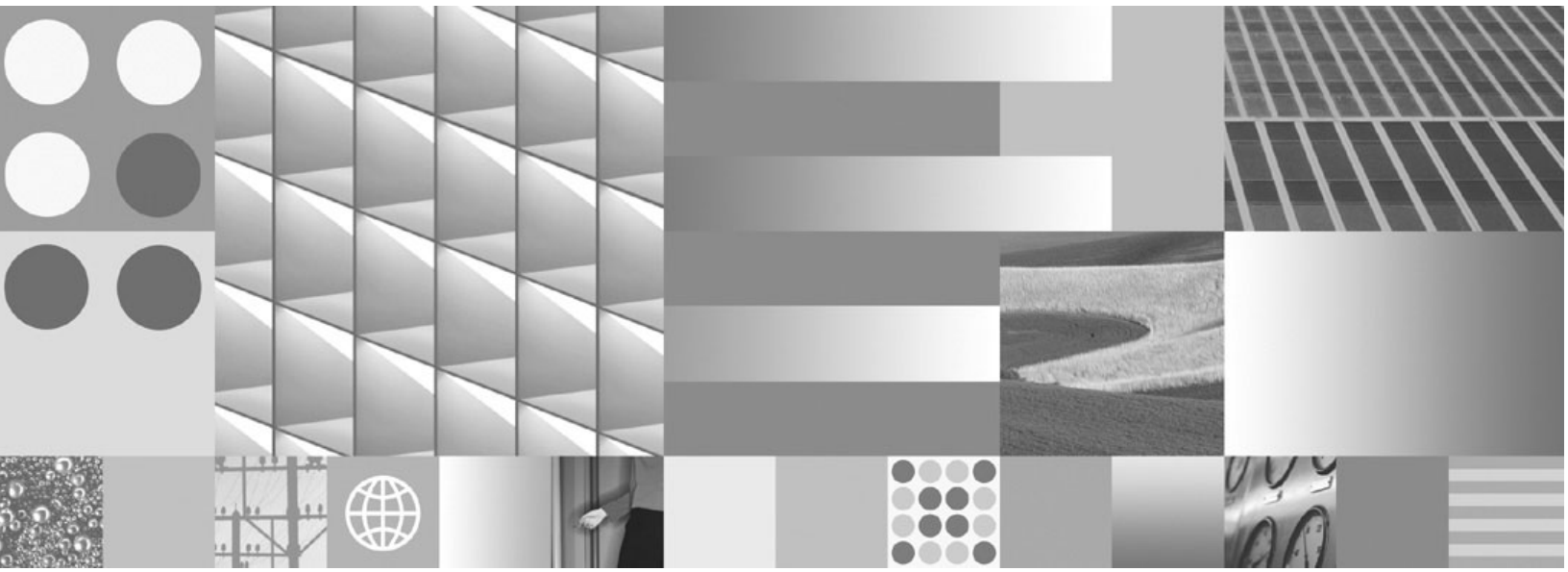
IBM FileNet Image Manager Process

Version 3.5.4

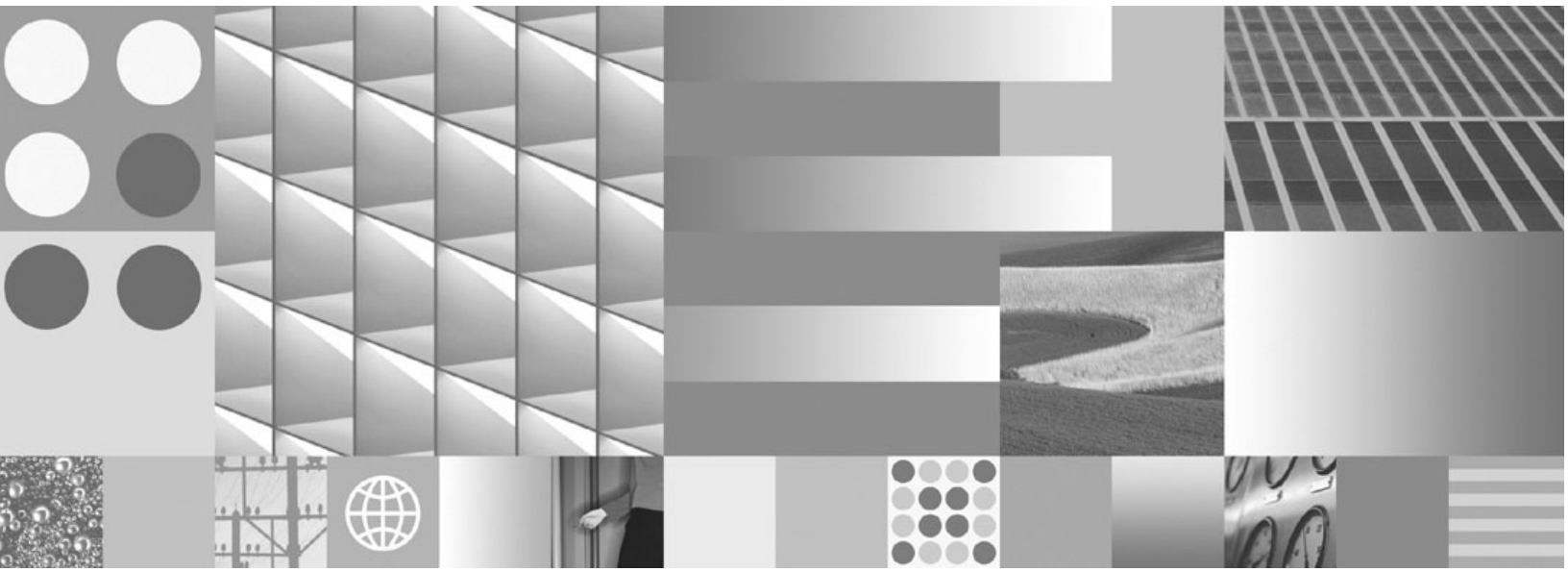


Installation and Upgrade Guide

GC31-5575-01

IBM FileNet Image Manager Process

Version 3.5.4



Installation and Upgrade Guide

GC31-5575-01

Note
Before using this information and the product it supports, read the information in "Notices" on page 97.

This edition applies to version 3.5.4 of IBM FileNet Image Manager Process (product number 5724-R87) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Revision Log

The following table identifies changes made to this document since the Image Manager Process release 2.0.1.

Date	Revision
03/08	Updated back cover information.
01/08	Initial release of the *Image Manager Process 3.5.4 Installation and Upgrade Guide*.

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About this Document

Installation by an IBM® FileNet® Certified Professional (FCP) recommended. For more information on the FCP program, contact your IBM service representative.

Every effort has been made to provide you with complete installation instructions. If information becomes available after the documentation release from which you accessed this guide, we will provide an updated version of the guide on the Information Management support page (www.ibm.com/software/data/support/). As a general rule, you should refer to the web site to obtain the current version of this guide.

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).

NOTE

Before you attempt to install or upgrade Process for FileNet Image Manager, Process Java™ Applets and Connectivity (PJAC), or Visual WorkFlo 3.6, review the list of releases and their associated dependencies, requirements, and prerequisites in the IBM FileNet Compatibility Matrix for eProcess on the Information Management support page (www.ibm.com/software/data/support/).

Access IBM FileNet Documentation, Compatibility Matrices, and Fix Packs

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, under Learn, click Product documentation.
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.

To access compatibility matrices and fix packs for IBM FileNet products

1. Navigate to the Information Management support page (www.ibm.com/software/data/support/).
2. Select the FileNet eProcess product from the "Select a category" list.
3. Click Hardware/Software Requirements for FileNet products.
4. Click eProcess Services from the list of products.

Planning

This guide includes procedures for installing and configuring Process for FileNet Image Manager, Process Java Applets and Connectivity (PJAC), and Visual WorkFlo 3.6 thick client software.

Throughout this document there are references to two Process deployment methods:

- **Standalone Process** is a FileNet system installed with Process software and the necessary supporting software, including Image Services (IS). In a standalone Process system, IS is configured only as required for Process and is not used for imaging.
- **Process with Imaging** is a FileNet system installed with Process software, Image Services (IS) configured for both Process and imaging, and the necessary supporting software. Both Process and imaging activity occur in such a system.

Process Java Applets and Connectivity (PJAC) software is available in three different client configurations:

- The **PJAC for FileNet Web Services** component enables users to run Process applications with FileNet Web Services. PJAC for FileNet Web Services must be installed on the system where FileNet Web Services is installed.
- The **PJAC for Open Client** component enables users to run Process applications with FileNet Open Client. PJAC for Open Client must be installed on the system where FileNet Open Client is installed.
- The **PJAC Standalone** component provides an interface to the Process Engine for development environments or for custom applications. Note that PJAC Standalone cannot be collocated with FileNet Web Services or FileNet Open Client.

This document provides installation procedures for both Process system types and for each PJAC component as well as the Visual WorkFlo thick client.

Pre-installation activities

Before installing, review the following sections of this document:

- The “Process system overview” on page 9 for an explanation of the components that make up a Process system.
- The “Sample configurations” on page 12.
- The “Installation Tasks” on page 16 for an overview of the installation process.

Process system overview

A Process system includes software that is installed and configured on one Process Engine and web server. End users and developers access the Process applications via browsers running on client workstations. Workflow definitions are checked in to a Content Services library. Image Services images and Content Services documents can be used as attachments in workflows.

Process Engine

The Process Engine software enables Process activity within a Process system.

Web Servers

A Process system must include at least one web server. A web server runs either:

- PJAC for FileNet Web Services
- PJAC for FileNet Open Client
- PJAC Standalone

Each web server runs one or more routers. A router is a process that evenly distributes the processing load for multiple users and servers. The web server-based applications communicate with Process Engine through the router. Each router corresponds to one isolated region.

End-User and Developer Workstations

End users and developers access the web server from an internet browser. In a system with multiple web servers, the system administrator determines which web server and router a user should log on to. The end user uses a web browser to access applications to define, perform, and track workflows.

Content Services (CS) Library

Every Process system must include at least one Content Services server, where workflow definitions and link information are stored. A Process system uses CS versioning functionality and (optionally) stored CS documents as workflow attachments.

Database Server

A system must include either a local or remote database. A remote database resides on a separate server from Process Engine.

Application Server

A Process system with Imaging configuration can optionally include an application server, where Process for FileNet Image Manager is installed only on the application server. Application servers are not supported in standalone Process deployments.

Image Services (IS) Library

Users can use images from IS libraries as workflow attachments.

SMTP Server

A Process system can be configured to send email notification of workflow activity. An SMTP server is required to take advantage of this feature.

Sample configurations

This section illustrates some simple examples of how to distribute Process for FileNet Image Manager components across a variety of machines. Each example represents a minimum recommended configuration. The configurations include the major Process for FileNet Image Manager components, both core required components and some functional expansions.

This topic includes the following sample configurations:

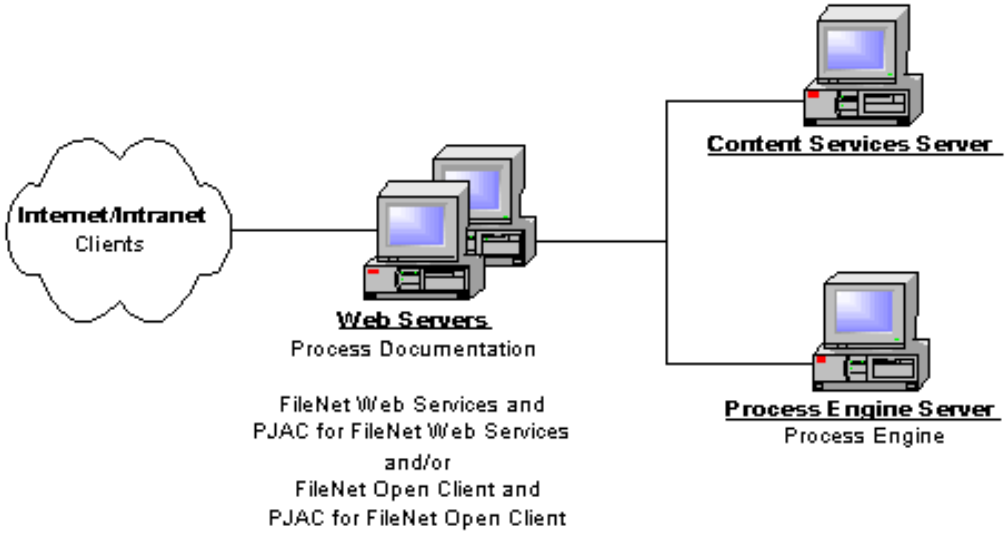
- "Baseline Configuration" on page 12
- "Baseline Configuration With Functional Expansions" on page 13
- "Developer Configuration" on page 14
- "Demo Configuration" on page 15

In all of the sample configurations, note that:

- None of the samples shows a database engine; however, both Process Engine and Process Analyzer require a local or remote database.
- Scaling of the web components through the use of web farms is possible, but is not illustrated in any of the samples.

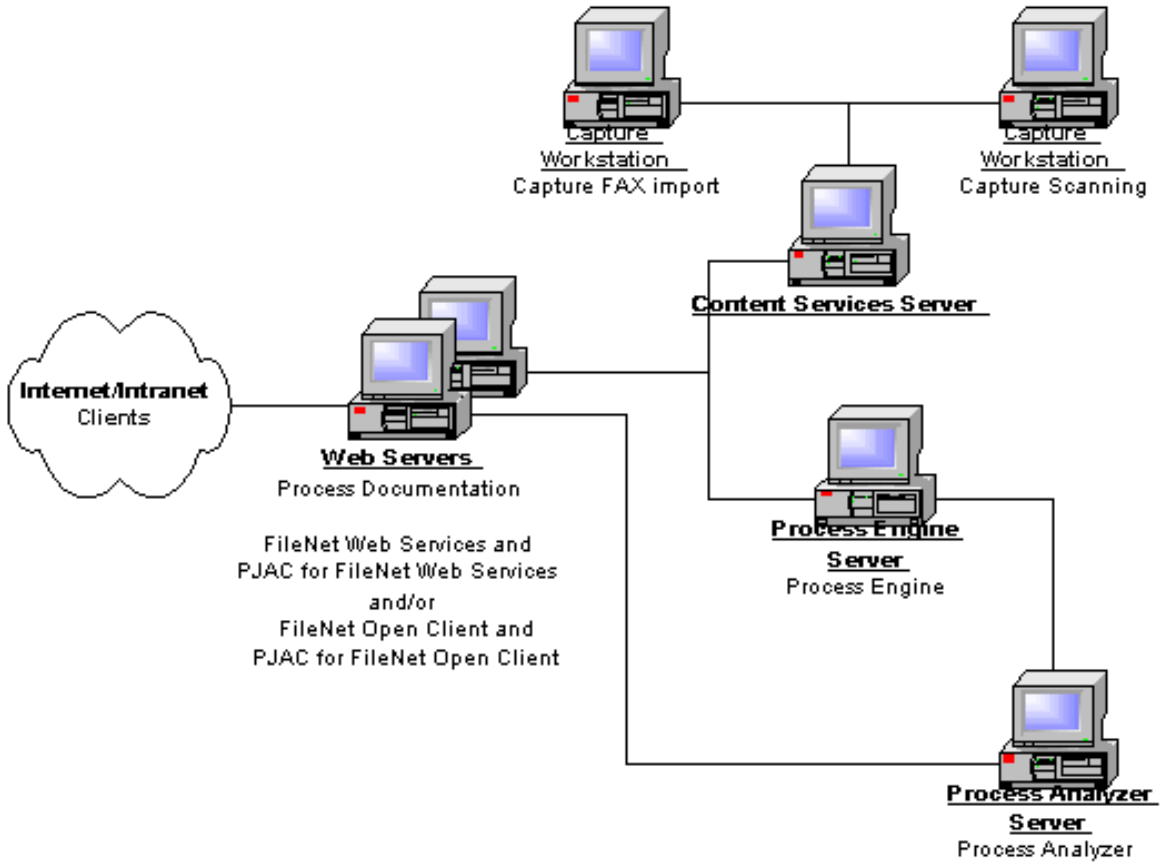
Baseline Configuration

This configuration illustrates a typical setup where basic Process and Content capabilities are required. It includes only the required core components (no functional expansions).



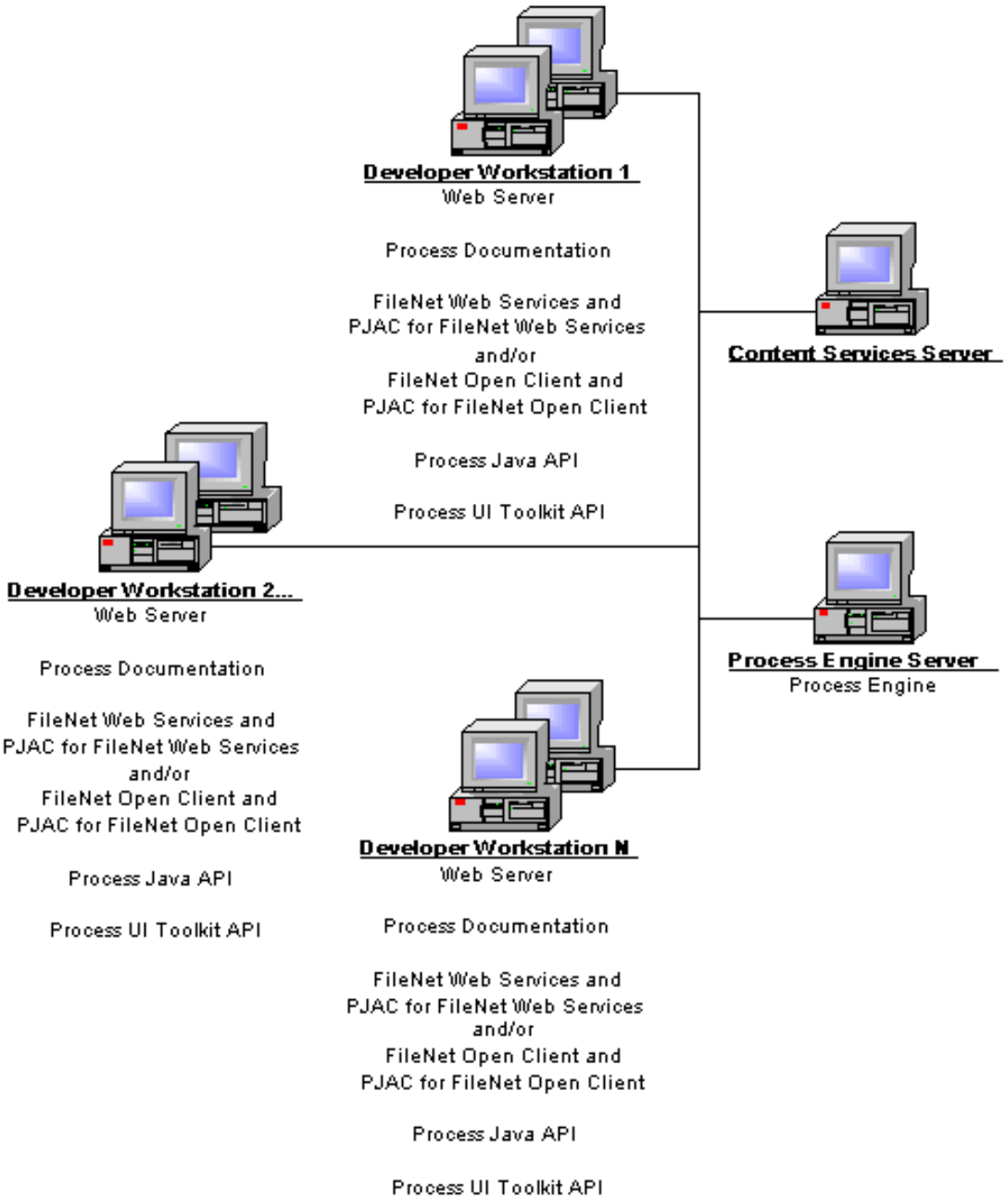
Baseline Configuration With Functional Expansions

This configuration is useful for environments that plan to use not only basic Process and Content capabilities, but also various functional expansion components.



Developer Configuration

This configuration illustrates how a development team might set up an environment for building an application that leverages Process for FileNet Image Manager functionality.



NOTES

- You can create multiple libraries to process isolated regions for different applications.
- It is useful to share the Content Services and Process Engine services.
- Refer to “Setting Up for Process Development” in Help for Process Java API for information on setting up your development environment. To download this help topic from the IBM support page, see “To access documentation for IBM FileNet products” on page 8.

Demo Configuration

This configuration supports demos, proof-of-concepts, and development on a single Windows® server that uses a Microsoft® SQL Server™ database engine.

Windows Server
Process Documentation

Content Services Server

Process Engine

FileNet Web Services and
PJAC for FileNet Web Services
and/or
FileNet Open Client and
PJAC for FileNet Open Client

Process Analyzer

Installation Tasks

Following is an overview of the installation process. Take the steps below (in the order listed) to install and initially configure your system. Except where noted, all steps apply to all system configurations.

1. Install the Process Documentation for FileNet Image Manager. Do Task 1 on page 17.
2. Set up Process Engine for either **standalone Process** or **Process with Imaging** activity.
   a. Process with Imaging: Configure a VWService, add the appropriate server to the service, and install the Process Engine software. Do Task 3a on page 28.
   b. Standalone Process (Windows only):
      i. Install a database server. For Oracle, do Task 2a on page 19; for MS SQL Server, do Task 2b on page 25.
      ii. If the database server will be remote from Process Engine, install database client software on the machine that will be Process Engine. For MS SQL Server, do Task 2c on page 27. (For Oracle, this step was done as part of Task 2a on page 19.)
      iii. Install the Process Engine software. Do Task 3b on page 37. Install Process Engine and documentation fix packs. Do Task 5 on page 49.
3. Install Visual WorkFlo thick client software if appropriate. Do the applicable tasks is “Install and Upgrade PC Workstation (thick-client)” on page 88. If the client is Visual WorkFlo, none of the additional steps here apply.
4. Start the Pooled Process Manager (PPM). Do Task 6 on page 50.
5. Install Process Java Applets and Connectivity (PJAC) if appropriate. Do Task 7 on page 51.
6. Install PJAC patches. Do Task 8 on page 54.
7. Start the Process router. Do Task 9 on page 55.
8. Initialize the isolated region. Do Task 10 on page 56.
9. Perform additional configuration. Do Task 11 on page 57.
10. Create a test workflow. Do Task 12 on page 58.

Task 1: Install Process Documentation for FileNet Image Manager

This task describes how to install the eProcess 5.2 online help as an HTML web site.

NOTES

- The installation and configuration of eProcess 5.2 help has been tested on Windows only.
- To begin this task you must first install the eProcess 5.1 help, and then upgrade that help with eProcess 5.2 help files. To download the online help for installation, see "Access IBM FileNet Documentation, Compatibility Matrices, and Fix Packs" on page 8.

To install eProcess 5.2 online help

1. Install the eProcess 5.1 online help.
   a. Access the *eProcess Documentation* version 5.1 documentation package.
   b. Expand the **eProcess_510_docs.zip** file to a <*temporary_eProcess_docs*> directory from which you can access the machine where you will install the eProcess documentation.
2. Upgrade the eProcess online help to version 5.2.
   a. Access the *eProcess Documentation* version 5.2 documentation package.
   b. Expand the **eProcess_520_docs.zip** file to a <*temporary_eProcess_5.2_docs*> directory accessible from the machine where you will install the eProcess documentation.
   c. Copy the **ecm_help** subdirectory from the <*temporary_eProcess_5.2_docs*> directory to the **ecm_help** subdirectory in the <*temporary_eProcess_docs*> directory, overwriting the old files with the updated version 5.2 files.

      Use a copy command from a command prompt or drag-and-drop the files to the <*temporary eProcess docs*> destination.
3. Deploy the updated **ecm_help** directory and its contents as a web site, per the instructions provided with your application server.
4. Verify that you can access the online help:
   a. From your web browser, access the following URL:

      `http://<docserver>:<port#>/ecm_help/_start_here.htm`

      where:

      <*docserver*> is the name of your web server.

      <*port#*> is the web server port number.
   b. On the Help Directory page, click the **Search** link on the toolbar, and then select one of the component search options, such as Process Designer.
   c. On the Search form, enter a term to search for, such as *Step,* and then click **Search**. A list of topics containing the search term (in this example, *Step*) opens.

NOTE Various FileNet setup programs you will run in subsequent installation procedures will prompt you to enter the documentation server URL. Enter the URL in the format shown below.

`http://<docserver>:<port#>/ecm_help`

Task 2a: Install Oracle for a Windows Process Engine (standalone)

This task is applicable only if you are installing a standalone Windows-based Process Engine with either a local or remote Oracle database. If the database is remote, it can be on a Windows, Solaris, HP-UX, or AIX® server. The steps in this task include installation and configuration of both Oracle server and client software.

In a Process with Imaging deployment, the Oracle installation would have been done as a part of the Image Services installation.

If your standalone Windows-based Process Engine uses a local or remote MS SQL Server database, see "Install MS SQL Server for a standalone Process Engine" on page 25.

NOTES

- All procedures in this task assume the Oracle installation is done by the Oracle user rather than the root user, per Oracle's recommendation.
- A Process Engine can use either a local or a remote database.
- With a local database, the Oracle server software and the Process Engine software reside on the same computer.
- With a remote database, the Oracle server software and the Process Engine software reside on different computers, Oracle client software is installed on the Process Engine computer, and the Process Engine is configured as an Oracle client.
- The procedures in this task are intended to supplement Oracle's installation instructions. See the IBM FileNet Compatibility Matrix for eProcess on the Information Management support page (www.ibm.com/software/data/support/) for supported version information. To download this document from the IBM support page, see "To access compatibility matrices and fix packs for IBM FileNet products" on page 8. Also, check Oracle's website to verify that you have all required patches.

Whether your Oracle database will be local to or remote from Process Engine, you must complete the following procedures on the computer that will be the Oracle database server:

"To install Oracle server software" on page 19

"To create the database" on page 20

"To start the database" on page 22

In addition, if the database will be remote from Process Engine, complete the procedures in "To complete additional steps for a remote database" on page 22.

To install Oracle server software

The following procedure shows the minimal choices (specific to the needs of Content Engine and Process Engine) for installing a database engine. Consult the Oracle9i or Oracle 10g installation documentation for complete requirements and instructions.

- For Oracle 9i, choose the following from the list of available product components.

  - Oracle9i Server
  - Oracle Net Services
    - Oracle Net Listener
  - Oracle9i Development Kit
    - Oracle Call Interface (OCI)
  - (Windows) Oracle Windows Interfaces
    - Oracle Services for Microsoft Transaction Server
  - Oracle9i Documentation (recommended)
- For Oracle 10g, choose the following from the list of available product components.
  - Oracle10g Server
  - Oracle Net Services
    - Oracle Net Listener
  - Oracle Call Interface (OCI)
  - (Windows) Oracle Windows Interfaces
    - Oracle Services for Microsoft Transaction Server
  - Oracle10g Documentation (recommended)

To create the database

Oracle documentation describes several ways to create a database. Use the Database Configuration Assistant (DBCA). Following is a list of options you might choose.

The following settings are mandatory:

- Server process type

  Dedicated Server Mode
- Database character set

  Choose a supported character set from the following table.

Language	Language Code
Unicode 3.1 UTF-8 universal character set	AL32UTF8
Western European	WE8ISO8859P1 or WE8ISO8859P15 (UNIX) WE8MSWIN1252 (Windows)
Eastern European	EE8ISO8859P2
South European	SE8ISO8859P3

Northern & Northeastern European	NEE8ISO8859P4
Latin/Cyrillic	CL8ISO8859P5
Latin/Arabic	AR8ISO8859P6
Latin/Greek	FL8ISO8859P7
Latin/Hebrew	IW8ISO8859P8
Western European & Turkish	WE8ISO8859P9
North European	NE8ISO8859P10
ASCII 7-bit American	US7ASCII

FileNet Process Engine software requires two tablespaces, with an optional third. Verify that the tablespaces are set up as shown:

Recommended Tablespace Names *	Tablespace Type	Minimum Tablespace Size (MB)
vwdata_ts	Permanent	200
vwtemp_ts	Temporary	400
vwindex_ts (optional)	Permanent	200

vwdata_ts is the name of the dedicated FileNet default tablespace.
vwtemp_ts is the name of the dedicated FileNet temporary tablespace.
vwindex_ts is the name of the optional index tablespace. If this tablespace does not exist, the data tablespace will be used for indexes.

You can assign any names you want to the tablespaces and make them any size, as long as they are at least the minimum sizes. You will be prompted for these names during the installation of Process Engine. Be aware that the Process Engine does not allow quoted identifiers and the following characters are not allowed in Process Engine setup for tablespace names:

*, \\, #, [,], !, <, >, " ", \, -

After you have installed the created the database, verify that the following Oracle data dictionary creation scripts have been run. They could either be run manually or automatically, depending on which tools you use to create the database.

catalog.sql
catproc.sql

To start the database

Start the database and verify that it successfully started.

If the database is local, leave the database up and running and proceed to installation of the Process Engine software as documented in Task 3b on page 37. If the database is remote, continue with "To complete additional steps for a remote database" on page 22.

To complete additional steps for a remote database

If your database is remote, you must complete the following additional steps. Some of the steps apply to the remote database server, the rest apply to that server's clients. The computer on which you will subsequently install the Process Engine software must be an Oracle client.

To create Oracle users and group

Note the names for the Oracle user and the Oracle dba group that are created automatically by the Oracle client software installation program. The Process Engine setup program will prompt for these names.

To install and configure Oracle client software

After the remote database has been configured and started, and the listener process is started, install the Oracle client software on server where you will later install Process Engine software. The following components are required.

- For Oracle 9i, choose the following from the list of available product components:
  - Oracle 9i Client
  - Oracle Network Utilities
  - Oracle Database Utilities
  - SQL*PLUS
- For Oracle 10g, choose the following from the list of available product components.
  - Oracle10g Client
  - Oracle Network Utilities
  - Oracle Database Utilities
  - SQL*PLUS
  - (Windows) Oracle Windows Interfaces
    - Oracle Services for Microsoft Transaction Server

5. Using Oracle Net Configuration Assistant, configure and test the connection to the Oracle database server with an appropriate Oracle user and password.
6. If your remote Oracle database uses the Unicode character set AL32UTF8, then for each user who will access Process Engine software on the machine, set the value of the Oracle

environment variable parameter NLS_LANG to reflect the PE-supported locale and (non-Unicode) character set on the machine.

NOTE To affect the environment for only Process Engine, set NLS_LANG for just the fnsw user.

7. Set the value of the LOCAL environment variable for the *oracle* user to a default connect identifier, such as the Oracle net service name or the database service name.
8. If you are going to install Process Engine on this machine, verify/add/edit/uncomment the following lines in the file **sqlnet.ora** (create the file if it doesn't exist) while the Oracle services/processes are stopped:

```
NAMES.DIRECTORY_PATH=(TNSNAMES)
SQLNET.AUTHENTICATION_SERVICES=(NTS)
```

sqlnet.ora is typically in ***ORACLE_HOME*\network\admin** on Windows operating systems.

9. Install all required Oracle patches, as specified in the IBM FileNet Compatibility Matrix for eProcess.

To verify the connection from Oracle client to the remote database.

1. Enter the following commands at the SQLPlus prompt, as follows:

```
sys/<password> as sysdba
```

2. At the prompt, enter the following SQL command:

```
SQL> select instance_name, host_name, version from v$instance;
```

The following represents an example of the information returned:

```
INSTANCE_NAME

----------------

HOST_NAME

----------------------------------------------------------------

VERSION

-----------------

pedbshr
HQVWBUCS
9.2.0.8.0
```

In this example:

- the instance, ORACLE_SID is pedbshr
- the database server name is hqvwbucs
- the Oracle server is at the 9.2.0.8 version

3. With the remote database running and the connection to it established, proceed to installation of the Process Engine software as documented in “Install the Process Engine (standalone Process)” on page 37.

Task 2b: Install MS SQL Server for a standalone Process Engine

The procedures in this task describe how to install and configure a SQL Server database. If the database is remote, complete the steps in "Install MS SQL Server Client software for a standalone Process Engine" on page 27 after installing and configuring the SQL Server.

NOTES

- Install MS SQL Server on the computer where the Process Engine software will be installed (subsequently referred to as a local database) or on a separate database server (subsequently referred to as a remote database).
- Process Engine and Process Analyzer can share a remote database server, but each requires a dedicated instance.
- The MS SQL database must be configured with *Mixed Mode* authentication.
- Record the values for the following settings as you work through the following database installation instructions. This information must be entered during Process Engine installation:
  - Dedicated database name (for example, VW_db)
  - Dedicated file group (for example, vwdata_fg)

  Be aware that the Process Engine does not allow quoted identifiers, and the following characters are not allowed in Process Engine Setup for any of the settings above:

  *, \\, #, [,], !, <, >, " ", \, -

To install and configure Microsoft SQL Server

- Create a database instance for use by Process Engine, or verify that such an instance already exists.
- If creating a new instance be aware of the following rules for instance names:
  - The name cannot exceed 16 characters.
  - The first character cannot be numeric or '$.
  - The name cannot contain special characters, except underscores or periods.
  - The name cannot contain spaces.
  - The name cannot be Default or MSSQLServer.
- Verify the authentication mode you specify is for Mixed Mode.
- Select the database collation settings. Specify one of the following:
  - **Dictionary order, case-*insensitive*, for use with 1252 Character Set** (or any case-insensitive MS SQL Server collation). Case-insensitive collation is the Microsoft default and the setting most used in FileNet environments (because it offers search results without regard to character case).

- **Dictionary order, case-*sensitive*, for use with 1252 Character Set** (or any case-sensitive MS SQL Server collation). Select case-sensitive MS SQL Server collation only if you are sure your site actually requires (and will continue to require) searches that must differentiate upper-case from lower-case characters (in property choice lists, folder names, and so on).

  CAUTION Select your MS SQL Server collation setting carefully. Switching collation settings after installation can be difficult and time-consuming, especially if you want to switch from case-sensitive to case-insensitive collation after significant user activity. Also, be aware that if you have a case-sensitive database, and you want to perform a case-insensitive search (programmatically or otherwise), you will likely encounter serious performance degradation on MS SQL Server because the database cannot use column (property) indexes in these cases.

- (SQL Server 2000 only) Assign a TCP/IP port number for the instance. If your instance is the only instance on the server, you can accept port 1433 (the default value). If you are creating a named instance you must assign a static port number.
- (SQL Server 2005 only) The TCP/IP port number cannot be assigned during installation of SQL Server 2005. You must assign the port number after installation is complete by using the SQL Server Configuration Manager application to modify the network configuration.
- Refer to the IBM FileNet Compatibility Matrix for eProcess for required operating-system and database patch sets, and service packs. To download this document from the IBM support page, see "To access compatibility matrices and fix packs for IBM FileNet products" on page 8. Verify that the required service pack has been installed before proceeding.
- If you want to disable the Named Pipes protocol for the database instance to be used by Process Engine, disable it after the Process Engine installation and configuration is complete. Disabling this protocol too early might cause Process Engine initialization to fail.

  WARNING The default on a SQL Server 2005 installation is to disable Named Pipes. Use the SQL Server Configuration Manager application to modify this network configuration parameter after SQL Server 2005 is installed and the instance has been created.

To create the Process Engine database

Create a SQL Server database for Process Engine. The default name assigned by the Process Engine Setup program is VWdb. Create the database with an initial size of 200MB, minimum. Assign a new file name for the database (for example, vw_data). Specify a filegroup. The Process Engine Setup program default name is vwdata_fg. Do not use the Primary filegroup.

NOTE You will need the database and filegroup names for the Process Engine installation.

To modify the tempdb database for Process Engine

Verify that the space allocated for the tempdb is at least *80* MB.

If the database is remote, proceed to "Install MS SQL Server Client software for a standalone Process Engine" on page 27.

Task 2c: Install MS SQL Server Client software for a standalone Process Engine

A Process Engine with a remote MS SQL Server database requires the SQL Server Client software to be installed on the Process Engine server. **NOTE**

The MS SQL Server can be in a separate subnet.

To install MS SQL Server Client software for remote database access

Ensure that all users and groups defined on the local server are also defined and granted security permissions on the database server.

Install the MS SQL Server Client software (SQL Server 2000)

1. Log on with an account that has local administrator privileges on the computer where the MS SQL Server client software will be installed.
2. Install the SQL Server **Client Tools Only**.
3. When the installation is complete, start the **Client Network Utility** and clear the **Automatic ANSI to OEM conversion** on the *DB-Library Options* tab**.**
4. Test the database connection.

Install the MS SQL Server Client software (SQL Server 2005)

1. Log on with an account that has local administrator privileges on the computer where the MS SQL Server client software will be installed.
2. Install Workstation components, Books Online and development tools and from the Advanced options, select Client Components.Install SQL Server patches and service packs

Refer to the IBM FileNet Compatibility Matrix for eProcess for required operating-system and database patch sets and service packs. To download this document from the IBM support page, see “To access compatibility matrices and fix packs for IBM FileNet products” on page 8. Verify that all required service packs have been installed before proceeding to “Install the Process Engine (standalone Process)” on page 37.

Task 3a: Install the Process Engine (Process with Imaging)

Follow the procedures in this task to install a Process with Imaging system.

NOTES

- FileNet Image Services 4.1 with Service Pack 1 or later must be configured for imaging activity and running on the server where you will install Process Engine software prior to beginning this task.
- Process Engine has the following user and password requirements:
  - The fnsw user must exist. Image Services 4.1 supports the use of an alias for this user but Process Engine does not. When Image Services is installed, the fnsw user must be selected and cannot be aliased.
  - The fnsw user password must be set to BPMtemp1pzwd (case sensitive) before installation of Process Engine software. It can be reset after successful installation and configuration of Process Engine.
- The database that the Process Engine will use:
  - Can be local to or remote from the Process Engine.
  - Must be running and fully configured for FileNet Image Services use prior to the running of Process Engine Setup. If the database is remote, the database client software must also be running on the Process Engine when Process Engine setup is started.
  - There are references to logging on as the **root** and **fnsw** users within these procedures. The root user on AIX or HP-UX must run in the Bourne or Korn shell and on Solaris, in the Bourne shell. The fnsw user on AIX, HP-UX, and Solaris must run in the Korn shell.

To configure Image Services to support Process Engine

Perform the following steps on the Image Services root server.

1. Logged on to the Image Services root server as **fnsw**, enter the following at a command or system prompt:

   fn_edit &

NOTE The fn_edit interface uses the term VWServer as an equivalent to the term Process Engine. Before adding a VWServer you must configure a single VWService.

2. Select **OK** to accept the default Database Name and Domain Name at the Open Configuration Database window.
3. Select *Add VWService* on the Procedures tab, and click **Run** if this is the initial configuration of a VWService.
4. Select a server for inclusion in the VWService, by clicking on the server name followed by the **<<** key. The newly selected server name moves to the left pane and into the list of selected components.

5. Change to the *VW Servers* subtab on the *WorkFlo Mgmt. Services* tab. Here you will see the name of the server. You will also see the default VWService number, 0. You must retain the VWService number.
6. Save the changes you made in **fn_edit** and exit if the VWService number is 0.

The update of the configuration database is complete at this point. To have these changes take affect within the system, complete the steps in "To build configuration files" on page 29.

To build configuration files

You must build configuration files and bring up the FileNet software on the server.

Complete the following steps on the Image Services root server first, then repeat them on all other servers. The FileNet software on the root must be running before running fn_build on other servers.

1. Logged on as **fnsw,** enter the following at a command prompt:

   fn_build -a
2. As necessary, correct any errors that occurred when you ran fn_build.
3. Bring up the Image Services software.

To create the Process Engine ODBC data source and test the connection (SQL Server 2005 only)

The ODBC data source is required for both local and remote databases.

1. Start **Program > Administrator Tools > Data Source (ODBC)**.
2. Click **Add** on the **System DSN** tab.
3. Select *SQL Server* as the driver to use for the new data source and click **Finish.**
4. Enter a name and description for the data source. The name will be required input for the Process Engine Setup program when configuring for a SQL Server database.
5. Choose the SQL Server to connect to from the dropdown list of servers and click **Next**.

   NOTE If only a server name appears in the list, the connection will be with the default instance. If there are named instances in the database, the name will appear as <*server*>/<*instance name*>.
6. Do the following, and then click **Next**:

   a. Choose SQL Server authentication.

   b. Select the option to get default settings for additional configuration options by connecting to the SQL Server.

   c. Indicate the Login ID and Password to connect to the database.

   NOTE This database login ID information need not be for an administrator and it is only used to connect to the database to get the default values for the remaining settings required to configure the data source.

7. Change the default database to be the Process Engine database created earlier in "Install MS SQL Server for a standalone Process Engine" on page 25.
8. Verify the settings for the data source configuration and click **Test Data Source**. If the test is successful click **OK.** Otherwise resolve the problem before continuing.
9. Double-click **SQL Server** on the **Connection Pooling** tab.
10. Select **Don't pool connection to this driver** and click **OK**.
11. Click **OK** on the ODBC Data Source Administrator window to finish configuration of the data source.

On the summary screen click **Test Data Source.** If error messages display, resolve them before proceeding with Process Engine software installation.

To reset the fnsw password to the default value

Reset the fnsw user's password to BPMtemp1pzwd (case sensitive) before running Process Engine setup. After you change the password for the fnsw user, you must also use the Windows Services tool to update the Log On tab for the IMS ControlService and the Process Engine Services Manager accordingly. If the password is not changed before the installation, the installation will fail. After successfully installing Process Engine, reset the password again.

To install Process Engine software

The following procedure applies to all supported Process Engine platforms. As appropriate, platform-specific differences are called out.

1. Log on as a **local** Windows administrator, or as the **root** user on AIX, HP-UX, or Solaris. This user must also be a database administrator.
2. Access the Process Engine software package and execute the appropriate setup program.
3. Enter the Documentation Server URL. This is the location where the Process Documentation for FileNet Image Manager was installed. This can also be the full path to the documentation if it was installed on a local drive. An example URL is:

   http://*<web_server>:<port_number>*/ecm_help

   where *<web_server>* is the name of the web server, *<port_number>* is the web server port number, and ecm_help is the root folder of the documentation web site.
4. When the installation is complete, check all log files and verify that there were no errors or failures. Correct any errors before proceeding. Log files to check include:
   - All **.lst** files in the ***<install drive>:*\fnsw** directory
   - All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_build** directory
   - All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_util** directory
   - Windows Event Logs
   - All **.lst** and **.log** files in the **/fnsw** directory (UNIX®)

- All **.log** files in the **/fnsw/local/logs** directory and **all its subdirectories** (UNIX)

To change performance tuning parameters and configure contiguous memory (Windows)

You must change several configuration parameters before updating Process Engine database objects.

1. Logged on as fnsw, start fn_edit at a command prompt.
2. On the Performance Tuning tab, Server Memory subtab, locate the Transient Buffer Pool field.
3. Change the value from 100000 to 10000.
4. Exit fn_edit and save the changes.
5. Enter at a command prompt:

   fn_build -a
6. Stop and restart the Process Engine software by executing:

   initfnsw -y restart
7. Start vwtool at a command prompt. Log on as a member of the SysAdminG group.
8. Use the processmap command to find the largest contiguous free memory area, as in:

   ```
   <vwtool:1>processmap
   ```

   vwtool returns the following:

   ```
   Process Id (CR=this vwtool process):
   ```

   Press **Return** (CR) to get the process map for this process, as in the following example, where the process ID is 2592:

   ```
   C:\FNSW\BIN\vwtool.exe (ID:2592)

   Address    Attrib         Size    Owner
   =======    ======           ====     =====

   00000000   Free          65536
   00010000   Private       12288
   00013000   Free          53248
   00020000    Private         4096
   ```

   ……..(pages of memory addresses omitted here)

   ```
   7FFDE000   Private        4096
   7FFDF000   Private        4096
   7FFE0000    Private        65536

   C:\FNSW\BIN\vwtool.exe (ID:2592)

   Largest FREE block found : 453873664 bytes at address 0x4B577000
   Rounded up to a 64K boundary, free block address 0x4B580000
   ```

   In this example, `0x4B580000` is the address we want. In some cases you might only see the line referencing the largest free block because the value is already at a 64K boundary.

   ```
   <vwtool:1>
   ```

9. Run the Windows regedit command to create a DWORD value for IS StartShmAddress, using the address found in step 2. Run regedit on the Process Engine server and go to:

   `HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\`

10. Create a new DWORD value. Name it:

    `StartShmAddress`

11. Enter or verify the following in the Edit DWORD Value Screen:

    Value name = `StartShmAddress`

    Value data = *<address of largest free memory block>*

    From the example above the value will be 4B580000.

    Base is hexadecimal.

12. Click **OK.**

13. Exit from regedit.

14. Restart the Process Engine software.

15. Verify the setting at a command prompt:

    `ipc_tool -A`

    The following is an example of the information that is returned.

```
Image Services software shared memory segment limit: 129 segments
Current configured segment size: 0x01000000 bytes (16 MB)
Before allocating shared memory for Image Services, the SysV library
performs a test to determine the system shared memory limit. This test
can be used as a reference for performance tuning. The test results vary
depending on the amount of memory in use by other processes. The actual
amount of shared memory available during operation may be less. The test
results are:

   Successfully attached to 27 segments
   Successfully obtained 432 MB of shared memory

The following table displays the number of shared memory segments currently
in use by Image Services. Segment #0 (called the address manager) is small.
The other segment(s) contain the actual Image Services data. Note that
running ipc_tool will force the creation of segments #0 and #1 even when no
other Image Services process is up.
Shared Memory Address Manager Information

    Address     Shm id          Creator

Enter <space> to continue, 'q' to quit:

  0 0x4b580000  FNSHM_464d0000  Shared address manager
```

NOTE The First shared memory address is 0x4B580000, the value from this example.

```
 1 0x4c580000  FNSHM_464a0000  FileNet server software

Total Image Services shared memory allocated: 16 MB
```

```
(This does not include segment #0)
```

16. Exit ipc_tool. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify steps 1 - 8 above before proceeding.

To reset transient buffers (Windows)

After the registry has been updated, the transient buffer pool value can be reset to the default value.

1. Logged on as fnsw, start fn_edit at a command prompt.
2. On the Performance Tuning tab, Server Memory subtab, locate the Transient Buffer Pool field.
3. Change the value from 10000 to 100000.
4. Exit fn_edit and save the changes.
5. Enter at a command prompt:

   fn_build -a

6. Stop and restart the Process Engine software.
   a. Start **Programs > FileNet Image Manager > Process Engine > Process Task Manager.**
   b. From the **Action** menu for the Process Service, choose **Stop.**
   c. From the **Action** menu for the Process Service, choose **Start.**

To change the fnsw password (Windows)

The password for the fnsw user can now be changed from the default value required for Process Engine installation. The fnsw user is configured to start the IMS ControlService and the Process Engine Services Manager services. You are strongly encouraged to reset these passwords to maintain system security on each Process Engine.

User Name	User Type	Description	How to modify
fnsw	Operating System	Primary Process Engine user. Used to execute Process Engine software and services.	Execute **Windows Control Panel > Administrative Tools > Computer Management >System Tools >Local Users and Groups.** After you change the password for the fnsw user, you must also use the Windows Services tool to update the Log On tab for the IMS ControlService and the Process Engine Services Manager, because the fnsw user is used to start those services. **NOTE** Process Engine activity will cease if the fnsw user's password expires.

To change the f_maint and f_sw passwords

1. Logged on as **fnsw**, enter the following at a command prompt:

   `set_f_maint_pw <user_name>`

   where the <*user_name*> is f_maint or f_sw

2. Enter your current password. (CR = initial default/never changed)

   NOTE Pressing Return will only work the first time the password is changed, when the default password is still valid. After the password is changed from the default, you must enter the current password.

3. Enter a new password for the user when prompted. The password must be between 6 and 30 characters. If the database is SQL Server, the first character cannot be numeric, per SQL Server naming conventions.

4. Confirm the new password when prompted.

Note If you want to use the same password you used before the update, change it temporarily now to a different value, then run set_f_maint_pw again to change it back.

To set environment variables (HP-UX)

If the database is local, add the following entry to the file $ORACLE_HOME/network/admin/sqlnet.ora. This single-line addition can be located anywhere in the file:

BEQUEATH_DETACH=YES

To edit the vwrestart file (HP only)

If you have 2GB of memory or more, edit the vwrestart file.

Change:

nohup /usr/ccs/lbin/dldd32 2>&1 >/dev/null

to

nohup /usr/ccs/lbin/dldd32 +a 0x70000000 2>&1 >/dev/null

To verify TCP/IP parameter settings (Windows)

1. Log in as the Administrator user and run **regedit** to verify the following registry key values.

   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\MaxUserPort => 65535 (default = 5000)

   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\TcpTimedWaitDelay => 90 (default = 240, or 4 min)

2. If necessary, add or modify a new DWORD value with the values as described above and save the changes.

NOTE These values are decimal. The default in regedit is hexadecimal.

To reset administrative user passwords

Image Services Setup automatically creates several internally required, local administrative users. Because these users are created with default passwords, you are strongly encouraged to reset

the passwords of these users to maintain system security, as shown in the following table. See the IBM FileNet Image Services documentation for instructions on using the referenced tools.

User Name	User Type	Description	How to modify
SysAdmin	SEC (internal Process Engine security software)	Primary administrator user for FileNet software tools.	Execute Xapex -> Security Administration. Log on as SysAdmin.
FieldService	SEC	Used internally by Process Engine software.	
Operator	SEC	Used internally by Process Engine software.	

To clean up before starting Process Engine (Solaris)

1. Log in as fnsw.
2. Execute:

   ```
   killfnsw -DAyS
   ```

3. Execute:

   ```
   ipcs -a
   ```

4. Verify there is no entry with 0x464 pattern. If there are any entries with this pattern, use `ipcrm` to remove them.

To redirect log messages to the Image Services error log (Windows)

Enable the redirection of log messages to the Image Services error log. This redirection will log messages to the Image Services error log as well as to the default Windows Event Log. By enabling this redirection, you can monitor the progress of the database object upgrade in a command window.

To enable the redirection, change the LogToFiles value from 0 to 1 for the following registry key.

```
HKEY_LOCAL_MACHINE>SOFTWARE>FileNET>IMS>CurrentVersion
```

Proceed to “Install Process Engine fix packs and documentation updates” on page 49.

Task 3b: Install the Process Engine (standalone Process)

Follow the procedures in this task to install a standalone Process system.

NOTES

- The Process Engine server must have a static IP address.
- The Windows file system on the Process Engine computer must be configured as NTFS.
- If computers in this configuration are installed on separate subnets, the Windows hosts file must contain the PC server name and Internet Protocol (IP) address of all computers this Process Engine will communicate with remotely, including the database server The location of the hosts file depends on where the Windows software is installed; for example, the file might be in \winnt\system32\drivers\etc.
- The database that Process Engine will use:
  - Can be local to or remote from Process Engine.
  - Must be running and be fully configured for FileNet use prior to starting Process Engine Setup. If the database will be remote, the database client software must also be installed and running on Process Engine when Process Engine setup is started. Depending on your database platform, see “Install MS SQL Server for a standalone Process Engine” on page 25 or “Install Oracle for a Windows Process Engine (standalone)” on page 19 for installation and configuration procedures.

About pre-installation SQL scripts (Oracle databases only)

A series of SQL scripts launch when you run Process Engine Setup. You will be prompted for the Oracle sys password, which is required to run the scripts. For SQL server, the scripts run automatically.

These scripts must run before Process Engine Setup can run successfully; if an error message indicates that the automated execution of the scripts failed, you must resolve the errors and run the scripts manually.

The scripts are located in the root directory for Process Engine. For Oracle, the scripts are:

- pe_install_scripts.sql (executes the other scripts)
- pe_setup_users_defaults.sql
- pe_filenet_site.sql
- pe_create_stored_procedures.sql
- pe_grant_sp_permissions.sql

For SQL Server, the scripts are:

- CreatePEinstallSP_1.sql
- CreatePEinstallSP_2.sql

- CreatePEinstallSP_3.sql

To turn off Oracle Password Complexity Verification

Process Engine does not support Oracle Password Complexity Verification during the installation process. Turn off this Oracle feature and do not re-enable it until you have installed Process Engine and used the set_f_maint_pw utility to change the f_sw.

To create the Process Engine ODBC data source and test the connection (SQL Server only)

The ODBC data source is required for both local and remote databases.

1. Start **Program > Administrator Tools > Data Source (ODBC)**.
2. Click **Add** on the **System DSN** tab.
3. Select *SQL Server* as the driver to use for the new data source and click **Finish.**
4. Enter a name and description for the data source. The name will be required input for the Process Engine Setup program when configuring for a SQL Server database.
5. Choose the SQL Server to connect to from the dropdown list of servers and click **Next**.

   NOTE If only a server name appears in the list, the connection will be with the default instance. If there are named instances in the database, the name will appear as <*server*>/<*instance name*>.
6. Do the following, and then click **Next**:
   a. Choose SQL Server authentication.
   b. Select the option to get default settings for additional configuration options by connecting to the SQL Server.
   c. Indicate the Login ID and Password to connect to the database.

   NOTE This database login ID information need not be for an administrator and it is only used to connect to the database to get the default values for the remaining settings required to configure the data source.
7. Change the default database to be the Process Engine database created earlier in “Install MS SQL Server for a standalone Process Engine” on page 25.
8. Verify the settings for the data source configuration and click **Test Data Source**. If the test is successful click **OK.** Otherwise resolve the problem before continuing.
9. Double-click **SQL Server** on the **Connection Pooling** tab.
10. Select **Don't pool connection to this driver** and click **OK**.
11. Click **OK** on the ODBC Data Source Administrator window to finish the configuration of the data source.
12. On the summary screen click **Test Data Source.** If error messages display, resolve them before proceeding with the Process Engine software installation.

To install Process Engine software

The Process Engine installation occurs in two parts that are separated by a reboot of the system. After the reboot, the second part of the installation continues automatically.

1. Log on as a **local** Windows **Administrator**. This user must also be a database administrator.
2. Access the software package and execute IMPE-3.5.4-Win.exe.
3. Enter the Documentation Server URL. This is the location where the Process Documentation for FileNet Image Manager was installed. This can also be the full path to the documentation if it was installed on a local drive. An example URL is:

   http://<*web_server*>:<*port_number*>/ecm_help

   where <*web_server*> is the name of the web server, <*port_number*> is the web server port number, and ecm_help is the root folder of the documentation web site.
4. In the Network Clearinghouse (NCH) Domain Name dialog box, enter *your_machine_name*:FileNet. Your entry must be ASCII and alphanumeric. Each string, separated by a colon, can not be longer than 20 characters.
5. Leave the box checked for the primary Process Engine.
6. Select the installation location for the executable files and configuration files.
7. Indicate whether the database will be local or remote.
8. Indicate whether the database will be Oracle or SQL.
9. Indicate which version of the database software you will be using, depending on which database you selected. The following databases are supported:
   - Oracle 9i
   - Oracle 10g
   - SQL Server 2000
   - SQL Server 2005

Based on the database software and location, you will be prompted for additional information, as is summarized in the following table.

Oracle	Environment Variables	Database Location	Notes
	ORACLE_SID	local or remote	
	ORACLE_HOME	local or remote	If the database is remote, the Oracle Home path you enter refers to the local Oracle Client location/ environment.
	LOCAL	remote only	This is the global database name or the server connecting string. This name must match the entry in the tnsnames.ora file.
	Tablespaces		
	Temporary tablespace	local or remote	
	Data tablespace	local or remote	
	Index tablespace	local and remote	Optional. If not indicated, the data tablespace will be used.
SQL	**Database**		
	database name	local or remote	defaults to VWdb
	Filegroup names	local or remote	defaults to vwdata_fg
	ODBC data source name	local or remote	The name of the ODBC data source created in “To create the Process Engine ODBC data source and test the connection (SQL Server only)” on page 38.

10. If Process Engine uses a SQL database, the scripts run automatically. Proceed to Step 13 on page 41
11. If Process Engine uses an Oracle database, you will be prompted for the Oracle sys password and the pre-installation scripts described in “About pre-installation SQL scripts (Oracle databases only)” on page 37 will run.
12. When prompted, enter the Oracle sys password. If the password is entered incorrectly, sqlplus will re-prompt for the user name, which you must enter exactly as:

    sys as sysdba

    The password prompt then re-displays; re-enter the sys password.

NOTE If an error message indicates that the scripts did not run, you must resolve the errors and run the scripts manually, as described in "About pre-installation SQL scripts (Oracle databases only)" on page 37. After the scripts have run successfully, start the Process Engine Setup again.

13. Review and verify the installation summary information. Click **Next** to proceed if all information is correct, or **Back** to make changes.
14. When setup is complete, select **Yes** I want to restart my computer now, and click **Finish** to restart the computer.
15. When the system restarts, log on using the same local administrator account you used before. After you log on, the Process Engine setup will complete.
16. When the dialog box informs you that Process Engine has been successfully installed, click **Finish**.
17. If the database is SQL Server 2000, proceed with steps 18 through 41. If the database is SQL Server 2005, execute the steps in "To change the f_maint and f_sw passwords" on page 44 and proceed to step 42. If the database is Oracle, proceed to step 42.
18. Open the Control Panel and double-click the *Administrative Tools* icon, then double-click the *Services* icon.
19. In the Services dialog box, stop the following services if they are running.
    - IMS ControlService
    - Process Engine Services Manager
20. Close the *Services* window.
21. Enter the following at a command prompt after the FileNet software is shut down:

    ```
    killfnsw -D -y -S
    ```

22. At a command prompt:

    ```
    cd \fnsw_loc\SD\conf_db\
    ```

23. Edit the current IMS_cdb file. The current file will be the one with the highest number in the file name.
    a. Copy that file to the same name but increment the number. For example, if the name is IMS_5.cdb, copy IMS_5.cdb to IMS_6.cdb
    b. Replace the line within the table **SERVER_Rel_DB** block that says:

       database_type = 5, user

       with this line:

       database_type = 3, user

c. Replace the line within the table **SERVER_Processes** block that says:

fn_msodbc stop

with this line:

fn_mssql stop

d. Save the file.

24. Logged on as **fnsw,** enter the following at a command prompt:

fn_build -a

As necessary, correct any errors that occurred when you ran fn_build.

25. Restart the following services:

- Process Engine Services Manager

26. Restart the software:

```
initfnsw -y restart
```

27. Logged on to the Image Services root server as **fnsw**, enter the following at a command or system prompt:

fn_edit &

28. Select the *Relational Database* tab and the *MS-SQL* subtab.
29. Add or modify the database instance name and remote server name.
30. Save the changes you made in **fn_edit** and exit.
31. Move **fnsw_local\sd\SqlInstance.glob** to **SqlInstance.glob.save**.
32. Logged on as **fnsw,** enter the following at a command prompt:

fn_build -a

33. As necessary, correct any errors that occurred when you ran fn_build.
34. Check **fnsw_local\sd\SqlInstance.glob** to make sure it contains:

- database server name
- instance name
- database name

35. Execute the steps in “To change the f_maint and f_sw passwords” on page 44. When prompted for initial password, enter filenet.
36. Restart the IMS ControlService and the Process Engine Services Manager service.
37. Restart the software and verify that the database can be accessed by executing steps 40-43.
38. Start vwtool at a command prompt. Log on as a member of the SysAdminG group.
39. Type the following at a vwtool prompt:

```
regions
```

40. When prompted, respond by typing:

```
d
```

41. Exit from vwtool.
42. Check all log files and verify that there were no errors or failures. Correct any errors before proceeding. Log files to check include:
    - All **.lst** files in the ***<install drive>:*\fnsw** directory
    - All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_build** directory
    - All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_util** directory
    - Windows Event Logs
43. Proceed to "To complete additional configuration" on page 43.

To complete additional configuration

After installing the Process Engine software, complete the following additional configuration steps on Process Engine.

1. During Process Engine software installation, several local users required internally by the Process Engine are automatically created. To maintain system security, reset the passwords for

these users. The following table lists the users created, the level of system access each user has, and the tool used to change the password.

User Name	Description	How to modify
f_maint	Has DBA privileges. Used for RDBMS maintenance. Also referred to as the database maintenance user.	Execute set_f_maint_pw. See below for instructions.
f_sw	Has privileges only for database objects created by Process Engine. Used for RDBMS maintenance. Also referred to as the database runtime user.	Execute set_f_maint_pw. See below for instructions.
fnsw	Windows OS	Execute Windows Control Panel > Administrative Tools > Computer Management >Local Users and Groups. **Note:** When you change the password for the fnsw user, use the Windows Services tool to update the Log On tab for the IMS ControlService and the Process Engine Services Manager accordingly (because fnsw is used to start those services).
SysAdmin	Process Engine	Execute Xapex > Security Administration. See FileNet Image Services documentation for instructions. To download documents from the IBM support page, see"To access documentation for IBM FileNet products" on page 8.
FieldService	Process Engine	
Operator	Process Engine	

To change the f_maint and f_sw passwords

1. Logged on as **fnsw**, enter the following at the command prompt:

   `set_f_maint_pw <user_name>`

   where the <*user_name*> is f_maint or f_sw

2. Enter your current password. (CR = initial default/never changed)

   NOTE Pressing Return will only work the first time the password is changed, when the default password is still valid. After the password is changed from the default, you must enter the current password.

3. Enter a new password for the user when prompted. The password must be between 6 and 30 characters. If the database is SQL Server, the first character cannot be numeric, per SQL Server naming conventions.
4. Confirm the new password when prompted.

Note If you want to use the same password you used before the update, change it temporarily to a different value, then run **set_f_maint_pw** again to change it back.

To verify TCP/IP parameter settings (Windows)

1. Log in as the Administrator user and run **regedit** to verify the following registry key values.

   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\MaxUserPort => 65535 (default = 5000)

   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\TcpTimedWaitDelay => 90 (default = 240, or 4 min)
2. If necessary, add or modify a new DWORD value with the values as described above and save the changes.

NOTE These values are decimal. The default in regedit is hexadecimal.

To re-enable Oracle Password Complexity Verification

If, as directed earlier, you disabled the Oracle Password Complexity Verification feature prior to installing Process Engine, you can now re-enable it.

To redirect log messages to the Image Services error log

Enable the redirection of log messages to the Image Services error log. This redirection will log messages to the Image Services error log as well as to the default Windows Event Log. By enabling this redirection, you can monitor the progress of the database object upgrade in a command window.

To enable the redirection, change the LogToFiles value from 0 to 1 for the following registry key.

```
HKEY_LOCAL_MACHINE>SOFTWARE>FileNET>IMS>CurrentVersion
```

Proceed to “Complete Post-Install Process Engine Configuration (standalone Process only)” on page 46.

Task 4: Complete Post-Install Process Engine Configuration (standalone Process only)

Performing the following procedure allows Process Engine to use the largest available contiguous free memory area for shared memory allocations on Windows. If you fail to perform this procedure, the system will not allocate shared memory correctly. To configure contiguous free memory for Process Engine.

1. Stop and restart the Process Engine software by executing:

   initfnsw -y restart

2. Start vwtool at a command prompt. Log on as a member of the SysAdminG group.

3. Use the processmap command to find the largest contiguous free memory area, as in:

   ```
   <vwtool:1>processmap
   ```

   vwtool returns the following:

   ```
   Process Id (CR=this vwtool process):
   ```

   Press **Return** (CR) to get the process map for this process, as in the following example, where the process ID is 2592:

   ```
   C:\FNSW\BIN\vwtool.exe (ID:2592)

   Address    Attrib         Size    Owner
   =======    ======           ====     =====

   00000000   Free          65536
   00010000   Private       12288
   00013000   Free          53248
   00020000    Private         4096
   ```

   …….(pages of memory addresses omitted here)

   ```
   7FFDE000   Private        4096
   7FFDF000   Private        4096
   7FFE0000    Private        65536

   C:\FNSW\BIN\vwtool.exe (ID:2592)

   Largest FREE block found : 453873664 bytes at address 0x4B577000
   Rounded up to a 64K boundary, free block address 0x4B580000
   ```

   In this example, `0x4B580000` is the address we want. In some cases you might only see the line referencing the largest free block because the value is already at a 64K boundary.

   ```
   <vwtool:1>
   ```

4. Run the Windows regedit command to create a DWORD value for IS StartShmAddress, using the address found in step 3. Run regedit on the Process Engine server and go to:

   ```
   HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\
   ```

5. Create a new DWORD value. Name it:

   ```
   StartShmAddress
   ```

6. Enter or verify the following in the Edit DWORD Value Screen:

   Value name = `StartShmAddress`

   Value data = *<address of largest free memory block>*

   From the example above the value will be 4B580000.

   Base is hexadecimal.

7. Click **OK.**
8. Exit from regedit.
9. Restart the Process Engine software.
10. Verify the setting by executing the following at a command prompt:

    ```
    ipc_tool -A
    ```

    The following is an example of the information that is returned.

    ```
    Image Services software shared memory segment limit: 129 segments
    Current configured segment size: 0x01000000 bytes (16 MB)
    Before allocating shared memory for Image Services, the SysV library
    performs a test to determine the system shared memory limit. This test
    can be used as a reference for performance tuning. The test results vary
    depending on the amount of memory in use by other processes. The actual
    amount of shared memory available during operation may be less. The test
    results are:

       Successfully attached to 27 segments
       Successfully obtained 432 MB of shared memory

    The following table displays the number of shared memory segments currently
    in use by Image Services. Segment #0 (called the address manager) is small.
    The other segment(s) contain the actual Image Services data. Note that
    running ipc_tool will force the creation of segments #0 and #1 even when no
    other Image Services process is up.
    Shared Memory Address Manager Information

        Address     Shm id          Creator

    Enter <space> to continue, 'q' to quit:

      0 0x4b580000  FNSHM_464d0000  Shared address manager
    ```

    NOTE The First shared memory address is 0x4B580000, the value from this example.

    ```
      1 0x4c580000  FNSHM_464a0000  FileNet server software

    Total Image Services shared memory allocated: 16 MB

    (This does not include segment #0)
    ```

11. Exit ipc_tool. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify steps 1 - 9 above before proceeding.

To start Process Engine software

1. Start **FileNet Image Manager > Process Engine > Process Task Manager.**

2. From the **Action** menu, choose **Start.**

Each time the server is restarted, you must manually start the Process Engine software unless you set the startup mode to automatic. To change the Process Engine software startup to automatic, see System administration tasks > Configuring the Process Engine > Automatic startup (Windows) in Help for Process Engine Administration. To download this help topic from the IBM support page, see “To access documentation for IBM FileNet products” on page 8.

Proceed to “Install Process Engine fix packs and documentation updates” on page 49.

Task 5: Install Process Engine fix packs and documentation updates

1. Install any service packs, fix packs and/or interim fixes required for Process Engine. To download the latest software updates, and to determine which of these updates might be required for use with other components and expansion products, contact your service representative.
2. Proceed to “Start the Pooled Process Manager (PPM)” on page 50.

Task 6: Start the Pooled Process Manager (PPM)

The Pooled Process Manager (PPM) is the link between the Process Router on the web server and the VWJs processes on Process Engine. Workflow activity cannot occur unless the PPM is running.

To start the PPM

1. On Process Engine, start Process Task Manager.
   a. Windows: Select **Start > Programs > FileNet Image Manager > Process Engine > Process Task Manager.**
   b. UNIX: Enter **vwtaskman** from the command prompt.
2. Select **PPM** in the left pane.
3. Enter the appropriate property values on the General and Advanced tabs. For property descriptions, click **Help** and navigate to *PPM/PPM Property descriptions* (in Help for Process Task Manager.).

   NOTE If Process Engine and web server are on opposite sides of a firewall, you must specify the Return Port property.
4. Click **Apply** to save your changes.
5. Click **Start** on the toolbar.

Proceed to either "Install Process Java Applets and Connectivity (PJAC)" on page 51 or "Install and Upgrade PC Workstation (thick-client)" on page 88.

Task 7: Install Process Java Applets and Connectivity (PJAC)

The Process Java Applets and Connectivity (PJAC) software enables FileNet Web Services, FileNet Open Client, and custom applications to interface with Process Engine. There are three PJAC components:

- PJAC for FileNet Web Services
- PJAC for Open Client
- PJAC Standalone

When you install PJAC for FileNet Web Services or PJAC for Open Client, the PJAC Setup program adds a Process feature to the corresponding client interface: for FileNet Web Services clients, a **Process** button is added to the left pane, for FileNet Open Client, a **Process** menu is added to the toolbar. Note that the PJAC Standalone component provides an API-only interface to the Process Engine.

On servers running both FileNet Web Services and FileNet Open Client you can install PJAC for FileNet Web Services, PJAC for Open Client, or both, depending on which clients you want to provide Process support.

NOTES

- Which PJAC components you can install depends on your web server configuration, as indicated in the following table.

To install...	the web server must have...	Notes
PJAC for Web Services	FileNet Web Services	The PJAC Setup program installs the PJAC software in the same location where FileNet Web Services is installed.
PJAC for Open Client	FileNet Open Client	The PJAC Setup program installs the PJAC software in the same location where FileNet Open Client is installed.
PJAC Standalone	PJAC Standalone cannot be collocated with FileNet Web Services or FileNet Open Client	For information on developing PJAC applications, see “Setting Up for Process Development” in Help for Process Java API. To download this help from the IBM support page, see “To access documentation for IBM FileNet products” on page 8.

To install the Process Java Applets and Connectivity (PJAC) software

1. Log on as the local Windows administrator.
2. Access the PJAC software package and double-click the Setup.exe icon.

3. Select the PJAC components you want to install. Depending on your system configuration, some components might not be available for selection.
4. (PJAC Standalone only) In the Directory Name text box, specify the directory where you want PJAC standalone installed. The default location is C:\Program Files\FileNet\PJAC.
5. Enter the Documentation Server URL. This is the location where the Process Documentation for FileNet Image Manager was installed. This can also be the full path to the documentation if it was installed on a local drive. An example URL is:

   http://<*web_server*>:<*port_number*>/ecm_help

   where <*web_server*> is the name of the web server, <*port_number*> is the web server port number, and ecm_help is the root folder of the documentation web site.

   Click **Test** to ensure that the URL is valid.

   NOTE If you do not specify a documentation URL in the text box, you can manually enable the Windows Start menu shortcuts and context-sensitive help for the Process applets after installation. See FileNet Documentation Server in Help for Process Engine Administration for more information. To download this help from the IBM support page, see "To access documentation for IBM FileNet products" on page 8.
6. Review the summary screen.
7. Setup installs the PJAC components you selected. If Microsoft IIS is running, Setup stops IIS before installing the PJAC components.

   NOTE Both PJAC for Web Services and PJAC for Open Client install and use the following common files. If the PJAC Setup program finds an earlier version of these files already installed on the system, Setup asks you whether you want to keep or overwrite these files. Click **Yes** to overwrite a file and **No** to keep the existing version. If you are upgrading PJAC, keep the existing versions. Note that if you are installing PJAC for Web Services and PJAC for Open Client at the same time, the Setup program attempts to install these files twice.

   – Process Help.url
   – taskman.properties
   – taskman.policy
8. When the installation is complete, Setup restarts Microsoft IIS.

   NOTE Depending on the state of the system you might be prompted to restart the computer in order to complete the installation.
9. (Open Client only) Set permissions on the Open Client download folder.

   a. Right-click on My Computer and select **Manage** from the context menu.
   b. On the Computer Management dialog box, expand the Services and Applications node and then expand the Internet Information Services node.
   c. Navigate to the Open Client download folder. The default location for this folder is **Default Web Site > OpenClient > eprocess > download**.
   d. Right-click on the download folder and select **Properties** from the context menu.

e. On the download Properties dialog box, ensure that the **Execute Permissions** option is set to **None**.

f. Click **OK** to close the download Properties dialog.

10. Proceed to “Install Process Java Applets and Connectivity (PJAC) Fix Packs” on page 54.

Task 8: Install Process Java Applets and Connectivity (PJAC) Fix Packs

Install any fix packs required for PJAC, FileNet Web Services, or FileNet Open Client. To determine whether additional fix packs are needed, contact your service representative.

Task 9: Start the Process Router

To enable workflow activity, at least one Process Router must be running on each web server; each router corresponds to a single isolated region.

NOTE If Process Engine and a web server are located on opposite sides of a firewall, you must add an entry to the hosts file on Process Engine, mapping the web server's IP address to its fully qualified name.

To start a router on a web server

1. Start Process Task Manager on the web server. Select Process Task Manager from the FileNet Image Manager/Process Web Server group in the Start menu.
2. Select **Routers** in the feature pane.
3. If necessary, add a new router.
   a. Select **New** from the **Action** menu.
   b. Enter the appropriate parameter values. For a description of each parameter, click the **Help** button and navigate to *Routers/Process Router property descriptions.*
4. In the feature pane, select the router you want to start and click the **Start** button on the toolbar.

Proceed to "Initialize the isolated region" on page 56.

Task 10: Initialize the isolated region

Initialize an isolated region to create the default data structures (queues, workflow roster, and event log) necessary to process workflows in that region.

To initialize the isolated region

1. On a client computer (not the web server), start Process Configuration Console:
   a. Select **Process** on the FileNet Web Services Client or Open Client page.
   b. Select **Process Configuration Console**.
   c. When prompted to, log on as SysAdmin or as a member of the SysAdminG group.
2. Right-click the icon of the isolated region you want to initialize.
3. Select **Connect** from the displayed menu.
4. Select **Initialize Isolated Region** from the **Action** menu.
5. Click **Yes** at the prompt.

For further details about initializing an isolated region, see Initialize an isolated region in the Process Configuration Console Help. To download this help from the IBM support page, see “To access documentation for IBM FileNet products” on page 8.

Proceed to “Perform additional configuration tasks” on page 57.

Task 11: Perform additional configuration tasks

Once you have completed all applicable prior tasks listed in “Installation Tasks” on page 16, review and complete, as appropriate, the tasks listed below to prepare the system for workflow activity. To download IBM FileNet help topics from the IBM support page, see “To access documentation for IBM FileNet products” on page 8.

- Create additional users and groups. Refer to *Configuring users and groups* in Help for Process Engine Administration.
- Set Process-specific site preferences in Open Client. Refer to Help for Open Client Administrators in the FileNet IDM group on the Start menu.
- Configure automatic workflow launch. Refer to *Automatic workflow launching* in Help for Process Engine Administration.
- Add any Content Services (CS) and Image Services (IS) libraries you will use for workflow activity (for example, a CS library where workflow definitions will be stored or an IS library containing files that will be routed as workflow attachments). Refer to Help for Open Client Administrators or Help for Administrators in the FileNet IDM group on the Start menu.
- (Windows only) Configure the Process Engine for automatic startup. Refer to *Configuring the Process Engine for automatic startup* in Help for Process Engine Administration.
- Configure email notification. Refer to *Email notification* in Help for Process Engine Administration.
- Set Process Engine runtime options. Refer to *Set runtime options*.
- Set the default date/time mask for the Process Service. Refer to *General properties* in Help for Process Task Manager.
- Define additional isolated regions. Refer to *Using isolated regions to separate groups of users* in Help for Process Engine Administration.
- For each isolated region:
  - Define workflows. Refer to *Welcome to FileNet Process Designer* in Help for Process Designer.
  - Configure event logging options. Refer to *Configure event logging options*.
  - Configure step processors. Refer to *Configure step processors*.
  - Define and configure work queues. Refer to *Configuring work queues*.
  - Define and configure component queues. Refer to *Configuring component queues*.
  - Define and configure workflow rosters. Refer to *Configuring workflow rosters*.

Proceed to “Create a test workflow” on page 58.

Task 12: Create a test workflow

Once you have completed all applicable prior tasks in this manual, create a test workflow to validate your configuration.

NOTES

- Users who will create workflow definitions, launch or participate in workflows, or monitor and manage workflows must be defined in both the Image Services (IS) and Content Services (CS) security systems. Before you can create and run a test workflow, define a workflow participant in IS and CS. See *Defining Users (Open Client/FileNet Web Services)* in the Help for Process Engine Administration for details. To download this help from the IBM support page, see "To access documentation for IBM FileNet products" on page 8.
- You are encouraged to make the usernames and passwords identical (including case) in both the Image Services and Content Services security systems to minimize the number of times that workflow users need to log on. If the usernames and passwords are not identical, users will be prompted to log on when they access the Process system as well as a Content Services or Image Services library.

Create a test workflow

1. If you have not already done so, define a workflow participant in your Image Services and Content Services security systems.
2. From an Open Client or FileNet Web Services client, open Process Designer.

FileNet Web Services	FileNet Open Client
1. On the FileNet Web Services Client page, click **Process**. 2. Select **Designer**. 3. At the logon prompt, log on as the workflow participant you defined in Step 1.	1. On the FileNet Open Client page, click **Process**. 2. On the Tools tab, select **Designer**. 3. At the logon prompt, log on as the workflow participant you defined in Step 1.

3. Click **Workflow Properties** on the toolbar to display the Workflow Properties dialog box.
4. In the WorkFlow Name field, type **Test.** In the Subject field, type **Test workflow**. Click **Close**.
5. To create a step:
   a. Click **Create General Step** on the Process Designer toolbar, then click anywhere in the map area to place the step.
   b. In the Properties pane (right side of the window), change the step name (Step 1) to **Test step**.
   c. In the Instructions field, type **Congratulate yourself!.**

6. For this configuration test, assign yourself as the participant for this Test step as follows:
   a. In the Properties pane, ensure that **Participants** is selected, then click the **Add** button.
   b. On the Participants dialog, click **Users**, then select the workflow participant you defined (the user name you used to log on) and move that name to the right column, using the right arrow button.
   c. Click **OK.**
7. To specify a route from the Launch step to Test step:
   a. On the workflow map, point to the edge of the **LaunchStep** until the cursor changes to a route cursor.
   b. Press and hold the mouse button and drag to the **Test step**. The route displays as a red arrow from the Launch step to the Test step.
8. On the **File** menu, select **Validate** to verify that the workflow has no errors.
9. Save the new workflow definition to the Content Services (CS) library and launch the workflow as follows:
   a. On the **File** menu, select **Launch**.
   b. On the **Save a workflow definition to Content Services** dialog box, under Document Name, enter a filename for the workflow definition. The system will append the extension.pep.
   c. Click **Browse**, then locate a folder in your Content Services library.
   d. With the selected folder open, click **Save**.
   e. On the **Save a workflow definition to Content Services** dialog box, click **Next**.
   f. Enter a title string, such as **First Test Workflow**, that will appear in the Content Services library as the document title. Click **Next**.
   g. Give other users access to your workflow definition, if you want, perform the following:
      i. Select a user or group from the first drop-down list in the lower portion of the screen.
      ii. Select an access level from the second drop-down list.
      iii. Click the **Add** button.
      iv. Click **Finish**.
10. On the Launch page, click **Launch** to start the workflow, sending the Test step to the assigned participant (you).
11. Exit Process Designer by selecting **File > Exit**.
12. Process Designer displays a dialog box informing you that the workflow definition is checked out. Select **Cancel the checkout** and click **Cancel.**

13. Locate the work (Test Step) assigned to you as follows:

FileNet Web Services	FileNet Open Client
1. On the FileNet Web Services client page, click **Manager**. (You are already logged on, so there is no logon prompt.) 2. Click on the folder with your user name, then open the **Inbox** to display the items in your workflow inbox. 3. Double-click the **Test workflow** item to open it. 4. Check the Instructions. 5. Click **Complete** to complete the step and end the workflow.	1. On the FileNet Open Client page, click **Process**. 2. On the Tools tab, select **Log on to workflow server**. 3. At the logon prompt, log on as the workflow participant you defined in Step 1. 4. Click **Inbox** 5. Double-click the **Test workflow** item to open it. 6. Click **Complete** to complete the step and end the workflow.

Upgrade Tasks

Following is an overview of the installation process. Perform the steps below (in the order listed) to install and initially configure your system. Except where noted, all steps apply to all system configurations.

1. Review the information in Task 1 on page 62. A number of prerequisite steps are identified there.
1. Upgrade the Process Documentation for FileNet Image Manager. Do Task 2 on page 65.
2. Upgrade Process Engine for either **standalone Process** or **Process with Imaging** activity.
   a. Process with Imaging: Do Task 4 on page 75.
   b. Standalone Process (Windows only): Do Task 3 on page 66. Install Process Engine and documentation fix packs. Do Task 5 on page 49.
3. Upgrade Visual WorkFlo thick client software if appropriate. Do the applicable tasks in "Install and Upgrade PC Workstation (thick-client)" on page 88. If the client is Visual WorkFlo, none of the additional steps here apply.
4. Start the Pooled Process Manager (PPM). Do Task 6 on page 50.
5. Upgrade Process Java Applets and Connectivity (PJAC). Do Task 5 on page 84 and Task 8 on page 54.
6. Start the Process router. Do Task 9 on page 55.

Task 1: Upgrade Planning

This document contains information and procedures for the following upgrade paths:

- FileNet Image Manager Process 2.0.1 to FileNet Image Manager Process 3.5.4
- FileNet Process Java Applets and Connectivity (PJAC) 2.0.1 to 3.5.4

Before starting any updates, read this chapter. In addition, read the chapter(s) appropriate to your system configuration (see table below).

Starting point...	Follow procedures in...
Process Engine 5.1, standalone eProcess.	“Upgrade Process Documentation for IM Process” on page 65 “Upgrade Standalone eProcess” on page 66
Process Engine 5.1, eProcess with Imaging	“Upgrade Process Documentation for IM Process” on page 65 “Upgrade eProcess with Imaging” on page 75
Web WorkFlo 5.1	“Upgrade Process Java Applets and Connectivity (PJAC)” on page 84
VW Thick Client version 3.5	“Install and Upgrade PC Workstation (thick-client)” on page 88

The procedures in this document assume that upgrades will be completed before any configuration changes, such as moving from a local to a remote database, are made.

Before upgrading to FileNet Image Manager Process 3.5.4, record the current f_maint password value as it will be needed during the upgrade.

To upgrade the MKF security database

The page size and block size for the SEC database must be updated before upgrading to FileNet Image Manager Process 3.5.4. If this is an eProcess with Imaging installation, you completed this update before installing Image Services 4.1. For standalone eProcess systems, perform the following steps to update the database.

You will export the contents of the SEC database, change the required parameters, reinitialize the database and reimport your exported security data. All commands are entered at a command prompt unless indicated otherwise.

1. Log on as a user with Administrator privileges.
2. Export the current contents of the security database using the SEC_tool utility. Execute the following:

   ```
   SEC_tool
   ```

3. At the SEC_tool prompt, enter the following:

   `export <filename>`

   Where <*filename*> is the file you want the security data exported to.

4. Back up the file containing the exported security data.
5. Start the **fn_edit** utility and modify the following:
   a. On the **MKF databases** tab, change the SEC page size to 8K.
   b. On the **Datasets** tab, change the sec_db0 and sec_rl0 sizes to a minimum of 64 MB.
   c. On the **Performance Tuning** tab, select Server Memory and set the security buffer pool size to 2000 (2 MB).
6. Exit fn_edit and save your changes.
7. Log on as the **fnsw** user.
8. Rebuild configuration files:

   ```
   fn_build -a
   ```

9. Stop all software:

   ```
   killfnsw -D -y
   ```

10. Reinitialize the SEC database:

    ```
    fn_util initsec
    ```

11. Restart the software:

    ```
    initfnsw restart
    ```

12. Import the contents of the security database using the SEC_tool utility. Execute the following:

    ```
    SEC_tool
    ```

13. At the SEC_tool prompt, enter the following:

    `import <filename>` [overwrite_all]

    Where <*filename*> is the file you exported to. Overwrite_all will retain all object IDs.

14. Stop all software:

    ```
    killfnsw -D -y
    ```

15. Back up the SEC database.

Proceed with the procedures in this topic.

To save existing configuration values

1. If you are using the Rules Engine:
   a. Note the values of the following parameters in the vwtaskman.properties file. You must manually edit the file after the upgrade to restore the values if you want to continue using the Rules Engine.

- TaskManager.RulesEngine=True
- TaskManager.RulesEngine.ClassPath=
- TaskManager.RulesEngine.Props=

b. Save the following files, to be restored after the upgrade:

- ri.jar
- re.jar

2. Check the /fnsw/bin/vwppm file to see if PPM is using a port other than the default which is 32771. If so, note the port number so it can be restored after the upgrade, otherwise the PPM port will not match the port used by the routers, as configured before the upgrade.
3. Backup the following configuration files:

- vwserver.ini,
- vwtaskman.xml,
- taskman.properties

Task 2: Upgrade Process Documentation for IM Process

The help system used for this release is the eProcess 5.2 online help. To access this help you must upgrade an existing eProcess 5.1 help system with updated eProcess 5.2 help files, see “Install Process Documentation for FileNet Image Manager” on page 17.

Task 3: Upgrade Standalone eProcess

These procedures assume the system is a standalone Process Engine, meaning that Image Services (IS) is configured only as required for eProcess and is not used for imaging. Verify that you have a full backup before starting these procedures.

To shut down Image Manager Process 2.0.1 software

1. Start Process Task Manager.
2. Stop any of the following components that are running, in the order listed:
   - Any custom applications that require the router
   - Process Analyzer
   - Routers on web servers and Content Services servers
   - PPM
   - Panagon eProcess Services Manager
   - Rules Engine
3. Click the **Close** button to exit Task Manager.
4. Open the Control Panel and double-click the *Administrative Tools* icon, then double-click the *Services* icon.
5. In the Services dialog box, stop the following services if they are running.
   - IMS ControlService
   - Panagon eProcess Services Manager
6. Close the *Services* window.
7. Enter the following at a command prompt after the FileNet software is shut down:

   ```
   killfnsw -D -y
   ```
8. Proceed to "Install Process Engine software" on page 67.

To reset the fnsw password to the default value

Reset the fnsw user's password to the default value of BPMtemp1pzwd before running Process Engine setup for the upgrade. After you change the password for the fnsw user, use the Windows Services tool to update the Log On tab for the IMS ControlService and the Panagon eProcess Services Manager accordingly. If the password is not changed before the upgrade, the upgrade will fail. After successfully upgrading Process Engine, reset the password again.

To create the Process Engine ODBC data source and test the connection (SQL Server only)

The ODBC data source is required for both local and remote databases.

1. Start **Program > Administrator Tools > Data Source (ODBC)**.

2. Click **Add** on the **System DSN** tab.
3. Select *SQL Server* as the driver to use for the new data source and click **Finish.**
4. Enter a name and description for the data source. The name will be required input for the Process Engine Setup program when configuring for a SQL Server database.
5. Choose the SQL Server to connect to from the dropdown list of servers.

   NOTE If only a server name appears in the list, the connection will be with the default instance. If there are named instances in the database, the name will appear as <*server*>/<*instance name*>.
6. Perform the following:
   a. Choose SQL Server authentication.
   b. Select the option to get default settings for additional configuration options by connecting to the SQL Server.
   c. Indicate the Login ID and Password to connect to the database.

   NOTE This database login ID information need not be for an administrator and it is only used to connect to the database to get the default values for the remaining settings required to configure the data source.
7. Change the default database to be the Process Engine database.
8. Verify the settings for the data source configuration and click **Test Data Source**. If the test is successful click **OK.** Otherwise resolve the problem before continuing.
9. Double-click **SQL Server** on the **Connection Pooling** tab.
10. Select **Don't pool connection to this driver** and click **OK**.
11. Click **OK** on the ODBC Data Source Administrator window to finish configuration of the data source.
12. On the summary screen click **Test Data Source.** If error messages display, resolve them before proceeding with the Process Engine software installation.

Install Process Engine software

1. Log on as a **local** Windows **Administrator**. This user must also be a database administrator.
2. Access the software package and execute IMPE-3.5.4-Win.exe.
3. Enter the Documentation Server URL. This is the location where the Process Documentation for FileNet Image Manager was installed in Task 2 on page 65. This can also be the full path to the documentation if it was installed on a local drive. An example URL is:

   `http://docserver:port#/ecm_help`

   where docserver is the name of the web server, port# is the web server port number, and ecm_help is the root folder of the documentation web site.
4. Click **Finish** when all files have been copied to the server.

5. Reboot the server.
6. If the database is SQL Server 2000, proceed with steps 7 through 23. If the database is Oracle, proceed to step 24.
7. Open the Control Panel and double-click the *Administrative Tools* icon, then double-click the *Services* icon.
8. In the Services dialog box, stop the following services if they are running.
   – IMS ControlService
   – Panagon eProcess Services Manager
9. Close the *Services* window.
10. Enter the following at a command prompt after the FileNet software is shut down:

    ```
    killfnsw -D -y
    ```

11. At a command prompt:

    ```
    cd \fnsw_loc\SD\conf_db\
    ```

12. Edit the current IMS_cdb file. The current file will be the one with the highest number in the file name.
    a. Copy that file to the same name but increment the number. For example, if the name is IMS_5.cdb, copy IMS_5.cdb to IMS_6.cdb
    b. Replace the line within the table **SERVER_Rel_DB** block that says:

       database_type = 5, user

       with this line:

       database_type = 3, user

    c. Replace the line within the table **SERVER_Processes** block that says:

       fn_msodbc stop

       with this line:

       fn_mssql stop

    d. Save the file.
13. Logged on as **fnsw,** enter the following at a command prompt:

    fn_build -a

As necessary, correct any errors that occurred when you ran fn_build.

14. Restart the following services:
    • Process Engine Services Manager
15. Restart the software:

    ```
    initfnsw -y restart
    ```

16. Change the password for f_sw and f_maint in the SQL database (via SQL Enterprise Manager) to filenet
17. Execute the steps in "To change the f_maint and f_sw passwords" on page 69. When prompted for initial password, enter filenet
18. Restart the IMS ControlService and the Process Engine Services Manager service.
19. Verify that the database can be accessed by executing steps 20-23.
20. Start vwtool at a command prompt. Log on as a member of the SysAdminG group.
21. Type the following at a vwtool prompt:

```
regions
```

22. When prompted, respond by typing:

```
d
```

23. Exit from vwtool.
24. Check all log files and verify that there were no errors or failures. Correct any errors before proceeding. Log files to check include:

- All **.lst** files in the ***<install drive>:*\fnsw** directory
- All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_build** directory
- All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_util** directory
- Windows Event Logs

25. Before proceeding to the next section, install the latest fixes for eProcess 5.2 as well as any fix packs required for Image Services (IS). Also review both the Image Services (IS) and eProcess release notes that are available on the IBM web site.

Bring Up FileNet Software

1. Start **Programs > FileNet Image Manager > Process Engine > Process Task Manager.**
2. From the **Action** menu for the Process Service, choose **Start.**

Each time the server is restarted, you must manually start the Process Engine software unless you set the startup mode to automatic. To change the Process Engine software startup to automatic, see System administration tasks > Configuring the Process Engine > Automatic startup (Windows) in Help for Process Engine Administration. To download this help topic from the IBM support page, see "To access documentation for IBM FileNet products" on page 8.

To change the f_maint and f_sw passwords

1. Logged on as **fnsw**, set the f_maint password:

```
set_f_maint_pw
```

2. Enter your current f_maint password. (CR = initial default/never changed)

NOTE Pressing Return will only work the first time the password is changed, when the default password is still valid. After the password is changed from the default, you must enter the current password.

3. Enter a new password for the user when prompted. The password must be between 6 and 30 characters. If the database is SQL Server, the first character cannot be numeric, per SQL Server naming conventions.
4. Confirm the new password when prompted.

Note If you want to use the same password you used before the update, change it temporarily to a different value, then run **set_f_maint_pw** again to change it back.

To update database objects

After you have updated the database and software you must update the database objects.

1. Log on as the **fnsw** user.
2. Open a command prompt window.
3. Run vwtool to initiate the database changes by executing the following:

   ```
   vwtool
   ```

4. At the prompt, enter:

   ```
   count *
   ```

   These steps to cause the software to start up and immediately begin the database changes. When the prompt displays again, the changes are complete.

   See the IS error log to monitor the progress of the updates and ensure that no errors occur.

   Check the logs to verify that messages similar to the following are captured:

   2006/10/17 16:23:43.261 <fnsw> VW/Process (14952) ... [INFO]
   VW: Database upgrade successful to version 44, please follow instructions to perform the next step.

   2006/10/17 16:23:43.303 <fnsw> VW/Process (14952) ... [INFO]
   VW: Must restart software to complete upgrade procedure

   Ignore messages designated as SERIOUS if they are in combination with a successful message for that upgrade, especially if all process IDs are the same for all the errors and INFO messages.
5. Exit vwtool when you get a message that the procedure is complete.
6. Stop and restart the Process Service software through Process Task Manager.
7. Restart the software:

   ```
   initfnsw -y restart
   ```

8. Change directories to \fnsw_loc\sd.
9. Start vwtool and do the following substeps:

a. Get a list of all regions on the disk by typing the following at a vwtool prompt:

```
regions
```

Make note of all region numbers.

b. When prompted, respond by typing:

d

c. Exit from vwtool.

10. Initiate a transfer on **every** working isolated region. The .cdl file to transfer will depend on whether you have thick or thin clients. by entering the following:

```
vwtfer -o <NNN>.cdl -r <X>
```

where <*X*> is the isolated region number

and <*NNN*> is the appropriate .cdl file.

upgrade.cdl is for thin client regions

(When prompted, log on as SysAdmin.)

To configure contiguous free memory for Process Engine (Windows only)

Execute the following steps to configure the largest available contiguous free memory block. If you fail to perform this procedure, the system will not allocate shared memory at some point during normal execution and will cease to function correctly.

1. Start vwtool at a command prompt.
2. Log on as a member of the SysAdminG group.
3. Use the processmap command to find the largest contiguous free memory area, as in:

```
<vwtool:1>processmap
```

vwtool returns the following:

```
Process Id (CR=this vwtool process):
```

Press **Return** (CR) to get the process map for this process, as in the following example, where the process ID is 2592:

```
C:\FNSW\BIN\vwtool.exe (ID:2592)

Address    Attrib         Size    Owner
=======    ======         ====    =====

00000000   Free          65536
00010000   Private       12288
00013000   Free          53248
00020000   Private        4096
```

(pages of memory addresses omitted here)

```
7FFDE000   Private        4096
7FFDF000   Private        4096
7FFE0000   Private        65536
```

```
C:\FNSW\BIN\vwtool.exe (ID:2592)

Largest FREE block found : 453873664 bytes at address 0x4B577000
Rounded up to a 64K boundary, free block address 0x4B580000
```

In the example above, `0x4B580000` is the address we want. In some cases you might only see the line referencing the largest free block because the value is already at a 64K boundary.

4. Run the Windows regedit command to create a key for IS StartShmAddress, using the address found in step 2. Run regedit on the Process Engine server and navigate to:

   ```
   HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\
   ```

5. Create a new DWORD value. Name it:

   ```
   StartShmAddress
   ```

6. Enter or verify the following in the Edit DWORD Value Screen:

   Value name = `StartShmAddress`

   Value data = *<address of largest free memory block>*

   From the example above the value will be 4B580000.

   Base is hexadecimal.

7. Click **OK.**
8. Exit from regedit.
9. Restart the Process Engine software.
10. Verify the setting by executing the following at a command prompt:

    ```
    ipc_tool -A
    ```

    The following is an example of the information that is returned.

    ```
    Image Services software shared memory segment limit: 129 segments
    Current configured segment size: 0x01000000 bytes (16 MB)
    Before allocating shared memory for Image Services, the SysV library
    performs a test to determine the system shared memory limit. This test
    can be used as a reference for performance tuning. The test results vary
    depending on the amount of memory in use by other processes. The actual
    amount of shared memory available during operation may be less. The test
    results are:

       Successfully attached to 27 segments
       Successfully obtained 432 MB of shared memory

    The following table displays the number of shared memory segments currently
    in use by Image Services. Segment #0 (called the address manager) is small.
    The other segment(s) contain the actual Image Services data. Note that
    running ipc_tool will force the creation of segments #0 and #1 even when no
    other Image Services process is up.
    Shared Memory Address Manager Information

        Address     Shm id          Creator

    Enter <space> to continue, 'q' to quit:
    ```

```
  0 0x4b580000  FNSHM_464d0000  Shared address manager
```

NOTE The First shared memory address is 0x4B580000, the value from this example.

```
  1 0x4c580000  FNSHM_464a0000  FileNet server software
Total Image Services shared memory allocated: 16 MB
(This does not include segment #0)
```

11. Exit ipc_tool. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify steps 1 - 8 above before proceeding.

To reset the fnsw password

Reset the fnsw user's password. After you change the password for the fnsw user, use the Windows Services tool to update the Log On tab for the IMS ControlService and the Process Engine Services Manager accordingly.

To redirect log messages to the Image Services error log

Enable the redirection of log messages to the Image Services error log. This redirection will log messages to the Image Services error log as well as to the default Windows Event Log. By enabling this redirection, you can monitor the progress of the database object upgrade in a command window.

To enable the redirection, change the LogToFiles value from 0 to 1 for the following registry key.

```
HKEY_LOCAL_MACHINE>SOFTWARE>FileNET>IMS>CurrentVersion
```

To restore Rules Engine settings

If you were using the Rules Engine on the previous release and want to continue to use it:

1. Restore the following values from the saved taskman.properties file:
   - TaskManager.RulesEngine=True
   - TaskManager.RulesEngine.ClassPath=
   - TaskManager.RulesEngine.Props=
2. Restore the following files:
   - re.jar
   - ri.jar

To restore custom configuration settings

Before upgrading, a number of custom configuration files or settings were saved for the following files:

- vwserver.ini,
- vwtaskman.xml,

- taskman.properties

Refer to the saved files and make any changes necessary to the new versions of these files. Do not overwrite the new files with the old ones.

Proceed to “Upgrade Process Java Applets and Connectivity (PJAC)” on page 84.

Task 4: Upgrade eProcess with Imaging

This chapter contains procedures for updating an eProcess system that is configured with FileNet Image Services (IS) for imaging activity. Prior to beginning the procedures in this chapter you must have already upgraded to and configured Image Services 4.1 Service Pack 1. Image Services and the database must be running at the time you run Process Engine Setup.

If the database is remote, the database client software must also be running on the workflow server when you run Process Engine Setup.

Assure that you have a full backup before starting these procedures.

To shut down Process Engine 5.1 (UNIX)

Execute Process Task Manager.

3. Stop any of the following components that are running, in the order listed:
   - Any custom applications that require the router
   - Process Analyzer
   - Routers on web servers and Content Services servers
   - PPM
   - Panagon eProcess Services Manager
   - Rules Engine
4. Click the **Close** button to exit Task Manager.
5. Enter the following at a command prompt after the FileNet software is shut down:

   ```
   killfnsw -DAy
   ```
6. Execute the following (AIX only):

   ```
   slibclean
   ```

To shut down Process Engine 5.1 (Windows)

1. Start Process Task Manager.
2. Stop any of the following components that are running, in the order listed:
   - Any custom applications that require the router
   - Process Analyzer
   - Routers on web servers and Content Services servers
   - PPM
   - Panagon eProcess Services Manager
   - Rules Engine

3. Click the **Close** button to exit Task Manager.
4. Open the Control Panel and double-click the *Administrative Tools* icon, then double-click the *Services* icon.
5. In the Services dialog box, stop the following services if they are running.
   - IMS ControlService
   - Panagon eProcess Services Manager
6. Close the *Services* window.
7. Enter the following at a command prompt after the FileNet software is shut down:

```
8. killfnsw -D -y
```

To reset the fnsw password to the default value

Reset the fnsw user's password to the default value of BPMtemp1pzwd before running Process Engine setup for the upgrade. On Windows, after you change the password for the fnsw user, use the Windows Services tool to update the Log On tab for the IMS ControlService and the Panagon eProcess Services Manager accordingly. If the password is not changed before the upgrade, the upgrade will fail. After successfully upgrading Process Engine, reset the password again.

To install Process Engine 3.5.4 (UNIX)

Execute the following steps on the application server if there is one, otherwise on the root.

1. Log on as the **root** user.
2. (AIX and HPUX) Verify that the /fnsw and /fnsw/local file systems are mounted before you install the Process Engine software. At the system prompt, type **mount** to see a list of what is currently mounted.
3. Access the Process Engine software package and launch the IMPE-3.5.4-<*operating system*>.bin Setup program.
4. Enter the Documentation Server URL. This is the location where the Process Documentation for FileNet Image Manager was installed. This can also be the full path to the documentation if it was installed on a local drive. An example URL is:

   http://<*web_server*>:<*port_number*>/ecm_help

   where <*web_server*> is the name of the web server, <*port_number*> is the web server port number, and ecm_help is the root folder of the documentation web site.
5. When the installation is complete, check all log files and verify that there were no errors or failures. Correct any errors before proceeding. Log files to check include:
   - All .lst files in the **/fnsw** directory
   - All .log files in the **/fnsw/local/logs/fn_build** directory
   - All .log files in the **/fnsw/local/logs/fn_util** directory

6. Before proceeding to the next section, install the latest fix pack for Process Engine 3.5.4 as well as any fix packs required for Image Services (IS).
7. (HPUX) Check the **/var/adm/sw/swagent.log** file for information regarding the install status. Look for the header information for your install. Information from other events might be in this file. The newest information is at the end of the file.

   ```
   more /var/adm/sw/swagent.log
   ```
8. This step applies to HP-UX servers configured with FileNet-controlled or local site-controlled Oracle databases. Add the following entry to the file $ORACLE_HOME/network/admin/sqlnet.ora. This single-line addition can be located anywhere in the file:

   ```
   BEQUEATH_DETACH=YES
   ```

   This step does not apply to an HP-UX system configured with a remote site-controlled Oracle database.
9. Proceed to "To update the Database Objects" on page 80.

To install Process Engine 3.5.4 software (Windows)

1. Log on as a **local** Windows **Administrator**. This user must also be a database administrator.
2. Access the Process Engine software package and launch the IMPE-3.5.4-Win.exe Setup program.
3. Enter the Documentation Server URL. This is the location where the Process Documentation for FileNet Image Manager was installed. This can also be the full path to the documentation if it was installed on a local drive. An example URL is:

   http://*<web_server>:<port_number>*/ecm_help

   where *<web_server>* is the name of the web server, *<port_number>* is the web server port number, and ecm_help is the root folder of the documentation web site.

- Review and verify the installation summary information. Click **Next** to proceed if all information is correct, or **Back** to make changes.

4. When the installation is complete, check all log files and verify that there were no errors or failures. Correct any errors before proceeding. Log files to check include:
   - All **.lst** files in the ***<install drive>:*\fnsw** directory
   - All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_build** directory
   - All **.log** files in the ***<install drive>:*\fnsw_loc\logs\fn_util** directory
   - Windows Event Logs
5. Install the latest fix pack for Process Engine 3.5.4 as well as any fix packs required for Image Services (IS).
6. Start the software on Process Engine.
   a. Start **Programs > FileNet Image Manager > Process Engine > Process Task Manager.**
   b. From the **Action** menu for the Process Service, choose **Start.**

Proceed to "To change performance tuning parameters and configure contiguous memory (Windows)" on page 78

To change performance tuning parameters and configure contiguous memory (Windows)

You must change several configuration parameters before updating Process Engine database objects.

1. Logged on as fnsw, start fn_edit at a command prompt.
2. On the Performance Tuning tab, Server Memory subtab, locate the Transient Buffer Pool field.
3. Change the value from 100000 to 10000.
4. Exit fn_edit and save the changes.
5. Enter at a command prompt:

   fn_build -a
6. Stop and restart the Process Engine software:

   initfnsw -y restart
7. Start vwtool at a command prompt. Log on as a member of the SysAdminG group.
8. Use the processmap command to find the largest contiguous free memory area, as in:

   ```
   <vwtool:1>processmap
   ```

   vwtool returns the following:

   ```
   Process Id (CR=this vwtool process):
   ```

   Press **Return** (CR) to get the process map for this process, as in the following example, where the process ID is 2592:

   ```
   C:\FNSW\BIN\vwtool.exe (ID:2592)

   Address    Attrib         Size    Owner
   =======    ======           ====     =====

   00000000   Free          65536
   00010000   Private       12288
   00013000   Free          53248
   00020000    Private         4096
   ```

   …….(pages of memory addresses omitted here)

   ```
   7FFDE000   Private        4096
   7FFDF000   Private        4096
   7FFE0000    Private        65536

   C:\FNSW\BIN\vwtool.exe (ID:2592)

   Largest FREE block found : 453873664 bytes at address 0x4B577000
   Rounded up to a 64K boundary, free block address 0x4B580000
   ```

   In this example, `0x4B580000` is the address we want. In some cases you might only see the line referencing the largest free block because the value is already at a 64K boundary.

```
<vwtool:1>
```

9. Run the Windows regedit command to create a DWORD value for IS StartShmAddress, using the address found in step 2. Run regedit on the Process Engine server and navigate to:

   ```
   HKEY_Local_Machine\Software\FileNet\IMS\CurrentVersion\
   ```

10. Create a new DWORD value. Name it:

    ```
    StartShmAddress
    ```

11. Enter or verify the following in the Edit DWORD Value Screen:

    Value name = `StartShmAddress`

    Value data = *<address of largest free memory block>*

    From the example above the value will be 4B580000.

    Base is hexadecimal.

12. Click **OK**.

13. Exit from regedit.

14. Restart the Process Engine software.

15. Verify the setting by executing the following at a command prompt:

    ```
    ipc_tool -A
    ```

    The following is an example of the information that is returned.

    ```
    Image Services software shared memory segment limit: 129 segments
    Current configured segment size: 0x01000000 bytes (16 MB)
    Before allocating shared memory for Image Services, the SysV library
    performs a test to determine the system shared memory limit.  This test
    can be used as a reference for performance tuning.  The test results vary
    depending on the amount of memory in use by other processes.  The actual
    amount of shared memory available during operation may be less.  The test
    results are:

       Successfully attached to 27 segments
       Successfully obtained 432 MB of shared memory

    The following table displays the number of shared memory segments currently
    in use by Image Services. Segment #0 (called the address manager) is small.
    The other segment(s) contain the actual Image Services data. Note that
    running ipc_tool will force the creation of segments #0 and #1 even when no
    other Image Services process is up.
    Shared Memory Address Manager Information

        Address     Shm id          Creator

    Enter <space> to continue, 'q' to quit:

      0 0x4b580000  FNSHM_464d0000  Shared address manager
    ```

    NOTE The First shared memory address is 0x4B580000, the value from this example.

    ```
      1 0x4c580000  FNSHM_464a0000  FileNet server software
    ```

```
Total Image Services shared memory allocated: 16 MB
(This does not include segment #0)
```

16. Exit ipc_tool. If the shared memory address is correct, proceed to the next installation task. If the value is not correct, verify steps 1 - 8 above before proceeding.
17.
    a. Start **Programs > FileNet Image Manager > Process Engine > Process Task Manager.**
    b. From the **Action** menu for the Process Service, choose **Start.**

Each time the server is restarted, you must manually start the Process Engine software unless you set the startup mode to automatic. To change the Process Engine software startup to automatic, see System administration tasks > Configuring the Process Engine > Automatic startup (Windows) in Help for Process Engine Administration. To download this help from the IBM support page, see "To access documentation for IBM FileNet products" on page 8.

Proceed to "To update the Database Objects" on page 80.

To update the Database Objects

After you have updated the Process Engine software, you must update the database objects with the following steps.

1. Log on as the **fnsw** user.
2. Open a command prompt window and execute:

   ```
   vl -t
   ```

   From this window you can monitor the status of the following commands.
3. Start vwtool at a command prompt. Log on as a member of the SysAdminG group.
4. At the vwtool prompt, enter:

   ```
   count *
   ```

   These steps cause the software to start up and immediately begin the database changes. When the prompt displays again, the changes are complete.

   Check the system error logs to verify that the following messages were logged:

   VW/eProcess (1048596)... [INFO] VW: Database upgrade successful

   VW/eProcess (1048596)... [INFO] VW: Must restart software to complete upgrade procedure
5. Stop and restart the Process Service software through Process Task Manager.
6. Initiate a transfer on every working isolated region:

   ```
   vwtfer -o NNN.cdl -r X
   ```

   where *X* is the isolated region number

   (When prompted, log on as SysAdmin.)

To reset transient buffers (Windows)

1. Logged on as fnsw, start fn_edit at a command prompt.
2. On the Performance Tuning tab, Server Memory subtab, locate the Transient Buffer Pool field.
3. Change the value from 10000 to 100000.
4. Exit fn_edit and save the changes.
5. Enter at a command prompt:

   fn_build -a
6. Stop and restart the Process Engine software.
   a. Start **Programs >** **FileNet Image Manager > Process Engine > Process Task Manager.**
   b. From the **Action** menu for the Process Service, choose **Stop.**
   c. From the **Action** menu for the Process Service, choose **Start.**

To restore custom PPM port setting (UNIX)

The default port used by the PPM is set to 32771. The port number used by the PPM must match the port used by routers. If you want to continue to use an old port number, edit the /fnsw/bin/vwppm file. If you do not edit this file PPM will start on port 32771 and the routers, by default, will continue to use the port number from the existing configuration.

The following is a sample procedure to fix the problem. In this example, the platform is HP-UX, and the old port number configured was 1099.

Add "-p 1099" to the ppm startup statement For example:

old:

```
if [ 'HP-UX' = `uname` ]
then
       java -pa11 -cp VWJAVA:/fnsw/bin/pw.jar:/fnsw/jre/lib filenet.vw.ppm.VWPPM $* &
else
        java -cp VWJAVA:/fnsw/bin/pw.jar:/fnsw/jre/lib filenet.vw.ppm.VWPPM $* &
fi
```

new:

```
if [ 'HP-UX' = `uname` ]
then
        java -pa11 -cp VWJAVA:/fnsw/bin/pw.jar:/fnsw/jre/lib filenet.vw.ppm.VWPPM -
p 1099
$* &
else
```

```
        java -cp VWJAVA:/fnsw/bin/pw.jar:/fnsw/jre/lib filenet.vw.ppm.VWPPM -p 1099
$* &
fi
```

Restart the software, log on as fnsw and execute:

```
vwzap
vwrestart
```

This could take several minutes. Check the error logs to verify that all software started successfully before proceeding to

To edit the vwrestart file (HP only)

If you have 2GB of memory or more, edit the vwrestart file.

Change:

```
nohup /usr/ccs/lbin/dldd32 2>&1 >/dev/null
```

to

```
nohup /usr/ccs/lbin/dldd32 +a 0x70000000 2>&1 >/dev/null
```

To redirect log messages to the Image Services error log (Windows)

Enable the redirection of log messages to the Image Services error log. This redirection will log messages to the Image Services error log as well as to the default Windows Event Log. By enabling this redirection, you can monitor the progress of the database object upgrade in a command window.

To enable the redirection, change the LogToFiles value from 0 to 1 for the following registry key.

```
HKEY_LOCAL_MACHINE>SOFTWARE>FileNET>IMS>CurrentVersion
```

To restore Rules Engine settings

If you were using the Rules Engine on the previous release and want to continue to use it:

1. Restore the following values from the saved taskman.properties file:
   - TaskManager.RulesEngine=True
   - TaskManager.RulesEngine.ClassPath=
   - TaskManager.RulesEngine.Props=
2. Restore the following files:
   - re.jar
   - ri.jar

To restore custom configuration settings

Before upgrading, a number of custom configuration files or settings were saved for the following files:

- vwserver.ini,
- vwtaskman.xml,
- taskman.properties

Refer to the saved files and make any changes necessary to the new versions of these files. Do not overwrite the new files with the old ones.

Proceed to "Upgrade Process Java Applets and Connectivity (PJAC)" on page 84.

Task 5: Upgrade Process Java Applets and Connectivity (PJAC)

To upgrade PJAC software, follow the procedures in:

"Remove Process Java Applets and Connectivity (PJAC)" on page 86 to remove the existing installation.

"Install Process Java Applets and Connectivity (PJAC)" on page 51 to install the 3.5.4 version of PJAC.

Remove Process Engine (Windows)

WARNING You must remove the software in the order listed below. Removing Image Services (step 6) prior to removing the Process Engine (step 3) will leave the Process Engine software in a state that will not allow removal with this procedure.

1. Use Process Task Manager to stop any of the following components that are running, in the order listed:

   Any custom applications that require the router
   Component Manager
   Application Engine
   Content Engine (because of Workflow Launch Service)
   Routers
   PPM
   Process Service

2. Start the **Control Panel > Add/Remove Programs**.
3. Click **Remove** for the Process Engine application.
4. Click **Yes** to confirm you want to remove the Process Engine installation.
5. Click **Finish**.
6. Click **Remove** for the FileNet Image Services 4.1.1 software.
7. Click **Yes** to confirm you want to remove the Image Services software.
8. Press **Enter** to continue with the uninstall.
9. Close the Add/Remove window.
10. Close the Control Panel.

If you will re-install Process Engine and will configure Process Engine to use a different MS-SQL database, also remove the database that was previously configured (and so will lose all data in that database).

In addition, remove the following FileNet user ids from the SQL Server Security folder before re-installing Process Engine software:

- f_sw
- f_cso
- f_maint
- f_open
- f_operator
- f_sqi

Remove Process Java Applets and Connectivity (PJAC)

The PJAC Setup program created an Uninstall program during the PJAC installation process. You can use this Uninstall program to remove the PJAC software, registry entries, and menu icons from your system. Note that the PJAC Uninstall program does not remove the FileNet Process documentation.

To remove PJAC from your system

1. Log on as the local Windows administrator.
2. Start the PJAC Uninstall program by executing one of the following.

- Select **Start > Settings > Control Panel > Add/Remove Programs. Select Process Java Applets and Connectivity (PJAC)** from the list box and click **Change/Remove**.
- In Windows Explorer, navigate to C:\Program Files\FileNet\PJAC_uninst and double-click on the Uninstall program.

  NOTE If you are uninstalling PJAC Standalone, the Uninstall program is located in PJAC_uninst folder where you installed PJAC.

3. Select the PJAC components you want to uninstall.
4. Review the summary screen.

   NOTE If you are uninstalling all PJAC components, the Uninstall program displays a series of prompts asking you to confirm the removal of the following files. Keep these files if you are removing PJAC to upgrade to a newer version unless otherwise noted. When you install the PJAC software again, the installer will detect the presence of these files and prompt you to overwrite them or not. Do not overwrite them.

- taskman.properties
  This file stores the property settings for Process Task Manager.
- taskman.policy
- taskman.login.properties
  (PJAC for Web Services and PJAC for Open Client only) This file specifies the Component Integrator functionality.
- Process Help.url
  This file is an internet shortcut for the Process online help. (do not keep if removing to do an upgrade)
- Developer's Guide.url
  (PJAC Standalone only) This file is an internet shortcut for the Process Developer's Guide online help.

5. Setup removes the PJAC components you selected. An information dialog box appears when the PJAC Uninstall program is complete.

- (PJAC for Web Services and PJAC for Open Client) Click **Next** to continue. You must restart the computer in order to complete the uninstall.
- (PJAC Standalone) Click **Finish** to complete the uninstall process.

Install and Upgrade PC Workstation (thick-client)

Use the procedures in this topic to:

- Install and configure Visual WorkFlo Desktop, Professional Desktop, or Desktop Toolkit software on a PC workstation. The workstation must be configured with TCP/IP before the installation.
- Upgrade Visual WorkFlo client software to the 3.5 release
- Remove Visual WorkFlo client software

Visual WorkFlo software is available in three packages:

- FileNet Visual WorkFlo Desktop
- FileNet Visual WorkFlo Professional Desktop
- FileNet Visual WorkFlo Desktop Toolkit

FileNet Visual WorkFlo Desktop

The FileNet Visual WorkFlo Desktop package includes the components necessary to run work performers on a PC workstation. The Desktop package is intended for workflow participants (such as the clerks and adjustors in the auto claims processing example).

The primary component of the Desktop package is the Performer program. In Performer, you determine which passive work performers run on the workstation and process work objects with those work performers.

FileNet Visual WorkFlo Professional Desktop

The FileNet Visual WorkFlo Professional Desktop package includes all of the components available in the Desktop package, plus various PC workstation-based system administration tools. This package is intended for system administrators and other users who will monitor and manage Visual WorkFlo activity, as well as run work performers.

The primary component of the Professional Desktop package is the Conductor program. In Conductor, you can:

- Transfer class definitions and isolated region-level configuration information from a file to the online repository.
- View a list of currently running work objects.
- Determine which instruction is in progress for a specific work object.
- Modify a work object's current data values, data field definitions, event logging options, and security configuration.
- View the definitions of work classes and work performer classes currently in the online repository.
- View statistical data about work objects and queues.

In addition to Conductor, the Professional Desktop package includes various utilities you use to complete additional administrative tasks.

FileNet Visual WorkFlo Desktop Toolkit

The FileNet Visual WorkFlo Desktop Toolkit package includes all of the components available in the Professional Desktop package, plus additional components you can use to develop and define automated business process elements such as:

- Work class and work performer class definitions
- Instruction sheets
- Work performers and other custom applications

This package is intended primarily for application developers and workflow authors.

Central to the Desktop Toolkit package is the Composer program. In Composer, you create and modify work class definitions (including instruction sheets), work performer class definitions, and isolated region-level configuration data. In addition, you use Composer to save completed class definitions and configuration data to a file; you can subsequently open the file in Conductor and transfer the class definitions and configuration data to the online repository.

In addition to Composer, the Desktop Toolkit package includes:

- Visual WorkFlo/RAD Controls

  The RAD Controls are ActiveX controls that an application developer can use to rapidly and easily access many Visual WorkFlo features, including some of the functionality available in the Conductor program. The RAD Controls are installed in the directory where Visual WorkFlo is installed (C:\Program Files\FileNET\VW, by default).

- Auto Claim demo

  The auto claim demo is the sample automated business process referenced throughout this manual. The demo includes the work class, work performer class, and instruction sheet definitions (in the file called AutoClaim.cdl) and the corresponding work performer applications. Directions for running the demo are also provided. The demo is installed in the \Samples sub-directory of the directory where Visual WorkFlo is installed (C:\Program Files\FileNET\VW, by default).

To install on a PC workstation

Prior to installing Visual WorkFlo on a PC workstation:

- Install and configure the workflow server that the workstation will communicate with. See the *FileNet Image Manager Process Installation Guide* for information on installing eProcess version 5.2. To download this help from the IBM support page, see “To access documentation for IBM FileNet products” on page 8.
- Ensure that the workstation meets the hardware and software requirements listed in the IBM FileNet Compatibility Matrix for eProcess on the Information Management support page (www.ibm.com/software/data/support/). To download this document from the IBM support page, see “To access compatibility matrices and fix packs for IBM FileNet products” on page 8.

Take the following steps to install Visual WorkFlo on a PC workstation.

1. Log on as Administrator or equivalent.
2. Access the Visual WorkFlo software package and execute setup.exe.
3. Select the installation directory for the client Visual WorkFlo software.

   Visual WorkFlo Setup installs the Visual WorkFlo software into the following directory by default:

   – For new Visual WorkFlo installations: C:\Program Files\FileNET\VW
   – For upgrades: the currently used Visual WorkFlo directory
4. Select the installation directory for support files.

   The setup program installs supporting files for Visual WorkFlo into the directory C:\Program Files\FileNET\FNSW by default.

   Visual WorkFlo Setup looks for versions of WorkForce Desktop (WFD) that might have been installed along with older versions of Visual WorkFlo.

   If you have a version of WorkForce Desktop earlier than release 5.01, a dialog box appears, asking if you wish to remove this version of WorkForce Desktop:

   – Click the **Yes** button to remove WorkForce Desktop from this PC workstation.
   – Click the **No** button to leave WorkForce Desktop installed on this PC workstation. If you choose this option, Visual WorkFlo Setup terminates.
5. Select the package to install on this PC workstation.

Following is a summary of which program modules are installed with each package, as well as the minimum disk space required for each package..

Package	Disk Space	Program Modules
Visual WorkFlo Desktop	50 MB	Performer
		Error Number Translator
		Getstamp
		Uninstall
Visual WorkFlo Professional Desktop	50 MB	Conductor
		Utilities
		Performer
		Error Number Translator
		Getstamp
		Uninstall

Package	Disk Space	Program Modules
Visual WorkFlo Desktop Toolkit	150 MB	Composer
		Visual WorkFlo RAD Controls
		Conductor
		Utilities
		Performer
		Samples
		Error Number Translator
		Getstamp
		Uninstall

6. Click the **Next** button to close the dialog box. Visual WorkFlo Setup then modifies the registry and SERVICES file as follows:

   - Visual WorkFlo updates the PATH setting to include the Visual WorkFlo software directory and the supporting files directory. This information is placed in the system registry.
   - Visual WorkFlo updates the SERVICES file in your Windows directory to include the following two lines (if they do not already exist):

     cor32769/tcp

     nch32770/udp

7. In the VW.INI Configuration dialog box, indicate the number of Trigger instances to run on the client workstation, as well as the name of the VWService and isolated region the workstation will access. All of this information is written to the workstation's VW.INI file when Setup is complete (you can subsequently use a text editor to change any VW.INI file entries, as needed).

   The Service Name entry identifies the VWService that a logged-on user of this workstation accesses. The entry is a three-part name in the following format:

   <ServiceName>:<Domain>:<Organization>

   where:

   ServiceName is the name of the VWService

   Domain is the name of the NCH domain

   Organization is the name of the organization

   - The maximum length of your *<domain name>* entry does not exceed 19 characters.
   - The maximum length of your *<organization>* entry does not exceed 19 characters.

- Both your <*domain name*> and <*organization*> entries contain only alphanumeric characters and underscores.

The NCH domain and organization names are defined using fn_edit, during IS configuration. The service name is defined with fn_edit during the Visual WorkFlo server configuration.

The Isolated Region entry identifies the isolated region that the workstation will access. Your entry must be a number in the range 1–999. Consider the following when designating the isolated region for this workstation:

– You cannot mix Visual WorkFlo Composer-based workflows with eProcess Designer-based workflows in the same isolated region.

– There are structural differences in work objects created with Visual WorkFlo thick or thin clients and those created with eProcess thin clients. While the workflow server software can accommodate both work object types, you cannot mix types within an isolated region.

After you close the dialog box, Visual WorkFlo Setup saves any older version of the VW.INI file as VW.<nnn>, where nnn is an integer from 001-999, then installs the Visual WorkFlo client software.

8. You must reboot the client workstation to save the changes in the AUTOEXEC.BAT and SERVICES files. You can choose to have Visual WorkFlo Setup restart your workstation or restart your workstation manually:

   – Choose the first option if you do not have any applications running other than Visual WorkFlo Setup. You will lose all unsaved information in all running applications.

   – Choose the second option if you have applications running other than Visual WorkFlo Setup. If you choose this option, be sure to restart Windows before using the Visual WorkFlo software.

Upon completing PC workstation installation, configure each PC workstation where the Visual WorkFlo client software is installed. See “To configure a PC workstation” on page 92 for more information.

To configure a PC workstation

After installing Visual WorkFlo on a PC workstation, complete the following configuration procedures, as needed.

To verify VW.INI file settings

Visual WorkFlo requires the presence of a VW.INI file in the Windows directory of the PC workstation where it is installed. This file contains various settings used by the Visual WorkFlo system software.

During the PC workstation Setup process, you entered certain information—number of Triggers, Service Name, and Isolated Region—that was written to the VW.INI file when Setup completed. Using any text editor, you can subsequently change those entries or any other VW.INI file entries.

To improve logon times on networks with routers

When Workflow Management Services runs in a network environment with routers, users might experience slow response times when they attempt to log on to Image Services libraries across routers. Network Clearinghouse (NCH) first attempts to find the server by broadcasting to it. Since broadcast packets usually cannot cross routers, this broadcast attempt fails after 30-40 seconds. NCH then typically looks up the server in the Domain Name Service (DNS), and the logon completes successfully.

To resolve the problem of slow response times on logon:

- Disable NCH broadcasting.
- Create an alias entry for the IP host name in a local or enterprise-wide hosts file if no such entry exists yet.

To disable NCH broadcasts

To disable PC workstation broadcasts to Image Services servers, complete the following steps:

1. From the Windows Start menu, select Run.
2. In the Open field, type:

   `regedit`
3. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE, SOFTWARE, FileNET, WAL, CurrentVersion.
4. From the Edit menu, select New, DWORD Value.
5. Type **NCHBroadcast** in the Name field.
6. Leave the DWORD value 0.
7. Close the registry to save your changes.

If you disable broadcasts to Image Services servers by making this registry change, you must add alias entries for all Image Services servers to a local or enterprise-level hosts table.

To create a hosts file on a PC Workstation

To create alias entries for IP host names, complete the following steps:

1. Verify that the alias entries don't already exist in the enterprise name service by using the ping command from a DOS prompt. For example, type:

   ping ace1-filenet-nch-server

   to identify an alias entry for a server named ace_1:FileNet. Use the name format described under step 3, below.
2. Look in the Windows directory for a file named hosts. If you find such a file open it with Notepad or any ASCII editor. If you don't find a hosts file, open a new file with your editor.

3. In the hosts file, create entries in the following format for each FileNet library that you need to connect to:

   <*IP addr of domain:organization*> <*domain-organization*>
   -nch-server

   where:

   <*IP addr of domain:organization*> is the IP address of the FileNet domain and organization identifying the target FileNet library system.

   <*domain-organization*> is that domain and organization name.

   When entering the domain-organization name, follow these rules:

   – Eliminate all characters except ASCII alphanumeric characters and hyphens.

   – Convert all upper case characters to lower case.

   – Insert a hyphen between the domain and organization names.

   – Append “nch-server” as a literal.

   For example, a FileNet library has a domain “ace_1” and organization “FileNet”. Its IP address is 123.45.6.78. For this system, the hosts file entry is:

   123.45.6.78 ace1-filenet-nch-server

NOTE The underscore character has been removed from the “ace_1” domain name and the F and N in the “FileNet” organization name have been converted to lower case.

4. After making your entries, save the file with the name hosts and no extension. (If you are using Windows Notepad to edit the file, it automatically adds the txt extension. In this case, rename the file in Windows Explorer after saving it.)

5. Use the ping command from a DOS prompt to verify that the aliases you created are being used and point to the correct server. For example, to identify an alias entry for the server named ace_1:FileNet, you would type:

   ping ace1-filenet-nch-server

To set the PC workstation date/time mask

The date/time mask specifies the formatting that the Visual WorkFlo system software uses for string representations of date and time data. To enable string representations of date and time data to pass between the PC workstations and servers within a VWService, the date/time masks defined for all PC workstations and servers within the service must match.

A PC workstation uses one of the following as the date/time mask.

- The entry in the DateTimeMask setting in the [DateTime] section of the VW.INI file.
- The time style set in the Windows Control Panel, Regional Settings.

By default, the VW.INI file setting is commented out; the Control Panel setting is used instead. You can elect to use the VW.INI file setting by removing the semi-colon (;) in front of the DateTimeMask setting and making an appropriate entry.

To upgrade Visual WorkFlo client software

To upgrade to the 3.6 version:

- Save a copy of the vw.ini file on the workstation.
- Remove the current installation as described below.
- Follow the instructions above for installing and configuring Visual WorkFlo client software.

To remove Visual WorkFlo from a PC workstation

To remove Visual WorkFlo from a PC workstation, perform the following.

1. Close all Visual WorkFlo programs (including user-created VW applications).
2. Double-click on the Uninstall icon in the Visual WorkFlo program group and follow the prompts accordingly.

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