD). All operators and administrators must belong to this group.
dba_group	*fnsw*, *dba_user*	Database Administration group.

Note   The *dba_group* name **dba** and the *dba_user* name **oracle** are suggested but not required.

Prepare a Location for the Oracle Server Software

For both fresh installations and upgrades, create a file system for the new Oracle Server software. The Oracle Server software requires a **minimum** of:

	Free Space for Oracle Software	Free Space for Database
AIX/6000	**7.5 GB**	**1.2 GB**
HP-UX (HP 9000)	**2.5 GB**	**1.2 GB**
HP-UX (HP Integrity)	**5.0 GB**	**1.2 GB**
Solaris	**3.5 GB**	**1.2 GB**
Windows	**2.0 GB**	**1.2 GB**

The volume names, mount points, user and group names in these tables are only examples. You can name them anything you choose.

AIX/6000

Volume Name	Mount Point	Minimum Size	Actual Size You Create	User Name	Group Name	Mode
orabase1 (Server)	/opt/oracle	**7.5 GB**		oracle	dba	755
oratmp ***	/oratmp	**400 MB**		oracle	dba	755

HP-UX (HP 9000 and HP Integrity)

Volume Name	Mount Point	Minimum Size	Actual Size You Create	User Name	Group Name	Mode
orabase1 (Server)	/opt/oracle	**5.0 GB**		oracle	dba	755
oratmp ***	/oratmp	**400 MB**		oracle	dba	755

Solaris

Volume Name	Mount Point	Minimum Size	Actual Size You Create	User Name	Group Name	Mode
orabase1 (Server)	/opt/oracle	**3500m**		oracle	dba	755
oratmp ***	/oratmp	**400m**		oracle	dba	755

* The oratmp file system is used for temporary space during the Oracle software installation. It can be removed at the end of this procedure.

Windows

The Windows operating system does not use logical volumes. Oracle requires **2 GB** for the Oracle 11g software, **1.2 GB** for datasets, and **500 MB** for temporary space.

The temporary space is required for decompressing Oracle files from the media onto the C: drive, and is only needed temporarily. These files are automatically deleted when the installation is finished. If desired, you can move this space to another drive by setting the TEMP variable.

To check your free disk space, open the Windows Explorer, right click on the drive where you plan to install your FileNet or RDBMS software, and choose Properties.

Create an Oracle Home Directory

Within the Oracle base volume (ORACLE_BASE=/opt/oracle), create an Oracle home directory where you will install the new Oracle software. For example:

- For Oracle 11g, you might create:

  /opt/oracle/product/11gR1

  (ORACLE_HOME=/opt/oracle/product/11gR1)

Set Oracle Directory Ownership and Permissions

As a user with **root** privileges, change the ownership and access permissions for the Oracle directories. Verify that the ownership is set to the Oracle user and the Database Administration group.

Note	On Solaris servers, use the Volume Manager to verify that the user and group ownership and the access permissions (mode) are set appropriately as shown in the table in the previous subsection.

If the access permissions are not correct, change them using this syntax:

chown -R *Oracle_user*:*DBA_group path*
chmod -R 775 *path*

For example, if the Oracle software is going to be located in /usr/ora/10g, enter commands similar to these:

chown -R oracle:dba /opt/oracle/product/11gR1
chmod -R 775 /opt/oracle/product/11gR1

Upgrade from an earlier version of Oracle

- If you are performing an **upgrade** from Oracle 9i or 10g, skip to **Chapter 2, "Upgrade to Oracle 11g Release 1," on page 30**.

- If you are performing a **fresh installation** of Oracle 11g on this server, continue with the next section.

Set the Environment Variables on UNIX Servers

If you're installing Oracle on a Windows server, skip to **"Install the Oracle software" on page 24**.

1 As the **oracle** user, verify the environment variables ORACLE_HOME and ORACLE_SID are set correctly.

echo $ORACLE_HOME
echo $ORACLE_SID

2 ORACLE_HOME must point to the location of the Oracle 11.1.0.6 software, and ORACLE_SID must be IDB, for example. To change them:

- For Bourne or Korn shell, enter:

  export ORACLE_HOME=*Oracle Home Directory*
  export ORACLE_SID=*Oracle Site Identifier*

- For C shell, enter:

  setenv ORACLE_HOME *Oracle Home Directory*
  setenv ORACLE_SID *Oracle Site Identifier*

3 Verify that the DISPLAY environment variable is set.

- For Bourne or Korn shell, enter:

  export DISPLAY=*host_identifier***:0**

- For C shell, enter:

  setenv DISPLAY *host_identifier***:0**

where *host_identifier* is either the server name or its IP address.

Install the Oracle software

This section provides information on installing **Oracle Database 11g Enterprise Edition, version 11.1.0.6.** The Oracle 11g media is composed of multiple DVDs.

Load the Oracle 11g software media

1 Insert into the DVD drive and use the appropriate command to mount the first Oracle 11g DVD.

AIX • On AIX servers, insert the first DVD into the drive and enter:

  mount -rv cdrfs /dev/cd0 /dvd

HPUX • On HP-UX servers, insert the first DVD into the drive and enter a command similar to this:

  /usr/sbin/mount -F cdfs -o rr /dev/dsk/cxtydz /dvd

In this exapmle, /dvd is the disc mount point directory and /dev/dsk/cxtydz is the device name for the disc device, for example /dev/dsk/c0t2d0.

SOL • On Solaris servers, insert the first DVD. The DVD mounts automatically.

WIN • On Windows servers, insert the DVD. (There is just one DVD for Oracle 11g on Windows.) The DVD mounts automatically.

Start the Oracle Universal Installer

1 As **oracle** user, log into the root directory and start the Oracle Universal Installer by entering:

AIX • On AIX servers:

  cd /
  /dvd/runInstaller

HPUX • On HP-UX servers:

  cd /
  /dvd/runInstaller

SOL
- On Solaris servers:

  cd /
  /dvd/dvd0/runInstaller

WIN
- On Windows servers:

  *drive***:\runinstaller**

Important   DO NOT change directories onto the DVD to run the Oracle installer. If you're logged onto the DVD, you won't be able to change disks when requested.

2   On the **Inventory** screen, enter the location where the base files are to be installed, such as /opt/oracle/product/11gR1.

3   On the **UNIX Group** screen, select the group that will have admin access, such as dba.

4   On the **root.sh** screen, run /tmp/oraRoot.sh before continuing with the installation.

5   At the File Locations screen, verify the destination directory is correct (such as, /opt/oracle/product/11gR1).

6   On the Available Products screen, select **Advanced Installation**.

7   On the Installation Types screen, selecteither:

- **Enterprise Edition**
- **Standard Edition**

Tip   FileNet Image Services is compatible with both; however, Enterprise Edition is recommended.

8 Select the **Install Software only** option. (Do not create a demo database.)

9 Accept the default values for the remaining prompts.

10 On UNIX servers, when the Oracle Installion program is finished installing products from Disk 1, the Disk Location screen displays and prompts you to insert Disk 2.

    a   As a user with **root** privileges, unmount or eject the current DVD.

    b   Remove Disk 1 and insert Disk 2 into the DVD drive.

    c   As soon as the second DVD is mounted, click **OK** on the Disk Location screen.

The Oracle Universal Installer continues installing products.

Tip You can ignore Warnings for patches that refer to older patch versions.

Also, on AIX servers, the following Warning messages in the log can safely be ignored:

Checking for rsct.basic.rte(0.0); Not found. Failed
  rsct.basic.rte(0.0) is only required for Oracle RAC
    (Real Application Clusters).

Checking for rsct.compat.clients.rte(0.0); Not found. Failed
  rsct.compat.clients.rte(0.0) is only required for Oracle RAC.

Checking for xlC.aix61.rte(9.0.0.2); Not found. Failed
  xlC.aix61.rte(9.0.0.2) is only required for AIX 6.

See Oracle Article ID 784193.1 for more information.

11 When the Oracle software installation is finished, return to the home directory of the **oracle** user. Unmount or eject the final Oracle DVD.

Install the Interim Patches

No patch sets are required for Oracle 11g at this time. However, interim patches are required for AIX and HP-UX Integrity servers.

AIX only

An interim patch is required for AIX servers to prevent a core dump when FileNet Image Services connects to an Oracle 11gR1 database.

- Oracle Patch Set 11.1.0.7
- Oracle Interim Patch 6800649

See **"Appendix B – Oracle 11g Patch Set and Interim Patch for AIX" on page 51**.

HP Integrity only

An interim patch is required for HP Integrity servers to replace missing 32-bit libraries in $ORACLE_HOME/lib32.

- Oracle Interim Patch 6661255

See **"Appendix C – Oracle 11g Interim Patch for HP Integrity" on page 58**.

Continue with the FileNet Image Services installation

If you are performing a fresh installation of Oracle and FileNet Image Services software on a new server, you are now ready to install the FileNet Image Services software.

See the FileNet Image Services *Installation and Configuration Procedures for FileNet Image Services 4.1.2*. To download this manual from the IBM support page, see **"Accessing IBM FileNet Documentation" on page 11**.

2

Upgrade to Oracle 11g Release 1

This chapter covers upgrading local Oracle database configurations from Oracle 9.2.0.4 or Oracle 10.0.2.0.2 to Oracle 11.1.0.6.

Important   Follow the steps in this chapter **after** you have upgraded the FileNet Image Services software to IS 4.1.2.

Skip the section "Upgrading the Relational Database Software" of the *IS Upgrade Procedure for IS 4.1.2.*

When you get to the section "Additional Relational Database Tasks" in the upgrade procedure, come back to this document to install the Oracle 11g software.

Install the Oracle 11g software

Refer to the Oracle documentation and the Oracle Metalink information (for registered users) on Oracle's Web site for complete information.

Verify the current Oracle release

Verify that the current version of Oracle is:

- Oracle **9.2.0.4** or later (for IS 4.0.50 or later)

- Oracle **10.2.0.4** or later (for IS 4.1.1 or later)

Create a new Oracle home directory

Within the Oracle base volume (ORACLE_BASE=/opt/oracle), create an Oracle home directory where you plan install the new Oracle software.

• For example, for Oracle 11g server software, create:

/opt/oracle/product/11gR1

Start the Oracle installer

Install Oracle 11g in the ORACLE_HOME directory you created in the previous section.

1   Start the Oracle Universal Installer:

UNIX   On UNIX servers:

As the **oracle** user, make sure the Oracle11g media has been downloaded to your server or that the DVD media is loaded, and start the Oracle Universal Installer.

runInstaller

WIN   On Windows servers:

If you received the Oracle11g software on DVD media, the Oracle Universal Installer starts automatically when you load the DVD. If the installer does not start automatically, or if you downloaded the media, use Windows Explorer to navigate to the location of the software and click Setup.

2   Select the **Advanced Installation** option.

3 Select the **Enterprise Edition** option.

(Do not create a demo database.)

4 Select the **Install Software only** option.

5 Accept the default values for the remaining prompts and change DVDs as requested.

(There is no need to select individual products.)

Tip You can ignore Warnings for patches that refer to older patch versions.

Also, on AIX servers, the following Warning messages in the log can safely be ignored:

Checking for rsct.basic.rte(0.0); Not found. Failed
  rsct.basic.rte(0.0) is only required for Oracle RAC
    (Real Application Clusters).

Checking for rsct.compat.clients.rte(0.0); Not found. Failed
  rsct.compat.clients.rte(0.0) is only required for Oracle RAC.

Checking for xlC.aix61.rte(9.0.0.2); Not found. Failed
  xlC.aix61.rte(9.0.0.2) is only required for AIX 6.

See Oracle Article ID 784193.1 for more information.

---

6 Leave the ORACLE_HOME variable set to the current location of the Oracle 9i or Oracle 10g software.

Install the Time Zone "version 4" Patch

If you are upgrading from Oracle 10.2.0.4 or later, skip to the next section, **"Download the Readiness and Rollback segment scripts" on page 33**. Oracle 10.2.0.4 and later versions already contain the correct version 4 files.

If you are upgrading from Oracle 9i or from a version of Oracle 10g earlier than version 10.2.0.4, you must install an interim patch to update the Oracle time zone files to version 4.

• Oracle Interim Patch 5632264

See **"Appendix A – Oracle 11g Interim Patch for All Servers" on page 48**.

Download the Readiness and Rollback segment scripts

Before you upgrade the IS index database to Oracle 11gR1, you must run the Oracle 11gR1 utility to check the database and make sure it is ready for the upgrade. This Oracle utility and a FileNet utility to expand rollback segments are available for download on the IBM Web site.

1 On the IBM Web site, navigate to the Information Management Product Fulfillment page and sign in with your IBM ID and password.

2 In the next window, select FileNet Products, and click **Continue**.

3 Verify your Business Contact Information, and click **Submit**.

4 In the Entitlement area of the subsequent window, enter your access key. Click **Submit**.

5 From the list of FileNet Products, select **Oracle 11g Pre-Upgrade Prep Scripts**. Scroll to the bottom of the window and click **Continue**.

6 Select either the .tar file or the .zip file:

UNIX   **ora11g_preupgradeprep.tar**

WIN   **ora11g_preupgradeprep.zip**

7 View the license agreement. If you choose to continue the download, select **I agree** and click **I confirm** to complete the download.

8 Expand the downloaded file to extract the script inside:

utlu111i.sql – This Oracle script determines the readiness of your databases for the upgrade to Oracle 11g. Copy this script to /fnsw/local/tmp on a UNIX server, or to \fnsw_loc\tmp on a Windows server.

Run the Oracle readiness utility

1 As the FileNet software user, such as **fnsw**, enter the following comand to start the Oracle software:

fn_util startrdb

2 As either the **fnsw** user or the **oracle** user, run the readiness utility. (The following is a UNIX example.)

Note   ORACLE_HOME should be set to the location of the current Oracle software.

$sqlplus "/as sysdba"

SQL>**spool /tmp/utlu111i.out**

SQL>**@/tmp/utlu111i.sql**

SQL>**exit**

3 Check the output file /tmp/utlu111i.out for any warnings and failures, and fix the problems appropriately.

a If some tablespaces need to be extended for a successful upgrade, refer to IS Upgrade manuals for the specific platform for the fn_edit procedures to add a datafile to the specific tablespace.

b If the rollback segments need to be extended, run the following script as the **fnsw** user:

UNIX   **$sqlplus @/fnsw/oracle/fn_oraaltrbs8.sql**

WIN   **$sqlplus @C:\fnsw\oracle\fn_oraaltrbs8.sql**

Verify the oratab file (UNIX servers only)

Make sure the IDB instance is listed in the oratab file so the Oracle tools can identify the instances that need to be upgraded. The location of oratab is different on different servers:

AIX
HPUX   On AIX and HP-UX servers:

/etc/oratab

SOL   On Solaris servers:

/var/opt/oracle/oratab

For example, verify that the following entries are in oratab:

*:/opt/oracle/product/9iR2:N
IDB:/opt/oracle/product/9iR2:N

where IDB is the $ORACLE_SID and
/opt/ora/product/9iR2 is the current $ORACLE_HOME

Create a listener using the Oracle Net Configuration Assistant (Oracle 9i only)

If you are upgrading from Oracle 9i and a listener was not configured in the Oracle 9i repository, then use the Oracle Net Configuration Assistant to configure the listening protocol address, service information, and listener.ora file for the Oracle Database 11g Release 1 (11.1) database.

Previous versions of the listener are not supported for use with an Oracle Database 11g Release 1 database. However, it is possible to use the new version of the listener with previous versions of the Oracle database.

As the **oracle** user, start the Oracle Net Configuration Assistant by entering:

UNIX   **$ORACLE_HOME/bin/netca**

where $ORACLE_HOME is your current Oracle 9i home directory.

WIN   **Start > Programs > Oracle - HOME_NAME > Configuration and Migration Tools > Net Configuration Assistant**

Create a raw partition for the SYSAUX tablespace (Oracle 9i on UNIX only)

Note   Perform the steps in this section on servers with Oracle 9i databases. (Oracle 10g databases should already have a SYSAUX tablespace.)

1 Use your operating system tools to create a new raw partition for the SYSAUX tablespace. The new raw partition must be at least **500 MB**.

2 After the raw partition has been created, use the chmod tool to set the access permissions for the partition:

    chmod 664 SYSAUX

3 Then change to the /fnsw/dev/1 directory:

    cd /fnsw/dev/1

4 Link the new partition to /fnsw/dev/1. For example:

> **AIX**   **ln -s /dev/rSYSAUX SYSAUX**

> **HPUX**   **ln -s /dev/fnvg/rSYSAUX SYSAUX**

> **SOL**   **ln -s /dev/vx/rdsk/fndg/SYSAUX SYSAUX**

Update the ORACLE_HOME Location

1 Use the inst_templates tool to set the ORACLE_HOME variable to the location of Oracle 11gR1 software, such as /opt/oracle/product/11gR1.

As the FileNet software user, enter:

    /fnsw/etc/inst_templates

2 Accept the defaults for each prompt until you are asked to enter the relational database home directory. Enter the location of the Oracle 11gR1 software, such as /opt/oracle/product/11gR1.

```
Enter the relational database home directory [...]: /opt/oracle/product/11gR1
```

Accept the default values for the remaining prompts.

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

Upgrade the Index database

Turn off Archive Logging (if necessary)

If Archive Logging is active on the server, turn it off before updating the Oracle database to prevent non-essential records from being written to the log file. Turning off Archive Logging will help the upgrade run faster.

Stop the FileNet Image Services Software

1 As the FileNet software user, such as **fnsw,** shut down the FileNet Image Services software by entering:

initfnsw -y stop

2 Kill all remaining FileNet processes by entering:

UNIX **killfnsw -DAy**

WIN **killfnsw -Dy**

The -D option terminates FileNet daemons (such as TM_daemon). Normally, the TM_daemon process continues to run after IS is stopped, but occasionally, it is necessary toterminate TM_daemon too.

The -A option removes all IPC segments. (UNIX only)

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

Start the Oracle Database Upgrade Assistant

Upgrade the index database for Oracle 11gR1. Select the defaults for each prompt, unless indicated in the following steps.

1 Change to the new ORACLE_HOME directory and start the Oracle database upgrade assistant:

cd $ORACLE_HOME/bin

dbua

2 During the index database upgrade, you are prompted for the path name of the initialization parameter file. Enter:

/fnsw/local/oracle/init.ora

3 Click **Yes** to continue when you see the warning of CONNECT role changes.

4 When you are prompted for creating SYSAUX tablespace, enter the path /fnsw/dev/1.

- Click "Reuse Existing File Name"

- Keep the default size of 500 MB

- Clear the check box, "Automatically extend datafile when full"

5 When you are prompted for configure the database with OEM, select "Use Database Control for Database Management."

6 Enter passwords for DBSNMP and SYSMAN.

7 When the Oracle database upgrade assistant is finished, check the log files in the following directory and ensure that there are no errors:

   $ORACLE_HOME/cfgtoollogs/dbua

8 Start the database and verify that it starts successfully:

   fn_util startrdb

9 Then shutdown the database again:

   fn_util stoprdb

Install the Oracle 11gR1 interim patches (AIX and HP Integrity only)

No patch sets are required for Oracle 11g at this time. However, interim patches are required for AIX and HP-UX Integrity servers.

AIX only

An interim patch is required for AIX servers to prevent a core dump when FileNet Image Services connects to the Oracle 11gR1 database.

- Oracle Patch Set 11.1.0.7.0

- Oracle Interim Patch 6800649

See **"Appendix B – Oracle 11g Patch Set and Interim Patch for AIX" on page 51**.

HP Integrity only

An interim patch is required for HP Integrity servers to replace missing 32-bit libraries in $ORACLE_HOME/lib32.

• Oracle Interim Patch 6661255

See **"Appendix C – Oracle 11g Interim Patch for HP Integrity" on page 58**.

Testing the Oracle database

1 Start the database and verify that it starts successfully:

fn_util startrdb

2 Then shutdown the database again:

fn_util stoprdb

Adding the SYSAUX tablespace to the IS configuration (UNIX and Windows)

Use the IS configuration editor, fn_edit, to add the SYSAUX tablespace to the IS configuration.

1 Start the IS configuration editor:

fn_edit &

2 On the Relational Databases tab, select the Oracle subtab.

   a Verify that the Version Number field is set correctly. Change the value in this field to reflect the newly installed Oracle version. For example:

   11.1.0.6

   b Also verify that the Oracle Home field contains the correct path to the Oracle 10g software. For example:

   /opt/oracle/product/11gR1

3 Select the Procedures tab.

   a Choose the procedure "Create an Optional Relational DB Dataset."

   b When you are prompted to select the dataset type to create, choose "Oracle sysaux tablespace."

   c When you are prompted to enter the dataset path, enter:

   /fnsw/dev/1/SYSAUX

   d When you are prompted to enter the dataset size, enter the size of the raw partition you created earlier, such as 500 MB.

4 After you have added the new dataset to the configuration, exit from fn_edit and save your changes.

5 Run fn_build to regenerate the IS system configuration files.

   fn_build -a

6 Then run fn_util to update the relational database.

   fn_util updaterdb

7 Start both the IS and Oracle software together by entering:

Initfnsw start

Update IS Configuration Files

You can upgrade from Oracle 10g to Oracle 11g several weeks or months after upgrading to FileNet Image Services 4.1.2. If you are upgrading to Oracle 11g independently of a FileNet Image Services 4.1.2 installation or upgrade, you must run **fn_setup_rdb** to update the IS configuration files and RDBMS related files.

(This step is also included in the IS 4.1.2 Upgrade procedures, so you do not need to run this command now if you are also also upgrading to IS 4.1.2 at this time.)

Note Verify that the relational database is up before you run the fn_setup_ rdb command.

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

fn_setup_rdb -u

You will be prompted to enter the passwords for the four IS database users, fn_sw, f_sqi, f_open, and f_maint.

Verifying the init.ora file

The init.ora file contains initialization parameters for the Oracle Relational Database Management System.

The FileNet Image Services software regenerates most of the parameters in this file each time IS is restarted. The parameter settings are

taken from the configuration database (CDB) and can be changed by using **fn_edit**, the FileNet system configuration editor. However, you can add custom Oracle parameter settings directly to this file as well.

A comment line divides the file into two parts:

*   The parameters above the comment line are automatically reset to the values stored in the configuration database each time the FileNet Image Services software is restarted.

*   The parameters below the line are not reset.

Important   Add or change only the parameters **below** the comment line. Parameters above the comment line are regenerated each time the FileNet Image Services software is restarted. Any parameters you add or change above the comment line will be lost the next time the FileNet Image Services software restarts.

To verify your init.ora file, follow the appropriate steps for your server:

UNIX servers

Use the **more** command to verify the current parameter settings. For example:

more   /fnsw/local/oracle/init.ora

If you decide to modify the init.ora file now, you can use your favorite text editor, such as **vi**, to add or change parameters below the comment line. For example, follow these steps:

1 As **fnsw** user (or as any member of the **dba** group), enter:

> **vi   /fnsw/local/oracle/init.ora**

Your init.ora file might look similar to this example:

```
control_files = /fnsw/local/oracle/control0/ctl.ora,/fnsw/local/oracle/
control1/ctl.ora
db_name = indexdb
db_block_buffers = 1000
db_block_size = 2048
...
sequence_cache_entries = 10
sequence_cache_hash_buckets = 10
shared_pool_size = 3500000
compatible = 10.0.2.0.4
sort_area_size = 131072
rollback_segments = rs0,rs1,rs2,rs3
# WARNING: lines above this line will be replaced by FileNet.

open_cursors = 50
```

2 To change or add parameters, see your Oracle documentation for complete information on the parameters that you can add to this file.

3 After you finish modifying the file, type Shift+z+z to save your changes and exit **vi**.

4 Skip to the section, .

Windows servers

Use the Windows Server notepad or a text editor such as "edit" to verify the current parameter settings. For example, using "type," enter the following at a Command Prompt:

Type *drive***:\fnsw_loc\oracle\init.ora**

If you decide to modify the init.ora file now, you can add or change parameters **below** the comment line. Follow these steps to modify the file:

1 As **fnsw** user (or as any member of the ora_dba group), enter:

edit *drive***:\fnsw_loc\oracle\init.ora**

Note ora_dba is the default group name for FileNet-controlled Oracle databases.

Your init.ora file might look similar to this example:

```
C:\>type d:\fnsw_local\oracle\init.ora
control_files = D:\FNSW_LOC\oracle\control0\ctl.ora,D:\FNSW_
LOC\oracle\control1\ctl.ora
db_name = indexdb
db_block_buffers = 1000
db_block_size = 2048
...
sequence_cache_entries = 10
sequence_cache_hash_buckets = 10
shared_pool_size = 3500000
compatible = 10.0.2.0.3
remote_login_passwordfile = exclusive
sort_area_size = 131072
rollback_segments = rs0,rs1,rs2,rs3
# WARNING: lines above this line will be replaced by FileNet.

open_cursors = 50

C:\>
```

2   To change or add parameters, see your Oracle documentation for complete information on the parameters that you can add to this file.

3   After you finish modifying the file, save your changes and exit.

Continue with the FileNet Image Services upgrade

If you are upgrading the Oracle software in conjunction with a FileNet Image Services software upgrade, continue with the section, "Additional Relational Database Tasks" in the *Upgrade Procedures for IS 4.1.2*. To download this manual from the IBM support page, see **"Accessing IBM FileNet documentation" on page 12**.

Appendix A – Oracle 11g Interim Patch for All Servers

Applying "version 4" Time Zone files

Oracle's time zone definitions are stored in two time zone files, time-zone.dat and timezlrg.dat. Oracle updates these files occasionally and releases new versions.

You must upgrade the Oracle time zone files to version 4 before you upgrade your relational database to Oracle 11g.

Tip   Oracle 10.2.0.4 and later releases already contain version 4 time zone files, but earlier Oracle 10g versions and all Oracle 9i versions do not. You must install the version 4 files before you upgrade the database to Oracle 11g,

If your current version of Oracle is 10.2.0.4 or later, skip this appendix and return to the section, .

Downloading the patch file

Download Oracle patch 5632264 for your specific Oracle level and operating system, p5632264_*oracle_level_your_os*.zip. For example, if your current version of Oracle is 10.2.0.2 and is running on a Solaris 64-bit server, download:

    p5632264_10202_SOLARIS64.zip.

Installing the interim patch

To apply the patch, unzip the PSE container file for your Oracle level and operating system. For example:

unzip p5632264_10202_SOLARIS64.zip

Set your current directory to the directory where the patch is located:

cd 5632264

Ensure that the directory containing the opatch script appears in your $PATH; then enter the following command:

opatch apply

Patch special instructions

Ensure that all instances running under the ORACLE_HOME being patched are cleanly shutdown before installing this patch. Also ensure that the tool used to terminate the instances has exited cleanly.

If the Oracle inventory is not set up correctly, this utility will fail. To check accessibility to the inventory, you can use the following command:

opatch lsinventory

If you have any problems installing this PSE or are not sure about inventory setup please, call Oracle support.

Now you can continue the upgrade procedure to configure FileNet Image Services as usual. Skip to the section, .

Removing the interim patch

If you decide to remove the patch, enter the following commands:

cd 5632264

opatch rollback -id 5632264

Appendix B – Oracle 11g Patch Set and Interim Patch for AIX

Preparing to Install the Patch Set 11.1.0.7.0

Load the Oracle Patch Set DVD

1   Insert the DVD containing the 11.1.0.7.0 Patch Set for Oracle Database Server AIX-5L Based.

2   Mount the DVD using the following command syntax:

mount -rv cdrfs *device_name mount_point*

a   If you are not sure of the DVD *device_name*, enter the following command:

lsdev -C | grep cd

The DVD device name will be similar to **/dev/dvd0**.

b   The *mount_point* is a directory on the server. If a /dvd directory does not already exist on the server for this purpose, enter:

mkdir /dvd

Then enter the mount command similar to this example:

mount -rv cdrfs /dev/dvd0 /dvd

Set Environment Variables

1 As the **oracle** user, verify that the environment variables ORACLE_ HOME and ORACLE_SID are set correctly.

> **echo $ORACLE_HOME**
> **echo $ORACLE_SID**

2 ORACLE_HOME must point to the location of the Oracle 11.1.0 soft- ware, and ORACE_SID must be IDB, for example. To change them:

- For Bourne or Korn shell, enter:

    > **export ORACLE_HOME=*Oracle Home Directory***
    > **export ORACLE_SID=*Oracle Site Identifier***

- For C shell, enter:

    > **setenv ORACLE_HOME *Oracle Home Directory***
    > **setenv ORACLE_SID *Oracle Site Identifier***

3 Verify that the DISPLAY environment variable is set.

- For Bourne or Korn shell, enter:

    > **export DISPLAY=*host_identifier*:0**

- For C shell, enter:

    > **setenv DISPLAY *host_identifier*:0**

where *host_identifier* is either the server name or its IP address.

4 Use the Oracle Universal Installer to install the Patch Set as described in the next section.

Start the Oracle Universal Installer

1   As **oracle** user, enter the following command to start the installer:

   ./dvd/runInstaller

2   On the File Locations screen in the **Source...** entry field, click the **Browse...** button and navigate to the *stage* directory located on the DVD. (The **stage** directory is located under the Disk1/ sub-directory on the DVD.)

3   Select the products.jar file.
   The products file will be read and the installer will load the product definitions. The products to be loaded are displayed on the Summary screen.

4   When you are prompted to select either the Oracle Universal Installer or the Oracle Patch Set, select:

   Oracle10gR2 11.1.0.7.0 Patch Set

5   Verify the products listed on the Summary screen.

Tip   Disregard the amount of space shown as Required. It assumes that all products will be installed, and is **not** accurate for this update. The amount of space you actually need is much less.

6   On the Summary screen, click **Install**. Expect the installation to take about an hour.

7   If you encounter problems writing to a file during the installation process, as shown below, change the permissions for the Oracle libraries and binaries.

Error in writing to file /opt/oracle/product/11gR1/...

- To add write permission for the owner of a file, enter:

    chmod u+w *filename*

- To change the ownership of a file, enter:

    chown oracle:dba *filename*

- To rename a file, enter:

    mv *filename newfilename*

After you have made the appropriate change, click **Retry** on the Error screen to continue.

8 When the installer prompts you to run the root.sh script, open a new X window and log on as a user with **root** privileges to run $ORACLE_ HOME/root.sh.

Accept the default values at any prompts you receive.

9 After the installation has completed successfully, use the following command to unmount Disk1.

    umount /dvd

Change Permissions for the Oracle Software

Set the access permissions:

    $ORACLE_HOME/install/changePerm.sh

Preparing to install the interim patch 6800649

OCIEnvCreate Core Dump on $ORACLE_HOME/lib32

A FileNet Image Services core dump can occur when IS is connected to an Oracle 11gR1 database. Oracle has provided an interim patch 6800649 (Description MAP:PERMISSION DENIED WHEN SQLPLUS IS STARTED IN SUID ENVIRONMENT WITH EUID=!UID) to fix the problem. This patch was omitted from patchset 11.1.0.7.0 and is needed on AIX platforms until the next patchset release 11.1.0.8.0 becomes available.

Installing the interim patch

To apply the patch, unzip the PSE container file:

unzip p6800649_11106_AIX64-5L.zip

Set your current directory to the directory where the patch is located:

cd 6800649

Ensure that the directory containing the opatch script appears in your $PATH; then enter the following command:

opatch apply

Patch special instructions

Ensure that all instances running under the ORACLE_HOME being patched are cleanly shutdown before installing this patch. Also ensure that the tool used to terminate the instances has exited cleanly.

If the Oracle inventory is not setup correctly, this utility will fail. To check accessibility to the inventory you can use the following command:

opatch lsinventory

If you have any problems installing this PSE or are not sure about inventory setup please contact Oracle support.

Now you can continue the installation or upgrade procedure to configure FileNet Image Services as usual.

Removing the interim patch

If you decide to remove the patch, enter the following commands:

cd 6800649

opatch rollback -id 6800649

Continue with the installation or upgrade

Installation

If you are installing Oracle and Image Services on a new server, you are now ready to install the Image Services software.

Refer to the Image Services *Installation and Configuration Procedures for IS 4.1.2*. To download this manual from the IBM support page, see .

Upgrade

If you are upgrading the Oracle software on an exisiting IS system, return to the section, **"Testing the Oracle database" on page 41** in Chapter 2.

Appendix C – Oracle 11g Interim Patch for HP Integrity

HP Integrity: 32-bit Libraries Are Not Installed

After installing Oracle11g (11.1.0.6) Enterprise Edition and Client on an HP Integrity server, there are no 32-bit libraries installed ($ORACLE_HOME/lib32). This is reported in Oracle bug 6661255. According to Oracle, for Oracle11g and beyond, HP-UX on HP Integrity servers will no longer create $ORACLE_HOME/lib32.

To have 32-bit applications work on HP Integrity servers, Oracle has separately released HP-UX Itanium 32-bit Instant Client software on **http://otn.oracle.com**.

To navigate to the Instant Client software downloads page, follow these steps:

1   Go to **http://otn.oracle.com**.

2   Click **Downloads** (near the top of the page) and select "More..." from the drop down list

3   Click the **Instant Client** link (within the "Database" category)

4   Click the **Instant Client for HP-UX Itanium (32-bit)** link at the bottom of the list of platforms

Alternatively, the direct link is:

http://www.oracle.com/technology/software/tech/oci/instant-client/htdocs/hpitanium32soft.html

5 Download "Instant Client Package - Basic" for Version 11.1.0.6.0

6 Unzip the packages into $ORACLE_HOME/lib32 as the **oracle** user or the user who installed Oracle 11gR1 software.

7 Make a symbolic link as **oracle** user or the user who installed Oracle 11gR1 software:

   ln -s $ORACLE_HOME/lib32/libclntsh.so.11.1 $ORACLE_HOME/ lib32/libclntsh.so

8 Now you can continue the installation or upgrade procedure to con-figure FileNet Image Services as usual.

Appendix D – Defining Additional RDB Objects

A brand new FileNet Image Services system has a basic set of default objects. Defining additional RDB objects allows you to customize the data layout of your relational database. The object name, in conjunction with the location, tells the FileNet Image Services software where in the database that object (or group of objects) is to be created.

An object can be a table like doctaba, a retrieval key (rdb index) like f_docnumber, or a whole group of objects like everything created from WFL, queues, workspaces, etc. The scope of the RDB object depends on how the RDB object name is formatted or built.

It's very important to build the object name string correctly. When the FileNet Image Services software is directed to create an RDB object (WFL queue, table, etc.), it dynamically builds a string that must exactly match the one that is defined in the object name column. The FileNet Image Services software searches the configuration database for a matching RDB_Object to find the location of the object. If it's not found, the search continues for the location of the parent object.

RDB Object Name Basic Syntax

The object name is a multi-part character string, separated by periods. Its maximum length is 255 characters plus a null terminator. The object name is built in a hierarchy where all names begin with fn_data. For example:

Object name format:

    fn_data[.services_name[.subname1[.subname2[.subname3]]]]

fn_data.services_name.subname1.subname2 is the parent of
.subname3
fn_data.services_name.subname1 is the parent of .subname2
fn_data.services_name is the parent of .subname1

Note   Not all services support all the subnames. See the following examples.

Index Services Example

To have the FileNet Image Services software create all index services
tables and indexes in a specific location in your database, define an
RDB Object using the following name:

fn_data.INXdb

Then, to have the FileNet Image Services software create doctaba in
its own location, define the object name as:

fn_data.INXdb.doctaba

To have the FileNet Image Services software create a specific index
(retrieval key) in its own location, define the object name as one of the
following examples:

fn_data.INXdb.doctaba.f_docnumber
fn_data.INXdb.table_name.index_name

WFL Services Example

To have the FileNet Image Services software create all WQS Database Objects in one location, you would define an RDB Object with the following object name:

fn_data.WFLdb

Then, to create an index (retrieval key) of a queue in its own location, you would enter:

fn_data.WFLdb.Workspace_name.queue_name.index_name

VW Services Example

The object name is composed of the following values:

For VW queues:

For indexes:

fn_data.vw.region*region#*.server*server#*.
queue.*logical_queue_table_name.logical_index_name*

For base data sets:

fn_data.vw.region*region#*.server*server#*.
queue.*logical_queue_table_name*

For VW rosters (indexes and base data set):

For indexes:

> **fn_data.vw.region*region#*.server*server#*.
> roster.DefaultWCTable.*logical_index_name***

For base data sets:

> **fn_data.vw.region*region#*.server*server#*.
> roster.DefaultWCTable**

For all other VW tables:

For indexes

> **fn_data.vw.region*region#*.server*server#*.
> table.*table_name*.*index_name*****

For base data sets:

> **fn_data.vw.region*region#*.server*server#*.
> table.*table_name*****

Key   In the previous examples:

> *region#* is the isolated region number.
> *server#* is the VW server number.
> *logical_queue_table_name* is the name of the table for the
>   queue as specified in Composer.
> *table_name* is the actual table name.
> *index_name* is the actual index name.

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