Panagon WorkFlo Services for Windows Installation Handbook

Release 5.0
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Please take a few moments to read the License Agreement in “Appendix A – Software License Agreement” on page 70. By installing the **Panagon software**, the customer agrees to be bound by the terms of this agreement.

Contents

About This Manual

This manual accompanies Release 5.0.0 of Panagon WorkFlo Services and provides information about installing and configuring that product, as well as setting up an eProcess system.

Conventions Used in the eProcess Documentation

The eProcess documentation uses a few special conventions.

- The form “Alt+T” describes keystrokes done in combination. This means “Hold down the Alt key and press T.” Note that the “T” can be uppercase or lowercase, unless otherwise stated. For example, Alt+Shift+T means uppercase T.
- Alt T (no “+” sign) means press the Alt key, release, then press the T key.
- *Italic* type indicates the titles of books or manuals recommended for further information.
- References to Panagon Image Services (IS) documentation are to the release 3.6 and 3.6 SP1 versions of that documentation.
- Within a manual, underlined text indicates a hyperlink to another topic within the manual. For example, “Education” on page 11.
- The term eProcess refers collectively to Panagon WorkFlo Services, Panagon Web WorkFlo, and other modules associated with WorkFlo Services or Web WorkFlo.

- Certain product names are abbreviated as shown below.
  - Designer, for eProcess Designer
  - Administrator, for eProcess Administrator
  - Tracker, for eProcess Tracker
  - Configuration Console, for eProcess Configuration Console
  - Personal Work Manager, for eProcess Personal Work Manager
  - Image Services or IS, for Panagon Image Services
  - Content Services or CS, for Panagon Content Services

Education

FileNET provides various forms of instruction. Please visit the Global Learning Services in FileNET's Service & Support area at www.filenet.com.

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Before You Install

This *Panagon WorkFlo Services for Windows Installation Handbook* includes procedures for installing and configuring Panagon WorkFlo Services for Windows.

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

- **Standalone eProcess** is a FileNET system installed with eProcess software and the necessary supporting software, including Panagon Image Services (IS). In a standalone eProcess system, IS is configured only as required for eProcess and is not used for imaging.

- **eProcess with Imaging** is a FileNET system installed with eProcess software, Panagon Image Services (IS) configured for both eProcess and imaging, and the necessary supporting software. Both eProcess and imaging activity occurs in such a system.

This document provides installation procedures for various configurations of both system types.

Prior to beginning WorkFlo Services installation, we recommend that you:

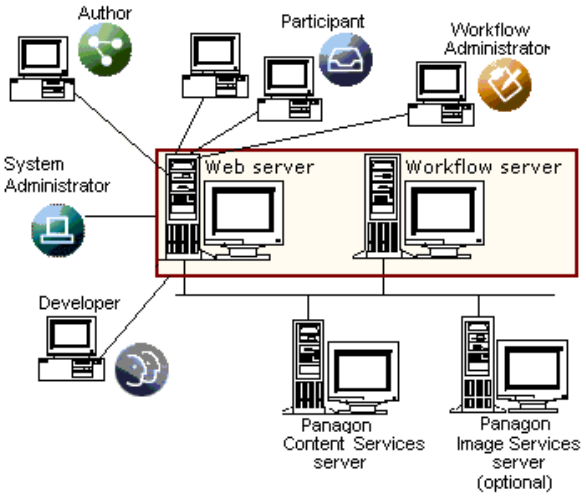
- Read this entire chapter and the chapters appropriate to your desired configuration. Setting up an eProcess system is a multi-part process; you should understand the steps required (and the

system structure) before beginning the procedures. See "Find the WorkFlo Services Install Procedures You Need" on page 19 to determine the applicable chapters.

- Read the release notes for both Panagon eProcess and Image Services. See the most current version of release notes on the FileNET website at http://www.css.filenet.com.
- Be prepared to reference additional documents as needed. For eProcess with Imaging installations, Panagon Image Services (IS) documentation is also available on the FileNET website. For operating system or database documentation, refer to the appropriate vendor documentation.
- Gather passwords for the Microsoft Server **Administrator** on the servers where you will be installing WorkFlo Services or a remote database.
- Collect the Domain Name and static IP address(es) for the workflow server(s) and the optional remote database server.

eProcess System Overview

An eProcess system includes software that is installed and configured on workflow and web servers. End users and developers access the eProcess 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.



Workflow Server

A workflow server runs the Panagon WorkFlo Services software, which enables eProcess activity within a FileNET domain.

Web Servers

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

- Panagon Web Services with ActiveX Client and Panagon Web WorkFlo
- Panagon open client with eProcess Integration

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 the workflow

server 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 Servers

Every eProcess system must include at least one Content Services (CS) server where workflow definitions and link information are stored. An eProcess system uses CS versioning functionality and (optionally) stored CS documents as attachments in a workflows. You can optionally configure additional CS libraries containing documents used as workflow attachments.

Remote Database Server

An eProcess system can include a remote Oracle or SQL Server 2000 database.

Application Server

An eProcess system with Imaging configuration can optionally include an application server, where WorkFlo Services is installed only on the application server. Application servers are not supported in standalone eProcess deployments.

Cluster Server

The workflow server in some eProcess system configurations can optionally be configured in a Microsoft Cluster Service Environment.

Image Services Libraries

Users can use images from IS libraries as workflow attachments.

SMTP Server

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

System Prerequisites

All eProcess systems must meet the hardware, software, and applicable configuration requirements documented in the eProcess Compatibility/Dependency/Hardware Matrix. The current matrix is located at: http://www.css.filenet.com/products.asp?id=974954286&mainFolderID=1000157883.

In addition meeting the requirements in the matrix:

- For an eProcess with Imaging system, you must install and configure Image Services (IS) and its database prior to undertaking any procedures in this manual. See the *Panagon Image Services Installation and Configuration Procedures for Windows Server* for IS and database installation/configuration procedures.

- You must install any required patches or *SS fixes for WorkFlo Services, Web WorkFlo, Image Services, or Content Services before running the system. To determine whether any patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

- Each workflow server must have a static IP address, as required by WorkFlo Services. The use of dynamic IP addresses (DHCP) is not supported.

- On all workflow servers, Windows 2000 must (a) be set to allow four-character passwords, and (b) not set passwords to expire immediately.

- Each workflow server's domain name can have a maximum of 128 characters and should contain only ASCII alpha-numeric characters and hyphens; using non-alphanumeric or underscore characters is not recommended. In addition, if a workflow server will be clustered, its name should not include hyphens.

  Conforming to these conventions prevents server names from changing when NCH crosses a router to find a server. When crossing a router, NCH converts the server's domain name to an IP host name using specific criteria, including dropping all non-alphanumeric and underscore characters. In cluster configurations, hyphens are also dropped. As a result, a name containing these dropped characters would not be converted correctly.

- Content Services can be installed on a Windows-based workflow server as long as the workflow server is not clustered.

- A remote database server must have the same operating system and service pack level as the workflow server. In addition, both servers must use the same version of the database software.
- If you plan to use images stored in Image Services (IS) libraries as attachments in workflows, those libraries must run IS release 3.5.0 or 3.6.0.
- A minimum of 200 MB of disk space must be available for creation of the WorkFlo Services database.
- If this is a standalone eProcess deployment in a cluster environment it must be a Windows 2000 native mode domain (no Windows NT servers in the domain).
- In a standalone eProcess deployment clustered environment, you will need six unique static IP addresses when configuring the workflow cluster servers: two for the network adapters on the private network, two for the network adapters on the public network, one for the cluster itself, and one for the FileNET (SQL Server) Network Name.

Find the WorkFlo Services Install Procedures You Need

This manual contains procedures for several eProcess system configurations. Depending on the type of system you are setting up, see either “eProcess with Imaging” on page 20 or “Standalone eProcess” on page 20 to determine which procedures you should use.

eProcess with Imaging

Desired configuration	Follow procedures in
Single workflow server that: • is the IS root server and • is not clustered	Chapter 2, “Installing eProcess with Imaging,” on page 23
Single workflow server that: • is the IS root server and • is clustered	“Appendix E– Configuring a Cluster Server - eProcess with Imaging Deployment” on page 108
Single workflow server that: • is an IS application server and • is not clustered	“Appendix D — Installing an Application Server” on page 97

Standalone eProcess

Desired configuration	Follow procedures in
Single workflow server that: • has a local Oracle database and • is not clustered	Chapter 3, “Installing Standalone eProcess with Oracle,” on page 34
Single workflow server that: • has a local SQL Server database and • is not clustered	Chapter 4, “Installing Standalone eProcess with MS SQL Server,” on page 58

Desired configuration	Follow procedures in
Single workflow server that: • has a remote Oracle database and • is not clustered	"Appendix B– Configuring a Remote Oracle Database and Client" on page 74. After completing the procedures in Appendix B, you will be directed back to Chapter 3, "Installing Standalone eProcess with Oracle," on page 34.
Single workflow server that: • has a remote SQL Server database and • is not clustered	"Appendix C – Configuring a Remote SQL Server 2000 Database and Client" on page 89. After completing the procedures in Appendix C, you will be directed back to Chapter 4, "Installing Standalone eProcess with MS SQL Server," on page 58
Single workflow server that: • has a local Oracle database and • is clustered	"Appendix G– Configuring a Cluster Server - Standalone eProcess with Oracle" on page 138
Single workflow server that: • has a local SQL Server database and • is clustered	"Appendix F– Configuring a Cluster Server - Standalone eProcess SQL 2000 Database" on page 119

Desired configuration	Follow procedures in
Single workflow server that: • has a remote Oracle database and • is clustered	““Appendix G– Configuring a Cluster Server - Standalone eProcess with Oracle” on page 138
Single workflow server that: • has a remote SQL Server database and • is clustered	“Appendix F– Configuring a Cluster Server - Standalone eProcess SQL 2000 Database” on page 119

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Installing eProcess with Imaging

This chapter contains installation and configuration procedures for a workflow server that is:

- part of an eProcess with Imaging system
- the only workflow server in the system
- also the IS root server
- not clustered

If **all** of the above statements are not true for the workflow server you want to set up, see “Find the WorkFlo Services Install Procedures You Need” on page 19 to determine which procedures you should instead refer to.

Prior to beginning any installation or configuration procedures, make sure you have read and understand Chapter 1, “Before You Install,” on page 13.

Installation of a workflow server assumes you have met the server pre-requisites as defined in “System Prerequisites” on page 17 and that you are installing a supported configuration.

Installing WorkFlo Services on a Microsoft Root Server

WorkFlo Services Setup installs and configures

- Panagon WorkFlo Services for Windows software
- Java Runtime Environment 1.3.0 and 1.3.1

All domain, server, and installation location information from the Image Services configuration is used.

If the database is site-controlled or remote, the database must be running prior to starting WorkFlo Services setup.

1 Log on as the *local* Windows **Administrator**.

2 Load the *Panagon WorkFlo Services for Windows Server* CD into the CD-ROM drive.

3 Click anywhere on the words *Install Panagon WorkFlo Services for Windows Server.*

4 Accept the Panagon WorkFlo Services license agreement to proceed with the installation.

If Java Runtime Environment versions 1.3.0 and 1.3.1 are not installed on the server you will be prompted to install them as WorkFlo Services requires both versions. Click **Yes** and see step 5 below. If Setup detects existing JRE versions 1.3.0 and 1.3.1, you will not be prompted and can proceed to step 6 in these instructions.

5 Java Runtime setup will prompt for acceptance of a license agreement and selection of components to install. Leave the default JRE components selected and choose the destination drive and directory for the JRE installation.

6 Click **Finish** when all files have been copied to the server.

Proceed to "Configure the Workflow Server" on page 25.

Configure the Workflow Server

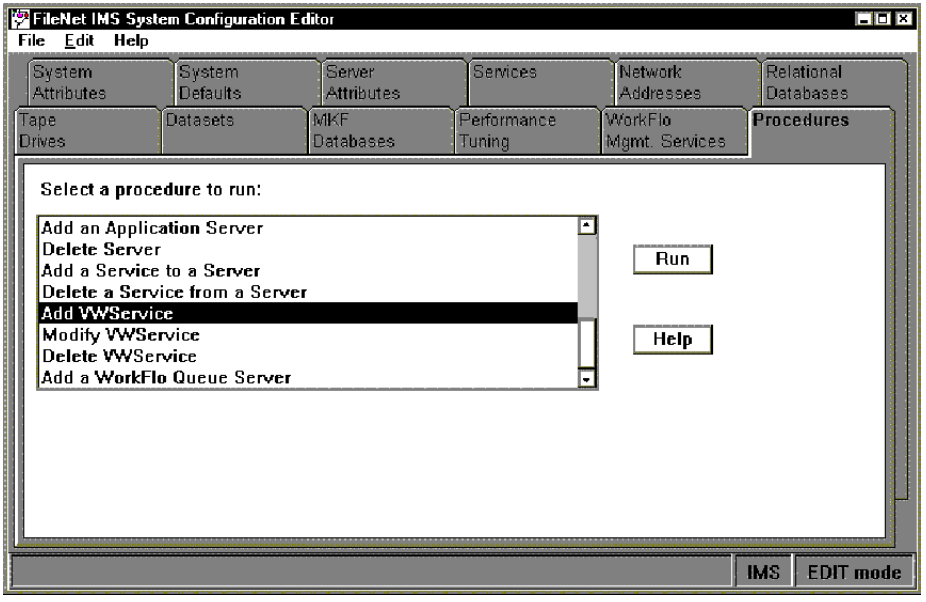
1. If you are not already, log on to the root server as **fnsw**.
2. Enter at a command prompt:

   fn_edit &

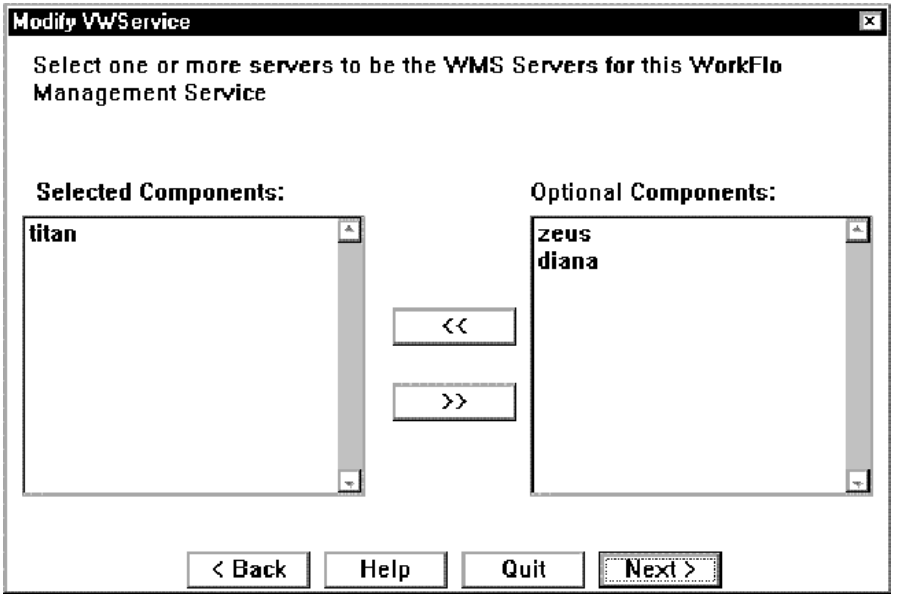
Note The fn_edit interface uses the term *VWServer* as an equivalent to the term *workflow server.*

3. At the Open Configuration Database window, select **OK** to accept the default Database Name and Domain Name.

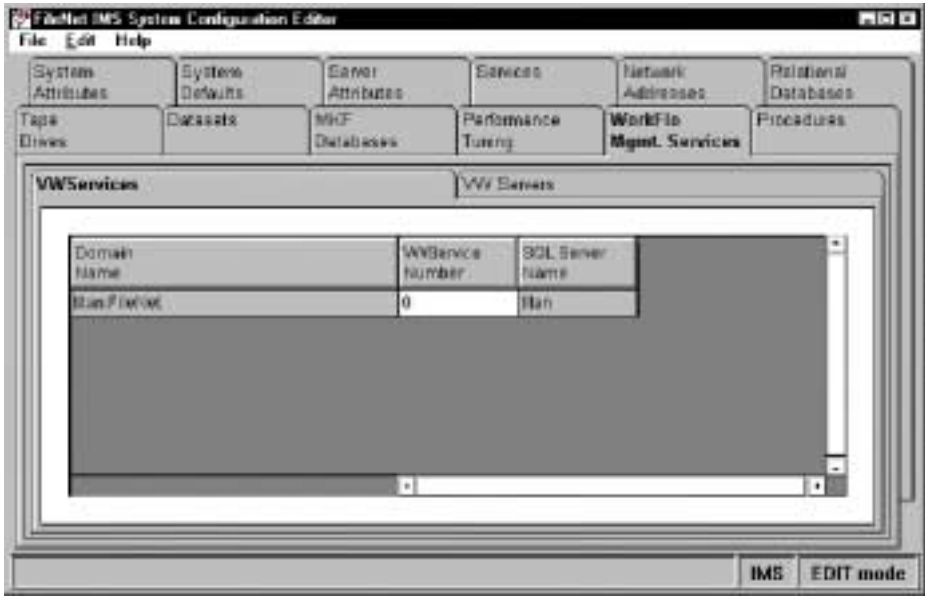
4 On the Procedures tab, select Add VWService and click on **Run**.



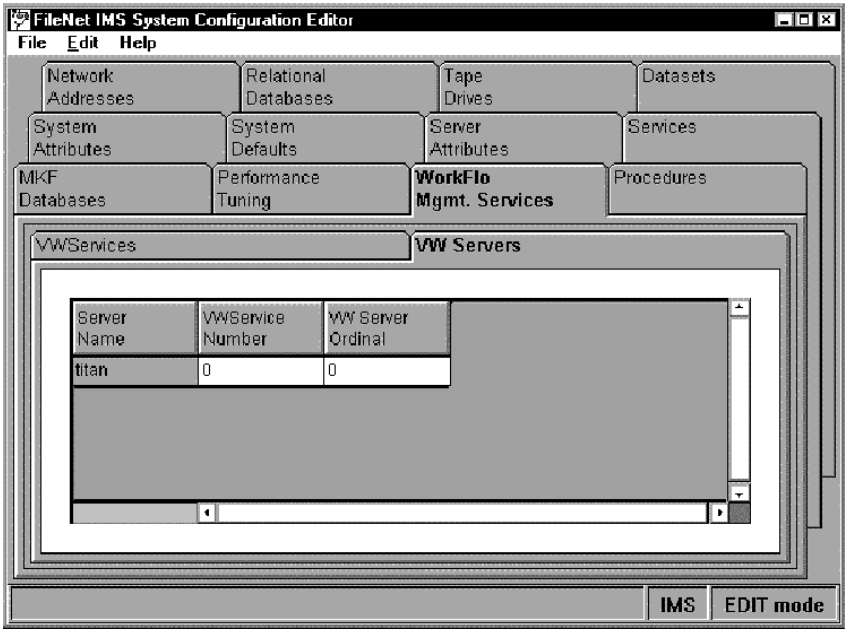
5 You will be presented with a list of available servers.



6 To select the server for inclusion in the VWService, click 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. Click on **Next**



7 Change to the *VW Servers* subtab on the *WorkFlo Mgmt. Services* tab. Here you will see the name of the server you added in step 6. You will also see the default VWService number, 0. You must retain the VWService number.



8 Save the changes you made in **fn_edit** and exit.

The update of the configuration database is complete at this point. To have these changes take affect within the system, complete the steps in “Build Configuration Files” on page 29.

Build Configuration Files

Configuration files must be built on every server. Bring up the FileNET software on the root before running fn_build on any server but the Image Services root.

1 Log on as the **fnsw** user.

2 Build the configuration files by typing the following at a command prompt:

fn_build -a

After **fn_build** runs, it displays messages for any errors encountered.

3 Make sure this command runs successfully by checking that no errors have occurred. Correct all errors before continuing.

Proceed to "Verify the NCH database" on page 30.

Verify the NCH database

1 Along with a number of other files, **fn_build** builds the appropriate NCH database records. If you want to verify the records, from a command prompt, type:

nch_tool

2 At the nch_tool prompt, enter:

nch_tool> listobj VW*

You will see a list of all NCH database records for VWServices and VW Servers. The names of the VWServices and servers are in the format <service number>_<ordinal number>, where:

service number = the number of the VWService (only 0 is supported)

ordinal number = automatically assigned to each server, starting with 0 and incrementing by 1.

Note The *VWServer* object name in the NCH database refers to the *workflow server.*

With a single server configuration, you should see these NCH database entries:

```
VWServer0_0:titan:FileNet
VWService0:titan:FileNet
```

3 To verify the VWService entry in the NCH database, enter the following at the nch_tool prompt:

nch_tool> listprop VWService0

```
Properties for VWService0:titan:FileNet
    (addressList, [10.1.44.1,32769]
                  [00000001,00a024db0054,0005] )
    (VWService, “Visual WorkFlo Service”)
```

This information shows the network address of the SQL Server used by VWService0. Verify that it is the address of the application server.

4 To verify the VW Server entry in the NCH database, enter the following at the nch_tool prompt:

nch_tool> listprop VWServer0*

You will see the network address of the SQL Server being used, along with the VWService number configured on this server.

```
Properties for VWServer0_0:titan:FileNet
  (addressList, [10.1.44.1,32769]
                [00000001,00a024db0054,0005] )
  (VWServer, “Visual WorkFlo Server”)
  (VWServerDesc, 0 0 VWService0:titan:FileNet SQLServer:titan:FileNet)
```

5. Type **q** to exit nch_tool.

6. Start the FileNET software on the workflow server.

Note For all database configurations, WorkFlo Services Setup configures the IMS ControlService to start automatically. In addition, the Pooled Process Manager (PPM) is not controlled by either the automatic or manual software startup procedures referenced in this step. It is not necessary to start the PPM until after you have installed a web server that will communicate with this workflow server. The installation procedures for both Panagon Web WorkFlo and Panagon Open Client with eProcess Integration provide additional details about starting the PPM.

7. If you are using a SQL Server database in a non-English language system, see “Change Character Conversions (SQL Server only, optional)” on page 33.

8. Install any patches or *SS fixes required for IS or Panagon WorkFlo Services. To determine whether patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS web site at http://www.css.filenet.com.

9 Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators*.

Change Character Conversions (SQL Server only, optional)

A SQL Server 2000 database is automatically configured to do an ANSI to OEM conversion of characters. This can cause character corruption on an eProcess system configured as a non-English language system. The SQL Server thinks eProcess is an OEM client and automatically does the conversion.

To disable this automatic conversion:

1 From the *Start* menu, choose *Microsoft SQL Server*, then *Client Network Utility*.

2 Click on the *DB-Library Options* tab on the *SQL Server Client Network Utility* screen.

Uncheck the box for the Automatic ANSI to OEM conversion option and click **OK.**

Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

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Installing Standalone eProcess with Oracle

This chapter contains installation and configuration procedures for a workflow server that:

- is part of a standalone eProcess system
- has an Oracle database
- is not clustered

If **all** of the above statements are not true for the workflow server you want to set up, see “Find the WorkFlo Services Install Procedures You Need” on page 19 to determine which procedures you should instead refer to.

Prior to beginning any installation or configuration procedures, make sure you have read and understand Chapter 1, “Before You Install,” on page 13.

Installing and Setting Up RDBMS

Prior to installing WorkFlo Services, you must install the Relational Database Management Software (RDBMS), also referred to throughout the manual as the database. Follow the appropriate procedures, based upon your database configuration.

- If the database will be remote, it must also be site-controlled. See “Appendix B– Configuring a Remote Oracle Database and Client” on page 74 for procedures to install and configure the database.

- If the database will be local and FileNET-controlled, see "FileNET-Controlled Oracle" on page 35 for procedures to install and configure the database.
- If the database will be local and site-controlled, the **Database Administrator** must install the RDBMS software per the guidelines in "Site-Controlled, Local Oracle" on page 45.

FileNET-Controlled Oracle

Only Oracle version 8.1.7 is supported in this release.

This installation procedure varies depending on whether you are installing on a Pentium IV machine. There is a known Oracle problem experienced when attempting to install Oracle 8.1.7 on a Pentium IV machine, patched and documented by Oracle as patch number 1507768. See "Install Oracle Patch #1507768 (Pentium IV only)" on page 35 for procedures to install that patch and then install Oracle8i using that patch.

If you are not installing on a Pentium IV machine, proceed to "Install Oracle 8.1.7.0.0 Server Software" on page 37.

Install Oracle Patch #1507768 (Pentium IV only)

1. Create a temporary directory for patch files on the drive where you are going to install the new Oracle 8.1.7 software.
2. Download Oracle patch #1507768 Titled: INSTALLER FAILS WHEN RUNNING ON NEW PENTIUM 4 (IV) PROCESSORS, from the Patches location of the Oracle metalink web site. Oracle ID number 620983. The zip file is named: p1507768_171_winnt.zip. Copy this file to your new directory.

3. Unzip the file using winzip. There are two files that are extracted: oui171100.jar and readme.txt.

4. Extract the files in the oui171100.jar file with the winzip tool. Unzipping the jar file will create a directory named 'cd' in your new directory.

5. Once all the files have been extracted, change directories to '...\cd\Disk1\stage\Components\oracle.swd.jre\1.1.7.30\1\Data-Files\Expanded\jre\win32\bin', then rename *symcjit.dll* to *symcjit.dll.ori.*

6. Run the setup.exe file located in ...\cd\Disk1\install\win32\.

7. Once at the File Locations screen accept the defaults.

   The Source Path will point to '...\cd\Disk1\stage\products.jar' products file.

   The Destination will specify Name: OUIHome and Path as <drive>:\OraHome1. Click **Next** to continue.

8. At the Installation Types screen, select *Complete,* then *Next* to continue.

9. At the Summary screen select *Install*. At end of Installation screen, select *Exit*.

Start setup using the patched OUI (Pentium IV only)

Patch # 1507768 includes an updated version of setup.exe. Run this patched version rather than the default setup.exe on the installation CD.

1. Insert the Oracle 8.1.7 CD into the CD ROM drive.

2 Exit from the Oracle screen that autoruns from the CD.

3 Change directories to c:\Program Files\Oracle\oui\install; there you should find the newly installed OUI setup.exe program. You should also be able to find the OUI setup program from Start, Program, then Oracle Installation Products.

4 Execute that setup.exe.

5 When the Welcome screen displays, click **Next**.

Continue with the rest of the install as documented in "Install Oracle 8.1.7.0.0 Server Software" on page 37 starting at step 4.

Install Oracle 8.1.7.0.0 Server Software

If you installed Oracle patch #1507768 above, proceed directly to step 4 here. If you did not install the patch, start with step 1 to run setup.exe directly from the CD.

1 If you aren't already, logon as Windows **Administrator**.

2 Load the **Oracle 8.1.7** CD-ROM into the CD-ROM drive.

The Oracle8i Autorun screen appears.

Note There are two versions of the Oracle8i software on CD-ROM: Oracle8i Enterprise Edition and Oracle8i Standard Edition. The following steps refer to the Enterprise Edition. If you are installing the Standard Edition, some text may be slightly different.

3 At the Welcome screen, click **Next**.

4 The File Locations dialog box appears.

The source path should point to **<cdrom drive>:\stage\products.jar**.

For destinations the *Oracle Home* name should be **OraHome81** and the *path* should be **<installation drive>:\Oracle\Ora81.**

5 Click **Next**.

6 After the Product Information has been loaded, the Available Products dialog box appears.

At the Available Products screen, select **Oracle8i Enterprise Edition 8.1.7.0.0**.

7 At the Install Type screen, select the **Custom** install option and click **Next**.

8 In the Available Product Components screen, click the **Product Languages** button.

9 In the Language Selection dialog box, choose the appropriate language (default is English).

The Available Product Components screen re-displays.

10 For a FileNET-Controlled database, you must install the products listed below with checkmarks. You can optionally install additional products, but at a minimum you must install the FileNET-required products. Select the products you want to install and deselect all others.

Each listed item has an associated icon and checkbox. An icon with a plus sign indicates if there are additional subordinate items. You can list those additional items by clicking on the icon.

Placing a **check** in the checkbox indicates that you have selected the item. Be sure to **uncheck** any products that you do not want to install.

Note If you are installing Oracle 8i Standard Edition, the product *Oracle Product Options*, *Oracle Spatial* shown below will not be available.

✔ Oracle 8i Enterprise Edition 8.1.7.0.0
  ✔ Oracle 8i Server 8.1.7.0.0
    Oracle HTTP Server 1.3.12.0.1a

✔ Oracle Product Options 8.1.7.0.0
    Oracle Time Series 8.1.7.0.0
    Oracle Visual Information Retrieval 8.1.7.0.0
    Oracle Spatial 8.1.7.0.0
    Oracle COM Automation Feature 8.1.7.0.0
    Oracle Advanced Security 8.1.7.0.0
    Oracle interMedia 8.1.7.0.0
    Advanced Replication 8.1.7.0.0
    Oracle Partitioning 8.1.7.0.0
    Legato Storage Manager 8.1.7.0.0

Note Uncheck interMedia, then uncheck Spatial.

✔ Net8 products 8.1.7.0.0
    ✔ All

✔ Oracle Utilities 8.1.7.0.0
    ✔ All

✔ Oracle Java Products 8.1.7.0.0
  ✔ Oracle Java Tools 8.1.7.0.0
  ✔ Oracle JDBC Drivers 8.1.7.0.0

✔Oracle SQLJ 8.1.7.0.0

Note Under the Oracle Java Products component, Oracle Java Tools 8.1.7.0.0 is a required component and already selected by default.

Oracle Enterprise Manager Products 8.1.7.0.0
✔Oracle Configuration Assistants 8.1.7.0.0
Oracle Data Migration Assistant 8.1.7.0.0
✔Oracle Database Configuration Assistant 8.1.7.0.0

Note The products in *Oracle Configuration Assistants* shown above may already be selected.

✔Development Tools 8.1.7.0.0
✔Oracle Call Interface (OCI) 8.1.7.0.0
Object Type Translator 8.1.7.0.0
Oracle Objects for OLE 8.1.7.3.11
Oracle ODBC Driver 8.1.7.0.0
Oracle Provider for OLE DB 8.1.7.0.0
Oracle XML Developer's Kit 8.1.7.0.0
✔Oracle XML SQL Utility 2.0.0.0.0

✔Oracle Installation Products 8.1.7.0.0
✔Oracle Universal Installer 1.7.1.9.0

Note If you are installing on a Pentium 4 system, do not select Oracle Universal Installer 1.7.1.9.0 above.

Oracle Migration WorkBench 1.3.0.0.0
Oracle Services for Microsoft Transaction Server 8.1.7.0.0
Oracle Administration Assistant for Windows NT 8.1.7.0.0
Oracle 8i Windows Documentation
After selecting the products, click **Next**.

11 In the Component Locations screen, check that the **Available Disk Space on:** field has the correct drive selected for the Oracle Home Location and note the disk space available. It should be more than the Required Disk Space indicated to the right.

Note If a red hand appears in the required disk space area, you will have to allocate more space for your file system.

After checking the available disk space, click **Next**.

The Create Database screen appears.

12 In the Create Database screen, select No and click **Next**.

The Oracle Protocol Support Screen Opens.

13 In the Oracle Protocol Support screen, accept the defaults and click **Next**.

The Summary screen opens.

14 In the Summary screen, verify the products installed, check the global settings and click the **Install** button at the bottom of the screen.

The install screen appears indicating the progress of the installation.

When the install finishes, the Net8 Configuration Assistant screen appears.

15 In the Net8 Configuration Assistant screen, click **Cancel**.

16 At the message “Are you sure you want to cancel the Net8 Configuration Assistant,” click **Yes** to confirm.

17 Ignore the error message that displays next, then click **OK**.

The Configuration Tools screen appears, showing the status of the Net8 Configuration Assistant as cancelled.

Click **Next** to continue.

18 When the software installation is complete, the Oracle Universal Installer window appears with a message similar to, "End of Installation...Installation of Oracle8i was successful."

After reading this message, click **Exit**, then **Yes** to confirm.

Proceed to "Create the ORACLE_SID" on page 42.

Create the ORACLE_SID

1 Open the Registry window by entering the following command at a Command Prompt:

REGEDT32

Note You can also enter this command in the taskbar Run dialog box.

2 In the HKEY_Local_Machine on Local Machine window, open the Software folder.

3 Locate and open the **Oracle** folder.

4 Locate and open the **Home*n*** folder, where ***n*** is the sequence number assigned when Oracle was installed. Numbering starts with 0 (zero), so choose the highest (most recent) number.

5 From the Registry Editor Edit menu, select **Add Value**.

6 Type ORACLE_SID in the Value Name box.

7 In the Data Type box, select REG_SZ and click **OK**.

The String Editor screen opens.

8 Enter IDB or your assigned ORACLE_SID and click **OK**.

9 Verify that the NLS_LANG parameter is set to US7ASCII. If not, double-click on the entry to open the String Editor dialog box and change the value (WE8ISO8859P1) to US7ASCII.

10 Close the Registry Editor Window.

Proceed to "Edit the sqlnet.ora File" on page 43.

Edit the sqlnet.ora File

Before the Oracle installation is complete, you must create an sqlnet.ora file with the proper settings.

1 Open a Command Prompt window (or use your favorite text editor) and make the following entries in a new file:

```
AUTOMATIC_IPC=OFF
TRACE_LEVEL_CLIENT=OFF
names.directory_path=(TNSNAMES)
names.default_domain=world
names.default_zone=world
sqlnet.authentication_services=(NTS)
```

2 Save the file as sqlnet.ora and put it in the following location:

<drive>:\<oracle home directory>\network\admin

Note Verify that the editor you used did not add a .txt file extension to the sqlnet.ora file. (Notepad or Wordpad may add a .txt extension.) If necessary, rename the file with a **.ora** extension.

Proceed to "Start Oracle Service" on page 44.

Start Oracle Service

To start the Oracle Service enter the following command at a Command Prompt.

oradim -new -sid IDB

Note In the command above, **IDB** is your assigned ORACLE_SID from Step 8 on page 43. If your Oracle_SID is different, substitute yours in the command above.

Proceed to "Create System Environment Variables" on page 44.

Create System Environment Variables

From the System Properties dialog box, create the following two new system variables:

ORACLE_SID = IDB

ORACLE_HOME = <drive>:\<oracle home directory>

Proceed to "Reboot the Server" on page 45.

Reboot the Server

After you finish installing the Oracle software, you must reboot the server so the newly installed device drivers can take effect.

Make sure that all applications and windows have been closed and re-boot the server.

Proceed to "Identify Oracle Instance for WorkFlo Services use (optional, FileNET and site-controlled)" on page 49.

Site-Controlled, Local Oracle

If you have a site-controlled, local Oracle database, the Database Administrator needs to perform the following steps.

Install Oracle8i Products

Ensure that at a minimum, the following products, with checkmarks, are installed.

Note If you are installing Oracle 8i Standard Edition, the product *Oracle Product Options*, *Oracle Spatial* shown below will not be available.

✔ Oracle 8i Enterprise Edition 8.1.7.0.0
  ✔ Oracle 8i Server 8.1.7.0.0
    Oracle HTTP Server 1.3.12.0.1a

✔ Oracle Product Options 8.1.7.0.0
  Oracle Time Series 8.1.7.0.0
  Oracle Visual Information Retrieval 8.1.7.0.0
  Oracle Spatial 8.1.7.0.0

Oracle COM Automation Feature 8.1.7.0.0
Oracle Advanced Security 8.1.7.0.0
Oracle interMedia 8.1.7.0.0
Advanced Replication 8.1.7.0.0
Oracle Partitioning 8.1.7.0.0
Legato Storage Manager 8.1.7.0.0

Note Uncheck interMedia, then uncheck Spatial.

✔ Net8 products 8.1.7.0.0
✔ All

✔ Oracle Utilities 8.1.7.0.0
✔ All

✔ Oracle Java Products 8.1.7.0.0
✔ Oracle Java Tools 8.1.7.0.0
✔ Oracle JDBC Drivers 8.1.7.0.0
✔ Oracle SQLJ 8.1.7.0.0

Note Under the Oracle Java Products component, Oracle Java Tools 8.1.7.0.0 is a required component and already selected by default.

Oracle Enterprise Manager Products 8.1.7.0.0
✔ Oracle Configuration Assistants 8.1.7.0.0
Oracle Data Migration Assistant 8.1.7.0.0
✔ Oracle Database Configuration Assistant 8.1.7.0.0

Note The products in *Oracle Configuration Assistants* shown above may already be selected.

✔ Development Tools 8.1.7.0.0
✔ Oracle Call Interface (OCI) 8.1.7.0.0
Object Type Translator 8.1.7.0.0

Oracle Objects for OLE 8.1.7.3.11
Oracle ODBC Driver 8.1.7.0.0
Oracle Provider for OLE DB 8.1.7.0.0
Oracle XML Developer's Kit 8.1.7.0.0
✔ Oracle XML SQL Utility 2.0.0.0.0

✔ Oracle Installation Products 8.1.7.0.0
✔ Oracle Universal Installer 1.7.1.9.0

Note If you are installing on a Pentium 4 system, do not select Oracle Universal Installer 1.7.1.9.0 above.

Oracle Migration WorkBench 1.3.0.0.0
Oracle Services for Microsoft Transaction Server 8.1.7.0.0
Oracle Administration Assistant for Windows NT 8.1.7.0.0
Oracle 8i Windows Documentation

Proceed to "Run Oracle SQL Scripts to Create the DB" on page 47.

Run Oracle SQL Scripts to Create the DB

After you have installed the Oracle8i software, you need to run at least the following Oracle SQL scripts. ORACLE _HOME is the directory location of the Oracle RDBMS software.

<ORACLE_HOME>\rdbms80\admin\catalog.sql
<ORACLE_HOME>\rdbms80\admin\catproc.sql

If you are creating the database via the Oracle DB Assistant, these scripts run automatically.

Define Tablespace Names

WorkFlo Services software requires two tablespaces. Make sure the tablespaces are set up as shown:

FileNET Guidelines for Site-Controlled/FileNET-Used Tablespaces

FileNET Equivalent/Default Tablespace Names	Site-Controlled Tablespace Names	Minimum Tablespace Size (MB)	Site-Controlled Tablespace Size (MB)
vwsys_ts		200	
vwtmp_ts		100	

vwsys_ts is the name of the dedicated FileNET default tablespace. **vwtmp_ts** is the name of the dedicated FileNET tablespace used for temp and rollback.

You can assign any names you want for the tablespaces and make them any size, as long as they are larger than the minimum sizes. Be sure to write down the names and sizes for the FileNET TC to use when installing the WorkFlo Services software.

Record and report database information

For future reference, we recommend recording the ORACLE_SID and the name of the database administration group. In addition, please provide this information to the system administrator and your FileNET Technical Consultant.

ORACLE_SID

When you set the ORACLE_SID, write it in the space below.

Site-Controlled ORACLE_SID:_____
(system identifier) (e.g., IDB or ORC1)

We recommend on Windows 2000 that this variable be set in the environment and in the registry under your HOMEX.

Oracle Database Administration Group

When you create the users and groups for administering the RDBMS databases, write down the name of the group that will be used for database administration. Later, the FileNET user **fnsw** must be made a member of this group.

Name of DBA Group: _____
(for database administration) (e.g., ORA_DBA)

Identify Oracle Instance for WorkFlo Services use (optional, FileNET and site-controlled)

If your system is configured with multiple instances of Oracle and you want to specify which instance for WorkFlo Services to use, add a new registry value before installing WorkFlo Services. The setup software will read the registry and use the specified instance to create all eProcess database entries.

1 Open the Registry window by entering the following command at a Command Prompt:

REGEDIT

Note You can also enter this command in the taskbar Run dialog box.

2 In the HKEY_Local_Machine on Local Machine window, open the Software folder.

3 Locate and right-click on the **Oracle** folder.

4 Select **String Value.**

5 Enter **FNSW_OracleHomeID** as the new value and click Enter.

6 Double-click on the **FNSW_OracleHomeID** name. At the *Value data* prompt, enter the instance number that corresponds with the Oracle 8.1.7 instance for the FileNET software to use. This should be a single digit value, starting from 0.

7 Close the Registry Editor Window.

Proceed to "Install WorkFlo Services on a Microsoft Server" on page 50.

Install WorkFlo Services on a Microsoft Server

Prior to installing WorkFlo Services:

- If you installed a remote database, do not install WorkFlo Services on the database server.
- If you installed a remote database or a local site-controlled database, ensure that the database is up and running. WorkFlo Services Setup must be able to access the database.

WorkFlo Services Setup installs and configures the following components:

- Image Services 3.6 SP1 components required for workflow

- Java Runtime Environment 1.3.0 and 1.3.1.
- The appropriate SLAC key, automatically determined by the installation program
- Panagon WorkFlo Services for Windows software
- A single workflow server with a single VWService

Follow the steps below to install WorkFlo Services.

1 Log on as the *local* Windows **Administrator**.

2 Load the *Panagon WorkFlo Services for Windows Server* CD into the CD-ROM drive.

3 Click anywhere on the words *Install Panagon WorkFlo Services for Windows Server.*

4 Accept the Panagon WorkFlo Services license agreement to proceed with the installation.

If Java Runtime Environment versions 1.3.0 and 1.3.1 are not installed on the server you will be prompted to install them as WorkFlo Services requires both versions. Click **Yes** and see step 5 below. If Setup detects existing JRE versions 1.3.0 and 1.3.1, you will not be prompted and can proceed to step 6 in these instructions.

5 Java Runtime setup will prompt for acceptance of a license agreement and selection of components to install. Leave the default JRE components selected and choose the destination drive and directory for the JRE installation.

6 Enter your FileNET domain name. You are prompted for <companyname>:FileNet. Replace <companyname> with your FileNET domain name.

7 Leave the check box for Root Server selected.

8 Select the drive for installation of executables and configuration files.

9 Choose the location for the database, either local or remote.

10 Choose control for the database, either FileNET-controlled or site-controlled. If you choose to install a remote database you must define it as site-controlled.

11 Click **Finish** when all files have been copied to the server.

12 When prompted, choose **Yes** to restart the computer. Do **not** remove the CD if you are running setup from it. Log on again as the *local* Windows **Administrator** and reconnect to the installation drive if you are installing from a network drive rather than from the CD. Installation and configuration of the software will continue after the restart.

13 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services now. To determine whether any additional patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

14 Set the f_maint password:

a Enter the following at a command prompt: **set_f_maint_pw.**

b Enter a carriage return to accept the default password.

c Enter and confirm the password you want to use for f_maint.

15 Start the FileNET software on the workflow server using the appropriate method for your database configuration:

- Local FileNET-controlled database

  Reboot the server. (With this database configuration, WorkFlo Services Setup configures the software to start automatically following a reboot.)

- Local or remote site-controlled database

  Use either the manual or automatic start procedures in Bringing up FileNET Software.

Note For all database configurations, WorkFlo Services Setup configures the IMS ControlService to start automatically. In addition, the Pooled Process Manager (PPM) is not controlled by either the automatic or manual software startup procedures referenced in this step. It is not necessary to start the PPM until after you have installed a web server that will communicate with the workflow server. The installation procedures for both Panagon Web WorkFlo and Panagon Open Client with eProcess Integration provide additional details about starting the PPM.

16 Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

Bringing Up FileNET Software (site-controlled database only)

For site-controlled databases you can either leave the software startup set to manual mode, or change it to start automatically. See either the

Manual Start and Stop procedure, or the procedure for Automatic Start and Stop.

If the database is remote, make sure the database server is started and the RDBMS is running before rebooting or starting the eProcess server software. For Oracle, the listener must also be started and running.

Manual Start and Stop

If you want to leave your system in MANUAL mode, start the software manually.

1. From the Windows Start menu, execute eProcess Task Manager.
2. For the Oracle user *svrmgrl,* or if you used Oracle Database Assistant to create the DB, you can start and stop the Oracle service. Execute the following at a command prompt:

   svrmgrl
3. At the svrmgrl prompt, type:

   > connect internal

   > startup pfile=<pfile_name>

   > exit
4. To use *svrmgrl* for shutdown, execute the following at a command prompt:

   svrmgrl

5 At the svrmgrl prompt, type:

> connect internal

> shutdown immediate

> exit

Automatic Start and Stop

If you would like to have the software started AUTOMATICALLY, use the following procedure. See the notes that follow this procedure for items to be aware of if you want to set the start mode to automatic.

1 Stop all FileNET software including PPM, routers, and server software.

2 To stop the server software, at a command prompt execute:

initfnsw -y stop

followed by:

killfnsw -y -D

3 Verify that the IMSService service is stopped.

4 Run regedt32 (or use your favorite registry editor)

5 Go to **HKEY_LOCAL_MACHINE**

6 Expand **SYSTEM**

7 Expand **CurrentControlSet**

8 Expand **Services**

9 Locate and open **IMSService** by double-clicking on it.

10 Double-click on **ImagePath.** The String should read "C:\FNSW\bin\tm_daemon.exe"

11 Modify the string to read:

"C:\FNSW\bin\tm_daemon.exe -c start"

12 Click **OK** to save and close the registry editor.

13 Reboot system.

If the database is local (it is on the server with WorkFlo Services), make sure that the IMSService depends on the RDBMS service. Without this dependency, you could run into a condition were the IS software tries to log onto the RDBMS before the RDBMS has started. To establish the dependency, see "Make the IMSService dependent on the RDBMS service".

Make the IMSService dependent on the RDBMS service

Create the following registry key:

HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/IMSService/DependOnService
where the DependOnService is set to : **OracleService<SID>**

If you are running a local Oracle RDBMS, the procedure above handles the service but you must also make sure the RDBMS instance is started. The best way to do this is to create your site-controlled Oracle DB via the Oracle Database Configuration Assistant, so it is all done automatically for you.

If you did not create your site-controlled Oracle database using the Oracle Database Configuration Assistant, follow these procedures:

1. Create two directories under <ORACLE_HOME>\admin, for example, if your ORACLE_HOME is c:\oracle\ora81:

   mkdir c:\oracle\ora81\admin\<SID>

   mkdir c:\oracle\ora81\admin\<SID>\pfile

2. Move your Oracle parameter file (init.ora) to that pfile directory.

3. Follow steps 4 -13 in "Automatic Start and Stop", but this time find ORACLEService<SID> and add your SID to the end of the existing ImagePath string.

   Registry key ImagePath should look like this if your SID is XYZ:

   c:\oracle\ora81\bin\ORACLE.EXE XYZ

4

Installing Standalone eProcess with MS SQL Server

This chapter contains installation and configuration procedures for a workflow server that:

- is part of a standalone eProcess system
- has a SQL Server 2000 database
- is not clustered

If **all** of the above statements are not true for the workflow server you want to set up, see "Find the WorkFlo Services Install Procedures You Need" on page 19 to determine which procedures you should instead refer to.

Prior to beginning any installation or configuration procedures, make sure you have read and understand Chapter 1, "Before You Install," on page 13.

Installation of a workflow server assumes you have met the server pre-requisites as defined in "System Prerequisites" on page 17 and that you are installing a supported configuration.

Installing and Setting Up RDBMS

Prior to installing WorkFlo Services, you must install the Relational Database Management Software (RDBMS), also referred to

throughout the manual as the database. Follow the appropriate procedures, based upon your database configuration.

- If the database will be remote, it must also be site-controlled. See "Appendix C – Configuring a Remote SQL Server 2000 Database and Client" on page 89 for procedures to install and configure the database.
- If the database will be local and FileNET-controlled, see "FileNET-Controlled, Microsoft SQL Server 2000" on page 59 for procedures to install and configure the database.
- If the database will be local and site-controlled, the **Database Administrator** must install the RDBMS software per the guidelines in "Site-Controlled, local Microsoft SQL Server 2000" on page 60.

FileNET-Controlled, Microsoft SQL Server 2000

Only SQL Server 2000 SP2 is supported in this release.

Refer to the Microsoft installation instructions to install the SQL Server 2000 software. You can find these instructions at the Microsoft web site at:

http://msdn.microsoft.com/library/default.asp?ShowPane=false&URL=/library/psdk/sql/getstart_4fht.htm

Note You must enter the following information:
- In the Instance Name dialog box, choose Default Instance Name.
- Choose Custom setup type for the installation of SQL Server 2000.
- In the Authentication Mode dialog box, choose Mixed Mode.

- In the Collation Settings dialog box choose Latin1_General as the collation designator and choose Binary Sort order.

Download and install SQL Server 2000 Service Pack 2(SP2) per the instructions at http://www.microsoft.com/sql/downloads/2000/sp2.asp.

Proceed to Install WorkFlo Services on a Microsoft Server.

Site-Controlled, local Microsoft SQL Server 2000

Only SQL Server 2000 SP2 is supported in this release.

Refer to the Microsoft installation instructions to install the SQL Server 2000 software and create the Site DB. You can find these instructions at the Microsoft web site at:

http://msdn.microsoft.com/library/default.asp?Show-Pane=false&URL=/library/psdk/sql/getstart_4fht.htm

Note You must choose Custom setup type for the installation of MSSQL and enter the following information:
- In the Authentication Mode dialog box, choose Mixed Mode.
- In the Collation Settings dialog box choose Latin1_General as the collation designator and choose Binary Sort order.

Download and install SQL Server 2000 Service Pack 2(SP2) per the instructions at http://www.microsoft.com/sql/downloads/2000/sp2.asp.

Complete the procedure in Create the Site DB, then proceed to Install WorkFlo Services.

Create the Site DB

On the database computer, use the following steps to create the database, specify the filegroup, and set the space allocations. See the Microsoft SQL Server documentation for detailed instructions.

Use the SQL Server Enterprise Manager tool to

- Create a database
- Create an additional filegroup in the new database
- Increase the size of the existing tempdb database

1. Start the **Enterprise Manager** tool.
2. Expand the <*server name*>/<*new instance name*> folder you just created.
3. Right-click on the **Databases** folder and select *New Database*.
4. From the *General* tab, enter a new database name, example: **VWdb**.
5. Select *Database files* tab. Here add another filegroup by clicking on the first free line in the *File Name* column.
6. Enter a new file name, example: **vw_data**.
7. Tab twice to next columns and specify a disk location for that file.
8. Tab again to the *Initial size* column and enter **200**.
9. Tab to *Filegroup* column and enter a new filegroup name, example: **vwsys_fg**.

10 Save your changes.

11 While still in the Enterprise Manager, right mouse click on the *tempdb database*.

12 Select *properties*.

13 Select the *Data Files* tab.

14 Click on the amount in *Space allocated* column and increase the space allocated to at least 80 MB.

Click **OK** to save.

During installation of WorkFlo Services you will be prompted to provide database information. The following table shows how the SQL database component names map to both installation-time prompts and to contents of the resulting FileNET configuration database, as viewed with the FileNET configuration editor,fn_edit.

Setup Prompt	Database Equivalent	fn_edit Equivalent	Example
Database name	<Customer defined database >	db_name	VWdb
FileNET data file-group	vwsys_fg	vwsys_fg	vwsys_fg

You will not need to use fn_edit at this time, but the information is provided here in the event that you should need to use it in the future.

Note The SQL TempDB is used for temporary data and should be sized to allow for a minimum of 80 MB for WorkFlo Services use.

Although the vwtmp_ts name appears in fn_edit, this database object is not used. The SQL TempDB is used by WorkFlo Services.

In fn_edit, a usr_data object name appears, with a location defined by default as fnusr_fg. This object and filegroup are not used by the WorkFlo Services software. An object named vwtmp_ts also appears, but is also unused.

Install WorkFlo Services on a Microsoft Server

Prior to installing WorkFlo Services:

- If you installed a remote database, do not install WorkFlo Services on the database server.
- If you installed a remote database or a local site-controlled database, ensure that the database is up and running. WorkFlo Services Setup must be able to access the database.

WorkFlo Services Setup installs and configures the following components:

- Image Services 3.6 SP1 components required for workflow
- Java Runtime Environment 1.3.0 and 1.3.1.
- The appropriate SLAC key, automatically determined by the installation program
- Panagon WorkFlo Services for Windows software
- A single workflow server with a single VWService

Follow the steps below to install WorkFlo Services.

1. Log on as the *local* Windows **Administrator**.

2. Load the *Panagon WorkFlo Services for Windows Server* CD into the CD-ROM drive.

3. Click anywhere on the words *Install Panagon WorkFlo Services for Windows Server.*

4. Accept the Panagon WorkFlo Services license agreement to proceed with the installation.

   If Java Runtime Environment versions 1.3.0 and 1.3.1 are not installed on the server you will be prompted to install them as WorkFlo Services requires both versions. Click **Yes** and see step 5 below. If Setup detects existing JRE versions 1.3.0 and 1.3.1, you will not be prompted and can proceed to step 6 in these instructions.

5. Java Runtime setup will prompt for acceptance of a license agreement and selection of components to install. Leave the default JRE components selected and choose the destination drive and directory for the JRE installation.

6. Enter your FileNET domain name. You are prompted for <companyname>:FileNet. Replace <companyname> with your FileNET domain name.

7. Leave the check box for Root Server selected.

8. Select the drive for installation of executables and configuration files.

9. Choose the location for the database, either local or remote.

10 Choose control for the database, either FileNET-controlled or site-controlled. If you choose to install a remote database you must define it as site-controlled.

11 Click **Finish** when all files have been copied to the server.

12 When prompted, choose **Yes** to restart the computer. Do **not** remove the CD if you are running setup from it. Log on again as the *local* Windows **Administrator** and reconnect to the installation drive if you are installing from a network drive rather than from the CD. Installation and configuration of the software will continue after the restart.

13 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services now. To determine whether any additional patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

14 Set the f_maint password:

a Enter the following at a command prompt: **set_f_maint_pw.**

b Enter a carriage return to accept the default password.

c Enter and confirm the password you want to use for f_maint.

15 If you are using a SQL Server database in a non-English language system, see Change Character Conversions.

16 Start the FileNET software on the workflow server using the appropriate method for your database configuration:

- Local FileNET-controlled database

Reboot the server. (With this database configuration, WorkFlo Services Setup configures the software to start automatically following a reboot.)

- Local or remote site-controlled database

  Use either the manual or automatic start procedures in Bringing up FileNET Software.

Note For all database configurations, WorkFlo Services Setup configures the IMS ControlService to start automatically. In addition, the Pooled Process Manager (PPM) is not controlled by either the automatic or manual software startup procedures referenced in this step. It is not necessary to start the PPM until after you have installed a web server that will communicate with the workflow server. The installation procedures for both Panagon Web WorkFlo and Panagon Open Client with eProcess Integration provide additional details about starting the PPM.

17 Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

Bringing Up FileNET Software (site-controlled database only)

For site-controlled databases you can either leave the software startup set to manual mode, or change it to start automatically. See either the Manual Start and Stop procedure, or the procedure for Automatic Start and Stop.

If the database is remote, make sure the database server is started and the RDBMS is running before rebooting or starting the eProcess server software.

Manual Start and Stop

If you want to leave your system in MANUAL mode, start the software manually.

1. From the Windows Start menu, execute eProcess Task Manager.
2. Use SQL Enterprise Manager to start and stop the SQL server or start and stop the service itself.

Automatic Start and Stop

If you would like to have the software started AUTOMATICALLY, use the following procedure. See the notes that follow this procedure for items to be aware of if you want to set the start mode to automatic.

1. Stop all FileNET software including PPM, routers, and server software.
2. To stop the server software, at a command prompt execute:

   initfnsw -y stop

   followed by:

   killfnsw -y -D
3. Verify that the IMSService service is stopped.
4. Run regedt32 (or use your favorite registry editor)
5. Go to **HKEY_LOCAL_MACHINE**
6. Expand **SYSTEM**
7. Expand **CurrentControlSet**

8 Expand **Services**

9 Locate and open **IMSService** by double-clicking on it.

10 Double-click on **ImagePath.** The String should read "C:\FNSW\bin\tm_daemon.exe"

11 Modify the string to read:

"C:\FNSW\bin\tm_daemon.exe -c start"

12 Click **OK** to save and close the registry editor.

13 Reboot system.

If the database is local (it is on the server with WorkFlo Services), make sure that the IMSService depends on the RDBMS service. Without this dependency, you could run into a condition were the IS software tries to log onto the RDBMS before the RDBMS has started. To establish the dependency, see "Make the IMSService dependent on the RDBMS service".

Make the IMSService dependent on the RDBMS service

Create the following registry key:

HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/IMSService/
DependOnService
or
where the DependOnService is set to :**MSSQLSERVER**

Change Character Conversions (SQL Server only, optional)

A SQL Server 2000 database is automatically configured to do an ANSI to OEM conversion of characters. This can cause character corruption on an eProcess system configured as a non-English language system. The SQL Server thinks eProcess is an OEM client and automatically does the conversion.

To disable this automatic conversion:

1. From the *Start* menu, choose *Microsoft SQL Server*, then *Client Network Utility*.

2. Click on the *DB-Library Options* tab on the *SQL Server Client Network Utility* screen.

   Uncheck the box for the Automatic ANSI to OEM conversion option and click **OK.**

   Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

Appendix A – Software License Agreement

FileNET End User Software License

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1. Authorization of End User

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Appendix B– Configuring a Remote Oracle Database and Client

This appendix contains procedures to configure a remote Oracle database server and configure the workflow server as an Oracle client. Use these procedures when setting up the workflow server that:

- is part of a standalone eProcess system
- has a remote Oracle database

If **all** of the above statements are not true for the workflow server you want to set up, see “Find the WorkFlo Services Install Procedures You Need” on page 19 to determine which procedures you should instead refer to.

Installation Overview

The installation and configuration of a remote Oracle database is a multi-part process.

- Install the Oracle remote database server.
- Configure the eProcess database, a dedicated filegroup, and expand tempdb on the remote.
- Set up necessary security on the remote server.
- Install the Oracle client on the workflow server.
- Install WorkFlo Services on the workflow server, also referred to as the local server.

Complete the configuration of both the remote database server and the client (the workflow server) and verify the communication between them before installing WorkFlo Services software.

Also before installing WorkFlo Services, fill in the following chart. This information will be required during setup.

Table C-1: Remote Database Objects

Database Object Type	Name
Server	
Instance	
Dedicated Database	
Dedicated Filegroup (not primary)	

Install Oracle software and create database

This installation procedure varies depending on whether you are installing on a Pentium IV machine. There is a known Oracle problem experienced when attempting to install Oracle 8.1.7 on a Pentium IV machine, patched and documented by Oracle as patch number 1507768. See "Install Oracle Patch #1507768 (Pentium IV only)" on page 75 for procedures to install that patch and then install Oracle8i using that patch.

If you are not installing on a Pentium IV machine, proceed to "Install Oracle 8.1.7.0.0 Server Software" on page 77.

Install Oracle Patch #1507768 (Pentium IV only)

1 Create a temporary directory for patch files on the drive where you are going to install the new Oracle 8.1.7 software.

2 Download Oracle patch #1507768 Titled: INSTALLER FAILS WHEN RUNNING ON NEW PENTIUM 4 (IV) PROCESSORS, from the Patches location of the Oracle metalink web site. Oracle ID number 620983. The zip file is named: p1507768_171_winnt.zip. Copy this file to your new directory.

3 Unzip the file using winzip. There are two files that are extracted: oui171100.jar and readme.txt.

4 Extract the files in the oui171100.jar file with the winzip tool. Unzipping the jar file will create a directory named 'cd' in your new directory.

5 Once all the files have been extracted, change directories to '...\cd\Disk1\stage\Components\oracle.swd.jre\1.1.7.30\1\Data-Files\Expanded\jre\win32\bin', then rename *symcjit.dll* to *symcjit.dll.ori.*

6 Run the setup.exe file located in ...\cd\Disk1\install\win32\.

7 Once at the File Locations screen accept the defaults.

The Source Path will point to '...\cd\Disk1\stage\products.jar' products file.

The Destination will specify Name: OUIHome and Path as <drive>:\OraHome1. Click **Next** to continue.

8 At the Installation Types screen, select *Complete,* then *Next* to continue.

9 At the Summary screen select *Install*. At end of Installation screen, select *Exit*.

Start setup using the patched OUI (Pentium IV only)

Patch # 1507768 includes an updated version of setup.exe. Run this patched version rather than the default setup.exe on the installation CD.

1. Insert the Oracle 8.1.7 CD into the CD ROM drive.
2. Exit from the Oracle screen that autoruns from the CD.
3. Change directories to c:\Program Files\Oracle\oui\install; there you should find the newly installed OUI setup.exe program. You should also be able to find the OUI setup program from Start, Program, then Oracle Installation Products.
4. Execute that setup.exe.
5. When the Welcome screen displays, click **Next**.

Continue with the rest of the install as documented in "Install Oracle 8.1.7.0.0 Server Software" on page 77 starting at step 4.

Install Oracle 8.1.7.0.0 Server Software

If you installed Oracle patch #1507768 above, proceed directly to step 4 here. If you did not install the patch, start with step 1 to run setup.exe directly from the CD.

1. If you aren't already, logon as Windows **Administrator**.
2. Load the **Oracle 8.1.7** CD-ROM into the CD-ROM drive.

   The Oracle8i Autorun screen appears.

Note There are two versions of the Oracle8i software on CD-ROM: Oracle8i Enterprise Edition and Oracle8i Standard Edition. The following steps refer to the Enterprise Edition. If you are installing the Standard Edition, some text may be slightly different.

3 At the Welcome screen, click **Next**.

4 The File Locations dialog box appears.

The source path should point to **<cdrom drive>:\stage\products.jar**.

For destinations the *Oracle Home* name should be **OraHome81** and the *path* should be **<installation drive>:\Oracle\Ora81.**

5 Click **Next**.

6 After the Product Information has been loaded, the Available Products dialog box appears.

7 On the Available Product dialog, select **Oracle8i Enterprise Edition**.

8 On the Installation Types dialog, select **Custom**.

9 In the Available Product Components screen, click the **Product Languages** button.

10 In the Language Selection dialog box, choose the appropriate language (default is English).

The Available Product Components screen re-displays.

11 Ensure that at a minimum, the Oracle products with checkmarks are installed.

✔ Oracle 8i Enterprise Edition 8.1.7.0.0
  ✔ Oracle 8i Server 8.1.7.0.0
    Oracle HTTP Server 1.3.12.0.1a

✔ Oracle Product Options 8.1.7.0.0
    Oracle Time Series 8.1.7.0.0
    Oracle Visual Information Retrieval 8.1.7.0.0
    Oracle Spatial 8.1.7.0.0
    Oracle COM Automation Feature 8.1.7.0.0
    Oracle Advanced Security 8.1.7.0.0
    Oracle interMedia 8.1.7.0.0
    Advanced Replication 8.1.7.0.0
    Oracle Partitioning 8.1.7.0.0
    Legato Storage Manager 8.1.7.0.0

Note Uncheck interMedia, then uncheck Spatial.

✔ Net8 products 8.1.7.0.0
    ✔ All

✔ Oracle Utilities 8.1.7.0.0
    ✔ All

✔ Oracle Java Products 8.1.7.0.0
  ✔ Oracle Java Tools 8.1.7.0.0
  ✔ Oracle JDBC Drivers 8.1.7.0.0
  ✔ Oracle SQLJ 8.1.7.0.0

Note Under the Oracle Java Products component, Oracle Java Tools 8.1.7.0.0 is a required component and already selected by default.

Oracle Enterprise Manager Products 8.1.7.0.0

✔ Oracle Configuration Assistants 8.1.7.0.0
Oracle Data Migration Assistant 8.1.7.0.0
✔ Oracle Database Configuration Assistant 8.1.7.0.0

Note The products in *Oracle Configuration Assistants* shown above may already be selected.

✔ Development Tools 8.1.7.0.0
✔ Oracle Call Interface (OCI) 8.1.7.0.0
Object Type Translator 8.1.7.0.0
Oracle Objects for OLE 8.1.7.3.11
Oracle ODBC Driver 8.1.7.0.0
Oracle Provider for OLE DB 8.1.7.0.0
Oracle XML Developer's Kit 8.1.7.0.0
✔ Oracle XML SQL Utility 2.0.0.0.0

✔ Oracle Installation Products 8.1.7.0.0
✔ Oracle Universal Installer 1.7.1.9.0
Oracle Migration WorkBench 1.3.0.0.0
Oracle Services for Microsoft Transaction Server 8.1.7.0.0
Oracle Administration Assistant for Windows NT 8.1.7.0.0
Oracle 8i Windows Documentation

12 Continue with next steps, choosing the defaults or specify settings as appropriate for your system.

13 On the dialog to Create Database, select **Yes** and continue with Oracle Step 2.

(If you are an experienced Oracle DBA, you can scan the instructions in Step 2 then use your own methods to create the database, tablespace, and configure the Oracle networking.)

Note When you are part way through the installation, the installer program prompts you to load CD #2. Follow the Oracle instructions to unmount CD #1 and continue with the installation.

Continue with the Oracle Database Configuration Assistant to install the Oracle software.

14 On the Database Identification dialog, enter the following:

Global database name
SID

15 Specify a location for the database.

16 On the Oracle Protocol Support dialog, accept the defaults.

17 On the Summary dialog, click Install and wait while the Oracle software is installed.

Configure Oracle networking

1 On the Welcome dialog for Net8 Configuration Assistant click **Next** to create the Listener and specify Naming Methods.

2 On the Directory Service Access dialog, select **No, I want to defer**...

3 On the Listener Configuration, Listener Name dialog, accept the default name **LISTENER**.

a On the Protocols dialog, use **TCP**.

b On the TCP/IP Protocol dialog, select **Use the standard port ...**

c On the More Listeners? dialog, select **No**.

4 On the Naming Methods dialog, select **Yes, I do want...**

a On the Select Naming Methods dialog, use Local.

b On the Database Version dialog, select **Oracle 8i database or service**.

c On the Service Name dialog, enter the Global Service name.

d On the Select Protocols dialog, select **TCP**.

5 On the TCP/IP Protocol dialog, enter the Host name—the name of this computer where the database is installed.

6 On the Test dialog, select **No**.

7 On the Net Service Name dialog, accept the service name.

8 At the prompt for Another net service? select **No**.

Continue with the Database Configuration Assistant

1 On the Oracle Database Configuration Assistant dialog, select **Multi-purpose** or as appropriate for your site.

2 On the Select the Mode dialog, select **Dedicated** or **Shared** as appropriate for your site.

3 On the Select the options dialog, select **SQL *Plus help**.

4 On the Review... dialog, select the following:

Compatible Parameter: **8.1.0**

Change Character Set: **WE8ISO8859P1**

5 On the Control Files dialog, accept the defaults.

6 Make the following settings on the tablespace configuration tabs (or as appropriate for your site):

System: accept defaults
Tools: accept defaults
User -Size (MB): **50 MB**
Rollback: accept defaults
Index: accept defaults
Temporary: accept defaults

7 For Redo log files, set all to 20480.

8 For Logging parameters, SGA parameters, and paths for debugging trace files, accept the defaults or enter setting appropriate for your site.

9 Click **Finish** to allow the Oracle Database Configuration Assistant to create the database.

10 **Exit**.

Verify that the database and listener have started

1 Run **Net8 Assistant** to verify the listener and database services parameters.

2 Expand **Local**, expand **Listeners**, then click **LISTENER**.

a Verify that the database you configured is shown correctly in one of the addresses.

b Verify that settings in Database Services match your entries.

3 Expand **Service Naming** and click on the name of your database.

4 Verify your database name and parameters.

5 **Exit** Net8 Assistant.

Create the tablespace for eProcess

Use DBA Studio to create the FileNET tablespace.

1 Run DBA Studio to create the FileNET tablespace.

Run **oemapp dbastudio**.

2 At the Management Login, select **Launch DBA Studio standalone**. (the name of your database should be listed.)

3 Select **Add selected databases**.

4 Open your database.

5 On the Database Connect Information dialog enter the following:

username: **sys**
password: **change_on_install**
Connect as **SYSDBA**

6 Select the database name.

7 On the Object menu, select **Create**, then select **Tablespace**.

8 Create tablespace **vwsys_ts**, minimum size **200 MB**

Status: **Online**

Type: **Permanent**
On the Storage tab, accept the default or set for your system requirements.

9 Create the temporary tablespace **vwtmp_ts**, minimum size **100MB.**

Status: **Online**
Type: **Permanent**

If you use other tablespace names, be sure to record them for use in installing the Panagon WorkFlo Services software.

10 **Exit** DBA Studio.

Install Oracle Client software on the workflow server

1 On the computer where the WorkFlo Services software will be installed (remote from the database), log on as the local **Administrator**.

2 Load the Oracle CD-ROM into the CD-ROM drive and start the installation of the Oracle software.

3 On the Available Products screen, select **Oracle8i Client**.

4 Select the **Custom** installation, then install the following Oracle Client products:

Oracle 8i Client

✔Net8 products
✔All
✔Oracle Utilities
✔SQL*Plus

5 On the subsequent dialogs, accept the defaults or specify settings appropriate for your site, then click **Install** to install the selected Oracle products.

6 Continue with Oracle Net8 Configuration Assistant to configure Oracle communication between the Oracle client (WorkFlo Services server) and the Oracle database server.

a On the Directory Service Access, select **No, I would like to defer...**

b On the Naming Methods Configuration dialog, accept **Local**.

c Accept **Oracle 8i database or service**.

d Enter your Service Name (the Global database name).

e Accept Protocol **TCP**

f Enter your Host name (the name of the computer where the Oracle database is installed)

g On the Test? dialog, choose **Yes**. The logon error is normal because you did not install the demo package.

h Select **Change Logon**, then enter

username **system**,
password **manager**.

You should see "**Connecting...Test successful**". If this test fails, be sure to resolve the problem before you continue—check that both com-

puters are members of the same domain, check the database name, check the name of the host computer.

7 Accept the Net Service Name.

8 Configure another? **No**.

9 **Exit**.

Continue with Oracle Step 4.

Set up environment variables

On the database server AND the workflow server, create required system variables and add them to the registry under your HOMEX.

Name	Value
ORACLE_SID	
ORACLE_HOME	<drive>:\<oracle home directory> (where Oracle is installed)
LOCAL	(the Global database name)

Test Oracle Networking on the workflow server

On the workflow server (Oracle client), enter the following command to test the communication between the Oracle client and the Oracle database.

sqlplus <user/password>

For example, enter *sqlplus sys/change_on_install*

Note If you have changed the SYS user's password, reset it to the default "change_on_install" to allow the FileNET utility to initialize the new database during installation of the WorkFlo Services software. You can change this password back to your preferred value after installation of WorkFlo Services is complete.)

Name Oracle Database Administration Group

When you create the users and groups for administering the databases, note the name of the group that will be used for database administration—the FileNET user fnsw must be made a member of this group.

When both the Oracle client and server have been configured and are communicating, proceed to “Install WorkFlo Services on a Microsoft Server” on page 50.

If you are installing in a clustered environment, return to “Add Oracle SiteDB Resource” on page 150 and continue with the procedures in “Appendix G– Configuring a Cluster Server - Standalone eProcess with Oracle”.

Appendix C – Configuring a Remote SQL Server 2000 Database and Client

This appendix contains procedures to configure a remote SQL Server database server and configure the workflow server as a SQL Server client. Use these procedures when setting up the workflow server that:

- is part of a standalone eProcess system
- has a remote SQL Server 2000 database

If **all** of the above statements are not true for the workflow server you want to set up, see “Find the WorkFlo Services Install Procedures You Need” on page 19 to determine which procedures you should instead refer to.

Installation Overview

The installation and configuration of a remote SQL Server 2000 database is a multi-part process.

- Install the SQL Server 2000 remote database server.
- Configure the eProcess database, a dedicated filegroup, and expand tempdb on the remote.
- Set up necessary security on the remote server.
- Install the SQL Server 2000 client on the workflow server.
- Install WorkFlo Services on the workflow server, also referred to as the local server.

Complete the configuration of both the remote database server and the client (the workflow server) and verify the communication between them before installing WorkFlo Services software.

Also before installing WorkFlo Services, fill in the following chart. This information will be required during setup.

Table C-1: Remote Database Objects

Database Object Type	Name
Server	
Instance	
Dedicated Database	
Dedicated Filegroup (not primary)	

Remote SQL requirements in a cluster environment

The following are requirements specific to a cluster environment for this configuration.

- The remote server should be outside of the eProcess cluster configuration.
- The SQL 2000 client software should be installed on each node in the cluster. When prompted for a valid user name that has Administrator privileges on all nodes in the cluster, enter the domain administrator user name and password using the domain from "Initial Server Setup" on page 119.
- You do not need to set the ISQLServer environment variable when using a remote database.

Install SQL Server 2000 on Remote Server

Install your remote server with SQL 2000 Server Enterprise or Standard edition. Answer the screen prompts as appropriate to your environment **with the exception** of the following:

1 At the Installation Selection screen, select *Create a new instance of SQL Server, or install Client Tools*.

2 At the *Installation Definition* screen, select *Server and Client Tools*.

3 At the *Instance Name* screen, create a new named SQL Server instance with a name up to 16 characters long. If the default box is checked at the top of the screen uncheck it to be able to create a named instance.

4 At the *Setup Type* screen, select Custom.

5 At the *Services Accounts* screen, use the *Local System account* in service settings for each service.

6 At the *Authentication Mode* screen, select *Mixed Mode* and enter the appropriate sa password for your site.

7 If both Content Services and eProcess will share this database, select **SQL Collations ....**, then select **Dictionary order, case-insensitive, for use with 1252 Character Set** (or any case-insensitive SQL collation).

If only eProcess will use this database, you can optionally select **Collation designator** and **Sort order - Binary**.

8 At the *Network Libraries* screen, if your new named instance is the only instance on the server, enter port 1434 in the TCP/IP port number box.

If you already have a default or other instance on the remote server, leave the '0' in the port number and a port number for this named instance will be dynamically assigned when the instance is started.

9 At the end of the database installation, restart the computer to start the database software.

Create the Site DB

On the database computer, use the following steps to create the database, specify the filegroup, and set the space allocations. See the Microsoft SQL Server documentation for detailed instructions.

Use the SQL Server Enterprise Manager tool to

- Create a database
- Create an additional filegroup in the new database
- Increase the size of the existing tempdb database

1 Start the **Enterprise Manager** tool.

2 Expand the <*server name*>/<*new instance name*> folder you just created.

3 Right-click on the **Databases** folder and select *New Database*.

4 From the *General* tab, enter a new database name, example: **VWdb**.

5 Select *Database files* tab. Here add another filegroup by clicking on the first free line in the *File Name* column.

6 Enter a new file name, example: **vw_data**.

7 Tab twice to next columns and specify a disk location for that file.

8 Tab again to the *Initial size* column and enter **200**.

9 Tab to *Filegroup* column and enter a new filegroup name, example: **vwsys_fg**.

10 Save your changes.

11 While still in the Enterprise Manager, right mouse click on the *tempdb database*.

12 Select *properties*.

13 Select the *Data Files* tab.

14 Click on the amount in *Space allocated* column and increase the space allocated to at least 80 MB.

Click **OK** to save.

During installation of WorkFlo Services you will be prompted to provide database information. The following table shows how the SQL database component names map to both installation-time prompts and to contents of the resulting FileNET configuration database, as viewed with the FileNET configuration editor,fn_edit.

Setup Prompt	Database Equivalent	fn_edit Equivalent	Example
Database name	<Customer defined database >	db_name	VWdb
FileNET data file-group	vwsys_fg	vwsys_fg	vwsys_fg

You will not need to use fn_edit at this time, but the information is provided here in the event that you should need to use it in the future.

Note The SQL TempDB is used for temporary data and should be sized to allow for a minimum of 80 MB for WorkFlo Services use.

Although the vwtmp_ts name appears in fn_edit, this database object is not used. The SQL TempDB is used by WorkFlo Services.

In fn_edit, a usr_data object name appears, with a location defined by default as fnusr_fg. This object and filegroup are not used by the WorkFlo Services software. An object named vwtmp_ts also appears, but is also unused.

Set up Windows User Security on the Remote Server

The workflow server is configured to use Windows authentication for initialization and configuration tasks. To allow this, the local (workflow) server's eProcess Windows users must have access to the remote server and the databases.

Here are some basic suggestions, or see your Windows System Administrator.

- If the local and remote servers are **not** in the same domain, any local server Windows users running WorkFlo Services setup, (and the fnsw user created by setup) must be created on the remote server, with the same names and passwords as on the local server. The users on the remote server (including fnsw) must also be members of the Administrators group.

- If both the local and remote servers are in the same domain, ensure that the eProcess users and fnsw on the local Windows server are granted security permissions on both servers.

Install SQL Server 2000 Client on the Local Server

Take the following steps to install and configure the SQL Server 2000 Client software on the server where you will install WorkFlo Services.

1 At the *Installation Selection* screen, select *Create a new instance of SQL Server, or install Client Tools*.

2 At the *Installation Definition* screen, select *Client Tools Only*.

3 Select the defaults for the rest of the installation.

4 Modify the DB-Library default Options. Go to *Start -> Programs -> Microsoft SQL Server* and open the *Client Network Utility*.

5 Select the *DB-Library Options* tab.

6 Uncheck the *Automatic ANSI to OEM conversion* box.

7 Click **Apply** then OK to save.

8 Test the connection between the SQL server and the SQL client.

At a command prompt type:

C:>isqlw -E -S<server name>\<instance name>

If the connection failed you will get an error message. If you get an error message fix the problem before continuing.

If the connection passed you will get an SQL Query Analyzer window with a Query window inside.

Using the entries in “Table C-1: Remote Database Objects,” on page 90, proceed to “Install WorkFlo Services on a Microsoft Server” on page 63 to install the WorkFlo Services software in a non-cluster environment.

If you are installing a cluster configuration, return to “Configure FileNET Resource Group (remote SQL database only)” on page 124 and complete the installation using the procedures in “Appendix F– Configuring a Cluster Server - Standalone eProcess SQL 2000 Database” on page 119.

Appendix D — Installing an Application Server

This appendix contains installation and configuration procedures for a workflow server that is:

- part of an eProcess with Imaging system
- the only workflow server in the system
- an Image Services (IS) application server rather than the IS root server
- not clustered

If **all** of the above statements are not true for the workflow server you want to set up, see "Find the WorkFlo Services Install Procedures You Need" on page 19 to determine which procedures you should instead refer to.

Prior to using the procedures in this appendix, make sure you have read and understand Chapter 1, "Before You Install," on page 13. In addition, complete the IS procedures for adding an application server as documented in the *Panagon Image Services Installation and Configuration Procedures for Windows Server.*

Those procedures include:

- Installation and configuration of the root server, including Image Services and database software.
- Installation and configuration of the application server, including Image Services and database software.

- Configuration of a SQL Service on the application server. This includes building the configuration files and rebooting the application server.

Once you have completed the IS procedures, follow the procedures in "Add a VWService to the Application Server" on page 98.

Add a VWService to the Application Server

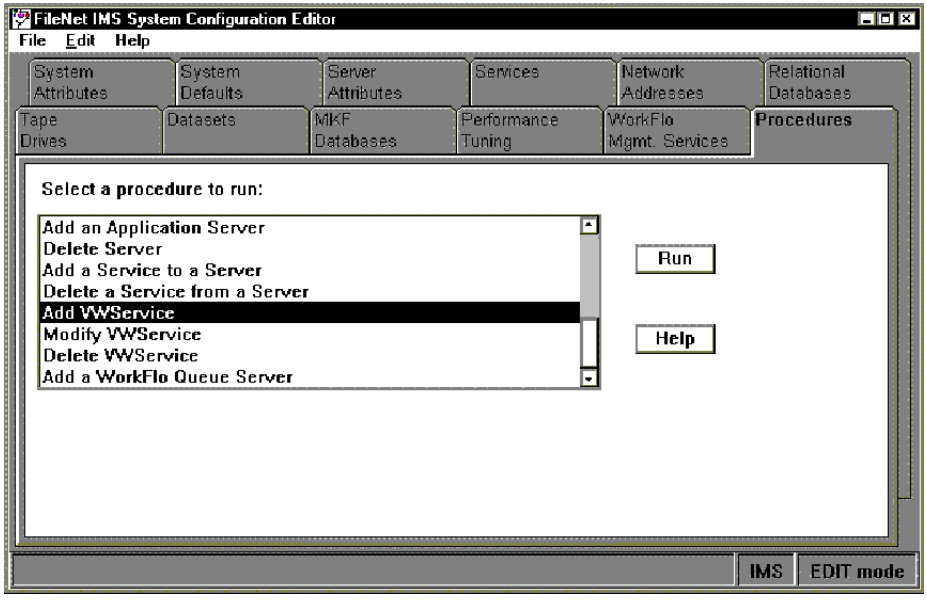
1. If you are not already, log on to the root server as **fnsw**.
2. Enter at a command prompt:

   fn_edit &

Note The fn_edit interface uses the term *VWServer* as an equivalent to the term *workflow server.*

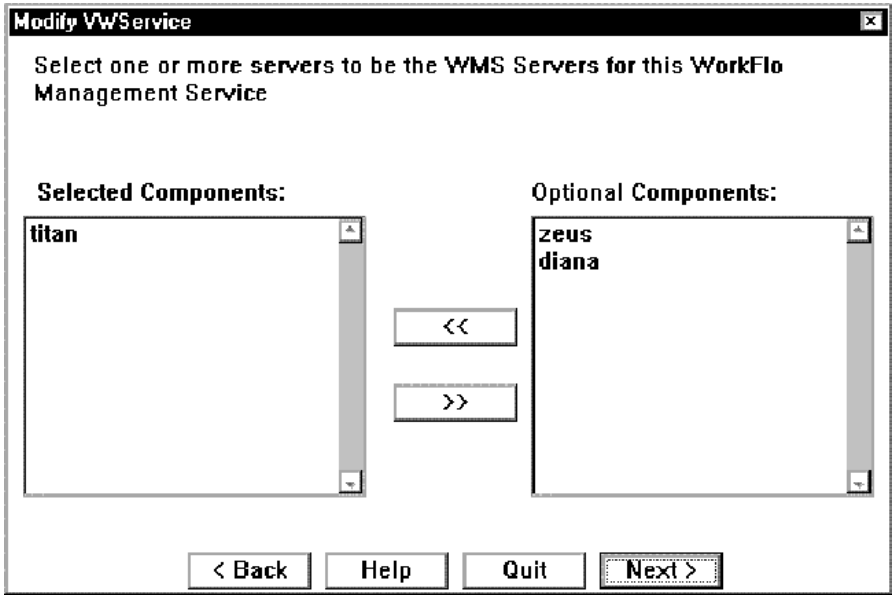
3. At the Open Configuration Database window, select **OK** to accept the default Database Name and Domain Name.

4 On the Procedures tab, select Add VWService and click on **Run**.

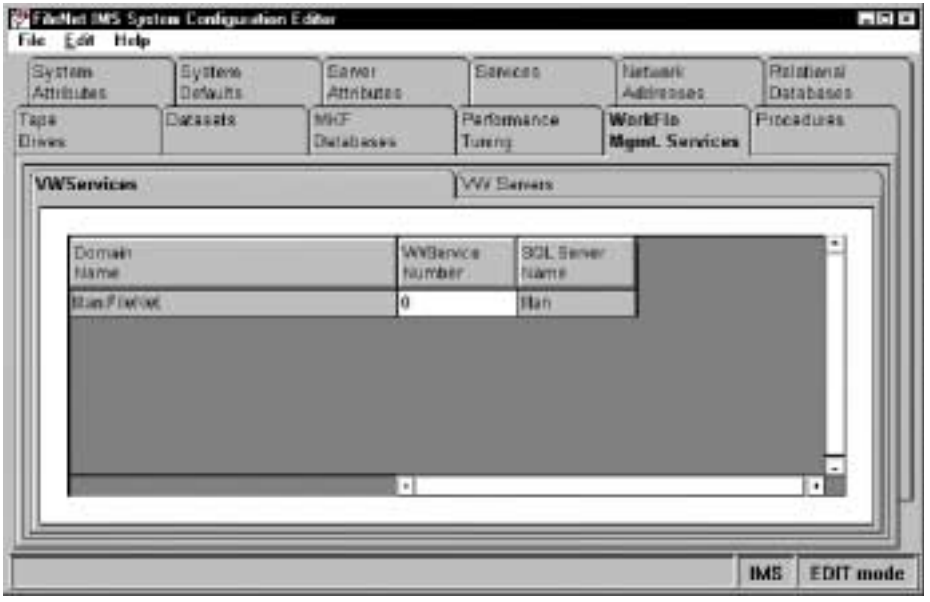


5 You will be presented with a list of available servers.

On your system you should see two server names. One is the Image Services root, where no eProcess software is installed. The other server is the application server on which you will install WorkFlo Services.

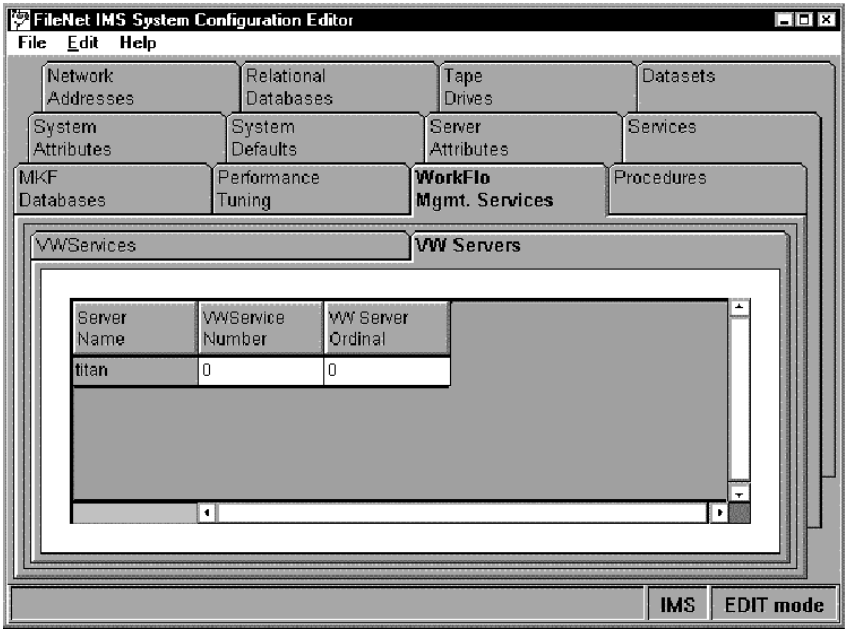


6 To select the server for inclusion in the VWService, click on the application server name followed by the << key. The newly selected server name moves to the left pane and into the list of selected components. Repeat the selection of any additional application servers. Click on **Next.**



7 Change to the *VW Servers* subtab on the *WorkFlo Mgmt. Services* tab. Here you will see the name of the server you added in step 6.

8 You will also see the default VWService number, 0. You must retain the VWService number.



9 Save the changes you made in **fn_edit** and exit.

The update of the configuration database is complete at this point. To have these changes take affect within the system, complete the steps in “Build Configuration Files” on page 102.

Build Configuration Files

Configuration files must be built on every server. Bring up the FileNET software on the root before running fn_build on any server but the Image Services root.

1 Log on as the **fnsw** user.

2 Build the configuration files by typing the following at a command prompt:

fn_build -a

After **fn_build** runs, it displays messages for any errors encountered.

3 Make sure this command runs successfully by checking that no errors have occurred. Correct all errors before continuing.

Proceed to "Verify the NCH database" on page 103.

Verify the NCH database

1 Along with a number of other files, **fn_build** builds the appropriate NCH database records. If you want to verify the records, from a command prompt, type:

nch_tool

2 At the nch_tool prompt, enter:

nch_tool> listobj VW*

You will see a list of all NCH database records for VWServices and VW Servers. The names of the VWServices and servers are in the format <service number>_<ordinal number>, where:

service number = the number of the VWService (only 0 is supported)

ordinal number = automatically assigned to each server, starting with 0 and incrementing by 1.

Note The *VWServer* object name in the NCH database refers to the *workflow server.*

With a single server configuration, you should see NCH database entries like the following:

```
VWServer0_0:titan:FileNet
VWService0:titan:FileNet
```

3 To verify the VWService entry in the NCH database, enter the following at the nch_tool prompt:

nch_tool> listprop VWService0

```
Properties for VWService0:titan:FileNet
    (addressList, [10.1.44.1,32769]
                  [00000001,00a024db0054,0005] )
    (VWService, “Visual WorkFlo Service”)
```

This information shows the network address of the SQL Server used by VWService0. Verify that it is the address of the Application Server.

4 To verify the VW Server entry in the NCH database, enter the following at the nch_tool prompt:

nch_tool> listprop VWServer0*

You will see the network address of the SQL Server being used, along with the VWService number configured on this server.

```
Properties for VWServer0_0:titan:FileNet
  (addressList, [10.1.44.1,32769]
                [00000001,00a024db0054,0005] )
  (VWServer, “Visual WorkFlo Server”)
  (VWServerDesc, 0 0 VWService0:titan:FileNet SQLServer:titan:FileNet)
```

5 Type **q** to exit nch_tool.

Install WorkFlo Services on a Windows Application Server

WorkFlo Services Setup installs and configures

- Panagon WorkFlo Services for Windows software
- Java Runtime Environment 1.3.0 and 1.3.1

All domain, server, and installation location information from the Image Services configuration is used.

If the database is site-controlled or remote, the database must be running prior to starting WorkFlo Services setup.

1 Log on as the *local* Windows **Administrator**.

2 Load the *Panagon WorkFlo Services for Windows Server* CD into the CD-ROM drive.

3 Click anywhere on the words *Install Panagon WorkFlo Services for Windows Server.*

4 Accept the Panagon WorkFlo Services license agreement to proceed with the installation.

If Java Runtime Environment versions 1.3.0 and 1.3.1 are not installed on the server you will be prompted to install them as WorkFlo Services requires both versions. Click **Yes** and see step 5 below. If Setup detects existing JRE versions 1.3.0 and 1.3.1, you will not be prompted and can proceed to step 6 in these instructions.

5 Java Runtime setup will prompt for acceptance of a license agreement and selection of components to install. Leave the default JRE components selected and choose the destination drive and directory for the JRE installation.

6 Click **Finish** when all files have been copied to the server.

7 If you are using a SQL Server database in a non-English language system, see "Change Character Conversions (SQL Server only, optional)" on page 107.

8 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services. To determine whether patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS web site at http://www.css.filenet.com.

Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators*.

Change Character Conversions (SQL Server only, optional)

A SQL Server 2000 database is automatically configured to do an ANSI to OEM conversion of characters. This can cause character corruption on an eProcess system configured as a non-English language system. The SQL Server thinks eProcess is an OEM client and automatically does the conversion.

To disable this automatic conversion:

1. From the *Start* menu, choose *Microsoft SQL Server*, then *Client Network Utility*.

2. Click on the *DB-Library Options* tab on the *SQL Server Client Network Utility* screen.

   Uncheck the box for the Automatic ANSI to OEM conversion option and click **OK.**

Appendix E– Configuring a Cluster Server - eProcess with Imaging Deployment

This appendix contains installation and configuration procedures for a workflow server that:

- is part of an eProcess with Imaging system
- is the only workflow server in the system
- is the Image Services (IS) root server
- is clustered
- has a local database (either Oracle or SQL Server 2000)

If **all** of the above statements are not true for the workflow server you want to set up, see "Find the WorkFlo Services Install Procedures You Need" on page 19 to determine which procedures you should instead refer to.

Install, configure, and test your Image Services and database software to assure they are working in the cluster environment before completing any procedures in this appendix. Follow the Image Services installation procedures in the *Panagon Image Services Installation and Configuration Procedures for Windows Server*. In addition, see the Microsoft website at http://www.microsoft.com/windows2000/techinfo/planning/server/clustersteps.asp for information on cluster servers.

Install WorkFlo Services on Node 1

This is a server that is fully functional per the procedures documented in the *Panagon Image Services Installation and Configuration Procedures for Windows Server*.

1 If you aren't already, logon as the Windows **Administrator** of the domainlet.

2 Use the appropriate cluster administration tool to verify that Node 1 is the owner of the FileNET cluster group (the group containing the IS resource), and that the FileNET IS resource is offline.

For a SQL Server 2000 database:

a Open *Cluster Administrator.*

b If Node 1 is not the owner of the FileNET cluster group, right click on the **FileNET cluster** group and click **Move Group**. In a few minutes the owner of the group will switch from Node 2 to Node

c Right click on the **FileNET IS** resource and click **Take Offline**.

For an Oracle database:

a Open *Oracle Fail Safe Manager.*

b If the Node 1 is not the owner of the FileNET cluster group, right click on the **FileNET cluster group** and click **Move to a Different Node**. In a few minutes the Owner of the group will switch from Node 2 to Node 1.

c Right click on the **FileNET IS** resource and click **Take Offline**.

3 Run WorkFlo Services setup on Node1 as documented in "Install WorkFlo Services on a Microsoft Root Server" on page 115.

4 Proceed to "Install WorkFlo Services on Node 2" on page 110.

Install WorkFlo Services on Node 2

This is a server that is fully functional per the procedures documented in the *Panagon Image Services Installation and Configuration Procedures for Windows Server*.

1 If you aren't already, logon as the Windows **Administrator** of the domainlet.

2 Use the appropriate cluster administration tool to move ownership of the FileNET cluster group from Node 1 to Node 2. Follow the procedure for moving resource groups that was outlined in "Install WorkFlo Services on Node 1" on page 109.

3 Run setup on Node 2 as documented in "Install WorkFlo Services on a Microsoft Root Server" on page 115.

4 Using the appropriate cluster administration tool, right click on the FileNET IS resource and click **Bring Online**.

Configure the Panagon eProcess Services Manager

After you have installed WorkFlo Services on both cluster nodes, configure the eProcess Services Manager per the procedures in this section:

- Set eProcess Services Manager to Manual Startup
- Configure the PPM to run as a Service

- Add eProcess Services Manager Resource to the cluster

Set eProcess Services Manager to Manual Startup

Perform the following procedure on both the Node 1 and Node 2 servers:

1. Open the *Windows ->Settings->Control Panel->Administrative Tools* and double-click the **Services** icon.
2. Double-click the **Panagon eProcess Services Manager**, in the Services window.
3. From the *properties* dialog box click the **stop** button, if the service is not already stopped.
4. Click the **Startup type** drop-down arrow and set the Startup type to **Manual**.
5. Click **OK** to exit the Properties window.

Configure the PPM to Run as a Service

Perform the following procedure on the Node 2 server.

1. Open *Cluster Administrator* and verify that the owner of the Cluster Server is Node 2. If the owner is not Node 2 then right click on the **FileNET Group** (or the group where the database is located) and click **Move Group**.
2. From the *Start* menu, open *FileNET Panagon WorkFlo Services ->eProcess Services Administrator.*

3 Navigate to the *Panagon eProcess PPM* item and double-click to bring up the properties dialog.

4 Check **Automatically started** and **Automatically restarted**.

5 Modify the other settings as needed and click **OK**. See *Help for eProcess Services Administrator* for details.

6 Close *eProcess Services Administrator*

Add eProcess Service Manager Resource

Take this action on the Node 2 server.

SQL Server Procedure

1 Open the *Cluster Administrator.*

2 Locate and right click on **FileNET Group** (or the group where SQL Server is located), point to **New** and click **Resource**.

3 In the *New Resource* dialog box, enter the following:

a A name for the new resource (eProcess Service Manager).

b A description for the new resource (eProcess Service Manager).

c Select **Generic Service** as the resource type.

4 Click **Next** to continue.

5 Verify that the nodes you want are in the *Possible owners* list and click **Next**.

6 From the dependencies dialog, select *FileNET IS* from the list of available resources. Click the **add** button and click **Next**.

7 From the *Generic Service Parameters* dialog, enter **VWServices** in the service name box. Check **Use Network Name for computer name** and click **Next**.

8 From the *Registry Replication* tab, click the add button and enter:

system\CurrentControlSet\Services\VWServices.

9 Click **OK**.

10 Click **Finish** to close the properties window.

11 From the *Cluster Administrator* window, right-click the **eProcess Service Manager** and click **Bring Online**.

Oracle Procedure

1 Open *Oracle Fail Safe Manager.*

2 Locate and right click on **FileNET Group** (or the group where Oracle Server is located).

3 Point to **Add resource to group**.

Resource

a Select the **Generic Service** resource type.

b Click **Next**.

Generic Service Identity

a Select the Node 2 name in the node name list box.

b Enter or select eProcess Service Administrator in the display name list box.

c Enter VWServices in the ServiceName text box.

d Enter the full path to vwservices.exe.

e Click **Next.**

Generic Service Account

a Select the *This Account* radio button and enter **fnsw** as the account name.

b For the account **fnsw**, fill-in the boxes for password, and confirm password

c Verify or select the domainlet from the Domain drop-down listbox.

d Click **Next.**

Generic Service Disks

a Verify, or move, the disk used by the generic service to the selected disk list box.

Note The disk used by the generic service is the disk where the Image Services shared files are installed.

b Click **Next**.

Generic Service Dependencies

a From the dependencies dialog select the Oracle database and the network name from the list of available resources.

b Click **Next**.

Generic Service Registry

a Click the **add** button and enter:

system\CurrentControlSet\Services\VWServices.

b Click **Finish**.

Referenced Procedures

The procedures in this section are referenced in others in this appendix. After completing either of these procedures, return to the referring procedure.

Install WorkFlo Services on a Microsoft Root Server

1 Log on as the *local* Windows **Administrator**.

2 Load the *Panagon WorkFlo Services for Windows Server* CD into the CD-ROM drive.

3 Click anywhere on the words *Install Panagon WorkFlo Services for Windows Server.*

4 Accept the Panagon WorkFlo Services license agreement to proceed with the installation.

If Java Runtime Environment versions 1.3.0 and 1.3.1 are not installed on the server you will be prompted to install them as WorkFlo Services requires both versions. Click **Yes** and see step 5 below. If Setup detects existing JRE versions 1.3.0 and 1.3.1, you will not be prompted and can proceed to step 6 in these instructions.

5 Java Runtime setup will prompt for acceptance of a license agreement and selection of components to install. Leave the default JRE components selected and choose the destination drive and directory for the JRE installation.

6 Click **Finish** when all files have been copied to the server.

7 If you are using a SQL Server database in a non-English language system, see “Proceed with web server installation. As appropriate, see either the Panagon Web WorkFlo Installation Handbook or the Panagon Open Client Help for Administrators.” on page 118.

8 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services. To determine whether patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS web site at http://www.css.filenet.com.

Change Character Conversions (SQL Server only, optional)

A SQL Server 2000 database is automatically configured to do an ANSI to OEM conversion of characters. This can cause character corruption on an eProcess system configured as a non-English language system. The SQL Server thinks eProcess is an OEM client and automatically does the conversion.

To disable this automatic conversion:

1. From the *Start* menu, choose *Microsoft SQL Server*, then *Client Network Utility*.
2. Click on the *DB-Library Options* tab on the *SQL Server Client Network Utility* screen.

   Uncheck the box for the Automatic ANSI to OEM conversion option and click **OK.**

Test Cluster Server Operation

Using the appropriate cluster administration tool, perform the following procedures to test the fail-over of WorkFlo Services.

1. Move the FileNET cluster group from Node 2 to Node 1.
2. After all the resources in the group are online at Node 1, reboot the Node 2 server.
3. Verify that the FileNET IS resource comes online on Node 1.
4. Verify that the eProcess Service Manager resource comes online on Node 1.
5. Check the Windows Event Log for any errors.

Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

Appendix F– Configuring a Cluster Server - Standalone eProcess SQL 2000 Database

This appendix contains installation and configuration procedures for a workflow server that:

- is part of a standalone eProcess system
- has a SQL Server 2000 database (either local or remote)
- is clustered

If **all** of the above statements are not true for the workflow server you want to set up, see "Find the WorkFlo Services Install Procedures You Need" on page 19 to determine which procedures you should instead refer to.

Initial Server Setup

The Windows 2000 Advanced Server operating system must be installed and clustering configured on both servers before installing the database software and WorkFlo Services.

See the Microsoft website at http://www.microsoft.com/windows2000/techinfo/planning/server/clustersteps.asp for information on cluster servers.

To configure eProcess in a clustered environment you must first obtain a Microsoft Windows 2000 Cluster Service approved hardware configuration. All hardware used in the Cluster configuration must be on the

Microsoft Hardware Compatibility list (HCL). To view the Microsoft HCL go to http://www.microsoft.com/hcl/default.asp.

1. Install Windows 2000 Advanced Server Operating System with SP2 on both servers in your cluster system.

2. Add the cluster nodes to a domain. Configure both cluster nodes to be member servers of a Windows 2000 native mode domain.

3. Using the domain from step 2, create a domain user account under which the Cluster service will run. This user should be a **Domain Administrator**.

4. Follow the procedures provided by Microsoft to install the Cluster Server software on both servers. Install the software on the Node 1 server first. You can find the Microsoft installation procedures at: http://www.microsoft.com/windows2000/techinfo/planning/server/cluster-steps.asp.

Install and Configure Database

The SQL Server 2000 database must be configured as a site-controlled database, either local or remote.

Local SQL 2000 Server

Perform the Microsoft installation procedure from the Node 1 server. The Microsoft installation procedure will automatically install the SQL software on both nodes. Set the ISQLServer environment variable on both nodes to the SQL network name of your cluster system.

Refer to the Microsoft installation instructions to install the SQL Server 2000 software. You can find these instructions at the Microsoft web site at:

http://msdn.microsoft.com/library/default.asp?Show-Pane=false&URL=/library/psdk/sql/getstart_4fht.htm

Note You must choose Custom setup type for the installation of MSSQL and enter the following information:
- In the Authentication Mode dialog box, choose Mixed Mode.
- In the Collation Settings dialog box choose Latin1_General as the collation designator and choose Binary Sort order.

Download and install SQL Server 2000 Service Pack 2(SP2) per the instructions at http://www.microsoft.com/sql/downloads/2000/sp2.asp.

Create the Site DB

On the database computer, use the following steps to create the database, specify the filegroup, and set the space allocations. See the Microsoft SQL Server documentation for detailed instructions.

Use the SQL Server Enterprise Manager tool to

- Create a database
- Create an additional filegroup in the new database
- Increase the size of the existing tempdb database

1 Start the **Enterprise Manager** tool.

2. Expand the <*server name*>/<*new instance name*> folder you just created.

3. Right-click on the **Databases** folder and select *New Database*.

4. From the *General* tab, enter a new database name, example: **VWdb**.

5. Select *Database files* tab. Here add another filegroup by clicking on the first free line in the *File Name* column.

6. Enter a new file name, example: **vw_data**.

7. Tab twice to next columns and specify a disk location for that file.

8. Tab again to the *Initial size* column and enter **200**.

9. Tab to *Filegroup* column and enter a new filegroup name, example: **vwsys_fg**.

10. Save your changes.

11. While still in the Enterprise Manager, right mouse click on the *tempdb database*.

12. Select *properties*.

13. Select the *Data Files* tab.

14. Click on the amount in *Space allocated* column and increase the space allocated to at least 80 MB.

    Click **OK** to save.

    During installation of WorkFlo Services you will be prompted to provide database information. The following table shows how the SQL data-

base component names map to both installation-time prompts and to contents of the resulting FileNET configuration database, as viewed with the FileNET configuration editor,fn_edit.

Setup Prompt	Database Equivalent	fn_edit Equivalent	Example
Database name	<Customer defined database >	db_name	VWdb
FileNET data file-group	vwsys_fg	vwsys_fg	vwsys_fg

You will not need to use fn_edit at this time, but the information is provided here in the event that you should need to use it in the future.

Note The SQL TempDB is used for temporary data and should be sized to allow for a minimum of 80 MB for WorkFlo Services use.

Although the vwtmp_ts name appears in fn_edit, this database object is not used. The SQL TempDB is used by WorkFlo Services.

In fn_edit, a usr_data object name appears, with a location defined by default as fnusr_fg. This object and filegroup are not used by the WorkFlo Services software. An object named vwtmp_ts also appears, but is also unused.

Proceed to "Install WorkFlo Services on Node 1" on page 126**.**

Remote SQL 2000 Server

Use the procedures in "Appendix C – Configuring a Remote SQL Server 2000 Database and Client" on page 89 prior to completing the procedures in this section.

Configure FileNET Resource Group (remote SQL database only)

If you have installed a local site-controlled SQL Server there is no need to create and configure a new resource group, you will use the resource group where SQL Server is located. If you installed a remote site-controlled SQL Server you need to create and configure a FileNET resource group.

Perform the following three procedures on the Node 1 server.

Create the FileNET Group

1 Open the **Cluster Administrator.**

a Locate and right click on **Groups**, point to **New** and click **Group**.

b Enter a name for the new resource group (FileNET Group).

c Verify that the nodes you want are in the **Preferred owners** list and click **Finish**.

Create an IP address resource

1 While still in the **Cluster Administrator:**

a Locate and right click on the **FileNET Group**, point to **New** and click **Resource**.

b In the *New Resource* dialog box, enter the following:

A name for the new resource (IP Address)
A description for the new resource
IP Address as the resource type
FileNET Group for the resource group

2 Click **Next** to continue.

3 Verify that the nodes you want are in the **Possible owners** list and click **Next**.

4 From the *dependencies* dialog click **Next** to continue.

5 In the *TCP/IP Address* dialog box, enter the following:

IP address (this must be a static IP address)
Subnet mask
Network (select the network that is being used for the public connection)

6 Click **Finish.**

Create a Network Name resource

1 Locate and right click on the **FileNET Group**, point to **New** and click **Resource**.

2 In the *New Resource* dialog box, enter the following:

A name for the new resource (Network Name)

A description for the new resource
Select **Network Name** as the resource type
Select **FileNET Group** for the resource group

3 Click **Next**.

4 Verify that the nodes you want are in the **Possible owners** list and click **Next**.

5 From the *dependencies* dialog select the **IP address resource** that you have just created from the list of available resources. Click the **add** button and click **Next**.

6 Enter the **network name** and click **Finish**

7 Create a new physical disk resource or move an existing physical disk resource into the **FileNET Group**. This will be the shared disk where the WorkFlo Services local files will be installed.

8 From the ***Cluster Administrator*** window, right-click the **FileNET Group** and click **Bring Online**.

9 Proceed to “Install WorkFlo Services on Node 1” on page 126.

Install WorkFlo Services on Node 1

1 Turn on power to the Node 1 server; Node 2 should be powered off.

2 If you aren't already, logon as the domain **Administrator**.

3 Run WorkFlo Services setup on Node1.

4 When prompted enter the NCH Domain Name (this should be your SQL network name with a colon followed by your organization).

5 Install FNSW (executables) on the local drive.

6 Install FNSW_LOC (local files) on the shared disk drive.

7 Select local or remote database. Proceed to step 9 if the database is local, go to step 10 if it is remote.

8 Select Site-controlled.

a Enter database name, for example **VWdb**.

b Enter FileNET data file group name **vwsys_fg**

c Proceed to step 11.

9 Select Microsoft SQL Server.

a Enter database server name

b Enter database instance name

c Enter database name, for example **VWdb**

d Enter FileNET data file group name **vwsys_fg**

10 Click **Next** to finish the installation

11 Reboot the Node 1 server and logon as the domain **Administrator**. Do **not** remove the CD if you are running setup from it. Reconnect to the installation drive as the Domain fnsw user if you are installing from a network drive rather than from the CD. Setup will continue with the installation and configuration.

12 Set the f_maint password:

a Enter the following at a command prompt: **set_f_maint_pw.**

b Enter a carriage return to accept the default password.

c Enter and confirm the password you want to use for f_maint.

13 If you are using a SQL Server database in a non-English language system, see Change Character Conversions.

14 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services now. To determine whether any additional patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

15 Proceed to "Install WorkFlo Services on Node 2" on page 128

Install WorkFlo Services on Node 2

1 Power off Node 1.

2 Turn on power to the Node 2 and logon as the domain **Administrator**.

3 Open *Cluster Administrator.*

4 In the *Cluster Administrator*, verify that the owner of the Cluster Server is now Node 2. Node 2 needs possession of the shared drive in order to setup WorkFlo Services correctly in the next procedure.

5 Run WorkFlo Services setup on Node 2.

6 When prompted enter the NCH Domain Name. This should be the same NCH Domain Name that you entered when installing on Node 1.

7 Install FNSW (executables) on the local drive.

8 Install FNSW_LOC (local files) on the shared disk drive.

9 Select local or remote database. Proceed to step 11 if the database is local, go to step 12 if it is remote.

10 Select Site-controlled.

a Enter database name, for example **VWdb**.

b Enter FileNET data file group name **vwsys_fg**

c Proceed to step 13.

11 Select Microsoft SQL Server.

a Enter database server name

b Enter database instance name

c Enter database name, for example **VWdb**

d Enter FileNET data file group name **vwsys_fg**

12 Click **Next** to finish the installation

13 Reboot Node 2 and logon as the domain **Administrator**. Do **not** remove the CD if you are running setup from it. Reconnect to the installation drive if you are installing from a network drive rather than from the CD. Setup will continue with the installation and configuration.

14 Set the f_maint password:

a Enter the following at a command prompt: **set_f_maint_pw.**

b Enter a carriage return to accept the default password.

c Enter and confirm the password you want to use for f_maint.

15 If you are using a SQL Server database in a non-English language system, see Change Character Conversions.

16 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services now. To determine whether any additional patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

17 Turn on power to Node 1.

18 On both Node 1 and Node 2:

a Open *Settings -> Control Panel -> Administrative Tools -> Services.* Double-click *Panagon eProcess Service Manager.*

b In *Properties*, for Logon, change the user to <domain name>/fnsw and enter the appropriate password.

c Click OK to exit out and restart the service.

Add FileNET IS Resource to the cluster

Perform the following procedure on the Node 2 server.

1 Open the *Cluster Administrator*

2 Locate and right click on **FileNET Group** (or the group where SQL Server is located), point to **New** and click **Resource**.

3 In the *New Resource* dialog box, enter the following:

a A name for the new resource (FileNET IS).

b A description for the new resource (FileNET Image Service).

c Select **Generic Service** as the resource type.

4 Click **Next** to continue.

5 Verify that the nodes you want are in the *Possible owners* list and click **Next**.

6 Add the dependencies from the list of available resources and click **Next**. If the database is local, select the following. If the database is remote, proceed to step 7.

SQL Network Name
SQL Server
SQL Server Agent

7 Select the following for remote database:

Image Services network name
Shared disk containing the WorkFlo Services local files

8 In the *Generic Service Parameters* dialog, enter **IMSService** in the service name box, check **Use Network Name for computer name** and click **Next**.

9 Click **Finish**

10 Proceed to "Add NCHBroadcast Value to Registry Editor" on page 132.

Add NCHBroadcast Value to Registry Editor

Perform the following procedure on the Node 2 server:

1. Enter **regedt32** from a command prompt.
2. From HKEY_LOCAL_MACHINE navigate to the Software>FileNET>IMS>CurrentVersion folder.
3. From the Registry Editor *Edit* menu, select **Add Value**.
4. Enter NCHBroadcast for the name and select REG_DWORD for the data type. Click **OK**.
5. Enter **0** in the Data box and click **OK**.
6. Close the Registry Editor.
7. Proceed to "Configure IS Registry Keys For Cluster Replication" on page 132.

Configure IS Registry Keys For Cluster Replication

Perform the following procedure on the Node 2 server:

1. From the *Cluster Administrator* window, right-click the **FileNET IS** and click **Bring Online**.
2. Double-click the **FileNET IS** resource to display the FileNET IS properties window.
3. From the *Registry Replication* tab, click the **add** button and enter **software\filenet\ims\currentversion**.
4. Click **OK.**

5 Click the **add** button and enter

system\CurrentControlSet\Services\IMSService

6 Click **OK** twice to close the FileNET IS properties window.

7 Proceed to "Configure the Panagon eProcess Services Manager" on page 133.

Configure the Panagon eProcess Services Manager

After you have installed WorkFlo Services on both cluster nodes, configure the eProcess Services Manager per the procedures in this section:

- Set eProcess Services Manager to Manual Startup
- Configure the PPM to run as a Service
- Add eProcess Services Manager Resource to the cluster

Set eProcess Services Manager to Manual Startup

Perform the following procedure on both the Node 1 and Node 2 servers:

1 Open the *Windows ->Settings->Control Panel->Administrative Tools* and double-click the **Services** icon.

2 Double-click the **Panagon eProcess Services Manager**, in the Services window.

3 From the *properties* dialog box click the **stop** button, if the service is not already stopped.

4 Click the **Startup type** drop-down arrow and set the Startup type to **Manual**.

5 Click **OK** to exit the Properties window.

Configure the PPM to Run as a Service

Perform the following procedure on the Node 2 server.

1 Open *Cluster Administrator* and verify that the owner of the Cluster Server is Node 2. If the owner is not Node 2 then right click on the **FileNET Group** (or the group where the database is located) and click **Move Group**.

2 From the *Start* menu, open *FileNET Panagon WorkFlo Services ->eProcess Services Administrator.*

3 Navigate to the *Panagon eProcess PPM* item and double-click to bring up the properties dialog.

4 Check **Automatically started** and **Automatically restarted**.

5 Modify the other settings as needed and click **OK**. See *Help for eProcess Services Administrator* for details.

6 Close *eProcess Services Administrator*

Add eProcess Service Manager Resource

Take this action on the Node 2 server.

SQL Server Procedure

1. Open the *Cluster Administrator.*
2. Locate and right click on **FileNET Group** (or the group where SQL Server is located), point to **New** and click **Resource**.
3. In the *New Resource* dialog box, enter the following:
   a. A name for the new resource (eProcess Service Manager).
   b. A description for the new resource (eProcess Service Manager).
   c. Select **Generic Service** as the resource type.
4. Click **Next** to continue.
5. Verify that the nodes you want are in the *Possible owners* list and click **Next**.
6. From the dependencies dialog, select *FileNET IS* from the list of available resources. Click the **add** button and click **Next**.
7. From the *Generic Service Parameters* dialog, enter **VWServices** in the service name box. Check **Use Network Name for computer name** and click **Next**.
8. From the *Registry Replication* tab, click the add button and enter:

   system\CurrentControlSet\Services\VWServices.
9. Click **OK**.
10. Click **Finish** to close the properties window.

11 From the *Cluster Administrator* window, right-click the **eProcess Service Manager** and click **Bring Online**.

Test Cluster Server Operation

Perform the following procedures to test the fail-over of WorkFlo Services.

1 Open the *Cluster Administrator.*

2 Right click on the **FileNET Group** (or the group where SQL Server is located) and click **Move Group**. In a few minutes the owner of the Cluster Server will switch from Node 2 to Node 1.

3 Using the *Cluster Administrator,* verify that the FileNET IS resource comes online on Node 1.

4 Using the *Cluster Administrator,* verify that the eProcess Service Manager resource comes online on Node 1.

5 Check the Windows Event Log for any errors.

Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

Change Character Conversions (SQL Server only, optional)

A SQL Server 2000 database is automatically configured to do an ANSI to OEM conversion of characters. This can cause character corruption on an eProcess system configured as a non-English language system. The SQL Server thinks eProcess is an OEM client and automatically does the conversion.

To disable this automatic conversion:

1 From the *Start* menu, choose *Microsoft SQL Server*, then *Client Network Utility*.

2 Click on the *DB-Library Options* tab on the *SQL Server Client Network Utility* screen.

Uncheck the box for the Automatic ANSI to OEM conversion option and click **OK.**

Appendix G– Configuring a Cluster Server - Standalone eProcess with Oracle

This appendix contains installation and configuration procedures for a workflow server that:

- is part of a standalone eProcess system
- has an Oracle database (either local or remote)
- is clustered

If **all** of the above statements are not true for the workflow server you want to set up, see "Find the WorkFlo Services Install Procedures You Need" on page 19 to determine which procedures you should instead refer to.

See the Microsoft website at http://www.microsoft.com/windows2000/techinfo/planning/server/clustersteps.asp for information on cluster servers.

To configure eProcess in a clustered environment you must first obtain a Microsoft Windows 2000 Cluster Service approved hardware configuration. All hardware used in the Cluster configuration must be on the Microsoft Hardware Compatibility list (HCL). To view the Microsoft HCL go to http://www.microsoft.com/hcl/default.asp.

Initial Server Setup

The Windows 2000 Advanced Server operating system must be installed and clustering configured on both servers before installing the database software and WorkFlo Services.

1. Install Windows 2000 Advanced Server Operating System with SP2 on both servers in your cluster system.

2. Add the cluster nodes to a domain. Configure both cluster nodes to be member servers of a Windows 2000 native mode domain.

3. Using the domain from step 2, create a domain user account under which the Cluster service will run. This user should be a **Domain Administrator**.

4. Follow the procedures provided by Microsoft to install the Cluster Server software on both servers. Install the software on the Node 1 server first. You can find the Microsoft installation procedures at: http://www.microsoft.com/windows2000/techinfo/planning/server/clustersteps.asp.

Install and Configure Database and WorkFlo Services

The Oracle database must be configured as a site-controlled database, either local or remote. Perform these procedures on the Node 1 server first and then on Node 2, unless specifically directed otherwise.

Local Oracle Server

The following are requirements specific to a cluster environment with a local Oracle database.

- Oracle software must be installed on the private drive on each node of the cluster.
- Oracle home names must be identical on each node.
- Refer to the Oracle installation documentation (found on the Oracle CD-ROM) and the site-controlled RDBMS guidelines in, "Site-Controlled, Local Oracle" on page 45 to install the Oracle database software, create a database, and create tablespaces for WorkFlo Services.

After the Oracle database installation is completed, all resources must reside in only one group. Use the Cluster Administrator to check that all resources have been added to the same group.

Proceed to "Install Oracle Fail Safe Manager (local DB only)" on page 140 if the database will be local.

Install Oracle Fail Safe Manager (local DB only)

Perform this procedure on the Node 1 server first and then on Node 2.

Refer to the Oracle installation documentation found on the Oracle CD-ROM to install the Fail Safe Manager.

Proceed to "Create the Site DB (local DB only)" on page 140.

Create the Site DB (local DB only)

Perform this procedure on the Node 1 server. All files associated with the database must be located on a shared drive. This includes control files, log files, data files, and any local archive destinations defined in init.ora or SPFILE. It is also strongly recommended that the

background_dump_dest and user_dump_dest be located on shared drives.

Refer to the Oracle installation documentation (found on the Oracle CD-ROM) and the site-controlled RDBMS guidelines in, "Site-Controlled, Local Oracle" on page 45. After installing Oracle software, running several Oracle scripts to create the site DB, defining tablespaces for WorkFlo Services use, and recording database information, return to "Remote Oracle Server" on page 141 in this appendix.

Remote Oracle Server

The following are requirements specific to a cluster environment for this configuration.

- The remote server should be outside of the eProcess cluster configuration.
- The Oracle client software should be installed on each node in the cluster. When prompted for a valid user name that has Administrator privileges on all nodes in the cluster, enter the domain administrator user name and password using the domain from "Initial Server Setup" on page 139.

Use the procedures in "Appendix B– Configuring a Remote Oracle Database and Client" on page 74 to install the database then return to "Add Oracle SiteDB Group (local and remote DB)" on page 142 in this appendix.

Add Oracle SiteDB Group (local and remote DB)

Perform this procedure on the Node 1 server to add the Oracle SiteDB group.

1. Open the **Cluster Administrator.**
2. Locate and right click on Groups, point to New and click Group.
3. Enter a name for the new resource group (Oracle SiteDB Group).
4. Verify that the nodes you want are in the **Preferred owners** list and click **Finish**.
5. Right click the **Oracle SiteDB** group and select **Bring Online**. The state of the Oracle SiteDB group will change from Offline to Online.

Move Shared Drive to Oracle SiteDB Group (local and remote DB)

1. Select **Cluster Group** to list the Cluster Group resources.
2. Right click on the shared drive, select **Change Group**, and click **Oracle SiteDB**. This will move the shared drive to the Oracle SiteDB group.
3. Click **Yes** at the Cluster Administrator confirmation dialog box to confirm the move. Click **Yes** again at the Move Resources confirmation window. The Cluster Administrator re-appears showing the shared drive listed in the Oracle SiteDB resources.

   Proceed to "Identify Oracle Instance for WorkFlo Services use (optional)" on page 146 if the database is remote.

Proceed to "Configure Cluster Service for Oracle (local DB only)" on page 143 if the database is local.

Configure Cluster Service for Oracle (local DB only)

All configuration of cluster for Oracle MUST be done using the Oracle Fail Safe Manager.

Note Before you can start the Oracle Fail Safe Manager you **MUST** first close the Cluster Administrator on both Node 1 and Node 2 servers. The Cluster Administrator **cannot** be opened at the same time as the Fail Safe Manager.

1. Close the Cluster Administrator on both Node 1 and Node 2 servers.
2. Start the Oracle Fail Safe Manager from the Programs folder in the start menu.
3. Enter the user name and password, select the Cluster Alias and Domain, and click **OK**. The Oracle Fail Safe Manager opens.

Note If you have not verified your cluster by this time you will be prompted to do so now. Do not continue until all problems have been resolved.

4. Right click on **Oracle SiteDB** group and select *Add Resource to Group.*
5. In the Add Resource to Group - Resources dialog box, select, or verify, the Group Name is Oracle SiteDB.
6. Select the resource, Virtual Address, and click **Next.**

7 To add the Virtual Address resource, enter or verify the following:

a The radio button, “Show networks accessible by clients” is checked.

b In the Network drop-down list box enter, or select, the connection appropriate for your site.

c In the Host Name box, enter the Oracle network name.

d In the IP Address box, enter the IP address for the host.

e Click **Finish**.

8 Verify the properties and click **OK.**

9 The Oracle Fail Safe Manager re-appears showing the Network Name and IP Address you added for the virtual address resource.

10 Right click on Oracle SiteDB and select, *Add Resource to Group.*

11 In the Add Resource to Group - Resources dialog box, select, or verify, the Group Name is Oracle SiteDB.

12 Select the resource, **Oracle Database**, and click **Next.**

13 Enter, or verify, the following information:

a Enter or select the database Service Name.

b Enter the database Instance Name.

c Enter the Database Name.

d Enter the initialization parameter file name.

e After entering the information above, click **Next.**

14 Fill-in the boxes for User Name, Password, and Confirm Password, and click **OK**.

15 Verify the information that appears is correct, and click **OK.**

16 Read the message in the window that displays and click,**Yes.**

17 A window appears showing the status of the new database as it is being added. Read the output of this screen and then close the window. A message window appears showing that the operation completed successfully. Click **OK** at the window.

The Oracle Fail Safe Manager re-appears showing the database service name added as the Oracle SiteDB database resource.

18 Close the Oracle Fail Safe Manager.

Verify the Cluster Failover (local only)

1 Open the Oracle Fail Safe Manager.

2 Right click on Oracle Site DB group (or the group where Oracle is located)

3 Click *Move to a Different Node*. In a few minutes the owner of the Cluster Server will switch from Node 1 to Node 2. This will test that the cluster is setup properly and is able to failover to Node 2.

4 Verify that Oracle comes up under Cluster control on Node 2.

5 Check the Oracle logs on Node 2 to verify that the database started without error.

Proceed to "Identify Oracle Instance for WorkFlo Services use (optional)" on page 146.

Identify Oracle Instance for WorkFlo Services use (optional)

If your system is configured with multiple instances of Oracle and you want to specify which instance for WorkFlo Services to use, add a new registry value before installing WorkFlo Services. The setup software will read the registry and use the specified instance to create all eProcess database entries.

Use this procedure on both Node 1 and Node 2.

1. Open the Registry window by entering the following command at a Command Prompt:

   REGEDIT

Note You can also enter this command in the taskbar Run dialog box.

2. In the HKEY_Local_Machine on Local Machine window, open the Software folder.
3. Locate and right-click on the **Oracle** folder.
4. Select **String Value.**
5. Enter **FNSW_OracleHomeID** as the new value and click Enter.
6. Double-click on the **FNSW_OracleHomeID** name. At the *Value data* prompt, enter the instance number that corresponds with the Oracle 8.1.7 instance for the FileNET software to use. This should be a single digit value, starting from 0.

7 Close the Registry Editor Window.

Install WorkFlo Services on Node 1

1 Turn on power to the Node 1 server; Node 2 should be powered off.

2 If you aren't already, logon as the domain **Administrator**.

3 Run WorkFlo Services setup on Node1.

4 When prompted enter the NCH Domain Name (this should be your SQL network name with a colon followed by your organization).

5 Install FNSW (executables) on the local drive.

6 Install FNSW_LOC (configuration files) on the shared disk drive.

7 Select *local* or *remote* database.

8 Select Site-controlled.

9 Enter the temporary tablespace name, for example **vwtmp_ts.**

10 Enter the FileNET data tablespace name, for example **vwsys_ts.**

11 Enter the index tablespace name if desired.

12 Click **Next** to proceed with the installation.

13 Reboot the Node 1 server and logon as the domain **Administrator**. Do **not** remove the CD if you are running setup from it. Reconnect to the installation drive as the Domain *fnsw* user if you are installing from a network drive rather than from the CD. Setup will continue with the installation and configuration.

14 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services now. To determine whether any additional patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

15 Set the f_maint password:

a Enter the following at a command prompt: **set_f_maint_pw.**

b Enter a carriage return to accept the default password.

c Enter and confirm the password you want to use for f_maint.

Proceed to "Install WorkFlo Services on Node 2" on page 148.

Install WorkFlo Services on Node 2

1 Power off Node 1.

2 Turn on power to the Node 2 and logon as the domain **Administrator**.

3 Open *Cluster Administrator.*

4 In the *Cluster Administrator*, verify that the owner of the Cluster Server is now Node 2. Node 2 needs possession of the shared drive in order to setup WorkFlo Services correctly in the next procedure.

5 Run WorkFlo Services setup on Node 2.

6 When prompted enter the NCH Domain Name. This should be the same NCH Domain Name that you entered when installing on Node 1.

7 Install FNSW (executables) on the local drive.

8 Install FNSW_LOC (configuration files) on the shared disk drive.

9 Select *local* or *remote* database.

10 Select Site-controlled.

11 Enter the temporary tablespace name, for example **vwtmp_ts.**

12 Enter the FileNET data tablespace name, for example **vwsys_ts.**

13 Enter the index tablespace name if desired.

14 Click **Next** to proceed with the installation..

15 Reboot Node 2 and logon as the domain **Administrator**. Do **not** remove the CD if you are running setup from it. Reconnect to the installation drive if you are installing from a network drive rather than from the CD. Setup will continue with the installation and configuration.

16 Install any patches or *SS fixes required for IS or Panagon WorkFlo Services now. To determine whether any additional patches or *SS fixes are needed, contact the FileNET Response Center (FRC) or see the FileNET CSS website at http://www.css.filenet.com.

17 Set the f_maint password:

a Enter the following at a command prompt: **set_f_maint_pw.**

b Enter a carriage return to accept the default password.

c Enter and confirm the password you want to use for f_maint.

18 Turn on power to Node 1.

19 On both Node 1 and Node 2:

a Open *Settings -> Control Panel -> Administrative Tools -> Services.* Double-click *Panagon eProcess Service Manager.*

b In *Properties*, for Logon, change the user to <domain name>/fnsw and enter the appropriate password.

c Click **OK** to exit out and restart the service.

Proceed to "Add Oracle SiteDB Resource" on page 150.

Add Oracle SiteDB Resource

Perform the following procedure on the Node 2 server.

1 Open the *Cluster Administrator*

2 Locate and right click on **Oracle SiteDB Group** (or the group where Oracle is located), point to **New** and click **Resource**.

3 In the *New Resource* dialog box, enter the following:

a A name for the new resource (FileNET IS).

b A description for the new resource (FileNET Image Service).

c Select **Generic Service** as the resource type.

4 Click **Next** to continue.

5 Verify that the nodes you want are in the *Possible owners* list and click **Next**.

6 Add the dependencies from the list of available resources and click **Next**. If the database is local, select the following. If the database is remote, proceed to step 7.

Network Name
Oracle Server (Oracle IDB)
Oracle ORAHome81 TNS listener (the listener configured for the database)

7 Select the following for remote database:

Image Services network name
Shared disk containing the WorkFlo Services local files

8 In the *Generic Service Parameters* dialog, enter **IMSService** in the service name box, check **Use Network Name for computer name** and click **Next**.

9 Click **Finish**

Proceed to "Add NCHBroadcast Value to Registry Editor" on page 151.

Add NCHBroadcast Value to Registry Editor

Perform the following procedure on the Node 2 server:

1 Enter **regedt32** from a command prompt.

2 From HKEY_LOCAL_MACHINE navigate to the Software>FileNET>IMS>CurrentVersion folder.

3 From the Registry Editor *Edit* menu, select **Add Value**.

4 Enter NCHBroadcast for the name and select REG_DWORD for the data type. Click **OK**.

5 Enter **0** in the Data box and click **OK**.

6 Close the Registry Editor.

Proceed to "Configure IS Registry Keys For Cluster Replication" on page 152.

Configure IS Registry Keys For Cluster Replication

Perform the following procedure on the Node 2 server:

1 From the *Cluster Administrator* window, right-click the **FileNET IS** and click **Bring Online**.

2 Double-click the **FileNET IS** resource to display the FileNET IS properties window.

3 From the *Registry Replication* tab, click the **add** button and enter **software\filenet\ims\currentversion**.

4 Click **OK.**

5 Click the **add** button and enter

system\CurrentControlSet\Services\IMSService

6 Click **OK** twice to close the FileNET IS properties window.

Proceed to "Configure the Panagon eProcess Services Manager" on page 153.

Configure the Panagon eProcess Services Manager

After you have installed WorkFlo Services on both cluster nodes, configure the eProcess Services Manager per the procedures in this section:

- Set eProcess Services Manager to Manual Startup
- Configure the PPM to run as a Service
- Add eProcess Services Manager Resource to the cluster

Set eProcess Services Manager to Manual Startup

Perform the following procedure on both the Node 1 and Node 2 servers:

1. Open the *Windows ->Settings->Control Panel->Administrative Tools* and double-click the **Services** icon.
2. Double-click the **Panagon eProcess Services Manager**, in the Services window.
3. From the *properties* dialog box click the **stop** button, if the service is not already stopped.
4. Click the **Startup type** drop-down arrow and set the Startup type to **Manual**.
5. Click **OK** to exit the Properties window.

Configure the PPM to Run as a Service

Perform the following procedure on the Node 2 server.

1. Open *Cluster Administrator* and verify that the owner of the Cluster Server is Node 2. If the owner is not Node 2 then right click on the **FileNET Group** (or the group where the database is located) and click **Move Group**.
2. From the *Start* menu, open *FileNET Panagon WorkFlo Services ->eProcess Services Administrator.*
3. Navigate to the *Panagon eProcess PPM* item and double-click to bring up the properties dialog.
4. Check **Automatically started** and **Automatically restarted**.
5. Modify the other settings as needed and click **OK**. See *Help for eProcess Services Administrator* for details.
6. Close *eProcess Services Administrator*

Add eProcess Service Manager Resource

Take this action on the Node 2 server.

Oracle Procedure

1. Open *Oracle Fail Safe Manager.*
2. Locate and right click on **FileNET Group** (or the group where Oracle Server is located).
3. Point to **Add resource to group**.

Resource

a Select the **Generic Service** resource type.

b Click **Next**.

Generic Service Identity

a Select the Node 2 name in the node name list box.

b Enter or select eProcess Service Administrator in the display name list box.

c Enter VWServices in the ServiceName text box.

d Enter the full path to vwservices.exe.

e Click **Next.**

Generic Service Account

a Select the *This Account* radio button and enter **fnsw** as the account name.

b For the account **fnsw**, fill-in the boxes for password, and confirm password

c Verify or select the domainlet from the Domain drop-down listbox.

d Click **Next.**

Generic Service Disks

a Verify, or move, the disk used by the generic service to the selected disk list box.

Note The disk used by the generic service is the disk where the Image Services shared files are installed.

b Click **Next**.

Generic Service Dependencies

a From the dependencies dialog select the Oracle database and the network name from the list of available resources.

b Click **Next**.

Generic Service Registry

a Click the **add** button and enter:

system\CurrentControlSet\Services\VWServices.

b Click **Finish**.

Test Cluster Server Operation

Perform the following procedures to test the fail-over of WorkFlo Services.

1 Open the *Cluster Administrator.*

2 Right click on the **FileNET Group** (or the group where SQL Server is located) and click **Move Group**. In a few minutes the owner of the Cluster Server will switch from Node 2 to Node 1.

3 Using the *Cluster Administrator,* verify that the FileNET IS resource comes online on Node 1.

4 Using the *Cluster Administrator,* verify that the eProcess Service Manager resource comes online on Node 1.

5 Check the Windows Event Log for any errors.

Proceed with web server installation. As appropriate, see either the *Panagon Web WorkFlo Installation Handbook* or the *Panagon Open Client Help for Administrators.*

Appendix H– Changing a Server IP Address

You might need to change a server's IP address if your system's network needs to be upgraded, if you need to replace a server, or if you add a server to your configuration.

You can safely change a server's IP address without affecting WorkFlo Services, provided you observe the following rules:

- Do not change a server's IP address while another server in the domain is in the process of being deleted.
- Do not change a server's IP address while a step processor, Work Performer, or other user-defined application has locked a work item for processing.

See your Windows documentation for information on changing your server's IP address.

For FileNET software to recognize a change of IP address, the address must be changed through fn_edit.

All steps can be performed as **Administrator**, provided the Administrator is a member of the fnadmin group.

1 As **fnsw**, (or **Administrator**, see above), run **fn_edit**.

2 Select the **Network Addresses** tab and change the IP address to the new address for the server, save the change and exit fn_edit.

3 Change the IP address within the operating system. For more information on changing your server's IP address, see the documentation for your server platform.

4 Edit the **\etc\hosts** file and verify the IP address for the IS server. Change it if necessary.

5 From a command prompt window, type:

fn_build -a

Check for error messages when this process is finished and resolve any error conditions before continuing to the next step.

6 Update the NCH database by running:

nch_update [domain:org]

(EXAMPLE: "nch_update titan :FileNet")

7 As **fnsw**, restart the FileNET software and check the log files for error messages.