InfoPrint ProcessDirector for AIX

Planning and Installation

G550-1045-06

InfoPrint Solutions Company

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Note:
Before using this information and the product it supports, read the information in "Notices" on page 109.

Seventh edition (November 2009)

This edition applies to InfoPrint ProcessDirector for AIX, Version 1 Release 3 Modification 1 (Program Number 5765-G74) with PTF US00109, and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces G550-1045-05.

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About this publication

This publication provides planning and installation information about the InfoPrint® ProcessDirector for AIX®, Version 1 Release 3.1 licensed program (Program Number 5765-G74) with PTF US00109. InfoPrint ProcessDirector runs on an AIX server and is accessed from a Web-based user interface. Additional secondary servers can run on AIX, Linux®, and Microsoft® Windows® servers.

Who should read this publication

This publication is for system administrators who need to plan for and install InfoPrint ProcessDirector.

Related information

For information about InfoPrint products, see these Web pages:

- InfoPrint Solutions Company Web site (http://www.infoprint.com)
- InfoPrint Information Center (http://www.infoprint.com/infocenter)

For information about using InfoPrint ProcessDirector, see the information center and the online help, which you can access from the Web-based user interface.

For information about products used with InfoPrint ProcessDirector, see these publications:

- *IBM AFP Fonts: Font Summary for AFP Font Collection*, S544-5633
- *InfoPrint Font Summary*, G550-1140
- *InfoPrint Manager for AIX: Getting Started*, G544-5817
- *InfoPrint Manager for AIX: Introduction and Planning*, G544-5833
- *InfoPrint Manager: PSF and Server Messages*, G550-1053
- *InfoPrint Manager: Reference*, S550-1052
- *InfoPrint Transform Manager for Linux: Installation and User's Guide*, G550-1048
- *InfoPrint Transform Manager for Linux: afp2pdf Transform Installation and User's Guide*, G550-0538
- *InfoPrint XT for AIX: Installation and User's Guide*, GLD0-0024
- *InfoPrint XT for Windows: Installation and User's Guide*, GLD0-0025
- *Print Services Facility for z/OS: AFP Conversion and Indexing Facility User's Guide*, S550-0436
- *Print Services Facility for z/OS: AFP Download Plus*, S550-0433
- *Print Services Facility for z/OS: Download for z/OS*, S550-0429

Chapter 1. Overview of InfoPrint ProcessDirector

InfoPrint ProcessDirector is a product that lets you manage all aspects of your printing processes from a comprehensive Web-based user interface. InfoPrint ProcessDirector supports job submission from z/OS® host systems using Download for z/OS and AFP™ Download Plus and from other systems using file copying methods. You can copy or move jobs into directories that you specify (*hot folders*), and you can configure InfoPrint ProcessDirector so that it continually monitors the directories and automatically processes jobs as they arrive. You can also submit jobs from any system that uses the line printer daemon (LPD) protocol for file transmission.

InfoPrint ProcessDirector uses IBM® DB2® technology for database management. The extensive database that InfoPrint ProcessDirector uses provides detailed audit information about your printing workload and tasks.

You can access InfoPrint ProcessDirector from a supported Web browser on the Microsoft Windows, AIX, and Linux workstations in your network. You do not need to install InfoPrint ProcessDirector on the workstations that you use to access the user interface; you only need to install InfoPrint ProcessDirector on the server that is managing your workflow.

Components

InfoPrint ProcessDirector is made up of these components:

InfoPrint ProcessDirector server

The InfoPrint ProcessDirector server manages all job activities, including input devices that create the jobs and printers that print the jobs. The server also processes jobs through a series of steps, some of which include other programs. It controls both the flow of jobs and the IBM DB2 tables that store system information.

The InfoPrint ProcessDirector server is installed on a pSeries® machine with the AIX operating system. InfoPrint ProcessDirector can support more than one server; that is, a primary server and one or more secondary servers.

In addition, you can set up your installation to have a standby primary server to use as a backup (or failover) system. InfoPrint ProcessDirector is installed on both the primary server and the backup system, but it can only run on one system at a time. Both systems must have access to an external storage system, such as a storage area network (SAN) or an NFS-mounted file system, where print jobs and systems objects are stored. In the event of an outage on the primary system, you can run scripts provided with InfoPrint ProcessDirector to move processing to the other system without losing objects or print jobs.

Secondary servers can be defined with the primary server on the same system, or installed on a separate AIX, Linux, or Windows system. Secondary servers on all the platforms can be used to do additional or special types of processing. A secondary AIX or Linux server can be used for processing steps and for managing printers or input devices. A secondary Windows server can be used for processing steps.

The InfoPrint ProcessDirector server contains these programs:

Print Services Facility™
Print Services Facility (PSF) is a print-driver program that manages and controls data transmitted to Advanced Function Presentation™ (AFP) printers that are TCP/IP-attached. The PSF program is installed on the same machine as the primary InfoPrint ProcessDirector server. It is also installed on secondary AIX or Linux servers, but not on Windows servers.

DB2 InfoPrint ProcessDirector properties and their corresponding values are stored in an IBM DB2 database. You can:

- Install your own copy of DB2 on the system that you plan to use for the InfoPrint ProcessDirector primary server before you install the InfoPrint ProcessDirector program.
- Install your own DB2 server on a different system and a DB2 client on the primary server system before you install the InfoPrint ProcessDirector program.
- Let the InfoPrint ProcessDirector installer install the version of DB2 that is shipped with InfoPrint ProcessDirector automatically. If you choose the InfoPrint ProcessDirector version of DB2, you cannot use it for any other purpose.

DB2 or the DB2 client is installed on the same machine as the primary InfoPrint ProcessDirector server. It does not have to be installed on secondary servers.

InfoPrint ProcessDirector user interface
The InfoPrint ProcessDirector user interface is a Web-based interface that lets you manage the printing process. Users can access the user interface from a supported Web browser on a Windows, AIX, or Linux workstation as long as they have an InfoPrint ProcessDirector user ID. The workstation must have one of these Web browsers installed:

AIX Mozilla

Linux SLES 9.0
Mozilla

Linux SLES 10.0
Mozilla Firefox

Windows
Microsoft Internet Explorer, Mozilla, or Mozilla Firefox

The user interface program is installed on the same machine as the primary InfoPrint ProcessDirector server.

The user interface contains field-level help and an information center for InfoPrint ProcessDirector. The information center displays administrative and operational topics that help users learn about the InfoPrint ProcessDirector product. It also includes procedures that describe how to use the product.

The user interface also has a Web-based file viewer that uses the Adobe® Acrobat Reader to display AFP or PDF files so you can select pages to reprint.

InfoPrint ProcessDirector features

Some InfoPrint ProcessDirector features let you run devices like secondary servers and printers. The modular design of InfoPrint ProcessDirector lets you add features to the base product as your business needs change. Most features are integrated seamlessly into the user interface.

Table 1. InfoPrint ProcessDirector features

Description	CD number
Secondary server If you need additional processing power, you can run more than one InfoPrint ProcessDirector server on a single machine, or you can set up InfoPrint ProcessDirector servers that run on different machines. The additional servers are called secondary servers.	LCD4-5635
Low-speed printer engine	LCD4-5631
Medium-speed printer engine	LCD4-5632
High-speed printer engine	LCD4-5633
Workgroup printer engine	None (available with base product)
AFP Editor AFP Editor lets you create bar codes and hide areas in AFP files. You can create bar codes that contain index values, job properties, and static text. For example, if the ZIP codes in an AFP file are index values, you can create bar codes that contain the ZIP codes. You can hide areas in AFP files so that no one can see the data in the hidden areas and so that the data does not print. For example, you can hide areas that contain existing bar codes that you want to replace. In addition, AFP Editor can automatically replace POSTNET bar codes with Intelligent Mail bar codes (IMBs) that have the same routing code.	LCD4-5680
AFP Indexer AFP Indexer lets you create page groups and indexes in AFP files. When you view an AFP print file that contains page groups and indexes in InfoPrint ProcessDirector, you can navigate in the file to find pages containing specific index values. You can also use the indexing provided by AFP Indexer to reprint all the pages in one or more page groups.	LCD4-5679

Table 1. InfoPrint ProcessDirector features (continued)

Description	CD number
InfoPrint Transform Features InfoPrint Transform Features provide a powerful and cost-effective system for transforming print jobs to or from the format for Advanced Function Presentation (AFP) printing. **Notes:** • The user interface and information center for the Transform Features are separate from the InfoPrint ProcessDirector user interface and information center. If you install more than one Transform Feature, they share a user interface. • All Transform Features include the image transforms (gif2afp, jpeg2afp, and tiff2afp).	• pdf2afp and ps2afp Transforms, LCD4-5671 • pcl2afp Transform, LCD4-5672 • sap2afp Transform, LCD4-5673 • afp2pdf Transform, LCD4-5674
Inserter Level I Inserter Level I automates the insertion of printed documents and additional inserts (such as marketing materials) into envelopes. It can: • Prepare input files for insertion. • Receive results files from inserter controllers and interpret them to determine the insert status of each document in the job. • Automatically (or manually, with operator control) reconcile the job, and reprint any damaged documents.	LCD4-5678
Inserter Level II In addition to all the functions of Inserter Level I, Inserter Level II writes control files and sends them to inserter controllers.	LCD4-5685
Manufacturing Optimization Manufacturing Optimization lets you take print workflow beyond controlling and tracking print jobs to encompass controlling and tracking individual documents in a print job. Without changing the application that creates the print job, you can change the way the individual documents are processed, using business rules to indicate what processing to do. The documents in the print job can be split into subset print jobs, sorted based on document-specific information like address data, or grouped into subset print jobs based on data in the document.	LCD4-5677
Reports Reports lets InfoPrint ProcessDirector collect data about job events, user actions, and printer activity. Then, you can generate reports based on the data. You can use the reports for capacity planning, production efficiency measurement and optimization, and problem determination.	LCD4-5682

Table 1. InfoPrint ProcessDirector features (continued)

Description	CD number
Service Level Agreements (SLA) Service Level Agreements lets you manage your progress towards meeting your performance objectives. If you have service level agreements in place with your customers, this feature can help you make sure that their print jobs are on schedule to be completed on time.	LCD4-5681
Designer Designer extends InfoPrint ProcessDirector to make it easier to interact with GMC PrintNet T 6.0. The feature adds system objects tailored to work with files that the Designer portion of PrintNet T generates so they can be submitted to the processing engine to generate AFP print jobs as part of a print workflow.	LCD4-6598

Mailroom Integrity Solution

The Mailroom Integrity Solution is a collection of the InfoPrint ProcessDirector features that you need to automate and optimize the document workflow.

Mailroom Integrity Solution Level I includes these features:

- AFP Indexer
- Inserter Level I
- Reports

Mailroom Integrity Solution Level II includes these features:

- AFP Indexer
- Inserter Level II
- Manufacturing Optimization
- Reports

InfoPrint ProcessDirector extensions

InfoPrint ProcessDirector extensions are customizable software components that you can purchase from your InfoPrint Solutions Company customer support specialist. The customer support specialist installs the extensions on the existing InfoPrint ProcessDirector primary server.

Compatible products

As an option, you can use these products with InfoPrint ProcessDirector:

AFP Download Plus
AFP Download Plus is a separately ordered feature of Print Services Facility for z/OS (IBM Program Number 5655-M32) that transforms line data to Mixed Object Document Content Architecture™ for Presentation (MO:DCA-P) data and then transmits the print job with all required resources to InfoPrint ProcessDirector.

Download for z/OS
Download for z/OS is a separately ordered feature of PSF for z/OS (IBM Program Number 5655-M32) and is used to submit jobs to InfoPrint ProcessDirector. Download for z/OS automatically transmits output across the TCP/IP network from the host system to InfoPrint ProcessDirector for printing or archiving.

InfoPrint Manager for AIX
InfoPrint Manager for AIX (Program Number 5765-F68) is a print server that handles the scheduling, archiving, retrieving, and assembly of a print job and its related resource files.

InfoPrint Transform Manager for Linux
InfoPrint Transform Manager for Linux (Program Number 5639-P51) receives print jobs from InfoPrint ProcessDirector, transforms them to AFP, and returns them to InfoPrint ProcessDirector for printing.

If you purchase the InfoPrint Transform Manager for Linux: afp2pdf Transform i-listed PRPQ (Program Number 5799-TWL) with InfoPrint Transform Manager, you can use the afp2pdf transform to convert Mixed Object Document Content Architecture (MO:DCA-P) documents, also called AFP documents, into Adobe Portable Document Format (PDF) documents.

InfoPrint XT™ for AIX
InfoPrint XT for AIX (Program Number 5799-GTF) transforms Xerox metacode and line conditioned data stream (LCDS) jobs to AFP.

InfoPrint XT for Windows
InfoPrint XT for Windows (Program Number 5799-RZA) transforms Xerox metacode and line conditioned data stream (LCDS) jobs to AFP.

System configurations

You can install InfoPrint ProcessDirector with various system configurations, depending on whether you use secondary servers or include backup servers in your environment. The hardware configurations can include:

- Primary server
- Primary server with one or more secondary servers on the same system
- Primary server with one or more secondary AIX, Linux, or Windows servers
- Primary server with a backup (failover) primary server and an NFS-mounted file system

  In this configuration, only one primary server can be running at a time. System objects are created and stored on the mounted file system, so they can be accessed from the backup server in case of a hardware failure or other outage.
- Primary server with a backup (failover) primary server and a storage area network (SAN)

In this configuration, only one primary server can be running at a time. System objects are created and stored on the SAN, so they can be accessed from the backup server in case of a hardware failure or other outage.

Figure 1 shows a configuration with a primary server, a secondary Linux server on a separate system, a secondary AIX server, and a secondary Windows server. It also shows InfoPrint ProcessDirector components, including the optional InfoPrint Transforms feature, and the optional products you might use with InfoPrint ProcessDirector, including Download for z/OS, AFP Download Plus, and InfoPrint Manager for AIX.

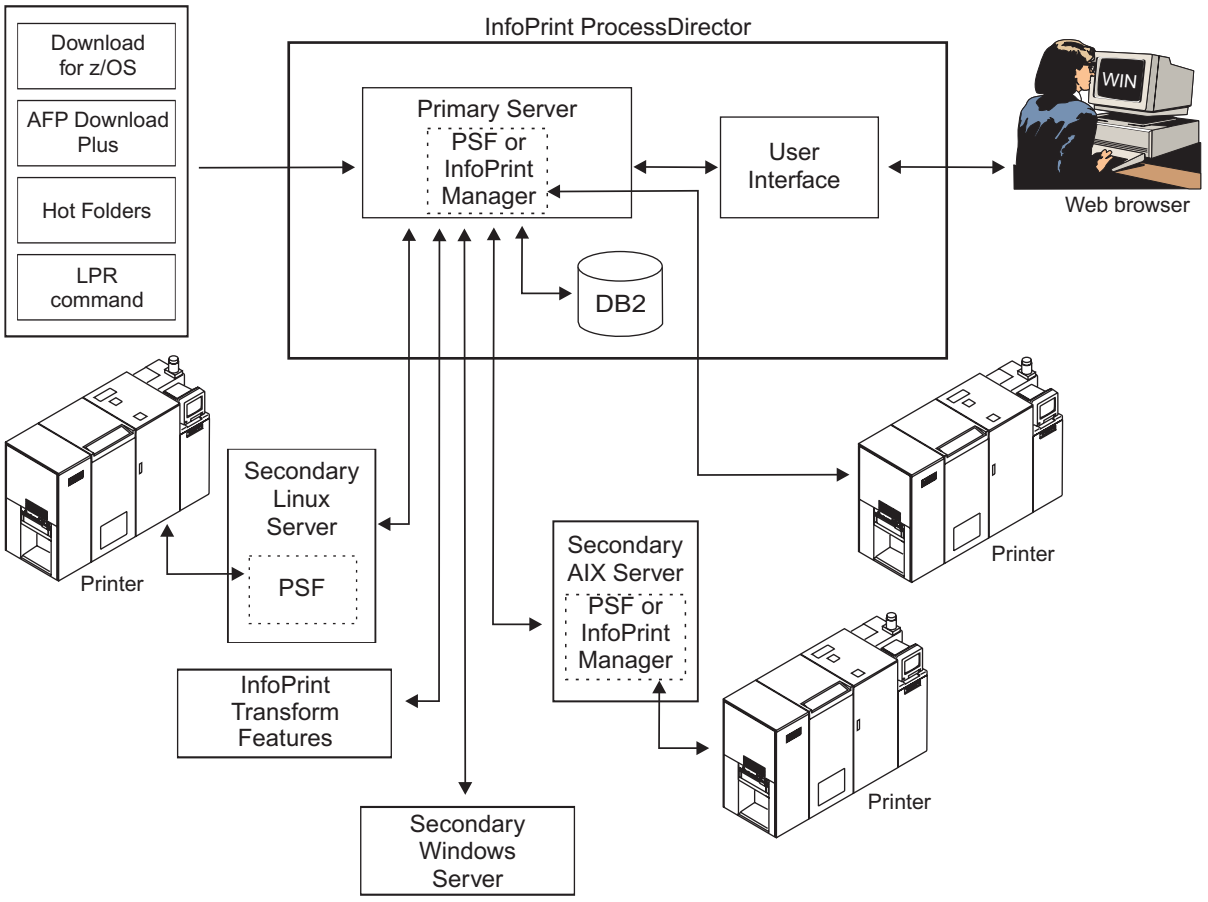

Figure 1. Example of an InfoPrint ProcessDirector system configuration

Figure 2 on page 8 shows a configuration with two primary servers (an active primary server and a backup) connected to a SAN using a fibre channel connection.

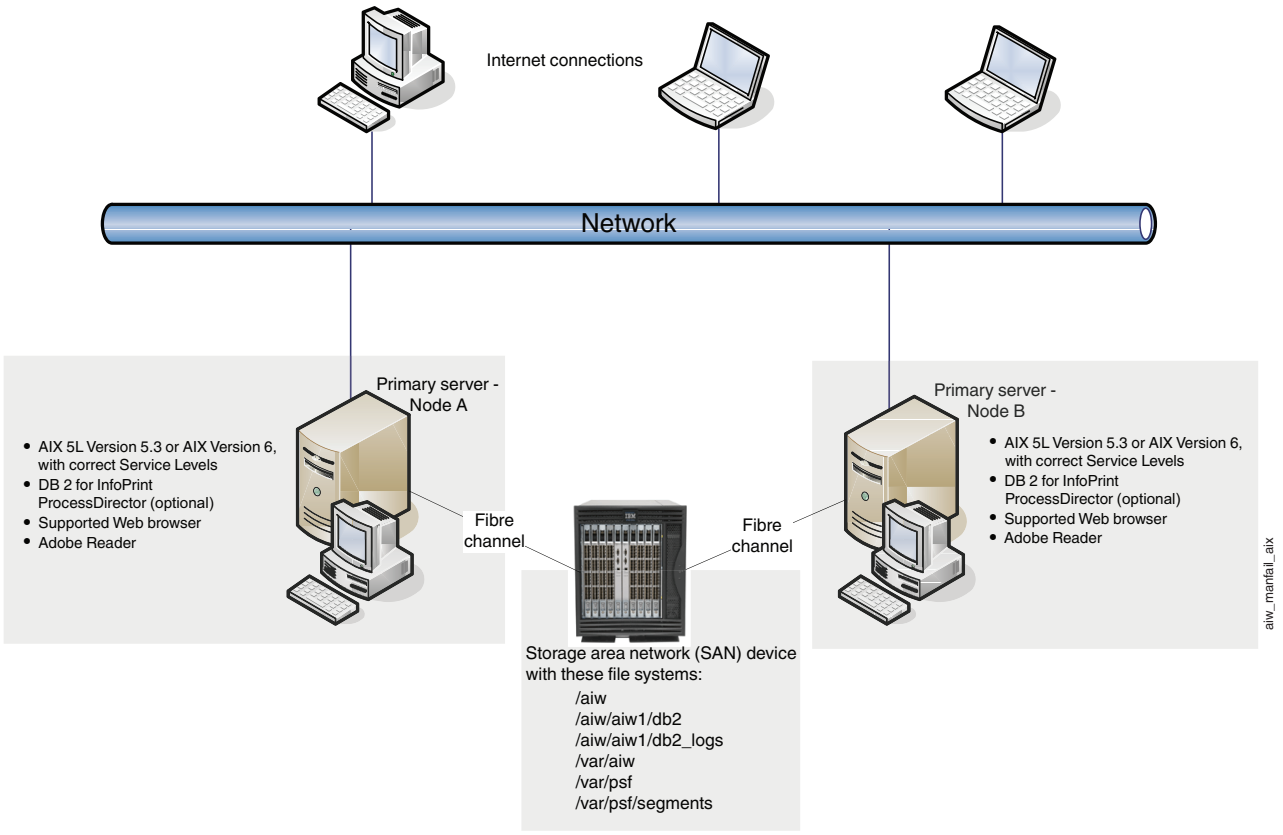

Figure 2. Example of a configuration with active and backup primary servers using a SAN

Figure 3 on page 9 a configuration with two primary servers (an active and a backup) and an NFS server that holds their shared file systems.

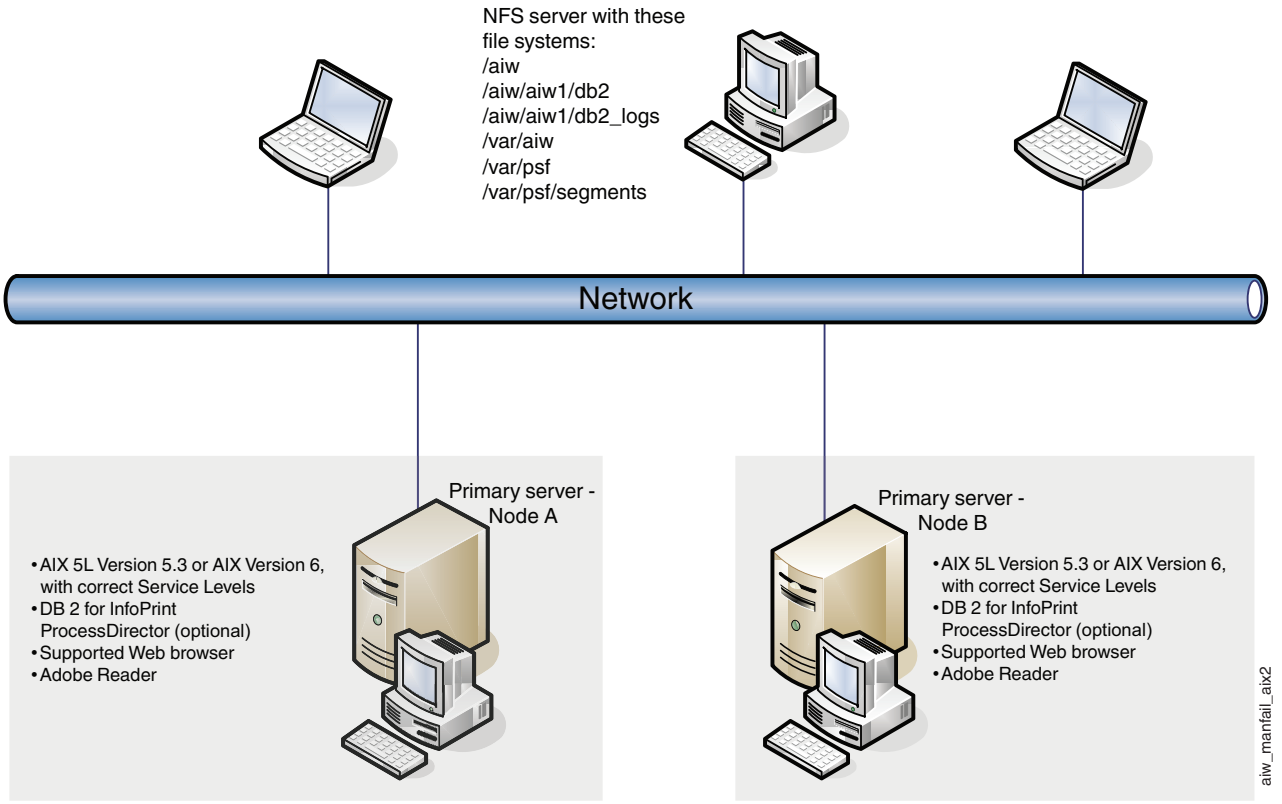

Figure 3. Example of a configuration with active and backup primary servers using an NFS server

InfoPrint ProcessDirector publications

The InfoPrint ProcessDirector publications CD-ROM includes the InfoPrint ProcessDirector publications in several languages. You can access the CD on AIX or Windows, but not on Linux.

The publications are:

- *InfoPrint ProcessDirector for AIX: Planning and Installation* (this book) in PDF format.
- *InfoPrint ProcessDirector: Developing Web Services*, G550-1152, in PDF format.
- *InfoPrint ProcessDirector: Integrating with Other Applications*, S550-1069, in PDF format.
- *InfoPrint Font Summary*, G550-1140, in PDF format.
- The InfoPrint ProcessDirector information center. The information center is installed as online help when you install InfoPrint ProcessDirector. You can read the copy on the CD-ROM before installation.
- The InfoPrint ProcessDirector readme file (readme.txt), which tells you how to access the other publications.
- The InfoPrint ProcessDirector release notes. If there is no download Web page for a release of InfoPrint ProcessDirector, the release notes are included on the publications CD-ROM. If there is a download Web page, the release notes are there. The release notes are available only in English.

Accessing the publications CD-ROM on AIX

To access the InfoPrint ProcessDirector publications CD on AIX:

1. Make sure that the cdrom daemon (**cdromd**) is running. Enter:

   ```
   ps -ef | grep cdromd
   ```

   If there are no daemon sessions running, enter:

   ```
   cdromd
   ```

2. Insert the CD in the CD-ROM drive. The CD is mounted automatically.
3. Navigate to the CD-ROM drive (/cdrom/cd0).
4. To launch the InfoPrint ProcessDirector information center, open readme.txt and follow the instructions.

Accessing the publications CD-ROM on Windows

To access the InfoPrint ProcessDirector publications CD on Windows:

1. Insert the CD in the CD-ROM drive. If the Windows system is configured to autorun CDs, Windows Explorer opens automatically to show the contents of the CD.
2. If Windows Explorer does not start automatically, open it and navigate to the CD-ROM drive.
3. To launch the InfoPrint ProcessDirector information center, open readme.txt and follow the instructions.

Chapter 2. Planning for installation

Before you can install InfoPrint ProcessDirector, you must do these planning tasks:

- Obtain required hardware.
- Determine your file system setup.
- Install required software.
- Install optional software.

You can use the checklist in Table 24 on page 103 to help you keep track of the planning tasks you have completed.

Hardware requirements

The system hardware requirements for the InfoPrint ProcessDirector base are:

- One or more 1.9 GHz or faster RISC processors.
- The Inserter Level I, Inserter Level II, and Manufacturing Optimization features require a 64-bit processor for the primary server system.
- If you install your own copy of DB2 to use with InfoPrint ProcessDirector, the system that you install DB2 on must have a 64-bit processor.
- 200 GB free hard-drive space for the primary server. The Inserter Level I, Inserter Level II, and Manufacturing Optimization features might require more space, depending on the number of documents.
- 200 GB free hard-drive space for each Linux or AIX secondary server. We recommend that this space should not be in the rootvg volume group.
- 150 MB free hard-drive space for each Windows secondary server.
- CD-ROM drive.
- Minimum of 4 GB available RAM for the primary server.

  Important: 4 GB means exactly 4,294,967,296 bytes. 4,000,000,000 bytes is not enough. To determine the amount of available RAM, enter this command:

  ```
  lsattr -El sys0 -a realmem
  ```

- For the Inserter Level I, Inserter Level II, or Manufacturing Optimization feature, a minimum of 12 GB RAM.
- For the Transform Features, a minimum of 6 GB RAM.
- If you install the DB2 server on a remote system, a minimum of 4 GB available RAM on that system for the server, plus 4 GB for each DB2 instance for InfoPrint ProcessDirector.
- Minimum of 1 GB available RAM for each secondary server.
- Minimum of 1024 × 768 display resolution.

  Note: A higher display resolution, 1280 × 1024 or greater, is recommended if you have unique layout requirements; for example, you need to display a larger number of printers or input devices in the user interface.
- The AFP Editor, AFP Indexer, Inserter Level I, Inserter Level II, and Manufacturing Optimization features include InfoPrint Visual Workbench, which requires a console attached to the InfoPrint ProcessDirector partition of the server where you use it. This can be the primary server or a Linux or AIX

secondary server, but not a Windows secondary server. If no console is installed, you can install an XWindows emulator such as VNC on a system that runs the Windows operating system to emulate the Linux or AIX console.

If you plan to install a primary server and a backup (failover) server, both systems must meet the minimum requirements for your software load. The hardware does not have to be identical, but the operating system must be identical, including version, release, and service updates. You must also install and configure an external storage system, such a SAN or an NFS-mounted file system, that is compatible with your servers and that has enough free space to hold the required file systems. The recommended size for the external storage system is at least 110 GB.

Manufacturing Optimization has additional hardware requirements. See *Installing and Configuring the Manufacturing Optimization Feature*, G550-1070.

The performance of InfoPrint ProcessDirector and its attached printers depends on the availability and efficiency of memory, processors, disk space, and network resources in the system configuration. Performance also depends on the content of the print data streams being processed and the overall load on the system. For example, complex print jobs, such as those containing images or bar codes, require more resources than those containing plain text. For help determining which hardware configuration meets your print requirements, contact your InfoPrint Solutions Company customer support specialist.

Primary server

The hardware required to install the primary InfoPrint ProcessDirector server is a pSeries system that can run one of these operating systems:

- AIX 5L™ Version 5.3, Technology Level 5, Service Pack 4 or later
- AIX Version 6.1, Technology Level 02 or later

The operating system for a new installation can be either 32-bit or 64-bit. The operating system level does not have to be the same on the primary server and secondary AIX servers.

If you plan to install a primary server with a backup server, the servers must have the same operating system installed at the same level (version, release, service update).

Secondary servers

You can install InfoPrint ProcessDirector on AIX, Linux, or Windows systems that have a minimum of 1 GB RAM:

- AIX secondary servers require a pSeries system that runs AIX 5L Version 5.3, Technology Level 5, Service Pack 4 or later; or AIX Version 6.1, Technology Level 02, or later.
- Linux secondary servers require an xSeries® system with SUSE Linux Enterprise Server (SLES) 9.0 with Service Pack 3 (SP3) for x86, SLES 10.0 with Service Pack 1 (SP1) for x86, SLES 10.0 with Service Pack 2 (SP2) for x86, or SLES 10.0 with Service Pack 2 (SP2) for x86_64.
- Windows secondary servers require an xSeries system running one of these operating systems: Windows XP Professional with Service Pack 2 or later, or Windows 2003 Server with Service Pack 1 or later. In addition, the Windows system must have Microsoft Windows Services for UNIX (SFU) Version 3.5 or later.

Planning for file systems

You can set up your file systems in any available volume group, but we recommend creating a new volume group. If you plan to install a primary server and a backup server, you must create them on the SAN or mounted file system so both servers can access them.

- On AIX primary or secondary servers:
  - You need to set up file systems and mount the file systems on your system before you install InfoPrint ProcessDirector.
  - We recommend creating enhanced journaled file systems (JFS2).
- On Linux secondary servers:
  - A single partition is the simplest file system setup. The InfoPrint ProcessDirector installer can create file systems in a single partition automatically.
  - Multiple partitions let the system continue functioning when it runs out of space in one partition. If you want to set up file systems in multiple partitions, you need to create the file systems and mount the file systems on your system before you install InfoPrint ProcessDirector.
  - When setting up partitions of the Linux system for InfoPrint ProcessDirector, do not use Logical Volume Manager (LVM). Use only Hardware RAID or separate partitions. Hardware RAID 0 provides the best performance.
- On Windows secondary servers, you do not have to set up file systems before installation.

When you determine the size and location of file systems, consider these factors:
- Storage and backup needs
- Failure recovery

Primary server file systems

You must create the file systems listed in Table 2 before you install InfoPrint ProcessDirector. Create and mount the /aiw file system before you create the other file systems.

Table 2. File systems to create for a primary InfoPrint ProcessDirector AIX server

File system	Recommended size	Minimum size	Description
/aiw	80+ GB	20 GB	File system for InfoPrint ProcessDirector print jobs, resources, backup files, and trace files. This file system is shared by the secondary servers as a mounted file system.
/aiw/aiw1/db2	20 GB	10 GB	File system for DB2 tables when DB2 is installed on the same system as the primary server (either the InfoPrint ProcessDirector version of DB2 or your own copy).
/aiw/aiw1/db2_logs	2 GB	2 GB	File system for DB2 logs when DB2 is installed on the same system as the primary server (either the InfoPrint ProcessDirector version of DB2 or your own copy).
Remote database location (DB2 administrator's choice)	22 GB	12 GB	File system for DB2 tables and logs when DB2 is installed on a different system.
/var/aiw	5 GB	5 GB	File system for debug information from InfoPrint ProcessDirector.

Table 3 shows the file systems that you must create if InfoPrint Manager for AIX is not installed on the same server. If InfoPrint Manager for AIX is already installed, these file systems have been created. Increase their size if necessary to accommodate both products. Create and mount the /var/psf file system before you create /var/psf/segments.

Table 3. File systems that InfoPrint Manager for AIX also uses

File system	Recommended size	Minimum size	Description
/var/psf	5 GB	5 GB	File system for PSF configuration and temporary files.
/var/psf/segments	45 GB	10 GB	File system used to improve performance. This file system must be bigger than your biggest job. It requires enough space to store data for concurrent jobs on multiple printers. The recommended minimum size is 45 GB for five printers. Increase the size by 10 GB for each additional printer.

Table 4 shows the file systems that you create when you install the AIX operating system. You might need to increase the size of these file systems before you install InfoPrint ProcessDirector.

Table 4. Existing file systems that the primary InfoPrint ProcessDirector AIX server uses

File system	Recommended size	Minimum size	Description
/var	Varies	Set as an operating system default	File system that contains the /var/spool/lpd directory, used to spool jobs received by LPD protocol. This file system must be large enough to hold all of the print files that you receive at one time with the LPD protocol.
/home (default)	500 MB free space	500 MB free space	File system that contains the home directory of the DB2 instance user (when you install a copy of DB2 on the primary server system only).
/home (default)	5.5 MB free space	5.5 MB free space	File system that contains the home directory of the InfoPrint ProcessDirector DB2 client user (when you install the DB2 client to work with a DB2 server on a different system only).
/opt	1.2 GB free space if Reports is not installed; 2 GB free space if Reports is installed	1.2 GB free space if Reports is not installed; 2 GB free space if Reports is installed	File system for InfoPrint ProcessDirector code.
/tmp	250 MB free space	250 MB free space	Temporary space used by the InfoPrint ProcessDirector installation program. **Note:** The /tmp file system must not be mounted with the **noexec** option. To verify that the **noexec** option is not used, enter `mount` on the command line. If the response does not include an entry for the /tmp file system, check the options for the / file system.

For the file systems that InfoPrint ProcessDirector manages, ownership and permissions must be set as shown in Table 5 on page 15.

Table 5. Ownership and permissions for AIX primary server file systems

File system	Owner	Group	Permissions
/var/aiw	root	system	775 - drwxrwxrwx
/var/psf (See **Note 1**.)	root	printq	2775 - drwxrwsr-x
/var/psf/segments (See **Note 1**.)	root	printq	2775 - drwxrwsrwx
/aiw/aiw1/db2 (See **Note 2**.)	root	system	755 - drwxr-xr-x
/aiw/aiw1/db2_logs (See **Note 2**.)	root	system	755 - drwxr-xr-x
/aiw	root	system	755 - drwxr-xr-x

Notes:

1. If InfoPrint Manager for AIX is already installed, do not change any settings for this file system.
2. The InfoPrint ProcessDirector installation program changes the ownership to **aiw1** and group to **aiwgrp1** after it creates the **aiw1** user and the **aiwgrp1** group.

AIX secondary server file systems

Table 6 shows the file system that you must create for an AIX secondary server.

Table 6. File system to create for a secondary InfoPrint ProcessDirector AIX server

File system	Recommended size	Minimum size	Description
/var/aiw	5 GB	5 GB	File system for debug information from InfoPrint ProcessDirector.

Table 7 shows the file systems that you must create if InfoPrint Manager for AIX is not installed on the secondary server. If InfoPrint Manager for AIX is already installed, these file systems have been created. Increase their size if necessary to accommodate both products.

Table 7. File systems that InfoPrint Manager for AIX also uses

File system	Recommended size	Minimum size	Description
/var/psf	5 GB	5 GB	File system for PSF configuration and temporary files.
/var/psf/segments	45 GB	10 GB	File system used to improve performance. This file system must be bigger than your biggest job. It requires enough space to store data for concurrent jobs on multiple printers. The recommended minimum size is 45 GB for five printers. Increase the size by 10 GB for each additional printer.

Table 8 on page 16 shows the file systems that you create when you install the AIX operating system. You might need to increase the size of these file systems before you install InfoPrint ProcessDirector.

Table 8. Existing file systems that the secondary InfoPrint ProcessDirector AIX server uses

File system	Recommended size	Minimum size	Description
/var/spool/lpd	Varies	Set as an operating system default	File system used to spool jobs received by LPD protocol. This file system must be large enough to hold all of the print files that you receive at one time with the LPD protocol.
/opt	1.2 GB free space if Reports is not installed; 2 GB free space if Reports is installed	1.2 GB free space if Reports is not installed; 2 GB free space if Reports is installed	File system for InfoPrint ProcessDirector code.
/tmp	250 MB free space	250 MB free space	Temporary space used by the InfoPrint ProcessDirector installation program. **Note:** The /tmp file system must not be mounted with the **noexec** option. To verify that the **noexec** option is not used, enter `mount` on the command line. If the response does not include an entry for the /tmp file system, check the options for the / file system.

For the file systems that InfoPrint ProcessDirector manages, ownership and permissions must be set as shown in Table 9.

Table 9. Ownership and permissions for AIX secondary server file systems

File system	Owner	Group	Permissions
/var/aiw	root	system	`777 - drwxrwxrwx`
/var/psf (See **Note**.)	root	printq	`2775 - drwxrwsr-x`
/var/psf/segments (See **Note**.)	root	printq	`2777 - drwxrwsrwx`
Note: If InfoPrint Manager for AIX is installed on the secondary server, do not change any settings for this file system.			

Linux secondary server file systems

You can let the InfoPrint ProcessDirector installer create the file systems listed in Table 10, or you can create them before you install InfoPrint ProcessDirector. If you want to use multiple partitions, you must create the file systems manually.

Table 10. File systems for a secondary InfoPrint ProcessDirector Linux server

File system	Recommended size	Minimum size	Description
/var/psf	50 GB	15 GB	File system for PSF files. This file system must be bigger than your biggest job. It requires enough space to store data for concurrent jobs on multiple printers. The recommended size is 45 GB for five printers. Increase the size by 10 GB for each additional printer.

Table 10. File systems for a secondary InfoPrint ProcessDirector Linux server (continued)

File system	Recommended size	Minimum size	Description
/var/aiw	5 GB	5 GB	File system for debug information from InfoPrint ProcessDirector.

Table 11 shows the file systems that you create when you install the Linux operating system. You might need to increase the size of these file systems before you install InfoPrint ProcessDirector.

Table 11. Existing file systems that the secondary InfoPrint ProcessDirector Linux server uses

File system	Recommended size	Minimum size	Description
/var/spool/lpd	Varies	Set as an operating system default	File system used to spool jobs received by LPD protocol. This file system must be large enough to hold all of the print files that you receive at one time with the LPD protocol.
/opt	1.2 GB free space if Reports is not installed; 2 GB free space if Reports is installed	1.2 GB free space if Reports is not installed; 2 GB free space if Reports is installed	File system for InfoPrint ProcessDirector code.
/tmp	250 MB free space	250 MB free space	Temporary space used by the InfoPrint ProcessDirector installation program. **Note:** The /tmp file system must not be mounted with the **noexec** option. To verify that the **noexec** option is not used, enter `mount` on the command line. If the response does not include an entry for the /tmp file system, check the options for the / file system.

For the file systems that InfoPrint ProcessDirector manages, ownership and permissions must be set as shown in Table 12. If the InfoPrint ProcessDirector installer creates the file systems, it sets the correct ownership and permissions automatically.

Table 12. Ownership and permissions for Linux secondary server file systems

File system	Owner	Group	Permissions
/var/aiw	root	sys	`777 - drwxrwxrwx`
/var/psf	root	sys	`2775 - drwxrwsr-x`

Installing required software

InfoPrint ProcessDirector requires this software:

- An operating system.
- DB2.
- A Web browser.
- Adobe Reader.

- The AFP Editor, AFP Indexer, Inserter Level I, Inserter Level II, and Manufacturing Optimization features include InfoPrint Visual Workbench, which requires a console attached to the InfoPrint ProcessDirector partition of the server where you use it. This can be the primary server or a Linux or AIX secondary server, but not a Windows secondary server. If no console is installed, you can install an XWindows emulator such as VNC on a system that runs the Windows operating system to emulate the Linux or AIX console.

Installing an operating system

InfoPrint ProcessDirector requires that the operating system you install supports running 32-bit applications whether the operating system itself is 32-bit or 64-bit. You can install this level of the operating system, depending on the hardware it is installed on:

pSeries system (for primary or AIX secondary):
AIX 5L Version 5.3, Technology Level 5, Service Pack 4 or later; or AIX Version 6.1, Technology Level 02, or later

Restriction: The Inserter Level I and Level II features require a 64-bit operating system for the primary server.

xSeries system (for Linux secondary):
One of these:

- SUSE Linux Enterprise Server (SLES) 9.0 with Service Pack 3 for x86 (32-bit)
- SUSE Linux Enterprise Server (SLES) 10.0 with Service Pack 1 for x86 or later (32-bit)
- SUSE Linux Enterprise Server (SLES) 10.0 with Service Pack 2 for x86 (64-bit)

Restriction: If you install your own copy of DB2 on a Linux system, it requires a 64-bit operating system.

xSeries system (for Windows secondary):
One of these:

- Windows XP Professional with Service Pack 2 or later
- Windows 2003 Server with Service Pack 1 or later

Notes:

- When installing the Windows operating system, select 32-bit mode, even if your hardware supports 64-bit mode.
- To run the Windows secondary server, you must install Windows Services for UNIX® (SFU) Version 3.5 or later. SFU includes all the facilities needed to mount and export network file systems and to map user names.

Installing the AIX operating system

To install the AIX operating system:

1. See the AIX documentation to install AIX 5L Version 5.3, Technology Level 5, Service Pack 4 or later; or AIX Version 6.1, Technology Level 02, or later. Make sure that these components are installed:
   - **Required on both primary and secondary servers:**
     - Perl interpreter (Perl.rte 5.8.2.50 or later).

- A UTF-8 language environment: EN_US, IT_IT, ES_ES, JA_JP, FR_FR, or DE_DE. Use `smit lang` to add a language environment.

  Note: Language environment names are case-sensitive. UTF-8 language environment names are all uppercase.
- The Java™ runtime environment installed on the server must be Version 1.4 with any update level.

- **Required on primary server only:**
  - If you plan to install Windows secondary servers, you must install the Network Information Service (NIS) server 5.3.0.50 or later on the AIX primary server.
  - If you plan to install the Inserter Level I or Inserter Level II feature, you must install a 64-bit kernel.
- **Required on primary server, optional on secondary servers:**
  - On AIX 5.3:
    - Mozilla 1.7.13
    - Adobe Acrobat 7.0 with plug-in for Mozilla
  - On AIX 6.1, Mozilla Firefox 1.5
- **Optional:** If you plan to install InfoPrint ProcessDirector Transform Features, we recommend X Windows System on the primary server because the graphic installer for the Transform Features requires it. If you do not install X Windows System, you can install the Transform Features from the command line.

2. Run these commands and look for the expected results to verify that you have all the prerequisites installed:

Table 13. AIX commands and expected results

Command	Expected result
`oslevel -s`	5300-05-04-*xxxx* (AIX 5.3) or 6100-02-*xx*-*xxxx* (AIX 6.1)
`lslpp -l all | grep perl`	Perl.rte 5.8.2.50
`locale -a`	EN_US, IT_IT, ES_ES, JA_JP, FR_FR, or DE_DE (uppercase)
`java -version`	JRE 1.4
`getconf -a | grep -i kernel`	64 bits
AIX 5.3 only: `lslpp -l all | grep Mozilla`	Mozilla 1.7.13
AIX 6.1 only: `lslpp -l all | grep Firefox`	Firefox 1.5

AIX 5.3 only:
`cd /usr/lpp/Adobe`
`ls -l`
	Adobe Acrobat 7.0

Note: If you have installed a later version of a prerequisite, the version number returned varies.	

3. Create partitions and file systems. See “Planning for file systems” on page 13.
4. If your system has 4 GB of memory, set the paging space to 5440 MB. If your system has other than 4 GB of memory, use this formula to determine the amount of paging space to set: total paging space = 512 MB + (memory size - 256 MB) * 1.25.

- To check your available memory, use the **prtconf -m** command.
- To check your paging space, use the **lsps -a** command.
- To change your paging space, use the **smit chps** command.

5. Verify date, time, and time zone settings through System Management Interface Tool (SMIT) and correct if necessary:

   Click **System Environments → Change/show date and time**.

6. Set up networking based on system networking information:
   a. Make sure that InfoPrint ProcessDirector has access to a Domain Name System (DNS) server. The DNS server must have correct entries for the host name and IP address of each InfoPrint ProcessDirector primary and secondary server on the network.
   b. In your firewall, open any ports that InfoPrint ProcessDirector uses. Depending on your configuration, you might need these ports:

      Table 14. Port numbers

Port number	Use
515	LPD protocol
5001–65535	IPDS™ printers
6001 or alternative	AFP Download Plus or Download for z/OS
6100	DownloadAFP input device
6101	DownloadJobTypeSet input device
6102	DownloadLineData input device
6103	DownloadMultiple input device
6104	DownloadMultipleJobType input device
6986–65535	InfoPrint Transform Manager or Transform Features
15080	InfoPrint ProcessDirector server
15888	InfoPrint ProcessDirector information center
50000	DB2 on a remote system
55555	Primary servers listen for secondary servers

7. Verify network connectivity:
   a. To verify that host name resolution is working, enter this command:

      ```
      host localhost
      ```

      If you can access the DNS server, the response includes the hostname `localhost` or `loopback` and the address `127.0.0.1`. For example:

      ```
      localhost.infoprint.com is 127.0.0.1
      ```

   b. From the system where you will access the InfoPrint ProcessDirector user interface, use both the host name and the IP address to ping the primary InfoPrint ProcessDirector server.
   c. From the secondary server (if any), ping the primary InfoPrint ProcessDirector server.
   d. From the primary server, ping the secondary server (if any).
   e. Contact the network administrator if you are not successful with any of these verifications.
8. Verify that the speed, duplexing, and autonegotiation settings for the Ethernet card are those that your network administrator recommends for optimum performance. Note that the optimum settings are different for each installation.

To display and change these settings:

a. Log in as the root user.

b. Enter `lsattr -E -l ent0 -a media_speed` to display the value of the **media_speed** attribute.

c. If necessary, use the **chdev** command to change the value. For example, this command sets full-duplex mode at a speed of 100 Mb per second with autonegotiation off:

```
chdev -P -l ent0 -a media_speed=100_Full_Duplex
```

This command sets autonegotiation on:

```
chdev -P -l ent0 -a media_speed=Auto_Negotiation
```

Installing the SLES 9.0 operating system

1. See the SLES documentation to install SLES 9.0 with Service Pack 3 for x86. Make sure that these components are installed:
   - **Required:**
     - Japanese installations only:
       - kochi-substitute Version 20030809 or later (font substitutes for Japanese Kochi TrueType fonts)
       - xfntjp Version 20020904 (Japanese fixed fonts for X11)
     - The Java runtime environment installed on the machine must be the IBM Runtime Environment for Linux Java 2 Technology Edition. This version (IBMJAVA2-JRE) is contained in the SLES distribution that is a prerequisite for InfoPrint ProcessDirector; however, several versions of Java are included on the SLES compact disks, so be sure you pick this one.

     Note: The latest levels of some of the required components are only available with Service Pack 3 (SP3).
   - **Optional:**
     - X Windows System
     - libredcarpet-python 2.0.2
     - Adobe Acrobat Reader 7 PDF viewer
     - Mozilla 1.7.13 Web browser
2. Create Linux partitions and file systems. See "Planning for file systems" on page 13 for recommendations and considerations.
3. Run these commands and look for the expected results to verify that you installed SLES correctly:

Table 15. SLES commands and expected results

Command	Expected result

`rpm -qa | grep suse`	`susehelp_en-2004.04.05-3.1`
	`susehelp-2004.04.05-3.1`
	`suse-build-key-1.0-662.10 (for SP3)`

`uname -rv`	One of these: • `2.6.5-7.244-smp #1 SMP Tue Nov 8 20:19:28 UTC 2005` • `2.6.5-7.236-bigsmp #1 SMP Mon Dec 12 18:32:25 UTC 2005` **Note:** `smp` and `bigsmp` might be replaced by `default`.
`getconf GNU_LIBPTHREAD_VERSION`	`NPTL 2.3.5`
`java -fullversion`	`java full version "J2RE 1.4.2 IBM build cxp641420ifx-20040722 (142GA+75755)"` **Note:** The build number might vary.
Note: If you have installed a later version of a prerequisite, the version number returned varies.	

If the command results are not as you expect, use YaST (Yet Another Setup Tool) to make sure you have installed the required components (see Step 1). In YaST, click **Software –> Install/Remove Software**.

4. Verify date, time, and time zone settings through YaST, and correct if necessary:

   Click **System –> Date and Time –> Clock and Time Zone Configuration**. If you change the date, time, or zone, you might have to reboot the system for your changes to take effect.

5. Set up networking based on system networking information:

   a. Make sure that InfoPrint ProcessDirector has access to a Domain Name System (DNS) server. The DNS server must have correct entries for the host name and IP address of each InfoPrint ProcessDirector primary and secondary server on the network.

   b. In your firewall, open any ports that InfoPrint ProcessDirector uses. Depending on your configuration, you might need these ports:

Table 16. Port numbers

Port number	Use
515	LPD protocol
5001–65535	IPDS printers
6001 or alternative	AFP Download Plus or Download for z/OS
6100	DownloadAFP input device
6101	DownloadJobTypeSet input device
6102	DownloadLineData input device
6103	DownloadMultiple input device
6104	DownloadMultipleJobType input device
6986–65535	InfoPrint Transform Manager or Transform Features
15080	InfoPrint ProcessDirector server
15888	InfoPrint ProcessDirector information center
50000	DB2 on a remote system

Table 16. Port numbers (continued)

Port number	Use
55555	Primary servers listen for secondary servers

6. Verify network connectivity:
   a. To verify that host name resolution is working, enter this command:
      ```
      host localhost
      ```
      If you can access the DNS server, the response includes the hostname `localhost` or `loopback` and the address `127.0.0.1`. For example:
      ```
      localhost.infoprint.com is 127.0.0.1
      ```
   b. From the secondary server, ping the primary InfoPrint ProcessDirector server.
   c. From the primary server, ping the secondary server.
   d. Contact the network administrator if you are not successful with any of these verifications.

Installing the SLES 10.0 operating system

1. See the SLES documentation to install SLES 10.0 with Service Pack 1 or later for x86 (32-bit), or SLES 10.0 with Service Pack 2 or later for x86 (64-bit).
   a. Make sure that these components are installed:
      - **Required:**
        - Korn shell. The Korn shell is installed automatically in a new installation, but you must select it if you are migrating from SLES 9.0.
        - The Java runtime environment installed on the machine must be the IBM Runtime Environment for Linux Java 2 Technology Edition. This version (IBMJAVA2-JRE) is contained in the SLES distribution that is a prerequisite for InfoPrint ProcessDirector; however, several versions of Java are included on the SLES compact disks, so be sure you pick this one.
      - **Optional:** X Windows System

      Note: The latest levels of some of the required components are only available with Service Pack 1 (SP1) or later.
   b. If you are migrating from an InfoPrint ProcessDirector installation on SLES 9.0, do not delete Print Services Facility (PSF).
2. Create Linux partitions and file systems. See “Planning for file systems” on page 13 for recommendations and considerations.
3. Run these commands and look for the expected results to verify that you installed SLES correctly:

Table 17. SLES commands and expected results

Command	Expected result

`rpm -qa | grep suse`	`susehelp_en-2006.06.20-1.2`
	`suseRegister-1.2-9.26`
	`susehelp-2006.06.20-1.2`
	`suse-build-key-1.0-685.6`

`rpm -q ksh`	`ksh-93r-12.28`
`uname -rv`	`2.6.16.46-0.12-bigsmp #1 SMP Thu May 17 14:00:09 UTC 2007` **Note:** `bigsmp` might be replaced by `default`.
`getconf GNU_LIBPTHREAD_VERSION`	`NPTL 2.4`
`java -fullversion`	`java full version "J2RE 1.4.2 IBM build cxia32142-20061124 (SR7)"` **Note:** The build number might vary.
Note: If you have installed a later version of a prerequisite, the version number returned varies.	

If the command results are not as you expect, use YaST to make sure you have installed the required components (see Step 1). In YaST, click **Software –> Install/Remove Software**.

4. Verify date, time, and time zone settings through YaST, and correct if necessary:

   Click **System –> Date and Time –> Clock and Time Zone Configuration**. If you change the date, time, or zone, you might have to reboot the system for your changes to take effect.

5. Set up networking based on system networking information:
   a. Make sure that InfoPrint ProcessDirector has access to a Domain Name System (DNS) server. The DNS server must have correct entries for the host name and IP address of each InfoPrint ProcessDirector primary and secondary server on the network.
   b. In your firewall, open any ports that InfoPrint ProcessDirector uses. Depending on your configuration, you might need these ports:

      Table 18. Port numbers

Port number	Use
515	LPD protocol
5001–65535	IPDS printers
6001 or alternative	AFP Download Plus or Download for z/OS
6100	DownloadAFP input device
6101	DownloadJobTypeSet input device
6102	DownloadLineData input device
6103	DownloadMultiple input device
6104	DownloadMultipleJobType input device
6986–65535	InfoPrint Transform Manager or Transform Features
15080	InfoPrint ProcessDirector server
15888	InfoPrint ProcessDirector information center
50000	DB2 on a remote system
55555	Primary servers listen for secondary servers

6. Verify network connectivity:

a. To verify that host name resolution is working, enter this command:
   ```
   host localhost
   ```

   If you can access the DNS server, the response includes the hostname `localhost` or `loopback` and the address `127.0.0.1`. For example:
   ```
   localhost.infoprint.com is 127.0.0.1
   ```
b. From the secondary server, ping the primary InfoPrint ProcessDirector server.
c. From the primary server, ping the secondary server.
d. Contact the network administrator if you are not successful with any of these verifications.

Installing the Windows operating system

When you use a secondary server on a Windows operating system, you must install the Windows operating system and Windows Services for UNIX (SFU) Version 3.5 or later.

To install the Windows operating system, see the Windows documentation to install Windows XP Professional with Service Pack 2 or Windows 2003 Server with Service Pack 1 or later.

Note: When installing the Windows operating system, select 32-bit mode, even if your hardware supports 64-bit mode.

For information about installing SFU, see "Installing Windows Services for UNIX (SFU) on Windows" on page 70.

Installing DB2

You can use the version of DB2 that is supplied with InfoPrint ProcessDirector, or you can install your own copy of DB2. Your own copy can be installed on the InfoPrint ProcessDirector primary server, or on a different AIX or Linux system.

If you install your own copy on the primary server and want to use it with InfoPrint ProcessDirector, your copy must be DB2 Version 9.5 with Service Pack 3. Otherwise, you must use the InfoPrint ProcessDirector version of DB2.

If you want to install your own copy on the primary server and use it in other parts of your business but not with InfoPrint ProcessDirector, you must install DB2 Version 9.0 or later.

Installing the InfoPrint ProcessDirector version of DB2

Use the InfoPrint ProcessDirector version of DB2 if you have no other applications that require DB2. Only InfoPrint ProcessDirector can use this version.

The InfoPrint ProcessDirector version of DB2 is installed automatically when you install the InfoPrint ProcessDirector primary server on a system where no other version of DB2 is installed. If another compatible version of DB2 is installed, you can choose whether to install and use the InfoPrint ProcessDirector version of DB2 or to use the other version of DB2.

When you install InfoPrint ProcessDirector, the installation program creates a DB2 instance and user ID, both called db2inst1. There must be no other DB2 instance or

user ID with this name on the system, even in a different version of DB2. To check whether the db2inst1 instance already exists, log in as the root user and enter this command:

```
/opt/IBM/db2/V9.5/instance/db2ilist
```

Note: The path name might be different if you have installed a version of DB2 other than 9.5 or if DB2 is not installed in the default location.

If you find a DB2 instance called db2inst1, enter this command to delete it:

```
/opt/IBM/db2/V9.5/instance/db2idrop db2inst1
```

Attention: When you delete a DB2 instance, you delete all data in that instance.

InfoPrint ProcessDirector creates these user IDs and user groups for internal use:

DB2 instance user ID
db2inst1

DB2 instance group
db2grp1

DB2 fenced user ID
db2fenc1

DB2 fenced group
db2fgrp1

You should never log in as these users, but you might need to recognize them for recordkeeping and security.

Installing your own copy of DB2 on the primary server system

Use your own copy of DB2 on the same system as InfoPrint ProcessDirector if:

- You have other applications that require DB2 on that system.
- You already have a DB2 license for the system that you want to use with InfoPrint ProcessDirector.
- You want to manage DB2 outside InfoPrint ProcessDirector.

You must install DB2 Version 9.0 with any service pack before you install the InfoPrint ProcessDirector primary server.

When you install InfoPrint ProcessDirector, the installer configures the existing version of DB2. It creates a DB2 instance for InfoPrint ProcessDirector whose default name is aiwinst. No other application should use this DB2 instance.

The installer also creates user IDs and user groups for internal use and prompts you to enter names for them. These names must be unique. The defaults are:

DB2 instance user ID
aiwinst

DB2 instance group
aiwdbgrp

DB2 fenced user ID
aiwfid

DB2 fenced group
aiwdbfgp

You should never log in as these users, but you might need to recognize them for recordkeeping and security.

If you plan to install a configuration that includes two primary servers (an active system and a backup), you must install DB2 on each system. In addition, you must use the same user IDs and user groups on both systems.

If you have to reinstall InfoPrint ProcessDirector, the DB2 instance that the first installation created might still exist. To check, log in as the root user and enter this command:

```
/opt/IBM/db2/V9.5/instance/db2ilist
```

Note: The path name might be different if DB2 is not installed in the default location.

If you find a DB2 instance with the name that you want to use, you cannot reuse it. You can either:

- Enter a different name for the DB2 instance when you reinstall InfoPrint ProcessDirector.
- Enter this command to delete the existing DB2 instance:

  ```
  /opt/IBM/db2/V9.5/instance/db2idrop aiwinst
  ```

  Attention: When you delete a DB2 instance, you delete all data in that instance.

Installing and configuring your own copy of DB2 on a different system

Use your own DB2 server on a different system and a DB2 client on the same system as InfoPrint ProcessDirector if:

- You have other applications that require DB2 on systems that can access the other system.
- You already have a DB2 license for another system that you want to use with InfoPrint ProcessDirector.
- You want to manage DB2 outside InfoPrint ProcessDirector.
- You want to use the same DB2 server with several InfoPrint ProcessDirector primary servers, including sharing the database between an active and a backup server.

The DB2 client and server do not have to be on the same operating system, but they must be at compatible levels of DB2. We recommend the same level and service pack.

Restriction: On Linux, the DB2 server requires a 64-bit operating system.

Before you install the InfoPrint ProcessDirector primary server, you must install and configure a DB2 server on the other system and a DB2 client on the primary server system. If you are installing a manual failover configuration, you must install the DB2 client on both the active and the backup systems.

To install and configure the DB2 server and client:

1. Install DB2 9.5 with Service Pack 3 or later on the other system, using the installation instructions provided with DB2.

   On the **Set up a DB2 instance** panel, choose the option to defer this task until later.

2. Verify that the DB2 system meets the memory and disk requirements to support InfoPrint ProcessDirector, keeping these issues in mind:
   - Each InfoPrint ProcessDirector primary server that connects to this DB2 server must use a separate directory to store its databases. Each of those directories must have 22 GB of space available. By default, the primary servers use the home directory for their instance user to store their databases. If you use the default setting, make sure that the home directory for the instance user is large enough.

     However, in a manual failover configuration, the active and the backup servers share a DB2 instance. As a result, they both use the same directory and only require 22 GB of space, not 44 GB.
   - If you change the directory that the instance uses to store its databases, make sure that the home directory for each instance user has at least 300 MB of space available.
3. Use the provided script to configure DB2 to work with each InfoPrint ProcessDirector primary server that connects to it. This configuration includes: creating a DB2 instance for InfoPrint ProcessDirector to communicate with; tuning the instance; creating the required groups and users (if needed); and starting the instance.

   The script is included on the InfoPrint ProcessDirector PTF CD, starting with PTF US00109.

   To configure the DB2 server:

   a. Insert the PTF CD in the drive and navigate to the aix/db directory.
   b. Type `./setupRemoteDB2.sh` to run the script. Respond to the prompts as required:
      - When the script asks for the DB2 instance name, type an instance name to use with one of your primary servers.

        Each primary server must have a unique DB2 instance. The default instance name is **aiwinst**; you can use this name with one of your primary servers. Record the instance name and password to use when you install InfoPrint ProcessDirector.
      - When the script asks for the **DB2 instance group** and the **DB2 fenced user group**, you can choose the default group or another existing group, or specify a new group to be created. The defaults are:

        DB2 instance group
        aiwdbgrp

        DB2 fenced group
        aiwdbfgp

        The instance user uses the DB2 instance group as its primary group; the DB2 fenced user uses the DB2 fenced user group as its primary group. If you are unsure which group to use, consult your DB2 administrator.
      - When the script asks for the **DB2 fenced user name**, you can choose the default user or another existing user, or specify a new user to be created. The default is **aiwfid**. If you are unsure which user to use, consult your DB2 administrator. You should never log in as this user, but you might need to recognize it for recordkeeping and security.
      - When the script asks for a DB2 instance port number, enter the port that you want DB2 to listen on for the primary server that uses this instance. Record the port number to use when you install InfoPrint ProcessDirector.

c. Run the script again for each primary server that will connect to DB2.

   Note: If you are configuring a manual failover environment, the backup server shares the DB2 instance with the active server. Do not run the script again for a backup server.

d. Record the host name or IP address of the system that DB2 is installed on.

4. Install the DB2 client on each of the systems that you plan to install an InfoPrint ProcessDirector primary server on, including any backup systems. Use the DB2 installation CD and choose the **IBM Data Server Runtime Client**.

   On the **Set up a DB2 instance** panel of the installer, choose the option to defer this task until later.

   After the installation finishes, install Service Pack 3 for the client.

5. Continue installing InfoPrint ProcessDirector using the instructions in Chapter 3, "Installing InfoPrint ProcessDirector on AIX," on page 43 or "Installing manual failover servers" on page 50.

When you install InfoPrint ProcessDirector, the installer configures the DB2 client. It creates a DB2 instance for InfoPrint ProcessDirector whose default name is aiwclnt. No other application should use this DB2 instance.

The installer also creates a user IDs and user group for internal use and prompts you to enter names for them. These names must be unique on the local system. The defaults are:

DB2 instance user ID
: aiwclnt

DB2 instance group
: aiwdbgrp

You should never log in as this user, but you might need to recognize it for recordkeeping and security.

If you plan to install a configuration that includes two primary servers (an active system and a backup), you must install a DB2 client on each system. In addition, you must use the same user IDs and user groups on both systems.

If you have to reinstall InfoPrint ProcessDirector, the DB2 instance that the first installation created might still exist. To check, log in as the root user and enter this command:

```
/opt/IBM/db2/V9.5/instance/db2ilist
```

Note: The path name might be different if DB2 is not installed in the default location.

If you find a DB2 instance with the name that you want to use, you cannot reuse it. You can either:

- Enter a different name for the DB2 instance when you reinstall InfoPrint ProcessDirector.
- Enter this command to delete the existing DB2 instance:

  ```
  /opt/IBM/db2/V9.5/instance/db2idrop aiwinst
  ```

  Attention: When you delete a DB2 instance, you delete all data in that instance.

Migrating to another DB2 configuration

If you have already installed InfoPrint ProcessDirector and want to migrate to a different configuration of DB2, you must update InfoPrint ProcessDirector to PTF US00109 or later, back up the system, and run a migration script.

The migration script saves the objects in the system. If you are migrating from the InfoPrint ProcessDirector version of DB2, it also uninstalls InfoPrint ProcessDirector. In this case only, you must reinstall InfoPrint ProcessDirector. When you activate, the objects are restored.

Table 19 shows the DB2 configuration migration paths that InfoPrint ProcessDirector supports.

Table 19. DB2 migration paths

Existing DB2 installation	Can migrate to
InfoPrint ProcessDirector version	• DB2 9.5 on the same system • DB2 9.5 with Service Pack 3 on a different Linux or AIX system
DB2 9.5 with any service pack on the same system as the primary server	• A different DB2 9.5 with Service Pack 3 installation on the same system • DB2 9.5 with Service Pack 3 on a different Linux or AIX system
DB2 9.5 with Service Pack 3 on a different Linux or AIX system	• DB2 9.5 with Service Pack 3 on the same system as the primary server • DB2 9.5 with Service Pack 3 on yet another Linux or AIX system

Migrating from the InfoPrint ProcessDirector version of DB2 to another configuration

To migrate from the version of DB2 that is included in InfoPrint ProcessDirector to any other DB2 configuration:

1. Back up the system using the instructions in "Backing up data" on page 89.
2. Insert the PTF CD in the drive and navigate to the aix/db directory.
3. Run the migration script. Enter this command:

   ```
   ./migrateDB.sh
   ```

   If you see a message that the migration script cannot uninstall InfoPrint ProcessDirector, uninstall it manually. See "Uninstalling InfoPrint ProcessDirector" on page 85 for instructions.
4. Make sure that the migration script completed successfully:
   a. Open the log file: /opt/IBM/aiw/V1.0/logs/aiwuninstall.log
   b. Look for these messages:
      - `AIWP0082I The Unload utility completed successfully.`

        If you see this message, continue with the next step.
      - `AIWP6164E The database Unload utility failed. See messages in file: /aiw/aiw1/migrate/Unload_messages.txt`

        If you see this message, do not continue with this procedure. Call InfoPrint Solutions Company Software Support for assistance.

5. Install DB2 on the system where you want to run the DB2 server, using the installation instructions provided with DB2.
   - If you install DB2 on a different system, continue with step 6.

     If you install DB2 on a different system, that system does not have to have the same operating system as the primary server system.
   - If you install DB2 on the same system as the primary server that is going to use it, continue with step 7 on page 32.
6. If you installed DB2 on a different system:
   a. Verify that the system meets the memory and disk requirements to support InfoPrint ProcessDirector, keeping these issues in mind:
      - Each InfoPrint ProcessDirector primary server that connects to this DB2 server must use a separate directory to store its databases. Each of those directories must have 22 GB of space available. By default, the primary servers use the home directory for their instance user to store their databases. If you use the default setting, make sure that the home directory for the instance user is large enough.
      - If you change the directory that the instance uses to store its databases, make sure that the home directory for each instance user has at least 300 MB of space available.

   b. Use the provided script to configure DB2 to work with each InfoPrint ProcessDirector primary server that connects to it. This configuration includes: creating a DB2 instance for InfoPrint ProcessDirector to communicate with; tuning the instance; creating the required groups and users (if needed); and starting the instance.

      To configure the DB2 server:

      1) Insert the PTF CD in the drive and navigate to the aix/db directory.
      2) Type `./setupRemoteDB2.sh` to run the script. Respond to the prompts as required:
         - When the script asks for the DB2 instance name, type an instance name to use with one of your primary servers.

           Each primary server must have a unique DB2 instance. The default instance name is **aiwinst**; you can use this name with one of your primary servers. Record the instance name and password to use when you install InfoPrint ProcessDirector.
         - When the script asks for the **DB2 instance group** and the **DB2 fenced user group**, you can choose the default group or another existing group, or specify a new group to be created. The defaults are:

           DB2 instance group
           aiwdbgrp

           DB2 fenced group
           aiwdbfgp

           The instance user uses the DB2 instance group as its primary group; the DB2 fenced user uses the DB2 fenced user group as its primary group. If you are unsure which group to use, consult your DB2 administrator.
         - When the script asks for the **DB2 fenced user name**, you can choose the default user or another existing user, or specify a new user to be created. The default is **aiwfid**. If you are unsure which user to use, consult your DB2 administrator. You should never log in as this user, but you might need to recognize it for recordkeeping and security.

- When the script asks for a DB2 instance port number, enter the port that you want DB2 to listen on for the primary server that uses this instance. Record the port number to use when you install InfoPrint ProcessDirector.

3) Run the script again for each primary server that will connect to DB2.

   Note: If you are configuring a manual failover environment, the backup server shares the DB2 instance with the active server. Do not run the script again for a backup server.

4) Record the host name or IP address of the system that DB2 is installed on.

c. Install the DB2 client on each of the systems that you plan to install an InfoPrint ProcessDirector primary server on. Use the DB2 installation CD and choose the **IBM Data Server Runtime Client**.

   On the **Set up a DB2 instance** panel of the installer, choose the option to defer this task until later.

   After the installation finishes, install Service Pack 3 for the client.

d. Continue with step 7.

7. Install (or reinstall) InfoPrint ProcessDirector as if this were a new installation. Follow the instructions in "Installing InfoPrint ProcessDirector on the primary server" on page 44. The installer configures the DB2 server or client as needed. It creates user IDs and user groups for internal use and prompts you to enter names for them. The defaults are:

User ID or group	DB2 installed on the primary server system	Primary server system client for DB2 server installed on another system
DB2 instance user ID	aiwinst	aiwclnt
DB2 instance group	aiwdbgrp	aiwdbgrp
DB2 fenced user ID	aiwfid	
DB2 fenced group	aiwdbfgp	

   You should never log in as these users, but you might need to recognize them for recordkeeping and security. When you activate the installation, the objects that you backed up are recreated.

Migrating from a separate copy of DB2 to another DB2 configuration

To migrate from a copy of DB2 that is installed either on the same system as the primary server or on a different system to a different DB2 configuration:

1. Back up the system using the instructions in "Backing up data" on page 89.
2. Install PTF US00109 or later for InfoPrint ProcessDirector. See Chapter 5, "Backing up data and applying service," on page 89 for instructions. When the installation program finishes, select the option to **Activate later** and finish the installation.
3. Install DB2 on the system where you want to run the DB2 server, using the installation instructions provided with DB2.
   - If you install DB2 on the same system as the primary server that is going to use it, continue with step 5 on page 34.
   - If you install DB2 on a different system, continue with step 4 on page 33.

If you install DB2 on a different system, that system does not have to have the same operating system as the primary server system.

4. If you installed DB2 on a different system:
   a. Verify that the system meets the memory and disk requirements to support InfoPrint ProcessDirector, keeping these issues in mind:
      - Each InfoPrint ProcessDirector primary server that connects to this DB2 server must use a separate directory to store its databases. Each of those directories must have 22 GB of space available. By default, the primary servers use the home directory for their instance user to store their databases. If you use the default setting, make sure that the home directory for the instance user is large enough.
      - If you change the directory that the instance uses to store its databases, make sure that the home directory for each instance user has at least 300 MB of space available.
   b. Use the provided script to configure DB2 to work with each InfoPrint ProcessDirector primary server that connects to it. This configuration includes: creating a DB2 instance for InfoPrint ProcessDirector to communicate with; tuning the instance; creating the required groups and users (if needed); and starting the instance.

      To configure the DB2 server:

      1) Insert the PTF CD in the drive and navigate to the aix/db directory.
      2) Type `./setupRemoteDB2.sh` to run the script. Respond to the prompts as required:
         - When the script asks for the DB2 instance name, type an instance name to use with one of your primary servers.

           Each primary server must have a unique DB2 instance. The default instance name is **aiwinst**; you can use this name with one of your primary servers. Record the instance name and password to use when you install InfoPrint ProcessDirector.
         - When the script asks for the **DB2 instance group** and the **DB2 fenced user group**, you can choose the default group or another existing group, or specify a new group to be created. The defaults are:

           DB2 instance group
           aiwdbgrp

           DB2 fenced group
           aiwdbfgp

           The instance user uses the DB2 instance group as its primary group; the DB2 fenced user uses the DB2 fenced user group as its primary group. If you are unsure which group to use, consult your DB2 administrator.
         - When the script asks for the **DB2 fenced user name**, you can choose the default user or another existing user, or specify a new user to be created. The default is **aiwfid**. If you are unsure which user to use, consult your DB2 administrator. You should never log in as this user, but you might need to recognize it for recordkeeping and security.
         - When the script asks for a DB2 instance port number, enter the port that you want DB2 to listen on for the primary server that uses this instance. Record the port number to use when you install InfoPrint ProcessDirector.
      3) Run the script again for each primary server that will connect to DB2.

Note: If you are configuring a manual failover environment, the backup server shares the DB2 instance with the active server. Do not run the script again for a backup server.

4) Record the host name or IP address of the system that DB2 is installed on.

c. Install the DB2 client on each of the systems that you plan to install an InfoPrint ProcessDirector primary server on. Use the DB2 installation CD and choose the **IBM Data Server Runtime Client**.

On the **Set up a DB2 instance** panel of the installer, choose the option to defer this task until later.

After the installation finishes, install Service Pack 3 for the client.

5. Insert the PTF CD in the drive and navigate to the aix/db directory.
6. Run the migration script. Enter this command:

```
./migrateDB.sh
```

7. Make sure that the migration script completed successfully:
   a. Open the log file: /opt/IBM/aiw/V1.0/logs/aiwuninstall.log
   b. Look for these messages:
      - `AIWP0082I The Unload utility completed successfully.`

        If you see this message, continue with the next step.
      - `AIWP6164E The database Unload utility failed. See messages in file: /aiw/aiw1/migrate/Unload_messages.txt`

        If you see this message, do not continue with this procedure. Call InfoPrint Solutions Company Software Support for assistance.
8. Log in as the aiw1 user and enter this command to restart InfoPrint ProcessDirector:

```
startaiw
```

Installing a Web browser

InfoPrint ProcessDirector requires a Web browser to access and display its user interface. You can access the user interface from the same system where the primary server is installed or from another system. One of these browsers must be installed and configured on the system where you access the user interface:

Table 20. Web browser requirements for the user interface

On system:	Install browser:	Obtain from:
AIX 5.3	Mozilla 1.7.13	One of these: • IBM Web site (http://www.ibm.com). Enter `mozilla 1.7 AIX` in the search field and follow the links. • *Mozilla for AIX* CD, which you can order with the AIX operating system.
AIX 6.1	Mozilla Firefox 1.5 or later	One of these: • IBM Web site (http://www.ibm.com). Enter `firefox AIX` in the search field and follow the links. • *Mozilla Firefox for AIX* CD, which you can order with the AIX operating system.

Table 20. Web browser requirements for the user interface (continued)

On system:	Install browser:	Obtain from:
SLES Linux 9.0	Mozilla 1.7.13	The SLES 9.0 operating system. The browser is not installed by default when you install the operating system.
SLES Linux 10.0	Mozilla Firefox 2.0.0.9 or later	The SLES 10.0 operating system. The browser is installed by default when you install the operating system.
Windows	One of these: • Microsoft Internet Explorer 6.*x* (Windows XP only) • Microsoft Internet Explorer 7 • Mozilla 1.7.13 • Mozilla Firefox 2.0.0.9 or later	One of these: • Internet Explorer: the Windows operating system or Microsoft Web site (http://www.microsoft.com) • Mozilla and Firefox: Mozilla Web site (http://www.mozilla.org)

The user interface has a Web-based file viewer that requires the Adobe Reader to display AFP or PDF files so you can select pages to reprint. To view print files, these supported versions of Adobe Reader must be installed on the AIX, Linux, or Windows system where you are accessing the user interface:

Table 21. Adobe Reader requirements for the file viewer

On system:	Software required:	Obtain from:
AIX 5.3	Adobe Reader 7.0 and Mozilla plug-in	Adobe Web site (http://www.adobe.com). Select **Get Adobe Reader** on the main page, then click **Different language or operating system?** In the **Select an operating system** field, select **AIX**. In the **Select an Installer** field, select **AIX (.tar.gz)**. You are prompted to download the Mozilla plug-in after Adobe 7 has been downloaded. If Adobe 7 is already installed, you can copy the plug-in from the Adobe installation directory to the Mozilla `plugins` directory. Enter this command (assuming a default installation directory) to install the plug-in: `cp /usr/lpp/Adobe/Acrobat7.0/Browser/ rs6000aix/nppdf.so usr/mozilla/base/ plugins`
AIX 6.1	**Restriction:** Adobe Reader does not support AIX 6.1.	
SLES Linux 9.0	Adobe Reader 7.0	The SLES 9.0 operating system. You might need to make the Adobe Reader available to the Web browser after InfoPrint ProcessDirector is installed. See "Making the Adobe Reader available to the Web browser" on page 38.

Table 21. Adobe Reader requirements for the file viewer (continued)

On system:	Software required:	Obtain from:
SLES Linux 10.0	Adobe Reader 7.0 or later	Adobe Web site. Select **Get Adobe Reader** on the main page, then click **Different language or operating system?** In the **Select an operating system** field, select **Linux**. In the **Select an Installer** field, select **Linux (x86—.rpm)**. You might need to make the Adobe Reader available to the Web browser after InfoPrint ProcessDirector is installed. See "Making the Adobe Reader available to the Web browser" on page 38.
Windows	Adobe Reader 7.0	Adobe Web site. To obtain Adobe Reader in your preferred language, select **Get Adobe Reader** on the main page, then click **Different language or operating system?**.

To view jobs that use double-byte fonts in InfoPrint ProcessDirector, be sure that the Japanese Language Support Package for the Adobe Reader is installed on your system. This package is available from the Adobe Web site (http://www.adobe.com/products/acrobat/acrrasianfontpack.html).

Configuring Mozilla

To access the InfoPrint ProcessDirector user interface with the Mozilla Web browser, configure the browser with these settings:

1. Click **Edit** → **Preferences**.
2. To change the language for text used in the user interface and for most of the messages that InfoPrint ProcessDirector issues, click **Navigator** → **Languages** in the **Category** pane. Add your language to the top of the list, and then click **OK**. InfoPrint ProcessDirector supports these languages and locales:
   - Brazilian Portuguese (pt_BR)
   - English (en_US)
   - French (fr_FR)
   - German (de_DE)
   - Italian (it_IT)
   - Japanese (ja_JP)
   - Russian (ru_RU)
   - Simplified Chinese (zh_CN)
   - Spanish (es_ES)
   - Traditional Chinese (zh_TW)
3. In the **Category** pane, click **Privacy & Security** → **Cookies**.
4. Click **Allow all cookies**.
5. In the **Category** pane, click **Advanced** → **Scripts & Plugins**.
6. Under **Enable JavaScript for**, click **Navigator**.
7. In the **Category** pane, click **Advanced** → **Cache**.
8. Under **Compare the page in the cache to the page on the network**, click **Every time I view this page**.
9. Click **OK**.

Configuring Mozilla Firefox

To access the InfoPrint ProcessDirector user interface with the Mozilla Firefox Web browser, configure the browser with these settings:

1. Click **Tools** → **Options**.
2. Click **Content**. Verify that the **Enable JavaScript** option is selected.
3. Click **Privacy**. In the **Cookies** area, select to accept cookies from sites.
4. To change the language that InfoPrint ProcessDirector uses for the user interface text and most of the messages that it issues, click **Advanced**. In the **General** tab **Languages** area, click **Choose** and follow the instructions to add your language to the top of the list. InfoPrint ProcessDirector supports these languages and locales:
   - Brazilian Portuguese (pt_BR)
   - English (en_US)
   - French (fr_FR)
   - German (de_DE)
   - Italian (it_IT)
   - Japanese (ja_JP)
   - Russian (ru_RU)
   - Simplified Chinese (zh_CN)
   - Spanish (es_ES)
   - Traditional Chinese (zh_TW)
5. Click **OK**.
6. Optional: In general, we do not recommend logging in to InfoPrint ProcessDirector as more than one user from the same workstation. If you do, each user must log in to a different browser session. To make this possible, you must create a browser profile for each additional user ID and enable Firefox to use more than one profile at a time:
   a. Enter this command:
      ```
      firefox.exe -ProfileManager
      ```
   b. Follow the instructions in the Profile Manager to create a new profile.
   c. In the Windows Control Panel, click **System** → **Advanced** → **Environment Variables**.
   d. In the System Variables area, click **New**.
   e. In the **Variable name** field, type `MOZ_NO_REMOTE`.
   f. In the **Variable value** field, type `1`.
   g. Click **OK** to close the New System Variable window.
   h. Click **OK** to close the Environment Variables window.
   i. Click **OK** to close the System Properties window.

   Whenever you start Firefox, you will be able to choose a profile that is not already in use.

Configuring Internet Explorer

To access the InfoPrint ProcessDirector user interface with the Internet Explorer Web browser, configure the browser with these settings:

1. Click **Tools** → **Internet Options**.
2. On the **General** tab, click **Settings**.
3. Under **Check for newer versions of stored pages**, select **Every time I visit the webpage** and click **OK**.

4. To change the language that InfoPrint ProcessDirector uses for the user interface text and most of the messages that it issues, click **Languages**. Then, click **Add** to add your language to the list. Move your language up so that it is the first entry in the list. Click **OK**. InfoPrint ProcessDirector supports these languages and locales:
   - Brazilian Portuguese (pt_BR)
   - English (en_US)
   - French (fr_FR)
   - German (de_DE)
   - Italian (it_IT)
   - Japanese (ja_JP)
   - Russian (ru_RU)
   - Simplified Chinese (zh_CN)
   - Spanish (es_ES)
   - Traditional Chinese (zh_TW)
5. Click the **Security** tab.
6. With the Internet zone selected, click **Custom Level**.
7. Make sure that **Enable** is selected for **Allow META REFRESH**.
8. Make sure that **Enable** is selected for **Active scripting** in the **Scripting** section.
9. Click **OK**.

Making the Adobe Reader available to the Web browser

You might need to make Adobe Reader available to the Mozilla or Firefox Web browser on the Linux system after you install it. This might be necessary even on SLES 9.0, where Adobe Reader 7.0 is available at installation. If so, do this procedure:

1. Enter `/usr/local/Adobe/Acrobat`*n.n*`/Browser/install_browser_plugin` at the command prompt. If the command is not found, enter `/usr/X11R6/lib/Acrobat`*n*`/Browser/install_browser_plugin`.
   - On SLES 9.0, *n.n* is 7.0 and *n* is 7.
   - On SLES 10.0, the values of *n.n* and *n* depend on the version and release of Adobe Reader that is installed.
2. Press Enter to install the Web browser plug-in.
3. Click the option for the user-specific installation.
4. Close any open Web browsers.
5. Open a new browser.
6. To check that the plug-in installed correctly:
   - In Mozilla, click **Help** → **About Plug-ins**.
   - In Firefox, type `about:plugins` in the location bar and press Enter.

   You should see Adobe Acrobat.
7. In Firefox, you must also make sure that the plugin is enabled for PDF files:
   a. Click **Tools** → **Options** → **Content**.
   b. In the File Types area, click **Manage**.
   c. Select **PDF** in the list of file extensions. Click **Change Action**, then select **Use this Plugin: (Adobe Acrobat)**.

Planning for optional software

You can install optional software to be used with InfoPrint ProcessDirector. The categories of optional software are:

- Job submission
- Data transforms
- InfoPrint Manager for AIX
- Fonts

Job submission

InfoPrint ProcessDirector can receive jobs for processing from the Job Entry Subsystem (JES) spool on a z/OS host from any system that can send jobs to hot folders or to the primary server using the LPD protocol. Jobs are submitted to input devices that you define in InfoPrint ProcessDirector. Input devices receive the jobs and then initiate job processing. The supported job submission methods are:

AFP Download Plus
: Converts line data to AFP data and transmits the print job with all required resources across the TCP/IP network from the host system to InfoPrint ProcessDirector for printing.

Download for z/OS
: Automatically transmits output across the TCP/IP network from the host system to InfoPrint ProcessDirector for printing or archiving.

Hot folders
: Receives print files through File Transfer Protocol (FTP) or your preferred file copying method. When you copy or move a print file to the hot folder directory, the input device that is associated with the hot folder automatically receives the job and initiates job processing.

LPD
: Receives jobs that are submitted using the line printer daemon (LPD) protocol. Users can use the **lpr** command or another command that uses the LPD protocol to submit jobs to an InfoPrint ProcessDirector LPD input device. The input device automatically receives the job and initiates job processing.

Download for z/OS and AFP Download Plus are separately ordered features of PSF for z/OS. For information about PSF for z/OS and its features, see the InfoPrint Solutions Company Web site (http://www.infoprint.com).

In addition to deciding which job submission methods to use, you need to determine the naming convention for the job submission directories on the primary server where you want the input files to be. You must specify these directories when you create an input device:

Folder location directory
: The name of the directory that an input device monitors for incoming jobs. For example, `/aiw/aiw1/System/dl` for Download for z/OS or AFP Download Plus jobs, `/aiw/aiw1/System/hf` for hot folder jobs, or `/aiw/aiw1/System/LPD` for LPD jobs.

Staging location directory
: The name of the directory where the job submission method places the input file. Consider creating a subdirectory of the folder location directory. For example, `/aiw/aiw1/System/dl/AFP/Staged` for AFP input files received

from Download for z/OS or AFP Download Plus, or `/aiw/aiw1/System/hf/LineData/Staged` for line data input files received from hot folders.

Each directory must provide read and write access to a group that the `aiw1` user ID is a member of so that InfoPrint ProcessDirector can read and modify the input files. The default group is `aiwgrp1`. For more information about the `aiwgrp1` group, see "Completing post-installation tasks" on page 73.

Before you use Download for z/OS or AFP Download Plus with InfoPrint ProcessDirector, you must configure the software to communicate with InfoPrint ProcessDirector. Some of the configuration tasks include:

- Define a JES initialization statement for a functional subsystem application (FSA).
- Create a startup procedure to identify program name, region size, and printing defaults for the FSA.
- Create a routing control data set that points to the port number and IP address of the InfoPrint ProcessDirector server. You only do this in Download for z/OS.
- Use installation exits, if necessary, for modifications to software functions. Both Download for z/OS and AFP Download Plus can use installation Exit 15, which transmits additional print parameters to InfoPrint ProcessDirector.
- If you want a Download input device whose parent is an AIX primary or secondary server to reuse a port that you have already defined for use with InfoPrint Manager, use the **kill** command to stop the MVS™ daemon process on the parent server before you connect the Download input device.

For information about:

- Configuring Download for z/OS and AFP Download Plus with InfoPrint ProcessDirector, see the InfoPrint ProcessDirector information center in the user interface
- Configuring Download for z/OS and AFP Download Plus, see *PSF for z/OS: Download for z/OS* and *PSF for z/OS: AFP Download Plus*
- Copying files to hot folders or sending files using the LPD protocol, see the InfoPrint ProcessDirector information center in the user interface

Data transforms

Data transforms receive print jobs from InfoPrint ProcessDirector and transform the data from one data stream to another so that it can be printed.

InfoPrint ProcessDirector supports several products that provide data transforms:

Table 22. Products that provide data transforms

Product	Data streams transformed to AFP	Data streams transformed from AFP	Other transforms	Information
InfoPrint Transform Features	• GIF, JPEG, and TIFF • PCL • PDF and PostScript® • SAP OTF and ABAP			InfoPrint Transform Feature information center

Table 22. Products that provide data transforms (continued)

Product	Data streams transformed to AFP	Data streams transformed from AFP	Other transforms	Information
InfoPrint Transform Manager 1.2 with Service Pack 4 or later	• GIF, JPEG, and TIFF • PCL • PDF and PostScript			*InfoPrint Transform Manager for Linux*
InfoPrint Transform Manager: afp2pdf Transform i-listed PRPQ (Program Number 5799-TWL)		PDF		*InfoPrint Transform Manager for Linux: afp2pdf Transform Installation and User's Guide*
InfoPrint Manager for AIX (installed on the same computer as an InfoPrint ProcessDirector primary or secondary server)	• DBCS ASCII and EUC • ditroff • GIF, image, JPEG, and TIFF • Line data and ASCII data • PCL • PDF and PostScript • PPML • SAP OTF and ABAP • XML	PDF	XML to PDF	*InfoPrint Manager: Reference*
InfoPrint Manager for Windows (installed on the same computer as an InfoPrint ProcessDirector secondary server)	• DBCS ASCII and EUC • GIF, image, JPEG, and TIFF • Line data and ASCII data • PCL • PDF and PostScript • PPML • SAP OTF and ABAP • XML	PDF	XML to PDF	*InfoPrint Manager: Reference*
InfoPrint XT for AIX (installed on the same computer as an InfoPrint ProcessDirector primary or secondary server)	Xerox metacode and LCDS			*InfoPrint XT for AIX: Installation and User's Guide*
InfoPrint XT for Windows (installed on the same computer as an InfoPrint ProcessDirector secondary server)	Xerox metacode and LCDS			*InfoPrint XT for Windows: Installation and User's Guide*

For more information about these InfoPrint products, see the InfoPrint Solutions Company Web site (http://www.infoprint.com).

For information about using an external step in a job type to use data transforms, see the InfoPrint ProcessDirector information center in the user interface.

Restriction: You cannot configure InfoPrint ProcessDirector to work with the Transform Features and with InfoPrint Transform Manager at the same time.

InfoPrint Manager for AIX

You can install InfoPrint ProcessDirector and InfoPrint Manager for AIX Version 4 Release 3 on the same AIX system. You can install InfoPrint ProcessDirector and InfoPrint Manager in any order.

Restriction: If you already have an earlier version of InfoPrint Manager installed, you must migrate to Version 4 Release 3 before you install InfoPrint ProcessDirector. If you uninstall either product, the other continues to work.

For information about InfoPrint Manager for AIX, see the InfoPrint Manager publications or the InfoPrint Solutions Company Web site (http://www.infoprint.com).

Fonts

InfoPrint ProcessDirector provides a basic set of 240-pel fonts and 300-pel fonts (compatibility fonts). These fonts are installed automatically with InfoPrint ProcessDirector.

InfoPrint ProcessDirector also provides a set of AFP outline fonts on a separate CD-ROM (LCD4-5683). These fonts can be used on AIX, Linux, and Windows. They include fonts for Japanese, Korean, Simplified Chinese, and Traditional Chinese.

To install the AFP outline fonts on your primary server, copy the fonts from the AFPFONTS directory on the CD-ROM to the /usr/lpp/ipfonts directory on your workstation. Be sure to copy all files from the subdirectories in the AFPFONTS directory to /usr/lpp/ipfonts. Do not maintain the subdirectory structure from the source directory, but do make sure that the uppercase file names are preserved.

You can also buy these fonts separately:

- WorldType Fonts (LCD4-5684) are OpenType and TrueType fonts in Microsoft Unicode format.
- AFP Raster Fonts (LCD4-5700) are used for special applications, such as printing older documents.

Chapter 3. Installing InfoPrint ProcessDirector on AIX

This section contains instructions for a new installation of InfoPrint ProcessDirector. If you already have InfoPrint ProcessDirector installed and you want to apply a service update, see Chapter 5, "Backing up data and applying service," on page 89.

The InfoPrint ProcessDirector installation package consists of several CDs. After the InfoPrint ProcessDirector program is installed, you can install any of the InfoPrint ProcessDirector features or the Document Pool extension.

On secondary servers, you install only the InfoPrint ProcessDirector Secondary Server feature.

Important:

1. Before you install a secondary server on a Linux SLES 10.0 system, download the latest PTF from the InfoPrint Solutions Company Web site (http://www.infoprint.com) or get it from your customer support specialist. You must start the initial installation on SLES 10.0 with the service update CD.
2. The installation program requires this unallocated free space (space that is not in a file system):

   Primary server
   8 GB in any volume group. In this space, the installation program creates a temporary file system, /aiwtmp, which is used only during installation.

   AIX secondary server
   2 GB in any volume group.

   Linux secondary server
   2 GB.
3. The installation instructions describe the installation with the InstallShield Wizard graphical display. If you cannot run the InstallShield Wizard in graphical mode, append the `-console` option at the end of a **setup** command to install with a text-based installation program.
4. To see which attributes you can use with the **setup** command, append the `-h` option at the end of the **setup** command.
5. During the installation of any InfoPrint ProcessDirector program, the program files are copied to the system. However, the installation is not complete until you click **Activate now**. If you skip the activation step and click **Activate later** (for example, to view the publications CD), you must insert any software CD, start its installation program, and click **Activate now** before using InfoPrint ProcessDirector. If you install any new InfoPrint ProcessDirector software after the initial installation, you must activate again.
6. If the system where you plan to install a primary server already has an InfoPrint ProcessDirector secondary server installed, you must uninstall the secondary server before you install the primary server.

Installing InfoPrint ProcessDirector on the primary server

Important: You must install the same code level of InfoPrint ProcessDirector on the primary server and all secondary servers. To determine the level of code that is installed on the primary server or on an AIX or Linux secondary server, enter this command:

```
rpm –qa | grep aiw-server
```

Notes:

- In addition to InfoPrint ProcessDirector, this software will be installed or upgraded if it is not already present on the AIX system:
  - Bash 3.0-1
  - RPM installp package (Rpm.rte 3.0.5.39)
- During the installation, the InfoPrint ProcessDirector license files are copied to the /opt/IBM/aiw/V1.0/license directory.
- If you are using a copy of DB2 installed on a different system instead of the version of DB2 that is included with InfoPrint ProcessDirector, make sure that you complete "Installing and configuring your own copy of DB2 on a different system" on page 27 before you start this procedure.

To install InfoPrint ProcessDirector on the primary server:

1. Make sure the planning checklist is complete and the required hardware and software is available and installed. See Chapter 2, "Planning for installation," on page 11.
2. Make sure that you can access the DNS server. Enter this command:

   ```
   host localhost
   ```

   The response should include the hostname `localhost` or `loopback` and the address `127.0.0.1`. For example:

   ```
   localhost.infoprint.com is 127.0.0.1
   ```

   If you do not see a response like this, work with your system administrator to configure name resolution on this system.
3. Check the InfoPrint Solutions Company Web site (http://www.infoprint.com) to see if a PTF is available. If so, download the PTF or get it from your customer support specialist.
4. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
5. Check to see whether DB2 or a DB2 client is installed on this system:
   a. Enter this command to see if a separate copy of DB2 or a DB2 client is installed:

      ```
      /usr/local/bin/db2ls
      ```

      The results show whether DB2 is installed and the level of that installation. If DB2 is installed, this table lists the actions you must take to use either the installed copy or the InfoPrint ProcessDirector version. If there are no results, DB2 is not installed outside of InfoPrint ProcessDirector.

Note: The results do not differentiate between DB2 and a DB2 client; you must know if you are going to use a copy of DB2 installed on this system or use a DB2 client on this system to connect to DB2 on a different system.

DB2 version installed	To use the copy of DB2 installed on the local system	To use the DB2 client on this system to connect to DB2 on a different system	To use the InfoPrint ProcessDirector version of DB2 (local system only)
DB2 9.5 with Service Pack 3	Continue installing InfoPrint ProcessDirector.	Continue installing InfoPrint ProcessDirector.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 9.5	Install Service Pack 3 or later and continue installing InfoPrint ProcessDirector	Install Service Pack 3 or later and continue installing InfoPrint ProcessDirector.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 9.0 or later, but earlier than 9.5	Upgrade to DB2 9.5 Service Pack 3 or later.	Upgrade to DB2 9.5 with Service Pack 3 or later.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 earlier than 9.0	Upgrade to DB2 9.5 Service Pack 3 or later.	Upgrade to DB2 9.5 with Service Pack 3 or later.	Uninstall DB2.

b. Enter this command to check for an existing copy of the version of DB2 supplied with InfoPrint ProcessDirector:

```
rpm -qa | grep "aiw-db2"
```

Command result	To use your own copy of DB2 on this system or a DB2 client connected to a different system	To use the InfoPrint ProcessDirector version of DB2
No result means that InfoPrint ProcessDirector DB2 is not installed.	Install DB2 9.5 with Service Pack 3 or later on this system or install DB2 9.5 Server with Service Pack 3 or later on a different system and a DB2 9.5 with Service Pack 3 or later client on this system.	Continue installing InfoPrint ProcessDirector.

A result similar to this means that InfoPrint ProcessDirector DB2 is installed:
`aiw-db2-1.3.1.0-47.0`
`aiw-db2fixes-1.3.1.0-47.0`
	See "Migrating to another DB2 configuration" on page 30.	This should not happen with a new installation. To apply service to an existing installation, see "Applying service updates on the primary server" on page 92.

6. Enter this command to make sure you are in the root directory:

```
cd /
```

7. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

```
ps -ef | grep cdromd
```

- If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
- If there are no daemon sessions running, enter:

  ```
  cdromd
  ```

8. If you have an InfoPrint ProcessDirector service pack CD, insert it in the CD-ROM drive. If not, insert the first InfoPrint ProcessDirector product CD.
9. Enter this command to start the installation:

   ```
   /cdrom/cd0/setup
   ```

   Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.
10. If you see a prompt, select **Primary**.
11. If you are installing a service pack, the setup program copies the update files and installers to the hard drive. When it completes, it prompts you to insert the first InfoPrint ProcessDirector CD.
12. If you have installed DB2 or a DB2 client on this system, the installation program finds it and asks if you want to use it. If you want to use that DB2, select **Yes** and answer the questions about DB2.

    If DB2 is installed on a different system, the installation program asks for information about the DB2 server, including:

    - Hostname or IP address
    - Port
    - Instance
    - Instance password
    - Directory that the instance uses to store the InfoPrint ProcessDirector database

    This is the information that you recorded when you ran the DB2 configuration script on the DB2 server in "Installing and configuring your own copy of DB2 on a different system" on page 27.
13. For each program that is installed:
    a. Select the appropriate language for the InstallShield Wizard, and then click **OK**. You see a welcome window for the InstallShield Wizard.
    b. Reply to the prompts as the InstallShield Wizard steps you through the installation.
14. When you see a window that displays the default user ID (UID) and group ID (GID) values, select the defaults or use the numeric values you established during installation planning for use on all the servers (see Chapter 6, "Installation planning checklist," on page 103).
15. The installation program asks you to select the language for the InfoPrint ProcessDirector server. Make sure you select a language if you want one different from the language used during the installation. The language in which the InfoPrint ProcessDirector server is installed determines the language for some messages and object descriptions, even if you set the browser for the user interface to a different language.
16. When you see a message that all your files have been copied to your system, click **Activate later** if you have additional software to install. Otherwise, click **Activate now**.

The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

`http://hostname:15080/aiw`

17. Click **Finish** to complete the installation.
18. You might see a prompt asking if you have additional software to install. To install features or extensions from any additional InfoPrint ProcessDirector CDs, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation.

    Note: When you install features, install the base feature first, then apply the feature PTF.
19. If you see error messages, view the installation logs in the /opt/IBM/aiw/V1.0/logs directory.
20. Verify the installation through the Web browser:
    a. The Web browser on your workstation automatically launches the InfoPrint ProcessDirector login page.

       Note: If the InfoPrint ProcessDirector login page does not automatically launch, manually launch the browser and enter this URL, replacing *hostname* with the host name of the primary server:

       `http://hostname:15080/aiw`
    b. If you see a message that the browser cannot connect to the primary server:
       1) Log in to the primary server as the InfoPrint ProcessDirector user. The default user ID is `aiw1` and the default password is `aiwpass1`.

          Notes:

          - InfoPrint ProcessDirector sets up the aiw1 user ID with environment variables and paths that permit all of the administrative functions for InfoPrint ProcessDirector. If you use the **su** command to switch from another login to aiw1, use the **-** (minus) flag (`su - aiw1`) to make sure that you inherit the environment that was set up for the aiw1 user.
          - InfoPrint ProcessDirector creates several user IDs for internal use:
            – If you use your own version of DB2, InfoPrint ProcessDirector creates dasusr1 and two IDs of your choice (the defaults are aiwinst and aiwfid).
            – If you use the InfoPrint ProcessDirector version of DB2, InfoPrint ProcessDirector creates dasusr1, db2inst1, and db2fenc1.

          You should never log in as any of these users, but you might need to recognize them for recordkeeping and security.
       2) Enter `startaiw` at the command prompt.
       3) To verify that the InfoPrint ProcessDirector server is running, enter this command on the command line:

          ```
          ps -ef | grep Instance
          ```

          You should see an instance statement such as:

          `java com.ibm.aiw.instance.PrimaryInstance hostname`
       4) Enter `http://hostname:15080/aiw` from the Web browser.
       5) If you still see the message, view the installation logs in the /opt/IBM/aiw/V1.0/logs directory.

c. On the InfoPrint ProcessDirector login page, type the default administrator user ID `aiw` and the default password `aiw` and then click **Log in**. You are prompted to change the password before you can log in to the user interface. Make note of your new password on the Chapter 6, "Installation planning checklist," on page 103.

InfoPrint ProcessDirector is now running on your primary server. See "Completing post-installation tasks" on page 73 to verify the installation by printing a test job.

Installing a manual failover environment

If you want to maintain both an active primary server and a backup server so you can move print processing to that system in case of a hardware failure or other problem, you can install your primary server and its backup in a manual failover configuration. This configuration does not switch processing to the backup system automatically; you must run one or two scripts to switch to the backup server.

A manual failover configuration consists of two servers (each one capable of running an InfoPrint ProcessDirector primary server) and an external storage system, such as an NFS-mounted file system or a SAN with a fibre channel connection to each server. The two servers must have identical operating systems installed on them. When you install InfoPrint ProcessDirector, you must install the base product and all the same features and extensions, at the same release levels, on both systems. The InfoPrint ProcessDirector servers must be able to access the external storage system.

In this configuration, the external storage system holds the file systems that InfoPrint ProcessDirector uses to store system objects and job data. When the primary server is connected to the storage system, it uses those file systems and the objects defined in them. When you run the manual failover scripts to move processing to the backup server, the external storage system is unmounted from the primary server and mounted to the backup server. When the process is complete, the backup server uses the objects in the file systems on the storage system.

For manual failover to work properly, the network connections on the two servers must be configured properly. Each server has a unique IP address, but you must also have another IP address and alias name available for InfoPrint ProcessDirector. All users and Web services requests use that alias (not the server IP address or hostname) to access the InfoPrint ProcessDirector user interface. When you run the manual failover scripts, the scripts transfer the alias from the primary server to the backup server, so users and Web services can continue to interact with InfoPrint ProcessDirector without making any changes. When the change is complete, users should not notice any difference in processing.

Installing a manual failover environment is different from installing a single primary server. Do the procedures in this section to install both servers.

Preparing the failover IP address and external storage system

Before you can install InfoPrint ProcessDirector, work with your system administrator to prepare a failover IP address and the external storage system.

Some things to consider before you begin:

- Some of the instructions for installing a manual failover configuration require you to replicate one system onto another system. Make sure that you have a procedure to do that task. Copying a system (or the contents of a system) does not always retain links correctly, so it is best to use the **tar** command.
- If you use an NFS file server as your storage system, we recommend that you configure it like this:

  If your primary server is **printserver1**, create these file systems on the file server:

  /printserver1/aiw

  /printserver1/var/aiw

  /printserver1/var/psf
- Make sure that your network switches have short timeout values for caching IP addresses and MAC addresses. If they have long timeout values and you have to move processing to the backup server, the switches might interpret the change as an address conflict.

To prepare the failover IP address and storage system:

1. Use your usual processes to request an IP address to use as the failover address. This IP address is not assigned to a specific server.
2. Choose a name, such as **printserver** or **InfoPrintProcessDirector**, that users and applications will use to access InfoPrint ProcessDirector.
3. Register the IP address and name with the DNS.
4. If your storage system is a fibre-channel connected SAN:
   a. Connect the SAN to a server and log in with the appropriate authority to configure the SAN.
   b. Enter this command to configure SAN shared disks: `cfgmgr -v`
   c. Create the appropriate volume groups. Make sure that **Automatic activation on system restart** is set to **no** on all volume groups. For example, if your SAN has three disks, you might create three volume groups with these characteristics:
      - Volume group names: **ippdvg ippd2vg ippd3vg**
      - Physical partition size: 256MB
      - Physical volume: hdisk2
      - **Automatic activation on system restart** set to **no**
   d. Create logical volumes for each file system listed in step e. Make sure that **Automatic activation on system restart** is set to **no** on all volumes. For example, you might create logical volumes with these characteristics:
      - Logical Volume name: **lv00**
      - Logical Volume type: **jfs2**
      - Logical partitions: **40 (256 MB x 40 = 10 GB)**
      - Mount Point: **/aiw**
      - **Automatic activation on system restart** set to **no**
   e. Create and mount these file systems:
      - /aiw
      - /aiw/aiw1/db2
      - /aiw/aiw1/db2_logs
      - /var/aiw
      - /var/psf
      - /var/psf/segments

5. If your external storage system is an NFS-mounted file system:
   a. Create these directories on the primary and backup servers and add them to /etc/fstab with the **noauto** option:
      - /aiw
      - /aiw/aiw1/db2
      - /aiw/aiw1/db2_logs
      - /var/aiw
      - /var/psf
      - /var/psf/segments
   b. Mount the NFS file system on the InfoPrint ProcessDirector primary server. Do not mount the file system on the backup server.

Installing manual failover servers

After the external storage system is prepared, do this procedure to install InfoPrint ProcessDirector on both manual failover servers.

Notes:

- In addition to InfoPrint ProcessDirector, this software will be installed or upgraded if it is not already present on the AIX system:
  - Bash 3.0-1
  - RPM installp package (Rpm.rte 3.0.5.39)
- During the installation, the InfoPrint ProcessDirector license files are copied to the /opt/IBM/aiw/V1.0/license directory.
- If you are using a copy of DB2 installed on a different system instead of the version of DB2 that is included with InfoPrint ProcessDirector, make sure that you complete "Installing and configuring your own copy of DB2 on a different system" on page 27 before you start this procedure.

On the active server

1. Make sure the planning checklist is complete and the required hardware and software is available and installed. See Chapter 2, "Planning for installation," on page 11.
2. Log in to the system that you plan to use as the active primary server.
3. Make sure that you can access the DNS server. Enter this command:

   ```
   host localhost
   ```

   The response should include the hostname `localhost` or `loopback` and the address `127.0.0.1`. For example:

   ```
   localhost.infoprint.com is 127.0.0.1
   ```

   If you do not see a response like this, work with your system administrator to configure name resolution on this system.
4. Check the InfoPrint Solutions Company Web site (http://www.infoprint.com) to see if a PTF is available. If so, download the PTF or get it from your customer support specialist.
5. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.

6. Check to see whether DB2 or a DB2 client is installed on this system:
   a. Enter this command to see if a separate copy of DB2 or a DB2 client is installed:

      ```
      /usr/local/bin/db2ls
      ```

      The results show whether DB2 is installed and the level of that installation. If DB2 is installed, this table lists the actions you must take to use either the installed copy or the InfoPrint ProcessDirector version. If there are no results, DB2 is not installed outside of InfoPrint ProcessDirector.

      Note: The results do not differentiate between DB2 and a DB2 client; you must know if you are going to use a copy of DB2 installed on this system or use a DB2 client on this system to connect to DB2 on a different system.

DB2 version installed	To use the copy of DB2 installed on the local system	To use the DB2 client on this system to connect to DB2 on a different system	To use the InfoPrint ProcessDirector version of DB2 (local system only)
DB2 9.5 with Service Pack 3	Continue installing InfoPrint ProcessDirector.	Continue installing InfoPrint ProcessDirector.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 9.5	Install Service Pack 3 or later and continue installing InfoPrint ProcessDirector	Install Service Pack 3 or later and continue installing InfoPrint ProcessDirector.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 9.0 or later, but earlier than 9.5	Upgrade to DB2 9.5 Service Pack 3 or later.	Upgrade to DB2 9.5 with Service Pack 3 or later.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 earlier than 9.0	Upgrade to DB2 9.5 Service Pack 3 or later.	Upgrade to DB2 9.5 with Service Pack 3 or later.	Uninstall DB2.

   b. Enter this command to check for an existing copy of the version of DB2 supplied with InfoPrint ProcessDirector:

      ```
      rpm -qa | grep "aiw-db2"
      ```

Command result	To use your own copy of DB2 on this system or a DB2 client connected to a different system	To use the InfoPrint ProcessDirector version of DB2
No result means that InfoPrint ProcessDirector DB2 is not installed.	Install DB2 9.5 with Service Pack 3 or later on this system or install DB2 9.5 Server with Service Pack 3 or later on a different system and a DB2 9.5 with Service Pack 3 or later client on this system.	Continue installing InfoPrint ProcessDirector.

Command result	To use your own copy of DB2 on this system or a DB2 client connected to a different system	To use the InfoPrint ProcessDirector version of DB2

A result similar to this means that InfoPrint ProcessDirector DB2 is installed:
`aiw-db2-1.3.1.0-47.0`
`aiw-db2fixes-1.3.1.0-47.0`
	See "Migrating to another DB2 configuration" on page 30.	This should not happen with a new installation. To apply service to an existing installation, see "Applying service updates on the primary server" on page 92.

7. If you are using the InfoPrint ProcessDirector DB2 or a DB2 server installed on a different system, continue with the next step. If you are using your own copy of DB2 installed on the primary system, the DB2 installation creates an AIX user and group. To see the UID and GID values for the default user and group, enter this command:

   ```
   id dasusr1
   ```

   Record the values for use later in this process.

   Note: If the dasusr1 user ID does not exist, the person who installed DB2 chose a different user ID. Ask your system administrator for the user ID and use it in the command.

8. Create AIX groups and user IDs for DB2 to use.

   The users and groups that you create are different for the InfoPrint ProcessDirector version of DB2, another copy of DB2 installed on the primary system, and a DB2 client installed on this system.

   - For the InfoPrint ProcessDirector version of DB2, enter these commands to create the required groups and users:

     ```
     mkgroup -A id=30110 dasadm1
     mkgroup -A id=30111 db2fgrp1
     mkgroup -A id=30112 db2grp1
     mkuser id=30115 pgrp=dasadm1 groups="staff,dasadm1" dasusr1
     mkuser id=30116 pgrp=db2fgrp1 groups="staff,db2fgrp1" db2fenc1
     mkuser id=30117 pgrp=db2grp1 groups="staff,db2grp1,dasadm1" fsize=-1
        cpu=-1 data=491519 stack=32767 core=-1 rss=-1 db2inst1
     ```

   - For another copy of DB2 installed on the primary system, enter these commands to create the required groups and users:

     ```
     mkgroup -A id=30111 aiwdbfgp
     mkgroup -A id=30112 aiwdbgrp
     mkuser id=30116 pgrp=aiwdbfgp groups="staff,aiwdbfgp" aiwfid
     mkuser id=30117 pgrp=aiwdbgrp groups="staff,aiwdbgrp,dasadm1" fsize=-1
        cpu=-1 data=491519 stack=32767 core=-1 rss=-1 aiwinst
     ```

     Note: You can use different names for **aiwdbfgp**, **aiwdbgrp**, **aiwfid**, and **aiwinst**, but you must create the same users on both servers and you must enter the names correctly when the installer asks for them.

   - For a DB2 client installed on this system, enter these commands to create the required groups and users:

```
mkgroup -A id=30111 aiwdbgrp
mkuser id=30116 pgrp=aiwdbgrp groups="staff,aiwdbgrp" fsize=-1
   cpu=-1 data=491519 stack=32767 core=-1 rss=-1 aiwclnt
```

Note: You can use different names for **aiwdbgrp** and **aiwclnt**, but you must create the same users on both servers and you must enter the names correctly when the installer asks for them.

9. Enter this command to make sure you are in the root directory:

   ```
   cd /
   ```

10. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

    ```
    ps -ef | grep cdromd
    ```

    - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
    - If there are no daemon sessions running, enter:

      ```
      cdromd
      ```

11. Verify that the /opt and /tmp file systems are the correct size. Enter this command:

    ```
    df -g
    ```

    Notes:

    - /opt must have 1.2 GB of free space if the Reports feature is not installed; 2 GB free space if the Reports feature is installed
    - /tmp must have 250 MB of free space

12. If you have an InfoPrint ProcessDirector service pack CD, insert it in the CD-ROM drive. If not, insert the first InfoPrint ProcessDirector product CD.
13. Enter this command to start the installation:

    ```
    /cdrom/cd0/setup
    ```

    Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.

14. If you see a prompt, select **Primary**.
15. If you are installing a service pack, the setup program copies the update files and installers to the hard drive. When it completes, it prompts you to insert the first InfoPrint ProcessDirector CD.
16. If you have installed DB2 or a DB2 client on this system, the installation program finds it and asks if you want to use it. If you want to use that DB2, select **Yes** and answer the questions about DB2.

    If DB2 is installed on a different system, the installation program asks for information about the DB2 server, including:

    - Hostname or IP address
    - Port
    - Instance
    - Instance password
    - Directory that the instance uses to store the InfoPrint ProcessDirector database

This is the information that you recorded when you ran the DB2 configuration script on the DB2 server in "Installing and configuring your own copy of DB2 on a different system" on page 27.

17. For each program that is installed:
    a. Select the appropriate language for the InstallShield Wizard, and then click **OK**. You see a welcome window for the InstallShield Wizard.
    b. Reply to the prompts as the InstallShield Wizard steps you through the installation.
18. When you see a window that displays that default user ID (UID) and group ID (GID) for InfoPrint ProcessDirector, use the defaults. You cannot change these values in a manual failover configuration.
19. The installation program asks you to select the language for the InfoPrint ProcessDirector server. Make sure you select a language if you want one different from the language used during the installation. The language in which the InfoPrint ProcessDirector server is installed determines the language for some messages and object descriptions, even if you set the browser for the user interface to a different language.
20. When you see a message that all your files have been copied to your system, choose:
    - **Activate later** to install additional software, such as features or extensions
    - **Activate now** if you have no features to install
21. Click **Finish** to complete the installation.
22. You might see a prompt asking if you have additional software to install. To install features or extensions from any additional InfoPrint ProcessDirector CDs, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation.

    Note: When you install features, install the base feature first, then apply the feature PTF.
23. If you see error messages, view the installation logs in the /opt/IBM/aiw/V1.0/logs directory.
24. If the Web browser launches automatically and shows the InfoPrint ProcessDirector login page, do not log in. Close the browser.
25. Change to the aiw1 user. InfoPrint ProcessDirector creates this user during the installation process. The default password is `aiwpass1`.

    Note: InfoPrint ProcessDirector sets up the aiw1 user ID with environment variables and paths that permit all of the administrative functions for InfoPrint ProcessDirector. If you use the **su** command to switch from another login to aiw1, use the **-** (minus) flag (`su - aiw1`) to make sure that you inherit the environment that was set up for the aiw1 user.
26. Enter `stopaiw` at the command prompt to stop InfoPrint ProcessDirector.
27. Change to the root user and navigate to the /opt/IBM/aiw/V1.0/bin directory.
28. Edit failover_aix_env to reflect your environment.

    The manual failover scripts use the information in this file to update network settings on the primary and backup servers. Edit the values for these entries with the assistance of your system administrator:
    - SHARED_IPPDVG

      A list of the volume groups that your system administrator created on the SAN.

- IPPDALIAS_NAME

  The name that your system administrator registered with the DNS for use with InfoPrint ProcessDirector. It is the name that users and applications use to access InfoPrint ProcessDirector, instead of using the hostname of the system that the primary server is installed on. It is not a fully qualified hostname. For example, if the name is represented in your network as **printserver.yourcompany.com**, this entry is **printserver**.
- IPPDALIAS_IP

  The IP address that your system administrator associated with the IPPDALIAS_NAME and registered with the DNS.
- IPPDALIAS_NETMASK

  The subnet mask of the network that the IPPDALIAS_IP belongs to.

29. As the root user, enter `./failover_aix_start.ksh` to run the manual failover script that connects InfoPrint ProcessDirector to the external storage system and to the network using the alias.
30. Verify that you can access the InfoPrint ProcessDirector user interface by opening a Web browser and entering this URL, replacing *alias_name* with the name you entered in the IPPDALIAS_NAME field in the environment file:

    ```
    http://aliasname:10580/aiw
    ```

    Do not log in. After you see the login page, close the browser.
31. At a command prompt, navigate to the /opt/IBM/aiw/V1.0/bin directory. As the root user, enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.
32. If you are using the InfoPrint ProcessDirector DB2 or a DB2 server installed on a different system, continue with the next step. If you are using another copy of DB2 installed on the primary system, you must remove the database that the InfoPrint ProcessDirector installation created. When you install the backup server, the database is restored. Enter these commands:

    Note: If you already have objects or jobs in the system, first back up the system using the information in "Backing up data" on page 89.

    ```
    rm -rf /aiw/aiw1/db2/*
    rm -rf /aiw/aiw1/db2_ext/*
    rm -rf /aiw/aiw1/db2_logs/*
    ```
33. Stop the auto-stop and auto-start processes from running on this server.

    Some of the processes in InfoPrint ProcessDirector are set to start and stop automatically when the physical server starts or stops. In a manual failover configuration, you cannot let those processes start and stop automatically. Do these steps to stop the automatic processes:

    a. Open /etc/netsvc.conf and add this line at the bottom of the file:

       ```
       hosts=local,bind
       ```

    b. Have your system administrator make sure that /etc/hosts and /etc/resolv.conf contain the correct information for your system.

    c. Enter these commands to back up the etc/inittab file:

       ```
       cd /etc
       cp -p  inittab  inittab.backup
       ```

d. Enter this command to change the InfoPrint ProcessDirector autostart setting in the etc/inittab file to **off**:

```
chitab "rcaiw:2:off:/etc/rc.aiw > /tmp/startaiw.out 2>&1 # IPPD auto-start"
```

e. Enter these commands to rename rc.shutdown to rc.shutdown.save, so the shutdown routine cannot find and run it:

```
cd  /etc
mv  rc.shutdown  rc.shutdown.save
```

InfoPrint ProcessDirector is now installed on the active primary server and some of its file systems are stored on the external storage system. However, InfoPrint ProcessDirector is not connected to the external storage system, so you cannot start the primary server.

On the backup server

1. Ask your system administrator to connect your backup server to the external storage system. If you are using a SAN, the administrator must also import the volume groups.
2. Log in to the system that you plan to use as the backup primary server.
3. Make sure that you can see the file systems on the external storage system.
4. Make sure that you can access the DNS server. Enter this command:

   ```
   host localhost
   ```

   The response should include the hostname `localhost` or `loopback` and the address `127.0.0.1`. For example:

   ```
   localhost.infoprint.com is 127.0.0.1
   ```

   If you do not see a response like this, work with your system administrator to configure name resolution on this system.
5. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
6. Check to see whether DB2 or a DB2 client is installed on this system:
   a. Enter this command to see if a separate copy of DB2 or a DB2 client is installed:

      ```
      /usr/local/bin/db2ls
      ```

      The results show whether DB2 is installed and the level of that installation. If DB2 is installed, this table lists the actions you must take to use either the installed copy or the InfoPrint ProcessDirector version. If there are no results, DB2 is not installed outside of InfoPrint ProcessDirector.

      Note: The results do not differentiate between DB2 and a DB2 client; you must know if you are going to use a copy of DB2 installed on this system or use a DB2 client on this system to connect to DB2 on a different system.

DB2 version installed	To use the copy of DB2 installed on the local system	To use the DB2 client on this system to connect to DB2 on a different system	To use the InfoPrint ProcessDirector version of DB2 (local system only)
DB2 9.5 with Service Pack 3	Continue installing InfoPrint ProcessDirector.	Continue installing InfoPrint ProcessDirector.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 9.5	Install Service Pack 3 or later and continue installing InfoPrint ProcessDirector	Install Service Pack 3 or later and continue installing InfoPrint ProcessDirector.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 9.0 or later, but earlier than 9.5	Upgrade to DB2 9.5 Service Pack 3 or later.	Upgrade to DB2 9.5 with Service Pack 3 or later.	Delete any existing DB2 instance or user ID called db2inst1.
DB2 earlier than 9.0	Upgrade to DB2 9.5 Service Pack 3 or later.	Upgrade to DB2 9.5 with Service Pack 3 or later.	Uninstall DB2.

b. Enter this command to check for an existing copy of the version of DB2 supplied with InfoPrint ProcessDirector:

```
rpm -qa | grep "aiw-db2"
```

Command result	To use your own copy of DB2 on this system or a DB2 client connected to a different system	To use the InfoPrint ProcessDirector version of DB2
No result means that InfoPrint ProcessDirector DB2 is not installed.	Install DB2 9.5 with Service Pack 3 or later on this system or install DB2 9.5 Server with Service Pack 3 or later on a different system and a DB2 9.5 with Service Pack 3 or later client on this system.	Continue installing InfoPrint ProcessDirector.

A result similar to this means that InfoPrint ProcessDirector DB2 is installed:
`aiw-db2-1.3.1.0-47.0`
`aiw-db2fixes-1.3.1.0-47.0`
	See "Migrating to another DB2 configuration" on page 30.	This should not happen with a new installation. To apply service to an existing installation, see "Applying service updates on the primary server" on page 92.

7. Enter this command to check the UID and GID of the **dasusr1** user and the **dasadm1** group:

```
id dasusr1
```

Note: If the dasusr1 user ID does not exist, the person who installed DB2 chose a different user ID. Ask your system administrator for the user ID and use it in the command.

Compare those values to the values you recorded from the active server. If they match, continue with the next step. If they do not match, use smitty to change the UID of the user and the GID of the group. Then, enter this command to change the ownership of the files and file systems from the old UID to the new UID, replacing *old_UID* and *new_user* with the appropriate values:

```
find / -user old_UID -print|xargs chown new_user
```

Enter this command to change all occurrences of the old GID to the new GID, replacing *old_GID* and *new_GID* with the appropriate values:

```
find / -group old_GID |xargs chgrp new_GID
```

8. Create AIX groups and user IDs for DB2 to use.

   The users and groups that you create are different for the InfoPrint ProcessDirector version of DB2, another copy of DB2 installed on the primary system, and a DB2 client installed on this system.

   - For the InfoPrint ProcessDirector version of DB2, enter these commands to create the required groups and users:

     ```
     mkgroup -A id=30110 dasadm1
     mkgroup -A id=30111 db2fgrp1
     mkgroup -A id=30112 db2grp1
     mkuser id=30115 pgrp=dasadm1 groups=″staff,dasadm1″ dasusr1
     mkuser id=30116 pgrp=db2fgrp1 groups="staff,db2fgrp1" db2fenc1
     mkuser id=30117 pgrp=db2grp1 groups="staff,db2grp1,dasadm1" fsize=-1
        cpu=-1 data=491519 stack=32767 core=-1 rss=-1 db2inst1
     ```

   - For another copy of DB2 installed on the primary system, enter these commands to create the required groups and users:

     ```
     mkgroup -A id=30111 aiwdbfgp
     mkgroup -A id=30112 aiwdbgrp
     mkuser id=30116 pgrp=aiwdbfgp groups="staff,aiwdbfgp" aiwfid
     mkuser id=30117 pgrp=aiwdbgrp groups="staff,aiwdbgrp,dasadm1" fsize=-1
        cpu=-1 data=491519 stack=32767 core=-1 rss=-1 aiwinst
     ```

     Note: You can use different names for **aiwdbfgp**, **aiwdbgrp**, **aiwfid**, and **aiwinst**, but you must create the same users on both servers and you must enter the names correctly when the installer asks for them.

   - For a DB2 client installed on this system, enter these commands to create the required groups and users:

     ```
     mkgroup -A id=30111 aiwdbgrp
     mkuser id=30116 pgrp=aiwdbgrp groups="staff,aiwdbgrp" fsize=-1
        cpu=-1 data=491519 stack=32767 core=-1 rss=-1 aiwclnt
     ```

     Note: You can use different names for **aiwdbgrp** and **aiwclnt**, but you must create the same users on both servers and you must enter the names correctly when the installer asks for them.

9. Enter this command to make sure you are in the root directory:

   ```
   cd /
   ```

10. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

    ```
    ps -ef | grep cdromd
    ```

- If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
- If there are no daemon sessions running, enter:

  ```
  cdromd
  ```

11. Verify that the /opt and /tmp file systems are the correct size. Enter this command:

    ```
    df -g
    ```

    Notes:
    - /opt must have 1.2 GB of free space if the Reports feature is not installed; 2 GB free space if the Reports feature is installed
    - /tmp must have 250 MB of free space
12. If you have an InfoPrint ProcessDirector service pack CD, insert it in the CD-ROM drive. If not, insert the first InfoPrint ProcessDirector product CD.
13. Enter this command to start the installation:

    ```
    /cdrom/cd0/setup
    ```

    Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.
14. If you see a prompt, select **Primary**.
15. If you are installing a service pack, the setup program copies the update files and installers to the hard drive. When it completes, it prompts you to insert the first InfoPrint ProcessDirector CD.
16. If you have installed DB2 or a DB2 client on this system, the installation program finds it and asks if you want to use it. If you want to use that DB2, select **Yes** and answer the questions about DB2.

    If DB2 is installed on a different system, the installation program asks for information about the DB2 server, including:
    - Hostname or IP address
    - Port
    - Instance
    - Instance password
    - Directory that the instance uses to store the InfoPrint ProcessDirector database

    This is the information that you recorded when you ran the DB2 configuration script on the DB2 server in "Installing and configuring your own copy of DB2 on a different system" on page 27.
17. For each program that is installed:
    a. Select the appropriate language for the InstallShield Wizard, and then click **OK**. You see a welcome window for the InstallShield Wizard.
    b. Reply to the prompts as the InstallShield Wizard steps you through the installation.
18. When you see a window that displays that default user ID (UID) and group ID (GID) for InfoPrint ProcessDirector, use the defaults. You cannot change these values in a manual failover configuration.
19. The installation program asks you to select the language for the InfoPrint ProcessDirector server. Make sure you select a language if you want one different from the language used during the installation. The language in

which the InfoPrint ProcessDirector server is installed determines the language for some messages and object descriptions, even if you set the browser for the user interface to a different language.

20. When you see a message that all your files have been copied to your system, choose:
    - **Activate later** to install additional software, such as features or extensions
    - **Activate now** if you have no features to install
21. Click **Finish** to complete the installation.
22. You might see a prompt asking if you have additional software to install. To install features or extensions from any additional InfoPrint ProcessDirector CDs, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation.

    Note: When you install features, install the base feature first, then apply the feature PTF.
23. If you see error messages, view the installation logs in the /opt/IBM/aiw/V1.0/logs directory.
24. If the Web browser launches automatically and shows the InfoPrint ProcessDirector login page, do not log in. Close the browser.
25. Change to the aiw1 user. InfoPrint ProcessDirector creates this user during the installation process. The default password is `aiwpass1`.

    Note: InfoPrint ProcessDirector sets up the aiw1 user ID with environment variables and paths that permit all of the administrative functions for InfoPrint ProcessDirector. If you use the **su** command to switch from another login to aiw1, use the **-** (minus) flag (`su - aiw1`) to make sure that you inherit the environment that was set up for the aiw1 user.
26. Enter `stopaiw` at the command prompt to stop InfoPrint ProcessDirector.
27. Change to the root user and navigate to the /opt/IBM/aiw/V1.0/bin directory.
28. Edit failover_aix_env to reflect your environment.

    The manual failover scripts use the information in this file to update network settings on the primary and backup servers. Edit the values for these entries with the assistance of your system administrator:
    - SHARED_IPPDVG

      A list of the volume groups that your system administrator created on the SAN.
    - IPPDALIAS_NAME

      The name that your system administrator registered with the DNS for use with InfoPrint ProcessDirector. It is the name that users and applications use to access InfoPrint ProcessDirector, instead of using the hostname of the system that the primary server is installed on. It is not a fully qualified hostname. For example, if the name is represented in your network as **printserver.yourcompany.com**, this entry is **printserver**.
    - IPPDALIAS_IP

      The IP address that your system administrator associated with the IPPDALIAS_NAME and registered with the DNS.
    - IPPDALIAS_NETMASK

      The subnet mask of the network that the IPPDALIAS_IP belongs to.

29. As the root user, enter `./failover_aix_start.ksh` to run the manual failover script that connects InfoPrint ProcessDirector to the external storage system and to the network using the alias.
30. Verify that you can access the InfoPrint ProcessDirector user interface by opening a Web browser and entering this URL, replacing *alias_name* with the name you entered in the IPPDALIAS_NAME field in the environment file:

    ```
    http://aliasname:10580/aiw
    ```

    Do not log in. After you see the login page, close the browser.
31. At a command prompt, navigate to the /opt/IBM/aiw/V1.0/bin directory. As the root user, enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.
32. Stop the auto-stop and auto-start processes from running on this server.

    Some of the processes in InfoPrint ProcessDirector are set to start and stop automatically when the physical server starts or stops. In a manual failover configuration, you cannot let those processes start and stop automatically. Do these steps to stop the automatic processes:

    a. Open /etc/netsvc.conf and add this line at the bottom of the file:

       ```
       hosts=local,bind
       ```

    b. Have your system administrator make sure that /etc/hosts and /etc/resolv.conf contain the correct information for your system.
    c. Enter these commands to back up the etc/inittab file:

       ```
       cd /etc
       cp -p  inittab  inittab.backup
       ```

    d. Enter this command to change the InfoPrint ProcessDirector autostart setting in the etc/inittab file to **off**:

       ```
       chitab "rcaiw:2:off:/etc/rc.aiw > /tmp/startaiw.out 2>&1 # IPPD auto-start"
       ```

    e. Enter these commands to rename rc.shutdown to rc.shutdown.save, so the shutdown routine cannot find and run it:

       ```
       cd  /etc
       mv  rc.shutdown  rc.shutdown.save
       ```

InfoPrint ProcessDirector is now installed on both the active primary server and the backup primary server, but neither server is connected to the shared file systems on the external storage system.

On the active server

To use InfoPrint ProcessDirector on the active server:

1. Navigate to the /opt/IBM/aiw/V1.0/bin directory.
2. As the root user, enter this command to connect to the external storage system and start InfoPrint ProcessDirector:

   ```
   ./failover_aix_start.ksh
   ```
3. Open a Web browser and access InfoPrint ProcessDirector at this URL, replacing *alias_name* with the name you entered in the IPPDALIAS_NAME field in the environment file:

`http://aliasname:10580/aiw`

4. On the InfoPrint ProcessDirector login page, type the default administrator user ID `aiw` and the default password `aiw` and then click **Log in**. You are prompted to change the password before you can log in to the user interface. Make note of your new password on the Chapter 6, "Installation planning checklist," on page 103.
5. If you created a backup of existing data, restore the data using the information in "Restoring data" on page 90.

Adding a backup server for manual failover

If you already have a primary server installed, do these steps to add a backup server in a manual failover configuration.

On the original primary server

1. If needed, install the most recent service update on your existing primary server. Be sure to back up all your system objects in case they are damaged during the installation process. Use the information in "Backing up data" on page 89.
2. Log in to the system as aiw1 and enter `stopaiw` to stop InfoPrint ProcessDirector.
3. Have a system administrator do the steps in "Preparing the failover IP address and external storage system" on page 48, without creating the file systems listed.
4. Have a system administrator move these file systems from the active server to the external storage system:
   - /aiw
   - /aiw/aiw1/db2
   - /aiw/aiw1/db2_logs
   - /var/aiw
   - /var/psf
   - /var/psf/segments
5. Change to the root user and navigate to the /opt/IBM/aiw/V1.0/bin directory.
6. Edit failover_aix_env to reflect your environment.

   The manual failover scripts use the information in this file to update network settings on the primary and backup servers. Edit the values for these entries with the assistance of your system administrator:

   - SHARED_IPPDVG

     A list of the volume groups that your system administrator created on the SAN.
   - IPPDALIAS_NAME

     The name that your system administrator registered with the DNS for use with InfoPrint ProcessDirector. It is the name that users and applications use to access InfoPrint ProcessDirector, instead of using the hostname of the system that the primary server is installed on. It is not a fully qualified hostname. For example, if the name is represented in your network as **printserver.yourcompany.com**, this entry is **printserver**.
   - IPPDALIAS_IP

     The IP address that your system administrator associated with the IPPDALIAS_NAME and registered with the DNS.

- IPPDALIAS_NETMASK

  The subnet mask of the network that the IPPDALIAS_IP belongs to.

7. As the root user, enter `./failover_aix_start.ksh` to run the manual failover script that connects InfoPrint ProcessDirector to the external storage system and to the network using the alias.
8. Verify that you can access the InfoPrint ProcessDirector user interface by opening a Web browser and entering this URL, replacing *alias_name* with the name you entered in the IPPDALIAS_NAME field in the environment file:

   ```
   http://aliasname:10580/aiw
   ```

   Do not log in. After you see the login page, close the browser.
9. At a command prompt, navigate to the /opt/IBM/aiw/V1.0/bin directory. As the root user, enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.
10. Stop the auto-stop and auto-start processes from running on this server.

    Some of the processes in InfoPrint ProcessDirector are set to start and stop automatically when the physical server starts or stops. In a manual failover configuration, you cannot let those processes start and stop automatically. Do these steps to stop the automatic processes:

    a. Open /etc/netsvc.conf and add this line at the bottom of the file:

       ```
       hosts=local,bind
       ```

    b. Have your system administrator make sure that /etc/hosts and /etc/resolv.conf contain the correct information for your system.

    c. Enter these commands to back up the etc/inittab file:

       ```
       cd /etc
       cp -p  inittab  inittab.backup
       ```

    d. Enter this command to change the InfoPrint ProcessDirector autostart setting in the etc/inittab file to **off**:

       ```
       chitab "rcaiw:2:off:/etc/rc.aiw > /tmp/startaiw.out 2>&1 # IPPD auto-start"
       ```

    e. Enter these commands to rename rc.shutdown to rc.shutdown.save, so the shutdown routine cannot find and run it:

       ```
       cd  /etc
       mv  rc.shutdown  rc.shutdown.save
       ```

11. Make a system image of this server.

On the backup server

1. Load the system image from the existing primary server onto your backup server.

   When this step completes, your backup server is identical to the original primary server.
2. Have a system administrator connect the backup server to the external storage system. If the storage system is a SAN, import the volume groups.
3. Change to the root user and navigate to the /opt/IBM/aiw/V1.0/bin directory.
4. Enter `./failover_aix_start.ksh` to run the manual failover script that connects InfoPrint ProcessDirector to the storage system and to the network using the alias.

Note: If you see an error message that the primary server failed to start, enter `stopaiw` to stop InfoPrint ProcessDirector. After all the process are stopped, enter `startaiw`.

5. Verify that you can access the InfoPrint ProcessDirector user interface by opening a Web browser and entering this URL, replacing *alias_name* with the name you entered in the IPPDALIAS_NAME field in the environment file:

   `http://aliasname:10580/aiw`

   Do not log in. After you see the login page, close the browser.
6. At a command prompt, navigate to the /opt/IBM/aiw/V1.0/bin directory. As the root user, enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.

On the original primary server

1. On the original primary server, change to the root user and navigate to the /opt/IBM/aiw/V1.0/bin directory.
2. As the root user, enter `./failover_aix_start.ksh` to run the manual failover script that connects InfoPrint ProcessDirector to the external storage system and to the network using the alias.
3. Open a Web browser and access InfoPrint ProcessDirector at this URL, replacing *alias_name* with the name you entered in the IPPDALIAS_NAME field in the environment file:

   `http://aliasname:10580/aiw`
4. Log in using your existing user ID.

InfoPrint ProcessDirector is now installed on both servers. The original server is now active and connected to the external storage system. You must give all your users the URL to the alias to use when they access InfoPrint ProcessDirector. The original URL continues to work while the original server is active, but fails when you move processing to the backup server. If all users and applications use the alias, processing is not interrupted when you move processing to the backup server.

Installing InfoPrint ProcessDirector on secondary servers

After successfully installing InfoPrint ProcessDirector on a primary server, you can install InfoPrint ProcessDirector secondary servers on separate AIX, Linux, and Windows systems.

For any type of secondary server, do these tasks on the primary server before you do installation tasks on the secondary server:

1. Set up the primary server to export the InfoPrint ProcessDirector shared file system to the secondary server. The secondary server uses the /aiw file system on the primary server.
   a. Log in as the root user.
   b. Use SMIT to configure the NFS server on the primary system to start both now and when the system restarts:
      1) Enter `smitty nfs`.
      2) Select **Network File System (NFS)** and press Enter.
      3) Select **Configure NFS on This System** and press Enter.

4) Select **Start NFS** and press Enter.
5) In the **Set Start NFS now, on system restart or both** field, select **both** and press Enter.
6) Press Enter.
7) Press F10 to exit SMIT.

c. Use SMIT to add /aiw to the exports list and to specify which systems to allow access:
1) Enter `smitty nfs`.
2) Select **Network File System (NFS)** and press Enter.
3) If this is the *first* secondary server you are setting up, add /aiw to the exports list:
a) Select **Add a Directory to Exports List**.
b) Type or select values in these fields. The **bold** entries in the example below show changes that you must make. Type the host name of the secondary server where *new-secondary* appears.

```
Type or select values in entry fields.              [Entry Fields]
Press Enter AFTER making all changes
* Pathname of directory to export                   [/aiw]
  Anonymous UID                                     [-2]
  Public filesystem?                                [no]
* Export directory now, system restart or both       both
  Pathname of alternate exports file                []
  Allow access by NFS versions                      []
  External name of directory (NFS V4 access only)   []
  Referral locations (NFS V4 access only)           []
  Replica locations                                 []
  Ensure primary hostname in replica list           yes
  Allow delegations?                                no
* Security method 1                                 [sys,...]
*       Mode to export directory                    read-write
        Hostname list. If exported read-mostly      []
        Hosts & netgroups allowed client access     [new-secondary]
        Hosts allowed root access                   [new-secondary]
```

c) Press Enter.
d) Press F10 to exit SMIT.

4) If *another* secondary server is already set up under this primary server, add /aiw to the exports list:
a) Enter `smitty nfs`.
b) Select **Network File System (NFS)** and press Enter.
c) Select **Change/Show Attributes of an Exported Directory** and press Enter.
d) In the **Set Pathname of exported directory** field, type `/aiw` and press Enter.
e) Add the host name of the new secondary server to the same fields where the other secondary servers are already named. In the example below, *old-secondary* is the host name of an existing secondary server and *new-secondary* is the host name of the new secondary server.

```
Press Enter AFTER making all changes        [Entry Fields]

   Hosts & netgroups allowed client access  [old-secondary,new-secondary]
   Hosts allowed root access                [old-secondary,new-secondary]
```

f) Press Enter.

g) Press F10 to exit SMIT.

d. If your network does not have a Domain Name System (DNS) server, edit /etc/hosts on the primary server to add the hostname and IP address of the secondary server.

2. For Windows secondary servers, you must install the Network Information Service (NIS) server software on the primary server if you did not install it with the AIX operating system:
   a. Insert the first AIX product CD in the CD-ROM drive.
   b. Select **Software Installation and Maintenance** → **Install and Update Software** → **Install software**.
   c. In the **Input device/ directory for software** field, select **/dev/cd0**.
   d. In the **SOFTWARE to install** field, select **Network Information Service Server** and press Enter.
   e. Reply to the installer prompts.
3. For Windows secondary servers, you must use SMIT to configure the NIS server on the primary server:
   a. To determine the domain name, enter `hostname -d`.
   b. Enter `smitty nfs`.
   c. Select **Network Information Service (NIS)** → **Configure / Modify NIS** → **Change NIS Domain Name of this Host**.
   d. In the **Domain Name of this Host** field, type the domain name of your network and press Enter.
   e. Press F3 to return to the Configure / Modify NIS panel.
   f. Select **Configure this Host as a NIS Master Server** and press Enter.
   g. In the **HOSTS that will be slave servers** field, type the name of the Windows secondary server and press Enter.
4. Use the InfoPrint ProcessDirector user interface to add and enable the secondary server:
   a. Enter `http://`*`hostname`*`:15080/aiw` from the Web browser, replacing *hostname* with the host name of the primary server.
   b. Log in as an administrator. The default user name is `aiw`.
   c. On the Main page, click the **Administration** tab.
   d. From the shortcuts list, click **Add a Secondary Server**.
   e. Specify a server name and the IP address or host name for the secondary server. As an option, specify a description and values for the other properties of the server.
   f. For an AIX or Linux secondary server, you can specify either **Yes** or **No** for **In general server pool**. Servers in the general server pool can run any step defined in any job type. If you want the secondary server to only run specific steps, specify **No** in this field and then use the **Tune** function for each step template that you want to allow to run on the secondary server. For a Windows secondary server, specify **No** for **In general server pool**.

      Note: If any external steps send jobs to the Windows secondary server, you must tune the step template appropriately. For information about how to tune the step template, click **Help** from the top task bar of the InfoPrint ProcessDirector user interface to see the information center.
   g. Click **OK**.
   h. In the left pane, click **System** → **Servers**.

i. Select the server and then click **Enable**.

5. Continue with the appropriate installation task for your secondary server.

Installing on Linux servers

You can install an InfoPrint ProcessDirector secondary server on a Linux system in your network.

Important: You must install the same code level of InfoPrint ProcessDirector on the secondary server as on the primary server. To determine the level of code that is installed on either server, enter this command:

```
rpm –qa | grep aiw-server
```

To install InfoPrint ProcessDirector on a secondary Linux system:

1. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.

2. If you have an InfoPrint ProcessDirector service pack CD, insert it in the CD-ROM drive. If not, insert the InfoPrint ProcessDirector Secondary Server CD.

3. To determine the name of the CD mount point, enter:

   ```
   ls /media/*
   ```

   On some systems where the CD is mounted automatically, the name of the mount point is the same as the name of the CD.

4. Mount the CD, if necessary. Enter:

   ```
   mount /media/mount_point
   ```

5. From a working directory that is not on the CD, enter this command to start the installation:

   ```
   /media/mount_point/setup
   ```

   Restriction: Do not change to the mount /media/*mount_point* directory. You cannot run **setup** from a directory on the CD.

6. If you see a prompt, select **Secondary**.

7. If you are installing a service pack, the setup program copies the update files and installers to the hard drive. When it completes, it prompts you to insert the InfoPrint ProcessDirector Secondary Server CD.

8. For each program that is installed:

   a. Select the appropriate language and then click **OK**. You see a welcome window for the InstallShield Wizard.

   b. Reply to the prompts as the InstallShield Wizard steps you through the installation.

9. When you see a window that displays the default user ID (UID) and group ID (GID) values, specify the same numeric values that you specified for the primary server.

10. You see a message that all your files have been copied to your system. Click **Activate now**. The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

    ```
    http://hostname:15080/aiw
    ```

11. Click **Finish** to complete the installation. The secondary server starts automatically.
12. To verify that the InfoPrint ProcessDirector server is running, enter this command on the command line:

    ```
    ps -ef | grep Instance
    ```

    You should see an instance statement such as:

    ```
    java com.ibm.aiw.instance.SecondaryInstance hostname
    ```

    If the server is not running, view the installation logs in the /opt/IBM/aiw/V1.0/logs directory. If this does not solve the problem, contact customer support.
13. To make sure that the secondary server is connected to the primary server, log in to the InfoPrint ProcessDirector user interface and click **Administration** → **System** → **Servers** to verify that the **CStatus** column contains **Connected**.

After your server is running, you must determine how this server is used and change the properties of some objects accordingly. For example:

- What printers and input devices do you want the server to manage?

  Create or modify those devices so this server is listed as their **Parent server**.
- What step templates can run on this server?

  Tune those step templates so that they can run on this server.
- What external programs on this server can be accessed using an external step?

  Set up the external program and configure a step based on the **RunExternalProgram** step template so it uses that program.

Installing on AIX servers

You can install an InfoPrint ProcessDirector secondary server on an AIX system in your network.

Important: You must install the same code level of InfoPrint ProcessDirector on the secondary server as on the primary server. To determine the level of code that is installed on either server, enter this command:

```
rpm –qa | grep aiw-server
```

Note: In addition to InfoPrint ProcessDirector, this software will be installed or upgraded if it is not already present on the AIX system:

- Bash 3.0-1
- RPM installp package (Rpm.rte 3.0.5.39)

To install InfoPrint ProcessDirector on a secondary AIX server:

1. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
2. Enter this command to make sure that the Java runtime environment installed on the server is 1.4 with any update level:

   ```
   java -version
   ```
3. Enter this command to make sure you are in the root directory:

   ```
   cd /
   ```

4. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

   ```
   ps -ef | grep cdromd
   ```

   - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
   - If there are no daemon sessions running, enter:

     ```
     cdromd
     ```

5. If you have an InfoPrint ProcessDirector service pack CD, insert it in the CD-ROM drive. If not, insert the InfoPrint ProcessDirector Secondary Server CD.
6. Enter this command:

   ```
   /cdrom/cd0/setup
   ```

   Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.
7. If you see a prompt, select **Secondary**.
8. If you are installing a service pack, the setup program copies the update files and installers to the hard drive. When it completes, it prompts you to insert the InfoPrint ProcessDirector Secondary Server CD.
9. For each program that is installed:
   a. Select the appropriate language and then click **OK**. You see a welcome window for the InstallShield Wizard.
   b. Reply to the prompts as the InstallShield Wizard steps you through the installation.
10. When you see a window that displays the default user ID (UID) and group ID (GID) values, specify the same numeric values that you specified for the primary server.
11. You see a message that all your files have been copied to your system. Click **Activate now**. The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

    ```
    http://hostname:15080/aiw
    ```

12. Click **Finish** to complete the installation. If the secondary server is installed on a different system from the primary server, it starts automatically.
13. If the secondary server is installed on the same system as the primary server, enter this command to start the secondary server:

    ```
    startaiw
    ```

14. To verify that the InfoPrint ProcessDirector server is running, enter this command on the command line:

    ```
    ps -ef | grep Instance
    ```

    You should see an instance statement such as:

    ```
    java com.ibm.aiw.instance.SecondaryInstance hostname
    ```

    If the server is not running, view the installation logs in the /opt/IBM/aiw/V1.0/logs directory. If this does not solve the problem, contact customer support.
15. To make sure that the secondary server is connected to the primary server, log in to the InfoPrint ProcessDirector user interface and click **Administration** → **System** → **Servers** to verify that the **CStatus** column contains **Connected**.

After your server is running, you must determine how this server is used and change the properties of some objects accordingly. For example:

- What printers and input devices do you want the server to manage?

  Create or modify those devices so this server is listed as their **Parent server**.
- What external programs on this server can be accessed using an external step?

  Set up the external program and configure a step based on the **RunExternalProgram** step template so it uses that program.

Installing on Windows servers

The InfoPrint ProcessDirector Windows secondary server runs as a Windows service, with the permissions of the Windows user ID specified during installation. Like all secondary servers, the Windows secondary server uses the NFS protocol to access the exported `/aiw` file system on the primary server. To enable this access, you must configure both the primary and secondary servers.

This section shows an example configuration, using the Windows NFS client and the User Name Mapping service provided with SFU. Be aware that your network environment might require a different configuration than the one described here.

To install a Windows secondary server, you must do these tasks:

1. To facilitate the use of the User Name Mapping service, you must make sure that a Network Information Service (NIS) server is installed on your InfoPrint ProcessDirector primary system.
2. Configure and run the NIS server on your InfoPrint ProcessDirector primary system if you have not done so already. See “Installing InfoPrint ProcessDirector on secondary servers” on page 64 for instructions.
3. On the Windows system, install Microsoft Windows Services for UNIX (SFU) if it is not installed already. The NFS protocol requires SFU, primarily for the use of the bundled NFS client. See “Installing Windows Services for UNIX (SFU) on Windows” for instructions.
4. To create an association between AIX and Windows user names, configure the User Name Mapping service on Windows. See “Configuring User Name Mapping on Windows” on page 71 for instructions.
5. Test the connection from Windows to the NFS server. See “Testing the connection to the NFS server” on page 72 for instructions.
6. Do the actual installation. See “Installing InfoPrint ProcessDirector on Windows secondary servers” on page 72 for instructions.

Installing Windows Services for UNIX (SFU) on Windows

After you install the Windows operating system, you must install SFU Version 3.5 or later on your Windows system. SFU includes all the facilities needed to mount network file systems, including the NFS client and User Name Mapping Service.

Note: Determine the NIS domain name on the InfoPrint ProcessDirector primary server before you begin this procedure. You can enter `hostname -d` on the primary server to obtain this information.

To install SFU:

1. Download the latest version of Windows Services for UNIX (SFU) from Microsoft TechNet (http://www.microsoft.com/technet/interopmigration/unix/sfu/default.mspx). The downloaded version of SFU is a self-extracting executable with a name similar to SFU35SEL_EN.exe.
2. Double-click the .exe file to unzip the files and begin the installation.

a. In the Customer Information window, type your customer information and click **Next**.
b. In the License and Support Information window, read the information. Click **I accept the agreement** and then click **Next**.

3. In the Installation Options window, click **Custom Installation** and click **Next**.
4. Under Authentication tools for NFS, click **User Name Mapping** and then click **Will be installed on local hard drive**.
5. Click **Next**.
6. In the Security Settings window, accept the defaults and click **Next**.
7. In the User Name Mapping window under the Configure the User Name Mapping server subtitle, make sure that **Local User Name Mapping Server** and **Network Information Service (NIS)** are selected, and then click **Next**.
8. In the User Name Mapping window under the Configure local User Name Mapping using NIS subtitle, type the NIS domain name that you specified previously in "Installing InfoPrint ProcessDirector on secondary servers" on page 64, specify the NIS Server host name (the host name of the primary), and then click **Next**.
9. Click **Next** until you see the window that shows the **Finish** button, and then click **Finish**.
10. When prompted, restart your computer.

Configuring User Name Mapping on Windows

The User Name Mapping service creates an association between AIX and Windows user names. This lets users connect to NFS resources without having to log on to AIX and Windows systems separately.

The User Name Mapping service also allows control over the AIX file permissions that individual Windows users have. For more information, see the User Name Mapping section in the documentation provided with SFU.

To configure user name mapping on Windows:

1. Access the Control Panel and click **Administrative Tools**.
2. Click **Services for UNIX Administration**.
3. If you see the Welcome to Services for UNIX on local computer window, click **Settings**. In the Services for UNIX [local] window, verify that **Computer name** is set to the name of the Windows computer that you are configuring, then minimize the window.
4. In the left pane of the Microsoft Welcome to Services for UNIX on local computer window, click **User Name Mapping**.
5. In the User Name Mapping on local computer window, make sure that **Use Network Information Services (NIS)** is selected.
6. Click the **Maps** tab and clear the **Simple maps** check box.
7. Make sure the **NIS Domain Name** and **NIS Server Name** fields are filled in correctly.
8. Click **Show User Maps** under Advanced maps. You might need to scroll down to see the Advanced maps section. If you see an error message when you click **Show User Maps**, stop and restart the User Name Mapping service by right-clicking **User Name Mapping** in the left navigation pane, and then clicking **Stop** and then **Start**.
9. Click **List Windows Users**, which fills in all the user IDs from your Windows system.

10. Click **List UNIX Users**, which fills in all the UNIX users on your primary server system.
11. Select the Windows user that you want your secondary server to run as, then select **aiw1** from the UNIX users list, and click **Add** to map the users.
12. Click **Show Group Maps**. You might need to scroll up or down to see the Advanced maps section.
13. Click **List Windows groups**, which fills in all the Windows groups from your Windows system. Select the Windows group that the previous user ID belongs to.
14. Click **List UNIX groups**, which fills in all the groups on your primary server system. Select **aiwgrp1**, which is the group that the `aiw1` user is in on the primary server.
15. Click **Add** to map the groups.
16. On the User Name Mapping on local computer window, click **Apply** in the upper right corner.
17. Close SFU.

Testing the connection to the NFS server

To test the connection to the NFS server:

1. Click **My Computer**. In the address bar, type `\\`*`hostname of primary server`*, such as `\\base.penn.boulder.ibm.com` or an IP address, such as `\\9.99.183.294`. You see the `\aiw` directory in the right pane.
2. If you can open the aiw folder, the connection to the NFS server is successful.
3. If you cannot open the aiw folder, open a command prompt and type `ping` *`hostname of primary server`* (for example, `ping base.penn.boulder.ibm.com`).
4. If you can ping the primary server but cannot open the aiw folder, see the "Windows secondary server does not connect" troubleshooting topic in the InfoPrint ProcessDirector information center. Click **Help** from the top task bar of the InfoPrint ProcessDirector user interface to see the information center.

Note: If your environment uses firewalls for security, contact your network administrator to make sure that the firewall is not preventing access to the primary server.

Installing InfoPrint ProcessDirector on Windows secondary servers

After you have completed the prerequisite steps, you can install an InfoPrint ProcessDirector secondary server on a Windows system in your network.

Important: You must install the same code level of InfoPrint ProcessDirector on the secondary server as on the primary server. To determine the level of code that is installed on the primary server, enter this command:

```
rpm –qa | grep aiw-server
```

To install InfoPrint ProcessDirector on a Windows secondary server:

1. Log in as an administrator.
2. Insert the InfoPrint ProcessDirector Secondary Server CD in the CD-ROM drive. The InfoPrint ProcessDirector InstallShield Wizard runs automatically from the CD if the Windows system is configured to autorun CDs.
3. If the installation wizard does not run automatically:
   a. Change to the drive where you inserted the CD.

b. Change to the win directory.
c. Double-click **setup.exe**.

4. For each program that is installed:
   a. Select the appropriate language and then click **OK**. You see a welcome window for the InstallShield Wizard.
   b. Reply to the prompts as the InstallShield Wizard steps you through the installation. You are prompted to enter a user ID in the format *DOMAIN\user_ID*. *DOMAIN* is the host name of the Windows system and *user_ID* is the user ID that you mapped to aiw1 in "Configuring User Name Mapping on Windows" on page 71.
5. Click **Finish** to complete the installation.
6. If you have a service pack CD, repeat steps 2 through 5 to install it.
7. To make sure that the Windows secondary server is connected to the primary server, log in to the InfoPrint ProcessDirector user interface and click **Administration** → **System** → **Servers** to verify that the **CStatus** column contains **Connected**.
8. If the Windows secondary server is not connected to the primary server, see the "Windows secondary server will not connect" troubleshooting topic in the InfoPrint ProcessDirector information center. Click **Help** from the top task bar of the InfoPrint ProcessDirector user interface to see the information center.

After your server is running, you must determine how this server is used and change the properties of some objects accordingly. For example:

- What external programs on this server can be accessed using an external step?

  Set up the external program and configure a step based on the **RunExternalProgram** step template so it uses that program.

Troubleshooting installation errors

If you have trouble installing InfoPrint ProcessDirector, you can find information in the installation logs.

The installer logs information in these directories:

- /opt/IBM/aiw/v1.0/logs
- /opt/IBM/aiw/v1.0/logs/installer
- /tmp

Completing post-installation tasks

After you finish installing InfoPrint ProcessDirector, you complete post-installation tasks to:

- Verify the installation.
- Configure InfoPrint ProcessDirector.
- Schedule automatic maintenance.

Note: During installation, InfoPrint ProcessDirector creates files with a default group ownership set to `aiwgrp1`. Any user who is in the `aiwgrp1` group can access files that InfoPrint ProcessDirector creates:

- If you have users with AIX system user IDs who need to work directly with InfoPrint ProcessDirector files or submit files to hot folders, you must add their user IDs to the `aiwgrp1` group. Be sure to use the `aiwgrp1` group name as an additional group for your users, not as their default group.

- If you create another group to own directories that InfoPrint ProcessDirector input devices use, you must add the `aiw1` user ID to the new group.

Verifying the installation

If you have finished installing InfoPrint ProcessDirector and want to verify the installation, use this procedure to add an AFP printer, submit a test job, and print the job.

To verify the installation:

1. Log in to the primary server as the InfoPrint ProcessDirector user. The default user ID is `aiw1` and the default password is `aiwpass1`. You are immediately prompted to change the password.
2. Enter `http://`*`hostname`*`:15080/aiw` from the Web browser. The host name of the primary server is *hostname*.
3. Type an administrator user name and password, and then click **Log in** to log in to the user interface. The default user name is `aiw` and the default password is `aiw`.
4. On the Main page, click the **Administration** tab.
5. From the shortcuts list, click **Add an AFP Printer**.
6. Specify the printer name, TCP/IP address or host name, TCP/IP port number, and language for the printer you want to send a test job to.

   Note: On most systems, the port number is 5001.
7. Click **OK**.
8. Click the **Main** tab.
9. In the Printers portlet, select the printer you just added and then click **Enable**.
10. In the Input Devices portlet, click the **Restore** () icon.
11. Select the **HotFolderAFP** input device and then click **Enable and Connect**.
12. On the command line, enter this command to copy a test file into the hot folder that the HotFolderAFP input device monitors:
    ```
    cp /aiw/aiw1/testfiles/Demo.afp /aiw/aiw1/System/hf/AFP
    ```
13. Wait a few minutes for the InfoPrint ProcessDirector user interface to be refreshed. If it is not refreshed automatically, refresh your browser. You should see a job in the Jobs table on the Main page.

    If you do not see a job, see the "Job not appearing in Jobs table" troubleshooting topic in the InfoPrint ProcessDirector information center. Click **Help** from the top task bar of the InfoPrint ProcessDirector user interface to see the information center.
14. Pick up your test job from the printer.

This verifies that InfoPrint ProcessDirector is installed correctly.

Configuring InfoPrint ProcessDirector

You use the user interface to complete configuration tasks for InfoPrint ProcessDirector, such as setting up job processing, defining input devices for job submission, defining your printer hardware to InfoPrint ProcessDirector, and adding users. The InfoPrint ProcessDirector information center describes these configuration tasks.

To access the InfoPrint ProcessDirector information center to learn about configuration tasks:

1. Enter `http://hostname:15080/aiw` from the Web browser on a workstation. The host name of the primary server is *hostname*.
2. Click **Help** from the top task bar. You see the InfoPrint ProcessDirector information center.
3. From Contents in the left pane, click **Configuring**. You see a list of configuration tasks in the right pane.
4. Select the configuration tasks that apply to your installation.

Scheduling automatic maintenance

InfoPrint ProcessDirector provides maintenance scripts that must be run regularly on the primary server to improve performance. By default, InfoPrint ProcessDirector runs these scripts every day at midnight. You can change the time or frequency, and you can run your own maintenance scripts at the same time.

While these scripts are running, they might slow InfoPrint ProcessDirector down for a few minutes. Therefore, you should avoid running them at peak production times.

These entries in the crontab file run the maintenance scripts:

```
00 00 * * 0-6 /aiw/aiw1/maintenance/maintenance.sh daily
00 00 * * 0 /aiw/aiw1/maintenance/maintenance.sh weekly
```

crontab entries are in this format:

```
mm hh dd month weekday command
```

The first entry runs all scripts in the /aiw/aiw1/maintenance/daily directory at 00:00 (midnight) every day from Sunday (0) through Saturday (6). The second entry runs all scripts in the /aiw/aiw1/maintenance/weekly directory at 00:00 (midnight) every Sunday. (By default, there are no scripts in /aiw/aiw1/maintenance/weekly.)

- To run the maintenance scripts weekly instead of daily, move them to the /aiw/aiw1/maintenance/weekly directory.
- To change the time, day, or frequency for running maintenance scripts, edit the crontab file:
  1. Log in as aiw1.
  2. Enter this command:

     ```
     crontab -e
     ```

  3. Make any necessary changes. For example, this entry runs all scripts in the /aiw/aiw1/maintenance/daily directory at 10:30 PM every Monday, Wednesday, and Friday:

     ```
     30 22 * * 1,3,5 /aiw/aiw1/maintenance/maintenance.sh daily
     ```

- To run your own scripts at the same time as the InfoPrint ProcessDirector maintenance scripts, copy them into the /aiw/aiw1/maintenance/daily or /aiw/aiw1/maintenance/weekly directory. Make sure that the aiw1 user ID has execute permission for your scripts.

Installing feature or extension software

After you install InfoPrint ProcessDirector, you can add feature or extension software at any time. You install features (except the secondary server feature) and extensions only on the primary server.

Important:

- If you are installing more than one feature, install the printer engine features last.
- The process for installing the Transform Features is slightly different from this procedure. See "Installing the Transform Features" on page 77 for instructions.

To add feature or extension software to the primary server:

1. Stop the primary server. See "Stopping primary and secondary servers on AIX" on page 83.
2. Log in as the root user.
3. Enter this command to make sure that you are in the root directory:

   ```
   cd /
   ```
4. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

   ```
   ps -ef | grep cdromd
   ```
   - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
   - If there are no daemon sessions running, enter:

     ```
     cdromd
     ```
5. Insert the CD for the feature or extension software in the CD-ROM drive.
6. Enter this command to start the installation:

   ```
   /cdrom/cd0/setup
   ```
7. Select the appropriate language for the wizard to use and then click **OK**. You see a welcome window for the InstallShield Wizard.
8. Reply to any prompts as the InstallShield Wizard steps you through the installation.
9. If you see a prompt to activate the installation, select one of these options:

   Activate later
   Select this option if you have additional features or extensions to install.

   Activate now
   Select this option if this is the last feature or extension that you have to install.

   The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

   ```
   http://hostname:15080/aiw
   ```
10. Click **Finish** to complete the installation. A prompt asks if you have additional software to install.
11. If you have additional feature or extension software to install, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation. The primary server restarts as part of the activation.

Installing the Transform Features

The process for installing the Transform Features is a little different from the process for installing other features.

To install the Transform Features:

1. Make sure that these space requirements are available in the named directories before you install any of the Transform Features:

Directory	Space
/tmp	500 MB
/var/IBM	1 GB
/opt/IBM	2 GB
/var/tmp/IBM	500 MB
root home directory	10 MB

2. Insert the Transform Feature CD in the CD-ROM drive.
3. Mount the CD if it does not mount automatically.

   Note: The mount point for the CD-ROM drive can vary depending on your system configuration.
4. Change to the directory where the CD is mounted.
5. Enter this command:

   ```
   ./install.sh
   ```
6. After the command finishes, enter this command to return to the root directory:

   ```
   cd /
   ```
7. Unmount and eject the CD.

Chapter 4. Starting, stopping, and uninstalling InfoPrint ProcessDirector on AIX

You can start and stop InfoPrint ProcessDirector servers. You can also uninstall InfoPrint ProcessDirector.

Starting primary and secondary servers on AIX

InfoPrint ProcessDirector primary and secondary servers start automatically when the AIX systems on which they are installed start. However, you might need to start the primary server or a secondary server without restarting the entire operating system.

To start the primary and secondary servers on an AIX system:

1. Log in to the AIX system as the InfoPrint ProcessDirector user (**aiw1**).
2. Access the command line.
3. Enter this command:

   ```
   startaiw
   ```

4. If the **startaiw** command fails, enter these commands:

   ```
   stopaiw
   startaiw
   ```

For the primary server, InfoPrint ProcessDirector starts the InfoPrint ProcessDirector version of DB2 (if it is installed), the Web server and user interface program, and the primary server. For a secondary server, the InfoPrint ProcessDirector secondary server starts and connects to the primary server.

Deactivating the autostart script on AIX

If you do not want the InfoPrint ProcessDirector primary or secondary servers to start automatically when you restart the system on which they are installed, you can deactivate the autostart script. The InfoPrint ProcessDirector system can be running when you deactivate the script.

To deactivate the autostart script:

1. Log in as the root user.
2. Access the command line.
3. Enter this command:

   ```
   /opt/IBM/aiw/V1.0/workflowsystem/rmInittabEntry.ksh
   ```

Activating the autostart script on AIX

If you previously deactivated the autostart script on your system, you can reactivate it. Reactivating the autostart script causes the InfoPrint ProcessDirector primary server or secondary server to start automatically when the system starts.

Note: When you install InfoPrint ProcessDirector, the default is that it activates the autostart script. If you have not deactivated it, you do not have to do this procedure.

To activate the autostart script:

1. Log in as the root user.
2. Access the command line.
3. Enter this command:

```
/opt/IBM/aiw/V1.0/workflowsystem/mkInittabEntry.ksh
```

Starting and stopping the primary server when the DB2 server is on a different system

The InfoPrint ProcessDirector primary server and its DB2 client must always be able to connect to the DB2 server. If the DB2 server is installed on a different system and you reboot that system, you must stop and restart InfoPrint ProcessDirector.

Stop and restart InfoPrint ProcessDirector and the DB2 server in this order:

1. Enter this command to stop InfoPrint ProcessDirector:

   ```
   stopaiw
   ```

2. Reboot the system where the DB2 server is installed. The DB2 server stops automatically.
3. Log into the DB2 server system as the InfoPrint ProcessDirector DB2 instance user. The default user ID is aiwinst.
4. Enter this command to start the DB2 server:

   ```
   db2 start db manager
   ```

5. On the InfoPrint ProcessDirector primary server system, enter this command to restart InfoPrint ProcessDirector:

   ```
   startaiw
   ```

If the DB2 server stops unexpectedly, stop InfoPrint ProcessDirector, then continue from step 2.

Starting secondary servers on Linux

InfoPrint ProcessDirector secondary servers are configured to start automatically when the Linux system on which they are installed starts. However, you might need to start the secondary server without restarting the entire operating system.

To start an InfoPrint ProcessDirector secondary server on a Linux system:

1. Log in to the Linux system as the InfoPrint ProcessDirector user (**aiw1**).
2. Access the command line.
3. Enter this command:

   ```
   startaiw
   ```

4. If the **startaiw** command fails, enter these commands:

   ```
   stopaiw
   startaiw
   ```

The InfoPrint ProcessDirector secondary server starts and connects to the primary server.

Deactivating the autostart script on Linux

If you do not want an InfoPrint ProcessDirector secondary server to start automatically when you restart the system on which it is installed, you can deactivate the autostart script. You remove two symbolic links from the script to deactivate it. The InfoPrint ProcessDirector system can be running when you deactivate the script.

To deactivate the autostart script:

1. Log in as the root user.
2. Access the command line.
3. Enter these commands:

```
cd /etc/init.d
ls rc*/*aiwserv
```

4. Delete the files with names like rc*n*.d/S*nn*aiwserv and rc*n*.d/K*nn*aiwserv. *n* and *nn* are numbers that determine when the script runs. Note these numbers so that you can reactivate the autostart script.

Activating the autostart script on Linux

If you previously deactivated the autostart script on your system, you can reactivate it. Reactivating the autostart script causes the InfoPrint ProcessDirector secondary server to start automatically when the system starts. You add two symbolic links from the script to activate it.

Note: When you install InfoPrint ProcessDirector, the default is that it activates the autostart script. If you have not deactivated it, you do not have to do this procedure.

To activate the autostart script:

1. Log in as the root user.
2. Access the command line.
3. Enter these commands:

```
ln -s /etc/init.d/aiwserv /etc/init.d/rcn.d/Snnaiwserv
ln -s /etc/init.d/aiwserv /etc/init.d/rcn.d/Knnaiwserv
```

n and *nn* are numbers that determine when the script runs. You noted these numbers when you deactivated the autostart script.

Starting the Windows secondary server service

When a Windows secondary server is installed, it is configured to start running automatically as a Windows service when the Windows system starts. If you stopped the secondary server or disabled the automatic start, you can start it manually.

To manually start the Windows secondary server service:

1. Log in to the Windows system as an administrator.
2. From the Windows Control Panel, click **Administrative Tools** → **Services**.
3. Right-click **InfoPrint ProcessDirector Secondary Server** and then click **Start**.

Disabling automatic start of the Windows secondary server service

You can disable the automatic start function of the Windows secondary service by configuring the Windows system.

To disable the automatic start of the Windows secondary server service:

1. Log in as an administrator.
2. From the Windows Control panel, click **Administrative Tools** → **Services**.
3. Right-click **InfoPrint ProcessDirector Secondary Server** and then click **Properties**.
4. On the **General** tab, set the **Startup type** to **Manual**.
5. Click **OK**. The Windows secondary server no longer starts when the Windows system starts. You can manually start the secondary server through the Windows interface.

Automatically starting the Windows secondary server service

If you previously disabled the automatic start of the Windows secondary server service on the Windows system, you can enable the automatic start again. Enabling the automatic start of the service causes the InfoPrint ProcessDirector secondary server to automatically start when the Windows system starts.

Note: When you install InfoPrint ProcessDirector, it enables the automatic start of the service. If you have not disabled the service, you do not have to do this procedure.

To automatically start the Windows secondary server service:

1. Log in to the Windows system as an administrator.
2. From the Windows Control Panel, click **Administrative Tools** → **Services**.
3. Right-click **InfoPrint ProcessDirector Secondary Server** and then click **Properties**.
4. On the **General** tab, set the **Startup type** to **Automatic**.
5. Click **OK**.

Moving processing to and from a backup server

If you set up a manual failover environment and your active primary server must be taken out of service, you can move print processing to your backup server using the manual failover scripts included with InfoPrint ProcessDirector. When the problem is solved, you can use the same scripts to move processing back to the active server.

To use this procedure you must have already installed a manual failover environment. For more information, see "Installing a manual failover environment" on page 48.

To move processing to a backup server:

1. Log in to the active server as the root user.

   Note: If you cannot log in to the active server, skip steps 2–4.
2. Navigate to the /opt/IBM/aiw/V1.0/bin directory.

3. Enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.
4. Try to access the InfoPrint ProcessDirector user interface to make sure that the primary server is not running.
5. Log in to the backup server as the root user.
6. Navigate to the /opt/IBM/aiw/V1.0/bin directory.
7. Enter `./failover_aix_start.ksh` to run the manual failover script that starts InfoPrint ProcessDirector, connects it to the external storage system, and adds the alias.
8. Open a Web browser and access the InfoPrint ProcessDirector user interface as usual.

When the problem is solved and you want to move processing back to the original server, repeat this procedure, running `./failover_aix_stop.ksh` on the backup server and `./failover_aix_stop.ksh` on the original server.

Logging in to the Transform Feature user interface

This section describes how to log in to the Transform Feature user interface.

To log in:

1. Open a Web browser and enter this address: `http://{`*`target server host name or ip address`*`}:{`*`port determined at install`*`}/psd`. The default port number is 16080. For example, if a Transform Feature is installed on a host with TCP/IP address 127.0.0.1 with the default port, enter this address: `http://127.0.0.1:16080/psd`.
2. In the browser window, you see the Log in to the Transform Feature user interface page. Type the Transform Feature password. The default password is `nopassword`.
3. Click **Log in**. You see the Transform Feature user interface main page.

   Remember: If you do not use the Transform Feature user interface for 30 minutes or more, you must log in again.

   When you first log in to the Transform Feature user interface, you see one transform server that has been added by default during the installation.

Stopping primary and secondary servers on AIX

When you stop the InfoPrint ProcessDirector primary server or a secondary server, you can stop the system with or without waiting for job-processing steps to complete. You can also choose whether to stop processes that were started by the InfoPrint ProcessDirector printer driver component, or by Download for z/OS, or by AFP Download Plus.

To stop the primary and secondary servers on an AIX system:

1. Log in to the AIX system as the InfoPrint ProcessDirector user (**aiw1**).
2. Access the command line.
3. Optional: To minimize the impact of shutting down the system on processes that are currently running, disable the input devices associated with the server.
4. Enter one of these commands:
   - To stop the system immediately without waiting for steps to complete:

```
stopaiw
```

Any steps that were in a processing state will move to an error state when you restart the system.

- To stop the system after the currently processing steps are complete:

```
stopaiw -q
```

- On a system where a primary server is defined, to stop the system and all processes that were started by the printer driver component, or by Download for z/OS, or by AFP Download Plus:

```
stopaiw -t
```

For the primary server, InfoPrint ProcessDirector shuts down the InfoPrint ProcessDirector version of DB2 (if it is installed), the Web server and user interface program, and the primary server. If a secondary server is defined to the primary server when the primary server stops, the secondary server tries to reestablish the connection every 30 seconds, until it can connect or until the secondary server stops.

For a secondary server, InfoPrint ProcessDirector disconnects from the primary server and stops the secondary server.

If the same AIX system has both a primary and a secondary server defined, these commands stop both of them.

Stopping secondary servers on Linux

When you stop an InfoPrint ProcessDirector secondary server running on Linux, you can stop the server with or without waiting for job-processing steps to complete.

To stop a secondary server on a Linux system:

1. Log in to the Linux system as the InfoPrint ProcessDirector user (**aiw1**).
2. Access the command line.
3. Optional: To minimize the impact of shutting down the system on processes that are currently running, disable the input devices associated with the server.
4. Enter one of these commands:
   - To stop the secondary server immediately without waiting for steps to complete:

     ```
     stopaiw
     ```

     Any steps that were in a processing state will move to an error state when you restart the system.
   - To stop the secondary server after the currently processing steps are complete:

     ```
     stopaiw -q
     ```

     InfoPrint ProcessDirector disconnects the secondary server from the primary server and stops the secondary server.

Stopping the Windows secondary server service

You can stop the Windows secondary server service through the Windows user interface. Stopping the service prevents InfoPrint ProcessDirector from accessing any external programs on the Windows system through external steps in job types.

To stop the Windows secondary server service:

1. Optional: To minimize the impact of shutting down the system on processes that are currently running, disable the input devices associated with the server.
2. Log in to the Windows system as an administrator.
3. From the Windows Control Panel, click **Administrative Tools** → **Services**.
4. Right-click **InfoPrint ProcessDirector Secondary Server** and then click **Stop**.

Uninstalling InfoPrint ProcessDirector

You might need to uninstall InfoPrint ProcessDirector (for example, if you need to restore to a previous level). This section explains how to uninstall InfoPrint ProcessDirector from the primary and secondary servers. Keep in mind that your primary and secondary servers must be at the same InfoPrint ProcessDirector level. Therefore, if you uninstall InfoPrint ProcessDirector from your primary server and install a previous level, you must also uninstall InfoPrint ProcessDirector from all your secondary servers and install the same level.

Note: The instructions in this section describe uninstalling with the InstallShield Wizard graphical display. If you cannot run the InstallShield Wizard in graphical mode, use -console at the end of an uninstallation command to uninstall with a text-based program; for example:

```
/opt/IBM/aiw/V1.0/_uninst/uninstall -console
```

Uninstalling from the primary server

If you need to uninstall the InfoPrint ProcessDirector programs from the primary server, you use one command that uninstalls the various programs in the correct order. You use separate InstallShield Wizards to uninstall each program.

To uninstall from the primary server:

1. Log in as the root user.
2. Enter this command:

   ```
   /opt/IBM/aiw/V1.0/_uninst/uninstall
   ```

   You see a welcome window.
3. For each program, reply to the prompts as the InstallShield Wizard steps you through the uninstallation. You see numerous processing messages that give the status of the uninstallation. When the uninstallation is complete, you see either a message that the uninstallation was successful or a message that there were errors and the location of the error log file.
4. If you see a message asking whether you want to activate InfoPrint ProcessDirector, click **Activate later**.
5. Click **Finish**.
6. To completely remove all files that InfoPrint ProcessDirector installed, remove any file systems that were created as part of the installation:

   /aiw/aiw1/db2
   /aiw/aiw1/db2_logs

/aiw
/var/psf/segments
/var/psf
/var/aiw

Important: Do not remove the /var/psf/segments and /var/psf directories if InfoPrint Manager is installed on the server you are using.

7. To remove the InfoPrint ProcessDirector databases and DB2 instance from a DB2 server on a different system:
   a. Log in to that server as the root user.
   b. Insert the InfoPrint ProcessDirector PTF CD in the drive.
   c. Navigate to the aix/db directory on the InfoPrint ProcessDirector PTF CD.
   d. Enter this command to run the uninstall script:

      ```
      ./remoteDB2uninstall.sh
      ```

   Note: remoteDB2uninstall.sh lets you choose whether to remove the InfoPrint ProcessDirector user IDs or user groups created by setupRemoteDB2.sh. It does not remove InfoPrint ProcessDirector user IDs or user groups that you created manually.

Uninstalling the AIX or Linux secondary servers

If you need to uninstall the InfoPrint ProcessDirector programs from the AIX or Linux secondary servers, you use one command that uninstalls the various programs in the correct order. You use separate InstallShield Wizards to uninstall each program.

To uninstall the AIX or Linux secondary servers:

1. Log in as the root user.
2. Enter this command:

   ```
   /opt/IBM/aiw/V1.0/_uninst/uninstall
   ```

   You see a welcome window.
3. For each program, reply to the prompts as the InstallShield Wizard steps you through the uninstallation. You see processing messages that give the status of the uninstallation. When the uninstallation is complete, you see either a message that the uninstallation was successful or a message that there were errors and the location of the error log file.
4. If you see a message asking whether you want to activate InfoPrint ProcessDirector, click **Activate later**.
5. Click **Finish.**
6. To completely remove all files installed by InfoPrint ProcessDirector, delete these file systems and directories:

   /aiw
   /var/psf/segments
   /var/psf
   /var/aiw

   Note: Do not remove the /var/psf/segments and /var/psf directories if InfoPrint Manager is installed on the server you are using.

Uninstalling the Windows secondary server

To uninstall the Windows secondary server:

1. Log in as the administrator.
2. From the Windows Control Panel, click **Add or Remove Programs**.
3. Scroll down the list until you find **InfoPrint ProcessDirector secondary server on Windows** and select it.
4. Follow all instructions as directed.
5. Click **Finish**.

Uninstalling features or extensions

When you uninstall the InfoPrint ProcessDirector base programs, you automatically uninstall all features and extensions. You can also uninstall a feature or extension without uninstalling InfoPrint ProcessDirector.

To uninstall a feature or extension without uninstalling InfoPrint ProcessDirector:

1. Log in as the root user.
2. Enter the appropriate command for the feature or extension that you want to uninstall:

Table 23. Uninstallation commands for InfoPrint ProcessDirector features

Feature	Uninstallation command
Secondary server	`/opt/IBM/aiw/V1.0/_uninst/ippd/uninstaller.bin`
Low-speed printer engine	`/opt/IBM/aiw/V1.0/_uninst/lspa/uninstaller.bin`
Medium-speed printer engine	`/opt/IBM/aiw/V1.0/_uninst/mspa/uninstaller.bin`
High-speed printer engine	`/opt/IBM/aiw/V1.0/_uninst/hspa/uninstaller.bin`
Workgroup printer engine	**Restriction:** This feature cannot be uninstalled without uninstalling InfoPrint ProcessDirector.
AFP Editor	`/opt/IBM/aiw/V1.0/_uninst/editor/uninstaller.bin`
AFP Indexer	`/opt/IBM/aiw/V1.0/_uninst/vi/uninstaller.bin`
Inserter Level I	`/opt/IBM/aiw/V1.0/_uninst/fbi-basic/uninstaller.bin`
Inserter Level II	`/opt/IBM/aiw/V1.0/_uninst/fbi-advanced/uninstaller.bin`
Manufacturing Optimization	`/opt/IBM/aiw/V1.0/_uninst/doc/uninstaller.bin`
Reports	`/opt/IBM/aiw/V1.0/_uninst/reports/uninstaller.bin`
Service Level Agreements (SLA)	`/opt/IBM/aiw/V1.0/_uninst/sla/uninstaller.bin`
afp2pdf Transform	`/opt/IBM/itm/feature/afp2pdf/_uninst/uninstaller.bin`

Table 23. Uninstallation commands for InfoPrint ProcessDirector features (continued)

Feature	Uninstallation command
pcl2afp Transform	`/opt/IBM/itm/feature/pcl2afp/_uninst/uninstaller.bin`
pdf2afp and ps2afp Transforms	`/opt/IBM/itm/feature/pspdf2afp/_uninst/uninstaller.bin`
sap2afp Transform	`/opt/IBM/itm/feature/sap2afp/_uninst/uninstaller.bin`
All Transform Features	`/opt/IBM/itm/_uninst/uninst_lchr.sh`
Transform Feature update	`/opt/IBM/itm/sp/sp_8b/_uninst/uninstaller.bin`
Designer	`/opt/IBM/aiw/V1.0/_uninst/gmc/uninstaller.bin`

3. Reply to the prompts as the InstallShield Wizard steps you through the uninstallation. You see numerous processing messages that give the status of the uninstallation. When the uninstallation is complete, you see either a message that the uninstallation was successful or a message that there were errors and the location of the error log file.
4. When you see a message that all your files have been copied to your system, click **Activate later** if you have additional software to uninstall. Otherwise, click **Activate now**.
5. Click **Finish**.

Chapter 5. Backing up data and applying service

If you already have InfoPrint ProcessDirector installed on your system and you want to apply a service update, you can do so without uninstalling InfoPrint ProcessDirector. The installation update program migrates your InfoPrint ProcessDirector objects, such as printers and input devices, to the updated level.

Keep in mind: Your primary and secondary servers must be at the same InfoPrint ProcessDirector level. Therefore, if you install a service update on your primary server, you must also install the service update on all your secondary servers.

Before installing any service updates, you must stop the primary server and all secondary servers. The activation step restarts the primary server. Apply service updates as necessary on the secondary servers. Then log in to the secondary server as an administrator and restart InfoPrint ProcessDirector on the secondary system. For more information, see these topics:

- "Starting primary and secondary servers on AIX" on page 79
- "Starting secondary servers on Linux" on page 80
- "Starting the Windows secondary server service" on page 81

Back up your system data *before* you install an update and periodically for failure recovery. Then, if you need to reinstall InfoPrint ProcessDirector (for example, to remove an update you installed), you can run a restore program to recover your data.

Backing up and restoring InfoPrint ProcessDirector data

To prevent loss of data from a system failure or to recover data (for example, if you want to return your system to a previously installed level with all the settings and objects restored), InfoPrint ProcessDirector provides backup and restore programs.

The backup program saves this data:

- System data, such as job types, step templates, users, input devices, and printers stored in the database
- Control files, such as those used for header sheets
- User data, such as job files in the spool directory

Then, if you need to reinstall InfoPrint ProcessDirector, you can run a restore program to recover your data. System data and control files are always backed up and restored; as an option, you can back up and restore user data.

Note: You cannot use the backup and restore programs to copy or move InfoPrint ProcessDirector from one server to another unless the two servers have the same host name and the same InfoPrint ProcessDirector service level. You can copy objects from one server to another with a different host name or service level by exporting them from the first server and importing them to the second.

Backing up data

You can use a backup script to archive a copy of your InfoPrint ProcessDirector system configuration.

To back up InfoPrint ProcessDirector data:

1. Stop all secondary servers. See "Stopping primary and secondary servers on AIX" on page 83, "Stopping secondary servers on Linux" on page 84, and "Stopping the Windows secondary server service" on page 85.
2. Log in to the primary server:
   - If you use the InfoPrint ProcessDirector version of DB2, log in as the InfoPrint ProcessDirector user. The default user ID is `aiw1` and the default password is `aiwpass1`.
   - If you use your own copy of DB2 (either on the primary server system or on a different system), log in as the root user.
3. Enter `/opt/IBM/aiw/V1.0/bin/aiwbackup.pl` with any of these options:

   -f *filename*
   Back up data to a directory and file name other than the default, which is /tmp/aiw_backup_data.[*timestamp*].tar.gz.

   -m Do not make a backup image of the DB2 database. Use this option if the DB2 database is on a remote system.

   -r Input files and job files (the files in the spool directory that contain job information, including copies of input files) are saved by default. A backup with the **-r** option does not save input files or job files, but it does save jobs. System data and control files are always saved.

   Important: The **-r** option is slightly different on the **aiwbackup** and **aiwrestore** commands:
   - On **aiwbackup**, the **-r** option removes only input files and job files from the saved system. It does *not* delete the jobs from the system.
   - On **aiwrestore**, the **-r** option removes jobs, input files, and job files from the restored system.

   If you use the **-r** option when you back up InfoPrint ProcessDirector, you should also use it when you restore the system to avoid restoring jobs whose files have not been saved.

   -h or -?
   Display help for the **aiwbackup** command.

   For example, this command saves data, including jobs, but not including input files or job files, to a file called mybackup.tar.gz:

   ```
   /opt/IBM/aiw/V1.0/bin/aiwbackup.pl -f mybackup.tar.gz -r
   ```

   You see a message that all servers will be stopped, whether jobs and input files will be backed up, and the location of the backed up files.
4. Enter `Y` to proceed with the backup. When the backup is complete, you see a message that the backup was successful.
5. To continue using this level of InfoPrint ProcessDirector, see "Starting primary and secondary servers on AIX" on page 79. To update InfoPrint ProcessDirector to a new level, see "Applying service updates on the primary server" on page 92.

Restoring data

You can use an InfoPrint ProcessDirector restore script to return your system to the configuration that you stored in a backup archive.

To restore InfoPrint ProcessDirector to a previous level, including any service updates, you must back up your data *before* you install an update of InfoPrint ProcessDirector.

Keep these considerations in mind when restoring an InfoPrint ProcessDirector level:

- All existing jobs and input files from the current InfoPrint ProcessDirector level are removed when you restore to a previous level.
- If you used a new level of InfoPrint ProcessDirector and then restored to a previous level, or if you installed and used the previous level before you restored the backup files, any changes you made to system data, control files, or user data is lost. Therefore, if you need to restore your backup files, do it as soon as possible to reduce the amount of lost data.

To restore InfoPrint ProcessDirector data:

1. Stop all primary and secondary servers (see "Stopping primary and secondary servers on AIX" on page 83, "Stopping secondary servers on Linux" on page 84, and "Stopping the Windows secondary server service" on page 85).
2. Uninstall InfoPrint ProcessDirector on all servers (see "Uninstalling InfoPrint ProcessDirector" on page 85).
3. On the primary and secondary servers, install the same level of InfoPrint ProcessDirector as the backup you previously created (see Chapter 3, "Installing InfoPrint ProcessDirector on AIX," on page 43).
4. On the primary server, log in as the root user.
5. Enter `/opt/IBM/aiw/V1.0/bin/aiwrestore.pl` with any of these options:

   -f *filename*
   Restore data from a directory and file name other than the default, which is /tmp/aiw_backup_data.[*timestamp*].tar.gz.

   -m Do not restore the DB2 database. Use this option if the DB2 database is on a remote system.

   -r Jobs, input files, and job files (the files in the spool directory that contain job information, including copies of input files) are restored by default. A backup with the **-r** option does not restore jobs, input files, or job files. System data and control files are always restored.

   Important: The **-r** option is slightly different on the **aiwbackup** and **aiwrestore** commands:

   - On **aiwbackup**, the **-r** option removes only input files and job files from the saved system. It does *not* delete the jobs from the system.
   - On **aiwrestore**, the **-r** option removes jobs, input files, and job files from the restored system.

   If you used the **-r** option when you backed up InfoPrint ProcessDirector, you should also use it when you restore the system to avoid restoring jobs whose files have not been saved.

   -h or -?
   Display help for the **aiwrestore** command.

   For example, this command restores data, not including jobs, input files, or job files, from a file called mybackup.tar.gz:

   ```
   aiwrestore.pl -f mybackup.tar.gz -r
   ```

You see a message that all servers will be stopped and the location the files are restored from.

6. Enter `Y` to proceed with the restore.
7. When you see a database warning message, enter `Y`. When the restore is complete, you see a message that the restore was successful.
8. Start the servers to use the restored level of InfoPrint ProcessDirector. See "Starting primary and secondary servers on AIX" on page 79.

Applying service updates on the primary server

You or your customer support specialist might want to apply a service update for InfoPrint ProcessDirector to address issues or add new functions. If you receive a service update for InfoPrint ProcessDirector, you can install it without uninstalling the system.

Before installing a service update of InfoPrint ProcessDirector, back up your data in case you need to reinstall the level of InfoPrint ProcessDirector you removed with the update. See "Backing up data" on page 89.

To apply a service update on the primary server:

1. Identify the current service level:
   a. In the InfoPrint ProcessDirector user interface, click **About**.
   b. Note the service level.
   c. To close the About window, scroll down to the bottom and click **Close**.
2. Note any files that you have customized for your installation; for example, the aiw1 user's .profile file or the control files for job audit information, banner pages, external programs, Passthrough printers, and rules files. Files that you can customize for your installation are copied to the /tmp/aiwsave during the update, but they are not restored automatically.

   Note: To preserve any customization that you might have done to objects supplied by InfoPrint ProcessDirector, applying service does *not* update these objects.
3. Delete as many jobs as possible from the system to minimize time and storage requirements.
4. Stop all primary and secondary servers. See "Stopping primary and secondary servers on AIX" on page 83, "Stopping secondary servers on Linux" on page 84, and "Stopping the Windows secondary server service" on page 85.
5. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
6. Enter this command to make sure that you are in the root directory:

   ```
   cd /
   ```
7. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

   ```
   ps -ef | grep cdromd
   ```

   - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
   - If there are no daemon sessions running, enter:

```
cdromd
```

8. Insert the CD for the service update in the CD-ROM drive.
9. Enter this command to start the installation:

   ```
   /cdrom/cd0/setup
   ```

   Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.
10. If you see a prompt, select **Primary**.
11. Select the appropriate language for the wizard to use and then click **OK**. You see a welcome window for the InstallShield Wizard.
12. Reply to any prompts as the InstallShield Wizard steps you through the installation.

    Note: During the installation on the primary server, the contents of the InfoPrint ProcessDirector database are copied to migration directories to preserve the data. Objects such as users, printers, input devices, and job types are restored in the update. This process might take a long time.
13. When you see a message that all your files have been copied to your system, select one of these options:

    Activate later
    Select this option if you have additional service updates to install.

    Activate now
    Select this option if this is the last service update that you have to install.

    The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

    ```
    http://hostname:15080/aiw
    ```
14. Click **Finish** to complete the installation. A prompt asks if you have additional software to install.
15. If you have additional service updates to install, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation.
16. The primary server restarts as part of the activation, but you might need to restart your secondary servers. For information about restarting the secondary servers, see “Starting primary and secondary servers on AIX” on page 79, “Starting secondary servers on Linux” on page 80 and “Starting the Windows secondary server service” on page 81.
17. Open the InfoPrint ProcessDirector About window to verify that the service level has changed.
18. Restore any files that you have customized for your installation. For example, you might have customized the control files for job audit information, banner pages, external programs, Passthrough printers, and rules files. These control files are initially installed in directories under the /aiw/aiw1/control_files directory. When you install an update to InfoPrint ProcessDirector, all the control files in those directories are copied to the /tmp/aiwsave directory. The installation program overwrites the files in the aiw/aiw1/control_files directory, so if you have customized those files, you must move your customized versions from the /tmp/aiwsave directory back into their original location under the /aiw/aiw1/control_files directory.
19. See “Completing post-installation tasks” on page 73.

After you run the update for several days and are satisfied with its operation, you can delete the migration directories that contain copies of the database contents. Enter this command:

```
/opt/IBM/aiw/V1.0/bin/clean_migrate_files.pl
```

Applying service updates in a manual failover configuration

If you install InfoPrint ProcessDirector in a manual failover configuration, you must apply service to both the active and the backup servers at the same time. You cannot wait until you need to use the backup server to apply service because both servers must be at the same service level for manual failover to work properly.

Before you install a service update, back up your data in case you need to reinstall the level of InfoPrint ProcessDirector that you removed with the update. See "Backing up data" on page 89.

On the active server

1. Identify the current service level:
   a. In the InfoPrint ProcessDirector user interface, click **About**.
   b. Note the service level.
   c. To close the About window, scroll down to the bottom and click **Close**.
2. Delete as many jobs as possible from the system to minimize time and storage requirements.
3. Log in as the **aiw1** user.
4. Enter this command to stop the InfoPrint ProcessDirector server while maintaining the connection to the external storage system:

   ```
   stopaiw
   ```
5. Log in as the root user.

   Note: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
6. Back up this file to a location outside of the /aiw, /var, and /opt directory paths: opt/IBM/aiw/V1.0/bin/failover_aix_env

   This file is overwritten when the service update is installed; you can restore it from the backup location instead of editing it again.
7. Enter this command to make sure that you are in the root directory:

   ```
   cd /
   ```
8. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

   ```
   ps -ef | grep cdromd
   ```
   - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
   - If there are no daemon sessions running, enter:

     ```
     cdromd
     ```
9. Insert the CD for the service update in the CD-ROM drive.
10. Enter this command to start the installation:

    ```
    /cdrom/cd0/setup
    ```

Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.

11. If you see a prompt, select **Primary**.
12. Select the appropriate language for the wizard to use and then click **OK**. You see a welcome window for the InstallShield Wizard.
13. Reply to any prompts as the InstallShield Wizard steps you through the installation.

    During the installation on the primary server, the contents of the InfoPrint ProcessDirector database are copied to migration directories to preserve the data. Objects such as users, printers, input devices, and job types are restored in the update. This process might take a long time.
14. When you see a message that all your files have been copied to your system, select one of these options:

    Activate later
    Select this option if you have additional service updates to install.

    Activate now
    Select this option if this is the last service update that you have to install.

    The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

    `http://hostname:15080/aiw`
15. Click **Finish** to complete the installation. A prompt asks if you have additional software to install.
16. If you have additional service updates to install, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation. The server starts as part of the activation.
17. Open the InfoPrint ProcessDirector About window to verify that the service level has changed.
18. Find the copy of the failover_aix_env file that you stored in another location and copy it back to /opt/IBM/aiw/V1.0/bin.
19. Navigate to the /opt/IBM/aiw/V1.0/bin directory.
20. Enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.
21. Stop the auto-stop and auto-start processes from running on this server.

    Some of the processes in InfoPrint ProcessDirector are set to start and stop automatically when the physical server starts or stops. In a manual failover configuration, you cannot let those processes start and stop automatically. Do these steps to stop the automatic processes:

    a. Open /etc/netsvc.conf and add this line at the bottom of the file:

       ```
       hosts=local,bind
       ```

    b. Have your system administrator make sure that /etc/hosts and /etc/resolv.conf contain the correct information for your system.

    c. Enter these commands to back up the etc/inittab file:

       ```
       cd /etc
       cp -p  inittab  inittab.backup
       ```

    d. Enter this command to change the InfoPrint ProcessDirector autostart setting in the etc/inittab file to **off**:

```
chitab "rcaiw:2:off:/etc/rc.aiw > /tmp/startaiw.out 2>&1 # IPPD auto-start"
```

e. Enter these commands to rename rc.shutdown to rc.shutdown.save, so the shutdown routine cannot find and run it:

```
cd  /etc
mv  rc.shutdown  rc.shutdown.save
```

On the backup server

1. Log in as the root user.

   Note: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
2. Navigate to the /opt/IBM/aiw/V1.0/bin directory.
3. Enter `./failover_aix_start.ksh` to run the manual failover script that starts InfoPrint ProcessDirector, connects it to the external storage system, and adds the alias.
4. Navigate to /aiw/aiw1 directory and find the migrateYYYYMMDDHHMM directory, where **YYYYMMDDHHMM** is the time stamp for when you installed this service update on the active system.

   InfoPrint ProcessDirector creates a directory called **/migrate** during the installation process and uses it to store your system objects. At the end of the activation process, the objects are restored and the directory is renamed to **migrateYYYYMMDDHHMM**.

   To prevent the installation process on the backup server from unloading the objects again, you must rename the directory back to **/migrate**. If you do not, the installation process fails.
5. Enter this command to rename the directory, substituting the correct directory name for **migrateYYYYMMDDHHMM**:

   ```
   mv migrateYYYYMMDDHHMM migrate
   ```
6. Log in as the **aiw1** user.
7. Enter this command to stop the InfoPrint ProcessDirector server while maintaining the connection to the external storage system:

   ```
   stopaiw
   ```
8. Change back to the root user.
9. Back up this file to a location outside of the /aiw, /var, and /opt directory paths: opt/IBM/aiw/V1.0/bin/failover_aix_env

   This file is overwritten when the service update is installed; you can restore it from the backup location instead of editing it again.
10. Enter this command to make sure that you are in the root directory:

    ```
    cd /
    ```
11. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

    ```
    ps -ef | grep cdromd
    ```

    - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
    - If there are no daemon sessions running, enter:

      ```
      cdromd
      ```

12. Insert the CD for the service update in the CD-ROM drive.
13. Enter this command to start the installation:

    ```
    /cdrom/cd0/setup
    ```

    Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.
14. If you see a prompt, select **Primary**.
15. Select the appropriate language for the wizard to use and then click **OK**. You see a welcome window for the InstallShield Wizard.
16. Reply to any prompts as the InstallShield Wizard steps you through the installation.

    During the installation on the primary server, the contents of the InfoPrint ProcessDirector database are copied to migration directories to preserve the data. Objects such as users, printers, input devices, and job types are restored in the update. This process might take a long time.
17. When you see a message that all your files have been copied to your system, select one of these options:

    Activate later
    Select this option if you have additional service updates to install.

    Activate now
    Select this option if this is the last service update that you have to install.

    The final window displays the URL for accessing the user interface in this format, where *hostname* is the host name of the primary server:

    ```
    http://hostname:15080/aiw
    ```
18. Click **Finish** to complete the installation. A prompt asks if you have additional software to install.
19. If you have additional service updates to install, click **Yes** and reply to any prompts. Be sure to click **Activate now** during the final installation. The server starts as part of the activation.
20. Open the InfoPrint ProcessDirector About window to verify that the service level has changed.
21. Find the copy of the failover_aix_env file that you stored in another location and copy it back to /opt/IBM/aiw/V1.0/bin.
22. Navigate to the /opt/IBM/aiw/V1.0/bin directory.
23. Enter `./failover_aix_stop.ksh` to run the manual failover script that stops InfoPrint ProcessDirector, disconnects it from the external storage system, and removes the alias.
24. Stop the auto-stop and auto-start processes from running on this server.

    Some of the processes in InfoPrint ProcessDirector are set to start and stop automatically when the physical server starts or stops. In a manual failover configuration, you cannot let those processes start and stop automatically. Do these steps to stop the automatic processes:

    a. Open /etc/netsvc.conf and add this line at the bottom of the file:

       ```
       hosts=local,bind
       ```

    b. Have your system administrator make sure that /etc/hosts and /etc/resolv.conf contain the correct information for your system.

    c. Enter these commands to back up the etc/inittab file:

```
cd /etc
cp -p  inittab  inittab.backup
```

d. Enter this command to change the InfoPrint ProcessDirector autostart setting in the etc/inittab file to **off**:

```
chitab "rcaiw:2:off:/etc/rc.aiw > /tmp/startaiw.out 2>&1 # IPPD auto-start"
```

e. Enter these commands to rename rc.shutdown to rc.shutdown.save, so the shutdown routine cannot find and run it:

```
cd  /etc
mv  rc.shutdown  rc.shutdown.save
```

On the active server

1. Log in as the root user.
2. Navigate to the /opt/IBM/aiw/V1.0/bin directory.
3. Enter `./failover_aix_start.ksh` to run the manual failover script that starts InfoPrint ProcessDirector, connects it to the external storage system, and adds the alias.
4. Restore any files that you have customized for your installation.

   Files that you might have customized for your installation are copied to migration directories during the update, but they are not restored automatically.

   For example, you might have customized the control files for job audit information, banner pages, external programs, Passthrough printers, and rules files. These control files are initially installed in directories under the /aiw/aiw1/control_files directory.

   When you install an update to InfoPrint ProcessDirector, all the control files in those directories are copied to the /tmp/aiwsave directory. The installation program overwrites the files in the aiw/aiw1/control_files directory, so if you have customized those files, you must move your customized versions from the /tmp/aiwsave directory back into their original location under the /aiw/aiw1/control_files directory.

After you run the update for several days and are satisfied with its operation, you can delete the migration directories that contain copies of the database contents. Enter this command:

```
/opt/IBM/aiw/V1.0/bin/clean_migrate_files.pl
```

Applying service updates on Linux secondary servers

You or your customer support specialist might want to apply a service update for InfoPrint ProcessDirector Linux secondary servers to address issues or add new functions. If you install a service update on your primary server, you must also install it on your Linux secondary servers.

The Linux secondary server should have been stopped when you applied the update on the primary server.

To apply a service update on a Linux secondary server:

1. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.

2. Insert the CD for the service update in the CD-ROM drive.
3. To determine the name of the CD mount point, enter:

   ```
   ls /media/*
   ```

   On some systems where the CD is mounted automatically, the name of the mount point is the same as the name of the CD.
4. Mount the CD, if necessary. Enter:

   ```
   mount /media/mount_point
   ```
5. From a working directory that is not on the CD, enter this command to start the installation:

   ```
   /media/mount_point/setup
   ```

   Restriction: Do not change to the mount /media/*mount_point* directory. You cannot run **setup** from a directory on the CD.
6. Select the appropriate language for the wizard to use and then click **OK**. You see a welcome window for the InstallShield Wizard.
7. Reply to any prompts as the InstallShield Wizard steps you through the installation.
8. When you see a message that all your files have been copied to your system, click **Activate now**.
9. Click **Finish** to complete the installation.
10. A prompt asks if you have additional software to install. Select **No** or **Exit**, then remove the CD from the CD-ROM drive.
11. Restart the secondary server. See "Starting primary and secondary servers on AIX" on page 79 for information.
12. See "Completing post-installation tasks" on page 73.

Applying service updates on AIX secondary servers

You or your customer support specialist might want to apply a service update for InfoPrint ProcessDirector AIX secondary servers to address issues or add new functions. If you receive a service update for your AIX secondary servers, you can install them without uninstalling the system. If you install a service update on your primary server, you must also install it on your AIX secondary servers.

To apply a service update on an AIX secondary server:

1. Log in as the root user.

   Restriction: You must actually log in as the root user. Do not use the **su** or **sudo** command to become the root user. Do not log in as another user with root authority.
2. Enter this command to make sure you are in the root directory:

   ```
   cd /
   ```
3. Make sure that only one session of the cdrom daemon (**cdromd**) is running. Enter:

   ```
   ps -ef | grep cdromd
   ```

   - If there is more than one session of the daemon running, make note of the process ID of each daemon and use the **kill** command to stop all except one session.
   - If there are no daemon sessions running, enter:

     ```
     cdromd
     ```

4. Insert the CD for the service update in the CD-ROM drive.
5. Enter this command to start the installation:

   ```
   /cdrom/cd0/setup
   ```

   Restriction: Do not change to the /cdrom/cd0 directory. You cannot run **setup** from a directory on the CD.
6. Select the appropriate language for the wizard to use and then click **OK**. You see a welcome window for the InstallShield Wizard.
7. When you see a message that all your files have been copied to your system, click **Activate now**.
8. Click **Finish** to complete the installation.
9. A prompt asks if you have additional software to install. Select **No** or **Exit**, then remove the CD from the CD-ROM drive.
10. To verify that the InfoPrint ProcessDirector server is running, enter this command on the command line:

    ```
    ps -ef | grep Instance
    ```

    You should see an instance statement such as:

    ```
    java com.ibm.aiw.instance.SecondaryInstance hostname
    ```

    If the server is not running, contact customer support.

Applying service updates on Windows secondary servers

You or your customer support specialist might want to apply a service update for InfoPrint ProcessDirector Windows secondary servers to address issues or add new functions. If you receive a service update for your Windows secondary servers, you can install them without uninstalling the system. If you install a service update on your primary server, you must also install it on your Windows secondary servers.

To apply a service update to a Windows secondary server:

1. Insert the CD for the service update in the CD-ROM drive. The InstallShield Wizard starts automatically.
2. Select the appropriate language for the wizard to use, then click **OK**. You see a welcome window for the InstallShield Wizard.
3. Follow the instructions on the installation screens to install the update. The destination directory and other necessary settings are obtained automatically based on your initial installation.
4. If a prompt asks if you have additional software to install, select **No** or **Exit**.

Updating the Transform Features

The process for updating the Transform Features is a little different from the process for updating other features.

Make sure that all the Transform Features you want to use are installed. The program on the Transform Feature update CD-ROM determines which Transform Features are already installed and updates those features. It does not install new Transform Features.

To apply service updates to the Transform Features:

1. Insert the Transform Feature update CD in the CD-ROM drive.

2. Mount the CD if it does not mount automatically.

   Note: The mount point for the CD-ROM drive can vary depending on your system configuration.
3. Change to the directory where the CD is mounted.
4. Enter this command:

   ```
   ./install.sh
   ```
5. After the command finishes, enter this command to return to the root directory:

   ```
   cd /
   ```
6. Unmount and eject the CD.
7. To activate the Transform Features, reinstall one of the printer engine features. See "Installing feature or extension software" on page 76 for instructions.

If you install additional transforms after you install an update, you must install the update again.

Applying service to a remote DB2 server

If InfoPrint ProcessDirector uses a remote DB2 server, applying service to the remote database while InfoPrint ProcessDirector is running can cause problems.

To apply service to a remote DB2 server:

1. Shut down InfoPrint ProcessDirector. See "Stopping primary and secondary servers on AIX" on page 83.
2. Apply service to DB2 on the remote system.
3. Restart InfoPrint ProcessDirector. See "Starting primary and secondary servers on AIX" on page 79.

Chapter 6. Installation planning checklist

This checklist contains tasks that can help you plan for your InfoPrint ProcessDirector installation.

Table 24. Installation planning checklist. Check each item as you complete the task.

	Task	Notes
	Determine your system configuration (see "System configurations" on page 6 for an example of a configuration). Keep in mind your requirements for file sharing (such as Shark, FAST, RAID, or NFS) and a failure recovery system. If you need help setting up a failure recovery system, contact your customer support specialist to discuss a custom solution.	
	Estimate your current and future storage and backup needs. Consider production volumes, print resource management, and failure recovery.	
	Make sure that you have adequate network capacity.	
	Determine which printers you want to include in the InfoPrint ProcessDirector workflow. When you define printers to InfoPrint ProcessDirector, you need this information: • Printer name • TCP/IP port number • TCP/IP address or host name • SNMP community name, if you want to use SNMP to monitor the printer You should also decide on the language for the printer driver component to use when it returns messages to InfoPrint ProcessDirector.	
	Obtain the required hardware for your configuration that meets your storage and backup requirements (see "Hardware requirements" on page 11).	
	Decide whether to set up your file system as partitions or as mounted file systems from other storage units. See "Planning for file systems" on page 13.	

Table 24. Installation planning checklist (continued). Check each item as you complete the task.

	Task	Notes
	Decide whether to use the version of DB2 supplied with InfoPrint ProcessDirector or your own copy. If you use your own copy: • Decide whether to install DB2 on the same system as the InfoPrint ProcessDirector primary server or on a different system. • Determine the directory for InfoPrint ProcessDirector information.	
	Determine whether to use the default system group ID (GID) for InfoPrint ProcessDirector or your own numeric value. Keep in mind that the GID must be the same across all servers; therefore, if you choose your own, make sure the value is large enough to avoid conflicts. The default system GID value is `32458`, which has a name of `aiwgrp1`.	
	Determine whether to use the default system user ID (UID) for InfoPrint ProcessDirector or your own numeric value. Keep in mind that the UID must be the same across all servers; therefore, if you choose your own, make sure the value is large enough to avoid conflicts. The default system UID value is `32457`, which has a name of `aiw1` and a password of `aiwpass1`. If you create directories for InfoPrint ProcessDirector input devices to use, this UID must be a member of the group that owns these directories.	
	Determine the user IDs for InfoPrint ProcessDirector internal use: • If you use the InfoPrint ProcessDirector version of DB2, InfoPrint ProcessDirector creates dasusr1, db2inst1, and db2fenc1. • If you use your own copy of DB2 on the primary server system, InfoPrint ProcessDirector creates dasusr1 and two IDs of your choice (the defaults are aiwinst and aiwfid). • If you use your own copy of DB2 on a different system, InfoPrint ProcessDirector creates dasusr1 and one ID of your choice (the default is aiwclnt) on the local system. You must create two IDs of your choice on the remote system. If you use the setupRemoteDB2.sh script to create these user IDs, the defaults are aiwinst and aiwfid. You should never log in as any of these users, but you might need to recognize them for recordkeeping and security.	

Table 24. Installation planning checklist (continued). Check each item as you complete the task.

	Task	Notes
	Establish a host name and IP address for each server, including the remote DB2 server if you use one. InfoPrint ProcessDirector supports IPv4 addresses.	
	Determine which password to use when you log in to InfoPrint ProcessDirector with the `aiw` user name. The first time you log in to InfoPrint ProcessDirector with the default user name of `aiw` and the default password of `aiw`, you are prompted to change the password. The password must be 8 to 32 alphanumeric characters.	
	If you use a remote DB2 server, determine the password for the InfoPrint ProcessDirector instance user.	
	Determine how many InfoPrint ProcessDirector user IDs you want to create and which authority you want each ID to have, such as monitor, operator, supervisor, or administrator.	
	Consider which job submission method you are going to use to send jobs to InfoPrint ProcessDirector. You can use Download for z/OS, AFP Download Plus, copy or ftp files into hot folders, or send files using the LPD protocol. The job submission method you use depends on the system you are sending the jobs from. For more information, see "Job submission" on page 39.	
	Determine which ports InfoPrint ProcessDirector will use. Common ports are: **515** LPD protocol **5001–65535** IPDS printers **6001 or alternative** AFP Download Plus or Download for z/OS **6100** DownloadAFP input device **6101** DownloadJobTypeSet input device **6102** DownloadLineData input device **6103** DownloadMultiple input device **6104** DownloadMultipleJobType input device **6986–65535** InfoPrint Transform Manager or Transform Features **15080** InfoPrint ProcessDirector server **15888** InfoPrint ProcessDirector information center **50000** DB2 **55555** Primary servers listen for secondary servers	

Table 24. Installation planning checklist (continued). Check each item as you complete the task.

	Task	Notes
	Determine which resources must be available for InfoPrint ProcessDirector to use (such as standard and non-standard AFP fonts). Then, consider how you want to share your AFP resources so they are available to InfoPrint ProcessDirector (for example, NFS or Samba). If you store your resources in the /aiw/aiw1/resources directory on your primary system, all the InfoPrint ProcessDirector components, including any secondary servers, can find them with no additional configuration. InfoPrint ProcessDirector does not make any changes to that directory during updates, so you do not have to reload the resources when you install an update. Also, keep in mind that you must do post-installation configuration so InfoPrint ProcessDirector can use the resources (such as updating the font mapping files for the file viewer). For information about AFP resource directories, see the InfoPrint ProcessDirector information center.	
	Install the required software for your configuration (see "Installing required software" on page 17).	
	Download the latest PTF from the InfoPrint Solutions Company Web site (http://www.infoprint.com) or get it from your InfoPrint Solutions Company customer support specialist.	
	Install any optional software, such as Download for z/OS, AFP Download Plus, or InfoPrint Transform Manager (see "Planning for optional software" on page 39).	
	Change the language for the server, if required: **AIX** In SMIT, click **System Environments → Manage Language Environment**. **Linux** In YaST: • Click **System → Choose Language**. • Click **System → Select Keyboard Layout**. In the KDE Control Center, click **Regional & Accessibility → Country/Region & Language**. **Windows** Click **Control Panel → Regional and Language Options**.	

Appendix. Accessibility

InfoPrint Solutions Company strives to provide products with usable access for everyone, regardless of age or ability. For more information about the commitment that we have made to accessibility, see: `http://www.infoprint.com/accessibility`

Accessibility features

Accessibility features help users who have disabilities, such as restricted mobility or limited vision, use information technology products successfully.

The major accessibility features in this product let you:

- Use screen readers, screen magnifiers, and other assistive technologies.
- Use a keyboard instead of a mouse.
- Change attributes such as volume, color, contrast, and font size.

In addition, the information center and the publications for the product are in an accessible format.

To enable assistive technology support in the InstallShield Wizard, specify the console option at the end of the **setup** command. For example, to enable assistive technology on AIX servers, enter:

```
cd/
/cdrom/cd0/setup -console
```

Restriction: Do not run **setup** from a working directory on the CD.

Keyboard navigation

This product uses standard Microsoft Windows navigation keys.

Restriction: You cannot use AFP Editor and AFP Indexer with the keyboard alone. They require a mouse.

InfoPrint ProcessDirector viewer shortcut keys

When the file viewer is displayed, you can use these shortcut keys:

Table 25. Viewer shortcut keys

Description	Alt + key
Go to first tag value	1 (number one)
Go to previous tag value	u
Go to next tag value	s
Go to last tag value	l (small-letter L)
Display first page with selected tag value	j
Find string	i
Search overlays and page segments	o
Find next	n
Find previous	p

Table 25. Viewer shortcut keys (continued)

Description	**Alt + key**
Cancel	x
Go to page number	Enter
Display first page	Home
Display next page	Right arrow
Display previous page	Left arrow
Display last page	End
Rotate clockwise	r
Rotate counterclockwise	c

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Glossary

This glossary defines technical terms and abbreviations used in InfoPrint ProcessDirector.

access control. In computer security, the methods and facilities used to ensure that a computer system and the data, system software, and application programs stored in it can be accessed only by authorized users in authorized ways.

Advanced Function Presentation (AFP). A set of licensed programs, together with user applications, that use the all-points-addressable concept to print data on a wide variety of printers or display data on a variety of display devices. AFP also includes creating, formatting, archiving, retrieving, viewing, and distributing information.

AFP. See Advanced Function Presentation.

AIX. Advanced Interactive Executive operating system. A UNIX operating system developed by IBM that is runs on POWER microprocessor-based hardware such as servers, workstations, and blades.

client. In a distributed file system environment, a system that is dependent on a server to provide it with programs or access to programs.

client/server. In communications, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server.

command. A request from a terminal or a specification in a batch-processing print file for the performance of an operation or the running of a particular program.

compatibility fonts. A group of AFP fonts that emulate the uniformly spaced and fixed-pitch fonts used with line printers. Compatibility fonts include 240-pel and 300-pel fonts.

File Transfer Protocol (FTP). In the Internet suite of protocols, an application layer protocol that uses TCP and Telnet services to transfer bulk-data files between machines or hosts.

GIF. Graphics interchange format for images.

host name. The network name for a print server or transform server. The host name is the fully qualified domain name or a specific subname of a fully qualified domain name. For example, if printserver1.boulder.ibm.com is the fully qualified domain name, either printserver1.boulder.ibm.com or printserver1 can be the host name. See also IP address.

hot folder. A directory that receives input files that are submitted to InfoPrint ProcessDirector.

InfoPrint Manager for AIX. A print server that handles the scheduling, archiving, retrieving, and assembly of a print job and its related resource files. It also tracks the finishing and packaging of the printed product.

IP address. In the Internet suite of protocols, the 32-bit address of a print server or transform server, expressed in dotted decimal notation. For example: 9.99.9.143. See also host name.

JPEG. Joint Photographic Experts Group image format.

Linux. An open source implementation of the UNIX system.

line printer daemon (LPD). The receiving portion, or target, of a file transfer that receives the spooled file that was sent and places the file on a local output queue.

mount. To make a file system accessible.

OpenType font. An extension of the TrueType font format that adds support for PostScript outlines and more support for international character sets and advanced typographic control.

outline font. A font whose graphic character shapes are defined by mathematical equations rather than by raster patterns.

PDF. See Portable Document Format.

Portable Document Format (PDF). A universal file format that preserves the fonts, images, graphics, and layout of any source document so it can be viewed and printed on a variety of platforms.

PostScript (PS). A page description language with graphics capabilities that was developed by Adobe Systems, Incorporated.

print server. A computer to which one or more printers are connected or the process that manages those printers.

PS. See PostScript.

raster font. A font in which the characters are defined directly by the raster bitmap.

root. The user name for the system user with the most authority.

server. On a network, the computer that contains the data or provides the facilities to be accessed by other computers on the network.

spool. The system function of putting files or jobs into disk storage for later processing or printing.

transform server. The process that manages data and image transforms.

TIFF. Tagged image file format.

TrueType font. A font format based on scalable outline technology in which the graphic character shapes are based on quadratic curves. The font is described with a set of tables contained in a TrueType font file.

Web browser. A client program that initiates requests to a Web server and displays the information that the server returns.

Web server. The program that is capable of servicing Hypertext Transfer Protocol (HTTP) requests for display in a Web browser.

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