

IBM Infoprint Manager 3.1 for AIX



Installation: Performing Optional Configuration (3/31/99)

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Configuring for Cut Sheet Emulation

To enable cut -sheet emulation, ensure that your printer has a microcode level of at least 9.216, then ensure that the appropriate personnel perform the following tasks at your installation on the systems specified:

1. At the Infoprint AIX server, the print administrator for your installation must disable the physical printer that you intend to run in cut sheet emulation mode.
2. At the printer console, an operator must set the printer to cut-sheet emulation mode.
3. The operator must then restart the printer.
4. At the Infoprint AIX server, the print administrator must create a logical printer for the physical printer.
5. The print administrator must ensure that both the logical and physical printer has been enabled.

To submit a job, see [Using Cut Sheet Emulation](#).

Configuring Your Server to Support Saving RIP Files and Preflighting

AIX Connections is the default communications program supported by Infoprint Manager to save RIP files and preflight jobs. The following procedures describe how to configure AIX Connections for use with Infoprint Manager. These procedures assume that you are using AIX Connections only in conjunction with Infoprint Manager.

WARNING: If you are currently using AIX Connections for other applications, **do not** use the following procedures. They may cause your other applications to fail. Instead, manually add file services for the /ipdata file system to your already existing AIX Connections configuration. Contact IBM Customer Support if you have problems with this manual configuration.

Consult the following topics before [configuring AIX Connections](#):

- [Required Filesets If Using AIX Connections](#)
- [AIX Connections Software Maintenance Support](#)

Configuring AIX Connections

This page describes four configuration procedures:

- [Configuring NetBIOS Over NetBEUI](#)
- [Configuring AppleTalk](#)
- [Configuring Netware Over IPX](#)
- [Configuring NetBIOS Over TCP/IP](#)

You must [configure NetBIOS over NetBEUI](#) before configuring any of the other protocols. This must be done even if you are not using NetBEUI for network communication. You must [configure AppleTalk](#) only if you will be using Macintosh clients. You must [configure Netware](#) only if your LAN uses Novell's IPX/SPX protocols for communication. Finally, you must [configure NetBIOS over TCP/IP](#) only if your LAN uses TCP/IP exclusively for communication with PC systems.

Required Filesets If Using AIX Connections

The following lists the fileset levels (including Program Temporary Fix (PTF) maintenance levels) recommended for AIX Connections. If you enter the following commands, you should see the following filesets on your AIX operating system if you have installed the latest levels.

If you specify `lsllpp -l "connect.*"`, you should see the following:

AIX Connection Version 4.1.5	AIX Connection Version 1.1 (4.1.6)
connect.Bnd 4.1.5.0	connect.Bnd 4.1.6.0
connect.client 4.1.5.2	connect.client 4.1.6.0
connect.html.en_US.data 4.1.5.0	connect.html.en_US.data 4.1.6.0
connect.protocols 4.1.5.1	connect.protocols 4.1.6.0
connect.ps.en_US.client 4.1.5.0	connect.ps.en_US.client 4.1.6.0
connect.ps.en_US.lsserve 4.1.5.0	connect.ps.en_US.lsserve 4.1.6.0
connect.ps.en_US.macserv 4.1.5.0	connect.ps.en_US.macserv 4.1.6.0
connect.ps.en_US.nwserve 4.1.5.0	connect.ps.en_US.nwserve 4.1.6.0
connect.ps.en_US.up_n_running 4.1.5.0	connect.ps.en_US.up_n_running 4.1.6.0
connect.server.admin 4.1.5.0	connect.server.admin 4.1.6.0
connect.server.com 4.1.5.6	connect.server.com 4.1.6.0
connect.server.lsserve 4.1.5.5	connect.server.lsserve 4.1.6.0
connect.server.macserve 4.1.5.3	connect.server.macserve 4.1.6.0
connect.server.nwserve 4.1.5.3	connect.server.nwserve 4.1.6.0

If you specify `lspp -l "netbios.*"`, you should see the following:

AIX Connection Version 4.1.5	AIX Connection 1.1 (4.1.6)
netbios.api 2.1.4.1 netios.msg.en_US 2.1.4.0 netbios.rte 2.1.4.3	netbios.api 2.1.4.1 netios.msg.en_US 2.1.4.1 netbios.rte 2.1.4.3

AIX Connections Software Maintenance Support

If you will be running Infoprint Manager in a commercial environment using AIX Connections, you need either AIX Connections Version 4.1.5 or AIX Connections Version 1.1 (which is also called Version 4.1.6). AIX Connections Version 4.1.5 also requires APAR IX65879, which includes a fix for configuring the NetBIOS protocol. AIX Connections Version 1.1 (4.1.6) has no maintenance requirements.

Note: To obtain the recommended AIX Connections and NetBIOS maintenance levels for Version 4.1.5, you must apply the following APARS:

AIX Connection V 4.1.5	NetBIOS
IX68811; IX65228; IX68090; IX70657; IX70131; IX67154	IX69231; IX65879

For more information about the current version of AIX Connections, see their [website](#).

Configuring NetBIOS Over NetBEUI

To configure AIX Connections to use the default Microsoft LAN protocols (NetBIOS Over NetBEUI), perform the following steps:

1. [Invoke the Infoprint Utilities SMIT interface](#) on the AIX system that holds the /ipdata file system.
2. Click **Configure AIX Connections**, then **NetBIOS Over NetBEUI**.
3. Enter the name of the Windows workgroup that will be used to hold the /ipdata file server.
4. If this is not a preloaded system, enter the volume group you wish to hold /ipdata and the number of megabytes you wish to allocate for /ipdata in the fields provided. If this is a preloaded system, leave these two fields blank.
5. Click **OK**.

Configuring AppleTalk

To configure AIX Connections to use AppleTalk for communicating with Macintosh clients, do the following:

1. [Invoke the Infoprint Utilities SMIT interface](#) on the AIX system that holds the /ipdata file system.
2. Click **Configure AIX Connections**, then **AppleTalk**.
3. In the field provided, enter the AppleTalk network zone in which you want the /ipdata file server to reside.
4. Select the TCP/IP interface that the server uses to communicate with the LAN.
5. Click **OK**.
6. Provide a password when prompted. The password you enter will become the AIX Connections password for the ipuser user. This user name and password will be required to access the AIX Connections AppleTalk file server from Macintosh clients.

TIP: You may need to reboot the AIX system before client systems can access the AIX Connections AppleTalk file server (*athostname*).

Configuring Netware Over IPX

To configure AIX Connections to work using Netware protocols, do the following:

1. [Invoke the Infoprint Utilities SMIT interface](#) on the AIX system that holds the /ipdata file system.
2. Click **Configure AIX Connections**, then **Netware Over IPX**.
3. Enter the Maximum Transfer Unit of your Netware network. (In most cases, you will not need to change the default value.)
4. Select the TCP/IP interface that the server uses to communicate with the LAN.
5. Select the frame type that your LAN uses.
6. Enter the external network number provided by your Netware network administrator.
7. Enter the internal network number if required by your Netware network.
8. Click **OK**.
9. Provide a password when prompted. The password you enter will become the AIX Connections password for the ipuser user. This user name and password will be required to access the AIX Connections Netware file server from client systems.

TIP: You may need to reboot the AIX system to establish communication between the AIX Connections Netware file server (*nwhostname*) and client systems.

Configuring NetBIOS Over TCP/IP

To configure AIX Connections to use NetBIOS over TCP/IP, do the following:

1. [Invoke the Infoprint Utilities SMIT interface](#) on the AIX system that holds the /ipdata file system.
2. Click **Configure AIX Connections**, then **NetBIOS Over TCP/IP**.
3. Select the correct LANA number from the list provided.
4. Select the TCP/IP interface that the server uses to communicate with the LAN.
5. Click **OK**.

On all Microsoft Windows 95 clients, do the following:

1. Make sure that Client for Microsoft Networks is installed and bound for TCP/IP.
2. Add an entry to the C:\WINDOWS\LMHOSTS file that maps the server IP address to the AIX Connections service name. The entry should have the following form:

```
9.99.12.34    lshostname
```

3. Refresh the client configuration by issuing the following command at a DOS prompt:

```
nbtstat -R
```

On all Microsoft Windows NT clients, do the following:

1. Add an entry to the C:\WINNT\system32\drivers\etc\lmhosts file that maps the server IP address to the AIX Connections service name. The entry should have the following form:

```
9.99.12.34 lshostname
```

2. Refresh the client configuration by issuing the following command at a DOS prompt:

```
nbtstat -R
```

TIP: On NetBEUI clients, AIX Connections services using NetBIOS over TCP/IP will not show up in the Network Neighborhood browser. This is because the browser only recognizes broadcasts over NetBEUI. Therefore, these TCP/IP services will only be seen if NetBEUI is also available on the network.

Creating Default Users

If you are using the non-DCE version of Infoprint Manager and are running a "Basic" configuration (formerly known as "commercial"), you should control access to Infoprint administrator and operator functions by creating the default users **admin** and **oper**.

If you are using the DCE version of Infoprint or are running an "Advanced" configuration, you must follow different procedures to control access to Infoprint .

Running Infoprint as the **root** user is not recommended under any circumstances. The **admin** user will be allowed to perform both administrator and operator tasks on basic, non-DCE Infoprint systems. The **oper** user will be able to perform operator tasks, but will be prohibited from performing administrative tasks. To set up these users, do the following:

1. [Invoke the Infoprint Utilities SMIT interface.](#)
2. Click Create Default Users.
3. Click OK when asked, "Are you sure?"
4. Note the passwords you set for the **admin** and **oper** users because they will be needed in the future.

Accessing Infoprint Manager Utilities

To access the Infoprint Utilities main menu, do the following:

1. If you do not have an Infoprint Manager icon on your front panel, open the **Infoprint** folder in the Application Manager and double click on the **Infoprint SMIT** icon.
2. If you do have an Infoprint Manager icon on your front panel, open Infoprint Manager's popup menu and click on the **Infoprint SMIT** icon.
3. Click **Infoprint Utilities**.

Enabling/Disabling Autostart

The server created for you by the Infoprint Installer will start automatically when the system reboots. You may [enable](#) or [disable](#) the automatic starting of any Infoprint servers present on your AIX system.

Enabling Autostart

To enable the automatic starting of a server, do the following:

1. [Invoke the Infoprint Utilities SMIT interface.](#)
2. Click **Enable/Disable Autostart**.
3. Select **on** in response to the question, "Do you wish to turn autostart on or off?"
4. Click **List** and select the Infoprint server you wish to start automatically on reboot.
5. Enter the port number which this server uses for communication with other programs. (Leave blank to use the default port number.)
6. Click **List** and select the locale (language environment) in which you want the server to run.
7. Click **OK**.

Disabling Autostart

To disable the automatic starting of a server, do the following:

1. [Invoke the Infoprint Utilities SMIT interface.](#)
2. Click **Enable/Disable Autostart**.
3. Select **off** in response to the question, "Do you wish to turn autostart on or off?"
4. If prompted, select the server you want to disable for automatic starting.

Adding or Removing Languages

The Infoprint Installer will install U.S. English (en_US) filesets on all Infoprint Control systems. If you will be installing a version of Infoprint Manager in a language other than U.S. English, you will need to install additional language support so that the Infoprint Installer can provide support for the language selected for use during install. The following topics provide the [software prerequisites](#) required, as well as procedures for [adding](#) and [removing](#) Infoprint Manager language support.

Software Prerequisites for Translated Versions of Infoprint Manager

You must install such support from the AIX operating system version 4.2.1 CD-ROM, onto each AIX system on which you will install Infoprint Manager and run an Infoprint Manager server. Infoprint Manager supports French, German, Italian, Spanish, and Japanese.

To install a language on an AIX operating system, use the following procedure:

1. From an AIX command line, access the smit fastpath by specifying: `smitty lang`
2. Select the **Add Additional Language Environments** option.
3. From the **Add Additional Language Environments** panel, press the **f4** key to determine value to specify in the **CULTURAL convention to Install** field.

Note that languages that are already installed on this AIX system will not appear in this list.

4. Press the **f4** key to determine the value to specify in the **LANGUAGE translation to install** field.

Note that languages that are already installed on this AIX system will not appear in this list.

5. Ensure that the **INPUT device/directory for software** field is pointing to your CD-ROM drive.
6. Press the **enter** key to install the language.

Note: For more information about installing different languages on your AIX operating system, access the **info** data base.

Adding a Language

You may add support for an Infoprint Manager language only if your system is able to provide system messages in the chosen language. To add support for a language, do the following:

1. Insert your Infoprint product CD.
2. [Invoke the Infoprint Utilities SMIT interface.](#)
3. Click **Add or Remove Languages**, then **Add Language**.
4. Select one or more locales to add from the list presented. (The list will only contain locales that your system is able to support.)
5. Enter your customer ID and Infoprint Manager Control Key in the fields provided.
6. Click **OK**.

Removing a Language

To remove support for an Infoprint Manager language environment, do the following:

1. [Invoke the Infoprint Utilities SMIT interface.](#)
2. Click **Add or Remove Languages**, then **Remove Language**.
3. Select one or more locales to remove from the list presented.
4. Click **OK**.

Note: The English locale may not be removed because some default messages must be presented in English.

Installing AFP Upload

AFP Upload consists of an AIX client program (as part of Infoprint Manager) and an MVS server program (available as a priced feature of PSF/MVS). The AIX client accepts AFP files (or files it can convert to AFP) and sends them to the MVS server, which places them on the JES spool. Many of the AFP file attributes, such as class, destination, and forms, are also communicated to the MVS system and recorded with the data sets on the JES spool.

To communicate between the AIX and MVS systems, AFP Upload uses either TCP/IP or SNA LU 6.2 protocols. Depending upon the protocol used at your site, you should use one of the following publications to customize and use the AFP Upload feature of Infoprint Manager:

Title	Publication Number
<i>AFP Upload Configuration Guide Using TCP/IP</i>	(S544-5423-01)
<i>AFP Upload Configuration Guide Using SNA</i>	(S544-5422-01)

In addition to the network configuration tasks described in these publications, you need to perform the following procedure before you can upload files to an MVS server through Infoprint Manager:

Configuring a Physical Printer for AFP Upload

To configure a physical printer to your Infoprint Manager installation for using the AFP Upload feature through either SNA Server/6000 protocols or TCP/IP protocols, you must invoke the System Management Interface Tool (SMIT) program as root. Note that when you configure a physical printer, the logical printer to drive that printer is created automatically, with the name `server-lp`, where `server` is the symbolic name of your Infoprint AIX server.

To configure a physical printer for the AFP Upload feature, use the following procedure:

1. From an AIX window on your Infoprint AIX server, type either `smit` or `smitty`, then take the following path: **Infoprint Printing System - Miscellaneous Configuration -- Add a Printer**

From the **Add a Printer** panel, select either **Upload-SNA** or **Upload-TCP/IP**, depending upon the communication protocol you will be using.

Note: If you specify more than one physical printer, Infoprint Manager will use the same logical printer for both options, always taking the first one created if both are enabled and available for the job. The logical printer attributes are displayed below:

The screenshot shows a dialog box titled "View and Change Logical Destination Properties". It contains several fields and buttons:

- Logical destination name: nome-lp
- Enabled: true
- Server: nome
- Description: (empty)
- Message: (empty)
- Default job: (empty) with a "List" button to its right.
- Default document: (empty) with a "List" button to its right.
- Associated actual destinations: A list box containing "upload1" and "uptcpip1".
- Destination type: (empty) with a "List" button to its right.

At the bottom of the dialog are buttons for "OK", "Apply", "Reset", "Search...", "Cancel", "?", and "Help".

- From the **Add an Upload-protocol Printer** panel, where `protocol` is either **TCP/IP** or **SNA**, specify the required fields as you would when creating any physical printer object:

TCP/IP-Specific Fields:

Internet Address	Specify as either dotted decimal notation or hostname.
PORT number	Specifies the location where the MVS server program on the target system receives access requests. Specify a number from 1 to 65535. 6001 is the default and a number greater than 5000 is recommended.
ASCII code-set	Defines the code-set used on the AIX system.
EBCDIC code-set	Defines the code-set used on the MVS system.

SNA-Specific Fields:

For SNA protocols, the **Printer Name** field must match the **Current profile name** field on the LU 6.2 Side Information Profile. For more information about the LU 6.2 Side Information and other SNA profiles, refer to *AFP Upload Configuration Guide Using SNA*.

To find more information about AFP Upload printers, see [Using Infoprint Manager Commands with AFP Upload](#).

Installing Secondary Infoprint Servers

Infoprint Manager allows you to configure multiple AIX systems to work together to meet your printing needs. Installing secondary servers using the Distributed Computing Environment (DCE) version of Infoprint Manager is simple. All that is required is to run the Infoprint Installer on each system. DCE will provide the services that your primary and secondary Infoprint servers require to communicate with each other.

If, however, you are installing secondary servers in a non-DCE Infoprint environment, you will be using Network File System (NFS) to enable communication between servers. To make this work correctly, you must use one of the following two procedures:

- [Installing Secondary Infoprint Servers Using NFS \(No Job Ticketing\)](#)
- [Installing Secondary Infoprint Servers Using NFS \(Job Ticketing\)Multiple CommercialMultiple CommercialMultiple Commercial](#)

Installing Secondary Infoprint Servers Using NFS (No Job Ticketing)

To set up multiple Infoprint servers that do not require full job ticketing services, do the following:

1. Complete the installation of the primary Infoprint server.
2. Apply current APAR service, if available.
3. Complete the configuration of the primary Infoprint server:
 1. [Invoke the Infoprint Utilities SMIT interface.](#)
 2. Click on **Configure Secondary Servers (NFS)**, then **Link from Primary Server to Secondary Server**.
 3. Provide the information about your secondary system as prompted.

Note: If you are using DNS or NIS name resolution services, be sure to update these services with all new server information before proceeding. (DNS and NIS are centralized services used to resolve host names into IP addresses. Whenever a new machine is added to the network, these services must be advised of the host name and IP address of the new system. These services may or may not be used on your LAN. If you are unsure about about your network's name resolution services, contact your network administrator.)

4. Do the following for each secondary server:
 1. Run the Infoprint Installer
 2. Apply current APAR service, as necessary.

Installing Secondary Infoprint Servers Using NFS (Job Ticketing)

To set up multiple Infoprint servers with job ticketing fully enabled:

1. Complete the installation of the primary Infoprint server.
2. Apply current APAR service, if available.
3. Run Infoprint Utilities on the primary Infoprint server as described in [Setting Up the Primary Server](#).
4. Run Infoprint Utilities on the secondary Infoprint server as described in [Setting Up the Secondary Server](#).

Note: You must set up the Primary Server before setting up the Secondary Server.

Setting Up the Primary Server

1. [Invoke the Infoprint Utilities SMIT interface.](#)
2. Click on **Configure Secondary Servers (NFS)**, then **Link from Primary Server to Secondary Server**. Provide the information about your secondary system as prompted.
3. If the `/ipdata` filesystem was not allocated on the primary server, you must perform the necessary steps to make `/ipdata` accessible to all Infoprint servers before proceeding. (This is necessary if, for example, you have elected to use a PC to store shared information instead of your primary server.)

Note: If you are using DNS or NIS name resolution services, be sure to update these services with all new server information before proceeding. (DNS and NIS are centralized services used to resolve host names into IP addresses. Whenever a new machine is added to the network, these services must be advised of the host name and IP address of the new system. These services may or may not be used on your LAN. If you are unsure about about your network's name resolution services, contact your network administrator.)

Setting Up the Secondary Server(s)

Do the following for each secondary server.

1. Run the Infoprint Installer.
2. Apply current APAR service, as necessary.
3. [Invoke the Infoprint Utilities SMIT interface.](#)
4. Click on **Configure Secondary Servers (NFS)**, then **Link from Secondary Server to Primary Server**. Provide the information about your primary system as prompted.

Note: If any of the procedures above fail because the user and group identifiers could not be set, you must set these values manually so they are the same on all servers in the namespace. To do this, follow these steps:

1. Invoke SMIT.
2. Click **Infoprint Printing System**, then **Troubleshooting**, then **Standardize Default Users**.
3. Enter ID numbers as prompted.

Perform this procedure on both primary and secondary systems until the same IDs are in use by all servers in the namespace.

Tuning the RS/6000 Server to Improve Performance

If an AIX system administrator suspects that the Infoprint Manager RS/6000 server is either limiting overall print throughput or contributing to excessive print job response times, they can use this section to tune the server. However, administrators should use caution when modifying default configuration values: they could improve Infoprint Manager performance while degrading the performance of another application running on the same Infoprint Manager RS/6000 server. Any tuning changes should be evaluated for effectiveness after they have been applied.

The performance of an Infoprint Manager RS/6000 server can differ, depending upon the environment they have been configured to support. This topic describes how the Infoprint Installer modifies the configuration defaults for both a [Basic Server configuration](#) and an [Advanced Server Configuration](#). In addition, this section provides tuning recommendations for [Input Manager](#), Infoprint Manager's utility for processing input from tape, file, or standard input that must be processed and printed.

Basic Server Configuration

During the install of a Basic Infoprint Manager 3.1 configuration, the Infoprint Installer sets the Infoprint Manager RS/6000 tuning parameters for large print-on-demand documents that contain compressed images and are printed on high-speed printers, such as the Infoprint 4000 IR3/IR4 printer. These performance options are contained in the [/etc/rc.net.ipr](#) file.

Note that if you have a pre-configured Model 4161-002 RS/6000 server, the Infoprint Installer not perform any additional performance tuning. Because the serial storage architecture (SSA) disk array performance within this model is dependent upon the **vmtune** settings, IBM does not recommend modifying tuning parameters on a Model 4161-002 RS/6000 server for any other applications.

Advanced Server Configuration

During the install of an Advanced Infoprint Manager 3.1 configuration, the Infoprint Installer does not make any changes to the tuning parameters for a general RS/6000 environment. If system administrators decide to tune parameters, they should use the System Management Interface Tool (SMIT) to make changes.

1. Logon to the AIX system as **root**.
2. From the AIX command line, type either `smit` or `smitty` and take the following path: Infoprint Printing Systems Infoprint Utilities Tune System Performance Optimize Infoprint Performance

This option sets system tuning parameters that affect TCP/IP memory and disk I/O characteristics that are contained in the [/etc/rc.net.ipr](#) script.

2. From an AIX window, specify

```
pdshutdown-w now servername
```

where *servername* is the name of the Infoprint AIX server.

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3. Specify

```
Shutdown -Fr
```

to shut down and subsequently restart the AIX operating system so these values can take effect.

Tuning Input Manager

Input Manager is Infoprint Manager's internal component for processing input from a variety of sources. The following section provides tuning suggestions for some of Input Manager's key components:

- [File Sync Parameter](#)
- [Segment Size Parameter](#)
- [Work Area Allocation](#)
- [Tuning Input Manager through SMIT](#)

File Sync Parameter

In Infoprint Manager 3.1, the **File Sync THRESHOLD LIMIT (K Bytes)** is set to 0 to disable it. The [/etc/rc.net.ipr](#) file performance settings help sequential disk I/O performance. However, if your installation does not call the **vmtune** options from this file, you may need to specify a file sync setting to improve the performance of some print applications.

Segment Size Parameter

The **Default SEGMENT SIZE** parameter affects the disk I/O performance of the **/var/psf/segments** file system. This parameter determines the maximum size of any temporary file created by the Input Manager component that is stored in **/var/psf/segments**. This setting determines the number of temporary files that Input Manager requires for all print jobs submitted to Infoprint Manager: the smaller the setting, the more files required to process the AFP input data.

For Basic Server configurations, the default setting of 5000 KB per segment can be raised to reduce the disk I/O usage associated with reading and writing data to the **/var/psf/segments** file system.

For Advanced Server configurations, the default setting of 1000 KB per segment can be raised to reduce the disk I/O usage associated with reading and writing data to the **/var/psf/segments** file system; however, the default setting usually works well with most AFP production applications.

Work Area Allocation

The SMIT field **PERCENTAGE of work area for retained jobs** determines how much of the `/var/psf/segments` file system is allocated for retained segment files. The lower this number, the better Input Manager's performance. The default setting is 50 percent, but you may want to lower the setting to 5 percent.

Tuning Input Manager through SMIT

Use the following procedure to tune Input Manager settings with SMIT:

1. Logon to the AIX system as **root**.
2. From the AIX command line, type either `smit` or `smitty` and take the following path: Inprint Printing Systems Miscellaneous Configuration Customize the Input Manager
3. From the **Customize the Input Manager** panel, set the following values as indicated in the table below.

Field	Variable
PATH used for work area & percentage usage threshold	<code>/var/psf/segments</code>
Work area MANAGEMENT	<code>automatic</code>
PERCENTAGE of work area for retained jobs	5
File Sync THRESHOLD LIMIT (K Bytes)	0
Default SEGMENT SIZE (K Bytes)	5000 for Basic Server Configuration 1000 for Advanced Server Configuration

Contents of the `/etc/rc.net.ipr` Script

This script modifies three AIX commands that are necessary to set network, memory, and I/O tuning parameters: **chdev**, **vmtune**, and **no**. The **chdev** command acts upon the system device (in this case, `sys0`) to enable pacing. The **vmtune** command options are optimal for sequential I/O operations, especially the `-c4` setting, which enables the memory-to-disk write behind algorithm. This **-c** parameter keeps memory from being over committed to large sequential files, reducing the potential for real memory thrashing.

The **no** commands help improve system-wide network performance for all network devices. If you have Ethernet devices at 1,492 bytes Maximum Transmission Unit (MTU) size (both **10 BaseT** and **100 BaseT**), Token-Ring devices at 4,096 bytes MTU, or FDDI devices at 4,352 bytes MTU, the settings shown below are helpful:

```
# TCP/IP PERFORMANCE TUNING

if [ -f /usr/sbin/no ] ; then

/usr/sbin/no -o rfc1323=1

/usr/sbin/no -o thewall=16384

/usr/sbin/no -o sb_max=262144

/usr/sbin/no -o tcp_sendspace=131072

/usr/sbin/no -o tcp_recvspace=131072

/usr/sbin/no -o udp_sendspace=65536

/usr/sbin/no -o udp_recvspace=65536

/usr/sbin/no -o tcp_keepidle=240

/usr/sbin/no -o tcp_keepintvl=60

fi

# VMTUNE MEMORY MANAGEMENT PERFORMANCE TUNING

if [ -f /usr/samples/kernel/vmtune ] ; then

/usr/samples/kernel/vmtune -r 2 -R 16 -f 120 -F 200 -c 4

fi

# I/O PACING TO HELP TUNE READ AND WRITE I/O PERFORMANCE

if [ -f /usr/sbin/chdev ] ; then

/usr/sbin/chdev -l sys0 -a maxpout=41 -a minpout=16

fi
```

Setting Up and Tuning SNMP Communication

If you are printing to network printers you may choose to control how your Infoprint servers issue SNMP requests. You can use your Infoprint Administrator's GUI to specify:

- Whether or not to attempt SNMP communication with a printer
- The name of the SNMP community to which the printer device belongs
- How many times to retry failed SNMP requests
- How many seconds to wait for an SNMP printer response before timing out.

The following SNMP attributes can be modified through the Infoprint Administrator's GUI to setup/tune the SNMP communication with network printers. To display the current settings, Select the SNMP tab located on the printer properties notebook.

Use SNMP (use-snmp)

This attribute defaults to "yes," but you may want to set it to "no" under the following types of conditions:

- Printer is off-line: the printer is turned off or removed from the network for an extended period of time and you don't want to use system resources to poll the device.
- Performance: it's taking too much time to query and poll the SNMP status.
- Invalid status/defaulting: the destination status is being reported incorrectly and you want to disable SNMP while service investigates the problem.

Community name (snmp-community-name)

Use this attribute to indicate the name of the SNMP community to which the printer belongs. The name must match one of the community names configured in the printer.

Number of times to retry (snmp-retry-count)

Use this to specify the number of times to retry an SNMP request if it fails. The higher the number of retries, the more possible traffic there will be on the network. Use higher numbers for remote printers. Increasing this number too much may cause reduced performance.

Timeout (snmp-timeout)

Use this to specify the number of seconds the server should wait for the printer to respond to an SNMP request. If the printer is remote (on a different subnet), this number may need to be increased from the default. The amount of increase depends on a number of network factors, including routing and network loading. Increasing this number too much may cause reduced performance.

