Micro Focus iPrint Appliance 3

Health Monitoring Guide

March 2017

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About This Guide

This guide describes how to monitor and manage Micro Focus iPrint Appliance using the iPrint Health Monitor. This guide discusses the following topics:

- Chapter 1, “An Overview of the iPrint Manager Health Monitor,” on page 7
- Chapter 2, “Understanding the iPrint Manager Health Monitor Screens,” on page 9
- Chapter 3, “Advanced iPrint Manager Information Page,” on page 19
- Chapter 4, “Using the iPrint Manager Health Monitor,” on page 37
- Chapter 5, “Troubleshooting Print System Errors,” on page 45
- Chapter 6, “Examples of Troubleshooting Print Problems,” on page 57
- Chapter 7, “Running iPrint Manager Health Monitor in a Virtualized Environment,” on page 63

Audience

This guide is intended for administrators involved in managing and monitoring iPrint.

Feedback

We want to hear your comments and suggestions about this manual and other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the latest version of the *Micro Focus iPrint Appliance Health Monitor Administration Guide*, visit the Micro Focus iPrint Appliance documentation web site.

Additional Documentation

For documentation on installing and running iPrint Appliance, see the Micro Focus iPrint Appliance 3 Administration Guide.

1 An Overview of the iPrint Manager Health Monitor

The iPrint Manager Health Monitor provides administrators with a global view of their print system. The Health Monitor shows you the current status of Printer Agents and lets you configure settings and generate reports about your print system.

The iPrint Manager Health Monitor lets you quickly evaluate your printing system and troubleshoot errors associated with printing.

Figure 1-1 *Print Services Manager Health Monitor Main Page*

iPrint Manager 'psm_33.novell'

Number of Printer Agents	5

		Jobs		Jobs Printed			
Printer Agent Name	Current Status	Scheduled	Active	Since 07/20/20111 03:00:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM	Printer Pool Name
direct_printer	Error Printing	0	0	0	0	0	
auditing_printer	Output Paused	5	0	0	0	0	
lpr_printer	Shut Down	N/A	N/A	5	5	5	
secure_printer	Idle	0	0	0	3	3	
wup printer (WalkUp)	Idle	0	0	0	0	0	

Jobs		Jobs Printed Since		
Scheduled	Active	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
5	0	8	8	8

Current iPrint Manager Status	GOOD

Advanced iPrint Manager Information

To access the Health Monitor, launch the iPrint Appliance Management Console, then click **iPrint Printer Status**.

1. On a Web browser, specify either the DNS name or the IP address of the iPrint Appliance Management Console. For example, https://10.0.0.1:9443 or https://iprint.example.com:9443.
2. Specify the Username and Password, then click **Log in**.
3. Click **iPrint Printer Status.**

On the Health Monitor page, you can view current Printer Agent states, start up and shut down Printer Agents, and view other information about your print system.

2 Understanding the iPrint Manager Health Monitor Screens

Although the default settings in iPrint Appliance allow your users to print without further configuration being necessary, you can modify some of those settings in order to manage your printing resources more effectively. Before making changes, you should monitor your print system using the iPrint Manager Health Monitor to determine which changes benefit your configuration.

The iPrint Manager Health Monitor is divided into two main areas. From these two areas you can access all the information you need to monitor and troubleshoot your print system.

This section discusses the following:

- Section 2.1, “Navigating in the iPrint Manager Health Monitor,” on page 9
- Section 2.2, “iPrint Manager Health Monitor Main Page,” on page 9
- Section 2.3, “Printer Agent Information Page,” on page 12

2.1 Navigating in the iPrint Manager Health Monitor

Navigating to different screens in the iPrint Manager Health Monitor is just a matter of selecting the link you want to view. To return to the main page above the page you are currently viewing, you must use the **Back** button in the Health Monitor that is located in the upper right-hand corner. Using the browser’s **Back** button takes you back to the previously viewed page.

2.2 iPrint Manager Health Monitor Main Page

When you first access the Health Monitor, the main page shows you a list of all the Printer Agents and their current state, print job statistics, and the status of the iPrint Manager.

Figure 2-1 *Print Services Manager Health Monitor Main Page*

iPrint Manager 'psm_33.novell'

Number of Printer Agents	5

		Jobs		Jobs Printed			
Printer Agent Name	Current Status	Scheduled	Active	Since 07/20/20111 03:00:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM	Printer Pool Name
direct_printer	Error Printing	0	0	0	0	0	
auditing_printer	Output Paused	5	0	0	0	0	
lpr_printer	Shut Down	N/A	N/A	5	5	5	
secure_printer	Idle	0	0	0	3	3	
wup printer (WalkUp)	Idle	0	0	0	0	0	

Jobs		Jobs Printed Since		
Scheduled	Active	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
5	0	8	8	8

Current iPrint Manager Status	GOOD

Advanced iPrint Manager Information

Use the following list to find out more information about the fields displayed on the main page.

- iPrint_Manager_Object Context (page 10)
- Number of Printer Agents (page 10)
- Printer Agent Name (page 10)
- Jobs and Jobs Printed Since (for Printer Agents) (page 11)
- Current iPrint Manager State (page 12)
- Advanced iPrint Manager Information (page 12)

2.2.1 *iPrint_Manager_Object Context*

Displays the name and context of the iPrint Manager that the Health Monitor is monitoring.

2.2.2 Number of Printer Agents

Indicates the number of Printer Agents serviced by this iPrint Manager.

2.2.3 Printer Agent Name

Displays links to the Printer Agent Information page for every Printer Agent associated with this iPrint Manager. For more information, see Section 2.3, “Printer Agent Information Page,” on page 12.

Current Status

Displays the current status of each Printer Agent. A Printer Agent can have one or more of the following status messages.

Table 2-1 Types of Status Error Messages

Status	Description
Error Printing	See Printer Agent's information page for details about the problems.
Idle	Waiting for a printable job to print.
Input Paused	Printer Agent will not accept new jobs.
Not Bound	No gateway is attached.
Output Paused	Printer's output is paused.
Printing	Job was opened by the gateway and is not yet closed.
Shutdown	Printer Agent is not accessible.

In addition to the status messages above, the column uses the following colors to indicate status.

Table 2-2 Status Color Indicators

Color	State
Red	Critical - Users cannot print to this printer.
Yellow	Warning - The printer is available to users, but the printer or Printer Agent might need attention to successfully print the job.
Green	Good - Users can print to the printer.

Scenarios

- If the status is idle and color is red, then the gateway has not requested a job.
- If the status is printing and the color is yellow, then the printer is not requesting data.

To configure how the iPrint Manager should handle the different status, use "Configuring the Monitoring Thresholds" on page 32 along with the Advanced iPrint Manager Information page.

Jobs and Jobs Printed Since (for Printer Agents)

Displays statistics about print jobs for the Printer Agent. The statistical information includes jobs that are scheduled to be printed; the number of jobs that the gateways currently have open; and the number of jobs printed in approximately the last hour, since midnight, and since the iPrint Manager was started. These numbers are reset when the iPrint Manager is stopped and restarted. This information is useful when troubleshooting issues.

2.2.4 Jobs/Jobs Printed Since (for iPrint Manager)

This listing below the dividing line displays a summary of job statistics for all Printer Agents associated with this iPrint Manager.

2.2.5 Current iPrint Manager State

The iPrint Manager can monitor itself for potential problems. This displays whether the iPrint Manager is operating within configured limits. For more information on configuring the iPrint Manager Health Monitor, see Section 3.7, “Configure Settings and Thresholds,” on page 31.

2.2.6 Advanced iPrint Manager Information

If there is a problem with the iPrint Manager’s status, click the Advanced iPrint Manager Information button for additional information. Also see “Advanced iPrint Manager Information Page” on page 19.

2.3 Printer Agent Information Page

This section describes the information presented on the Printer Agent Information page.

To access the Printer Agent page, launch iManager, click **Manage Print Manager > Manage Health Monitor**, and select a printer under **Printer Agent Name**.

- Section 2.3.1, “Printer Agent Status,” on page 12
- Section 2.3.2, “Printer Console,” on page 13
- Section 2.3.3, “Printer Agent Status Details, Event Time, Message,” on page 13
- Section 2.3.4, “Job List,” on page 13
- Section 2.3.5, “Shutdown/Startup History,” on page 14
- Section 2.3.6, “Message from Admin,” on page 14
- Section 2.3.7, “Configuration Options,” on page 15
- Section 2.3.8, “Job Processing Information,” on page 16
- Section 2.3.9, “Job History,” on page 16
- Section 2.3.10, “Printer Information,” on page 17
- Section 2.3.11, “Operating System and Driver Name,” on page 18

2.3.1 Printer Agent Status

Displays the current status of each Printer Agent. A Printer Agent can have one or more of the following status messages.

Table 2-3 *Types of Status Error Messages*

Status	Description
Error Printing	See Printer Agent’s information page for details about the problems.
Idle	Waiting for a job to print.
Input Paused	Printer Agent will not accept new jobs.
Not Bound	No gateway is attached.
Output Paused	Printer’s output is paused.
Printing	Job was opened by the gateway and is not yet closed.

Status	Description
Shutdown	Printer Agent is not accessible.

In addition to the status messages above, the column uses the following colors to indicate status.

Table 2-4 *Status Color Indicators*

Color	State
Red	Critical - Users cannot print to this printer.
Yellow	Warning - The printer is available to users, but the printer or Printer Agent might need attention to successfully print the job.
Green	Good - Users can print to the printer.

To configure how the iPrint Manager should handle the different status, use "Configuring the Monitoring Thresholds" on page 32 along with the Advanced iPrint Manager Information page.

Shutdown or Startup/Pause Input or Output for Printer

Select the action you want from the drop-down list and click **Apply**. You can shut down or start up the Printer Agent or pause input or output on the printer. When the Printer Agent starts up, the most current printer status might not be returned. You might need to refresh the page. The drop-down list appears only if you have manager or admin rights to the Printer Agent.

NOTE: The **Pause Output** and **Pause Input** options are not available on an iPrint Appliance for WalkUp printers.

2.3.2 Printer Console

Displays the information that the printer's display (usually the LCD) is showing. If the Printer Console field displays **None**, then the Health Monitor does not have access to the information. If the field displays **Unknown**, the Health Monitor was able to get the information, but it no longer can access the printer's display. This usually occurs when the gateway has changed. This feature uses SNMP to gather the information. If there is more than one message, additional Printer Console lines are displayed.

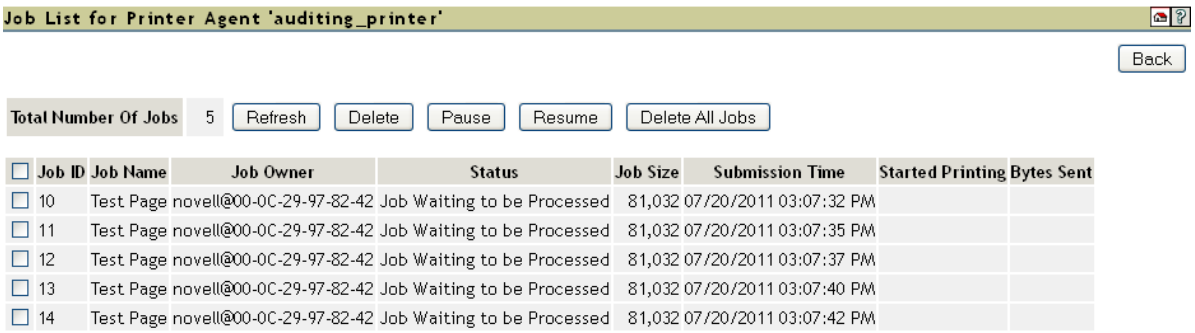
2.3.3 Printer Agent Status Details, Event Time, Message

The Printer Agent Status Details, Event Time, and Message table displays only when problems have been detected for this Printer Agent. The table lists current problems and the time the problem was reported along with any associated message. Red entries indicate problems that prevent printing. Yellow entries indicate warnings that should not stop printing.

2.3.4 Job List

Displays the current job list for this Printer Agent. This option is available only to administrators; the link appears only if you have manager or admin rights to the Printer Agent.

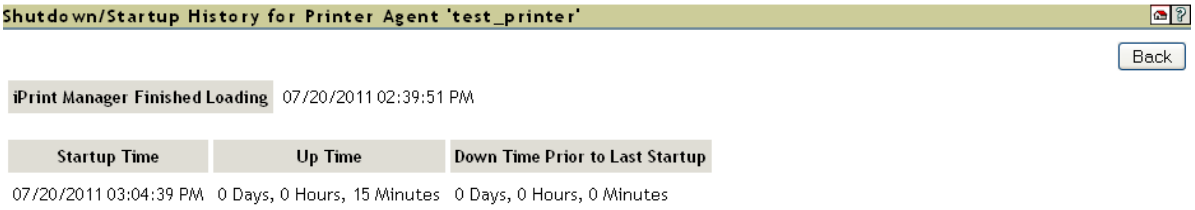
Figure 2-2 *Job List Page*



2.3.5 Shutdown/Startup History

Displays a history of the startup and running times for this Printer Agent since the last time the iPrint Manager was loaded. When a Printer Agent has been restarted many times, it usually indicates that a problem exists and warrants further investigation. This link appears only if you have manager or admin rights to the Printer Agent.

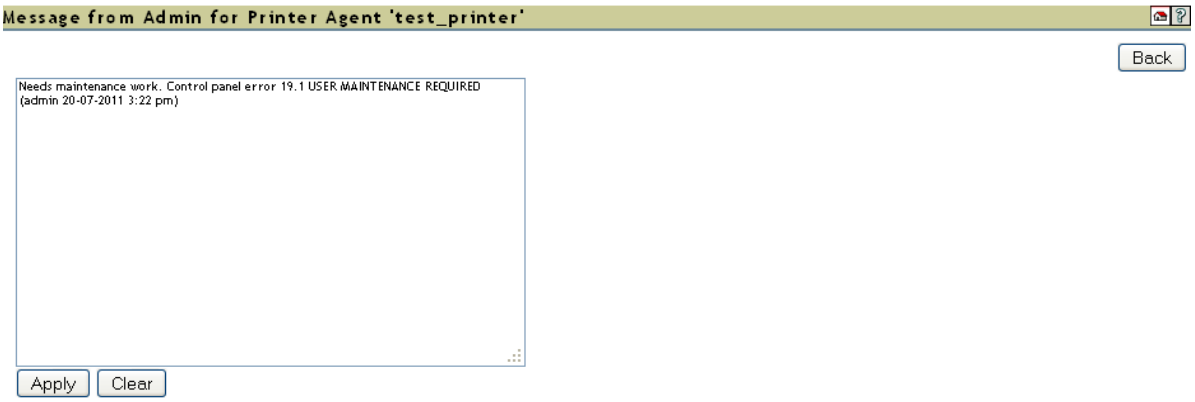
Figure 2-3 *Printer Agent Shutdown and Startup History*



2.3.6 Message from Admin

Lets you attach a note about this Printer Agent. When a message exists, this link is highlighted in yellow. To remove the message, you must delete the characters in the message box and then click **Apply**. This link appears only if you have manager or admin rights to the Printer Agent.

Figure 2-4 *Message from the Administrator Page*



This is useful for notes about the state of this printer. For example, you can leave a message when a printer is offline because of maintenance so that other administrators cannot delete the Printer Agent for the printer.

2.3.7 Configuration Options

Lets you configure the following options for the printer. After modifying this page, you must click **Apply** for the changes to be saved.

Figure 2-5 *Configuration Options Page*

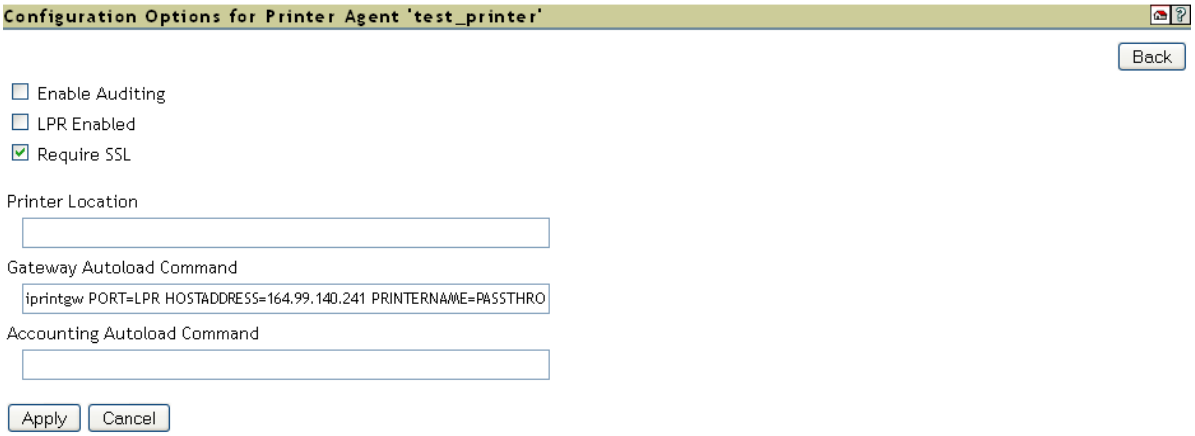


Table 2-5 *Configuration Options Descriptions*

Option	Description
Enable Auditing	Selecting this option enables auditing for this printer, which tracks who printed how many pages to this printer.
Printer Description	(Optional) Specify information about the characteristics of a WalkUp printer. For example, Color Laser Printer. This option is only available for WalkUp printers.
LPR Enabled This option is not available for WalkUp printers.	Selecting this option allows you to submit print jobs to a remote printer. Select this check-box to enable LPR, in order to allow the printer to accept print jobs from LPR/LPD clients.
Require SSL This option is not available for WalkUp printers.	Clients must use SSL to communicate with this printer. This option requires the printer to be an iPrint printer.
Printer Location This option is not available for WalkUp printers.	This field lets you specify a printer location associated with this printer. Use this field to add information that helps you and users locate this printer.

Option	Description
Gateway Autoload Command This option is not available for WalkUp printers.	If you need to make changes to the Gateway Autoload Command, such as changing the IP address for the printer, you can edit the information here. After saving any changes to the Gateway Autoload Command, you must restart the Printer Agent. An example for a Gateway Autoload Command could be - `iprintgw PORT=LPR HOSTADDRESS=10.255.255.255 PRINTERNAME=PASSTHROUGH`
Accounting Autoload Command This option is not available for WalkUp printers.	The Accounting Autoload Command allows programs to account, control, and limit print jobs. When using a third party accounting software for jobs submitted to this Printer Agent, enter the Accounting String details here. The accounting load string parameters are primarily used by third-party accounting software to overwrite the parent server information for this printer.

2.3.8 Job Processing Information

Displays information about processing jobs and about the last job that finished printing. This information is useful when troubleshooting.

2.3.9 Job History

The Job History includes the following fields:

- "Jobs Printed, Canceled, and Aborted Since" on page 16
- "Jobs Released and Jobs Expired" on page 16
- "Average Job Size Since (KB)" on page 17
- "Maximum Job Size Since (KB)" on page 17

Jobs Printed, Canceled, and Aborted Since

Displays statistics about the number of jobs that have been printed, canceled, and aborted in the last hour, in the last day, and since the iPrint Manager was started.

Jobs Printed refers to the number of jobs that have been printed since this value was reset to 0 (zero). This value was initialized to 0 when a Printer Agent was created. There should not be a need to reset this value to 0.

NOTE: The **Pages Printed** and **Jobs Printed** options are not available on an iPrint Appliance for WalkUp printers.

Jobs Released and Jobs Expired

The **Jobs Released** displays statistics about the number of jobs printed for a WalkUp printer.

The **Jobs Expired** displays statistics about the number of WalkUp jobs that were deleted because the jobs hold time had expired.

Average Job Size Since (KB)

Displays the size of the average print job (in kilobytes) that was processed since the indicated time. This information coupled with **Maximum Job Size Since (KB)** is useful in troubleshooting print problems as well as determining the throughput of your print system.

Maximum Job Size Since (KB)

Displays the size of the largest print job (in kilobytes) that was processed since the indicated time. This information coupled with **Average Job Size Since (KB)** is useful in troubleshooting print problems as well as determining the throughput of your print system.

2.3.10 Printer Information

The Printer Information includes the following:

- "Gateway" on page 17
- "Accounting Load String" on page 17
- "Date Printer Agent Created" on page 17
- "Printer Model and Printer Manufacturer" on page 18
- "Associated NDS Printer Object" on page 18
- "Printer Location" on page 18
- "SSL Required" on page 18
- "Printer URL" on page 18
- "Spooling Location" on page 18
- "Banner" on page 18

Gateway

Displays the gateway load string for this printer. This helps you identify the IP address for the printer.

This option is not available for WalkUp printers.

Accounting Load String

Displays the accounting load string parameters for this printer. These string parameters are primarily used by third-party accounting software to overwrite the parent server information for this printer.

This option is not available for WalkUp printers.

Date Printer Agent Created

Displays the date and time this Printer Agent was created. You can use this information with the print job statistics to determine the printer's overall use. For example, if the Printer Agent was created a long time ago and it has processed only a few print jobs, you might want to move the printer to a more useful location.

Printer Model and Printer Manufacturer

The gateway populates the iPrint Manager's database with the printer model and manufacturer information, if available, obtained by communicating with the printer. The first row of this table displays the manufacturer and model of the physical printer. Subsequent rows display which driver is to be downloaded for the specified client operating system. This information is used by the iPrint Manager for automatic driver download.

This option is not available for WalkUp printers.

Associated NDS Printer Object

Displays a list of the NDS® Printer objects associated with this Printer Agent. Access to these links is restricted to managers of this iPrint Manager object. If no NDS objects are associated with a printer, then the printer is a Public Access Printer.

Printer Location

Displays the location a printer.

This option is not available for WalkUp printers.

SSL Required

Identifies if SSL has been enabled for this printer. False means that SSL has not been enabled. True means that SSL is required and that print data is encrypted between the client and server. For more information, see "Creating Secure Printers" in the *Micro Focus iPrint Appliance 3 Administration Guide*.

Printer URL

Displays the URL for this Printer Agent. When a printer is installed using iPrint, this URL is the port assignment for the printer on the Windows workstation.

Spooling Location

Displays the location on the server where print jobs are spooled.

Banner

Displays the name of the banner page associated with this printer. If no banner page is associated to this printer, this field is blank.

This option is not available for WalkUp printers.

2.3.11 Operating System and Driver Name

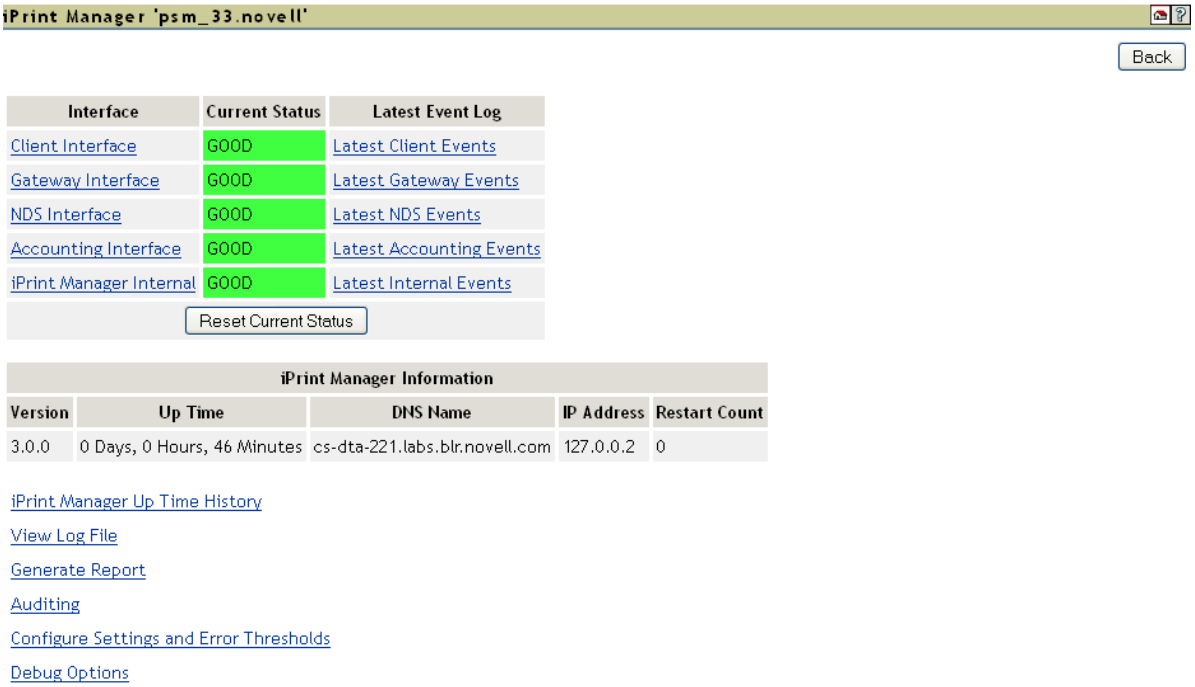
Displays the printer driver associations for this printer for each operating system.

3 Advanced iPrint Manager Information Page

To access the Advanced iPrint Manager Information page, launch iManager, and click **iPrint > Manage Print Manager > Manage Health Monitor > Advanced iPrint Manager Information**.

1. On a Web browser, specify either the DNS name or the IP address of the iPrint Appliance Management Console. For example, https://10.0.0.1:9443 or https://iprint.example.com:9443.
2. Specify the Username and Password, then click **Log in**.
3. Click **iPrint Printer Status.**
4. Click **Advanced iPrint Manager Information.**

Figure 3-1 *Print Services Manager Health Monitor Page*



This section discusses the following areas of the Advanced iPrint Manager Information page:

- Section 3.1, “Interface, Current Status, and Latest Event Log Information,” on page 20
- Section 3.2, “iPrint Manager Information,” on page 28
- Section 3.3, “iPrint Manager Up Time History,” on page 29
- Section 3.4, “View Log File,” on page 29
- Section 3.5, “Generate Report,” on page 30
- Section 3.6, “Internal Auditing,” on page 31

- Section 3.7, “Configure Settings and Thresholds,” on page 31
- Section 3.8, “Debug Options,” on page 34

3.1 Interface, Current Status, and Latest Event Log Information

This table displays the different interfaces of the iPrint Manager.

Interface: Contains links to pages that display statistics to profiled time and errors for the indicated interfaces.

Current Status: Indicates the state of each interface for the last hour.

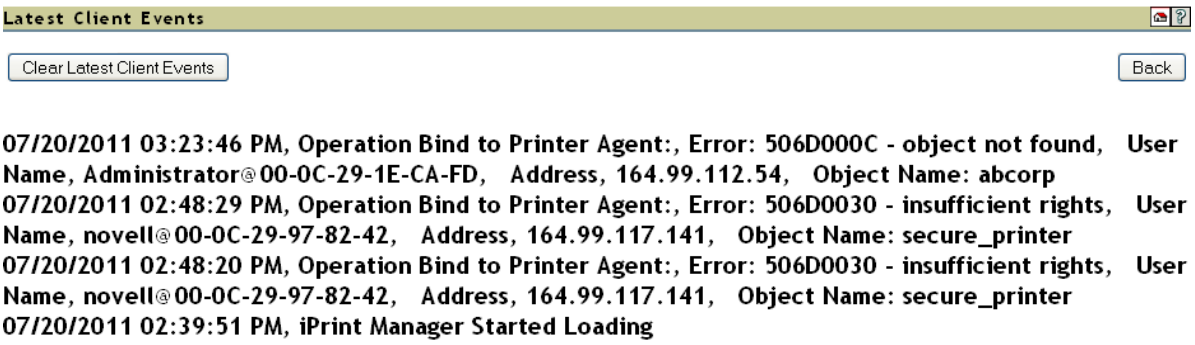
Table 3-1 *Interface Color Indicators*

Status	Description
Bad	Color: Red
	Running outside configured thresholds in a manner designated as an error.
Good	Color: Green
	Running within configured thresholds.
Not Monitored	Monitoring for the interface has been turned off or does not apply.
Warning	Color: Yellow
	Running outside configured thresholds in a manner designated as a warning.

Figure 3-2 *Latest Event Log*

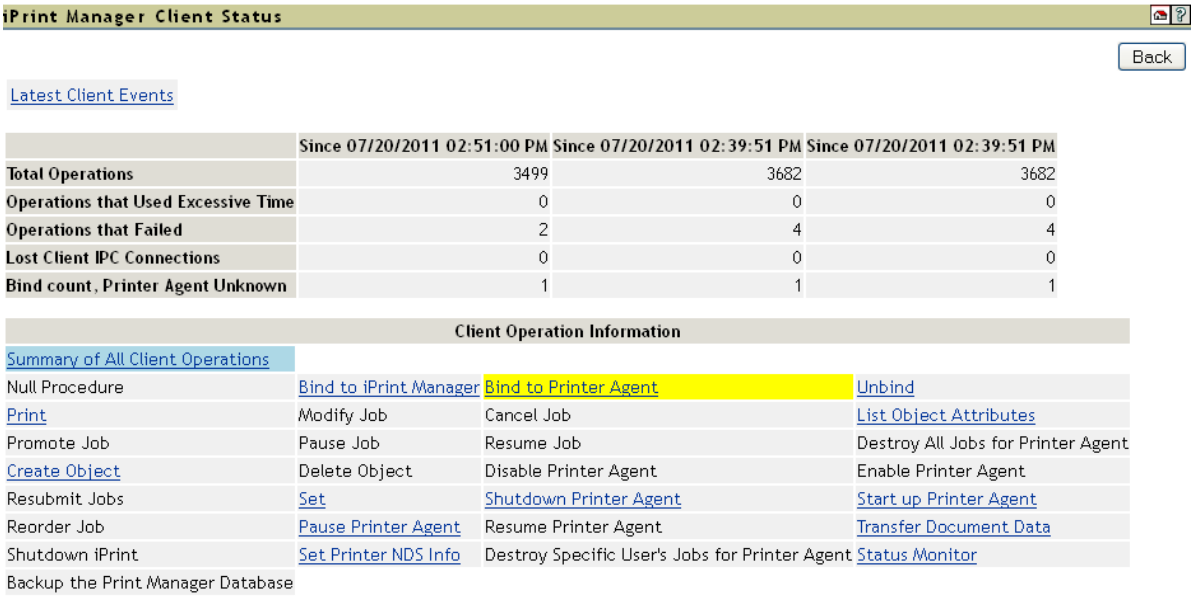
Latest Event Log: Displays the last 20 events for the given interface. You can choose to view the last 20 client events, gateway events, NDS events, accounting events, and internal events.

Figure 3-3 *Latest Client Events*



3.1.1 Client Interface

Figure 3-4 *Client Interface Page*



Latest Client Events

Displays the last 20 events for the given interface.

Currently Bound Clients

Displays statistics on clients currently bound to this iPrint Manager. Typically, most binds are transitory except for administrators that are using management tools.

Client Operations Statistics

Displays statistics regarding the operations that have occurred since the referenced time, typically in the last hour, since midnight, and since the Printer Agent was started.

Table 3-2 Client Operations

Statistic	Description
Total Operations	Total number of client operations that have occurred since the referenced time.
Operations That Used Excessive Time	Number of client operations that succeeded, but exceeded the configured threshold for maximum client operation time.
Operations That Failed	Number of client operations that failed.
Average Time Used	Average time used to perform operations of the selected type.
Max Time Used	Maximum time used to perform an operation of the selected type.
Lost Client Connections	Number of times the iPrint Manager attempts to respond to a request when the client is no longer communicating. Causes for the lost client connection include slow links or routers and a client machine being rebooted. This statistic can indicate when users are having difficulty printing. This displays only when you select Summary of All Operations.

Client Operation Information

Lists all of the client operations that might occur with the iPrint Manager. These operations become selectable if any operation of that type has occurred. The statistics at the top of this page apply to the currently selected field.

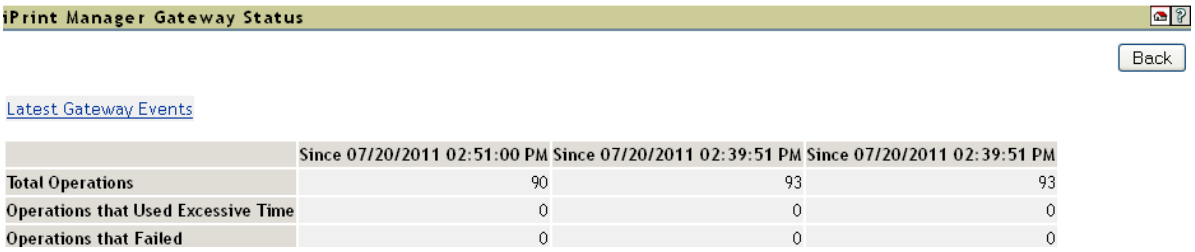
When an operation event occurs, the operation is changed to a link. When you click a link, the statistics for that operation for the last hour are displayed above the **Client Operation Information** and the operation is highlighted with the color Cyan. The following are all the colors that can be used.

Table 3-3 Operation Color Indicators

Color	Description
Cyan	Currently selected event operation
Magenta	Currently selected event operation with an event worthy of notice
Yellow	Event worthy of notice has occurred

3.1.2 Gateway Interface

Figure 3-5 Gateway Interface Page



	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
Total Operations	90	93	93
Operations that Used Excessive Time	0	0	0
Operations that Failed	0	0	0

Latest Gateway Events

Displays the last 20 events for the given interface.

Gateway Operations

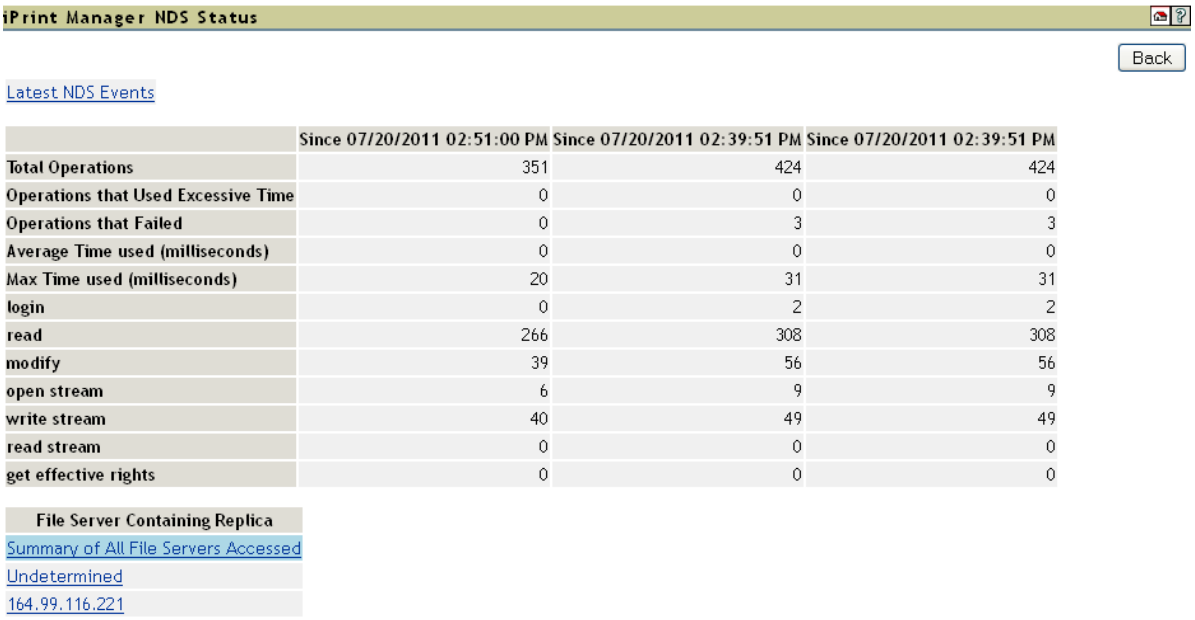
Displays statistics regarding the operations that have occurred since the referenced time, typically the last hour, since midnight, and since the Printer Agent was started.

Table 3-4 *Gateway Operations*

Statistic	Description
Total Operations	Total number of operations that have occurred since the referenced time.
Operations That Used Excessive Time	Number of operations that succeeded, but exceeded the configured threshold for maximum client operation time.
Operations That Failed	Number of operations that failed.

3.1.3 NDS Interface

Figure 3-6 *NDS Interface Page*



iPrint Manager NDS Status

Back

Latest NDS Events

	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
Total Operations	351	424	424
Operations that Used Excessive Time	0	0	0
Operations that Failed	0	3	3
Average Time used (milliseconds)	0	0	0
Max Time used (milliseconds)	20	31	31
login	0	2	2
read	266	308	308
modify	39	56	56
open stream	6	9	9
write stream	40	49	49
read stream	0	0	0
get effective rights	0	0	0

File Server Containing Replica
Summary of All File Servers Accessed
Undetermined
164.99.116.221

Latest NDS Events

Displays the last 20 events for the given interface.

Operations

Table 3-5 *NDS Operations*

Statistic	Description
Total Operations	Total number of client operations that have occurred since the referenced time.
Operations That Used Excessive Time	Number of client operations that succeeded, but exceeded the configured threshold for maximum client operation time.
Operations That Failed	Number of client operations that failed.
Average Time Used	Average time used in milliseconds to perform NDS® operations to the selected server.
Maximum Time Used	Maximum time used in milliseconds to perform NDS operations to the selected server.
Login	Number of times that the user has logged into eDirectory
Read	Number of times that read operations have been carried out in the eDirectory
Modify	Number of times that modify operations have been carried out in the eDirectory
Open Stream	Number of times that the open stream operation has been carried out in the eDirectory
Write Stream	Number of times that the write stream operation has been carried out in the eDirectory
Read Stream	Number of times that the read stream operation has been carried out in the eDirectory
Get Effective Rights	Number of times that requests have been made for obtaining effective user rights for printer objects

File Server Containing Replica

The statistics on this page apply to the currently selected replica in the list. The links are explained in the following table.

Table 3-6 *NDS Replica Information*

Options	Description
Summary of All File Servers Accessed	Statistics for all monitored NDS operations.
Undetermined	Any operation where the iPrint Manager cannot determine which replica was accessed.
File_Server_List	The first 15 file servers accessed by the iPrint Manager for NDS information within the last hour. Any server highlighted in yellow indicates that there has been a recent problem while processing an NDS operation to that server.

Clicking the link displays operations associated with that file server's replica. The following colors are used.

Table 3-7 *Operation Color Indicators*

Color	Description
Cyan	Currently selected event operation.
Magenta	Currently selected event operation with an event worthy of notice.
Yellow	An event worthy of notice has occurred.

Last Access of Replica

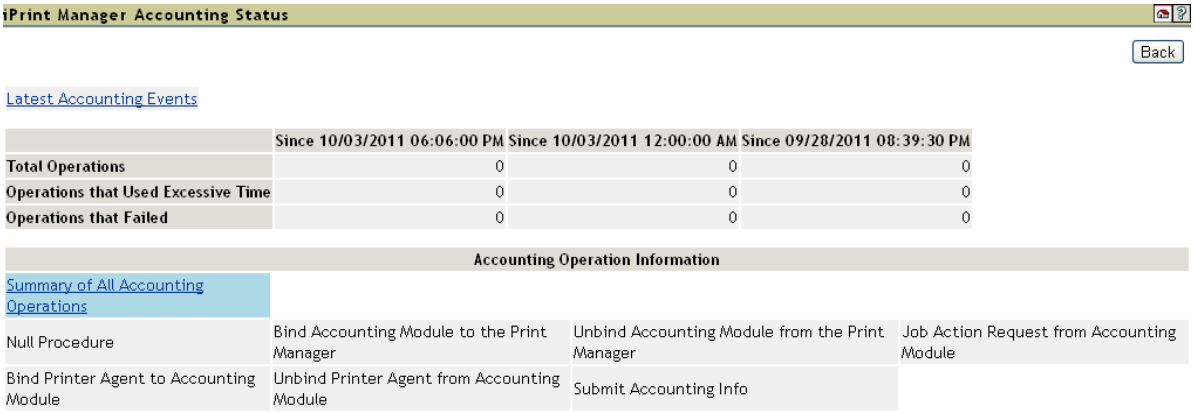
If a file server has been selected under **File Server Containing Replica**, this displays the date and time that the iPrint Manager last accessed a replica on that file server.

Lost Connection Count

Displays the number of times the iPrint Manager unsuccessfully attempted to talk to the selected server. This statistic is indicative of the health of eDirectory™.

3.1.4 Accounting Interface

Figure 3-7 *Accounting Status Page*



Latest Accounting Events

Displays the last 20 events for the given interface.

Operations

Table 3-8 Accounting Operations

Statistic	Description
Total Operations	Total number of accounting operations that have occurred since the referenced time.
Operations That Used Excessive Time	Number of accounting operations that succeeded, but exceeded the configured threshold for maximum client operation time.
Operations That Failed	Number of accounting operations that failed.

Accounting Operation Information

Lists all of the accounting operations that might occur with the iPrint Manager. These operations become selectable if any operation of that type has occurred. The statistics at the top of this page apply to the currently selected field.

When an operation event occurs, the operation is changed to a link. When you click a link, the statistics for that operation for the last hour are displayed above the **Accounting Operation Information** and the operation is highlighted with the color Cyan. The following are all the colors that can be used.

Table 3-9 Operation Color Indicators

Color	Description
Cyan	Currently selected event operation
Magenta	Currently selected event operation with an event worthy of notice
Yellow	Event worthy of notice has occurred

3.1.5 iPrint Manager Internal

Figure 3-8 *Print Services Manager Internal Page*

iPrint Manager Internal

Back

Last Database Backup	07/20/2011 03:10:32 PM
Database Data File Size	67 Kb
Database Object Count	69
Database XML File	padbtxt.xml

Database Object Lock Information	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
Total Object Lock Operations	4239	4399	4399
Failed Object Lock Operations	0	0	0

Database Information	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
Total Number of Operations	5805	6025	6025
Operations that Used Excessive Time	0	0	0
Average Access Time (milliseconds)	0	0	0
Max Access Time (milliseconds)	23	23	23

Examine Database Empty Records - Count: 1, Size: 1 KB Defrag Database Backup Database

Thread Pool Information	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
Total Tasks Processed	3857	4042	4042
Max Number of Queued Request	2	2	2
Max Request Queued Time (milliseconds)	0	0	0
Max Number of Threads	6	6	6

taskListNodeCountMGbl 0

Name	thread pool state	thread state	last executed seconds	thread ID	tasks executed	last Task Execution Time (1/10,000)	function
TaskThrd_0	ACTIVE	RUNNING	1	F2C47700	4003	0	Unknown
TaskThrd_1	NOT_ACTIVE	SUSPENDED	866	F2446700	39	0	Unknown
TaskThrd_2	NOT_ACTIVE	SUSPENDED	1311156230	F1C45700	0	0	Unknown
TaskThrd_3	NOT_ACTIVE	SUSPENDED	1311156230	F1444700	0	0	Unknown
TaskThrd_4	NOT_ACTIVE	SUSPENDED	1311156230	F0C43700	0	0	Unknown
TaskThrd_5	NOT_ACTIVE	SUSPENDED	1311156230	F0442700	0	0	Unknown

house keeping function	id 1	id 2	id 3	sleep time	next run time	last execute time (1/10000)	run count
Unknown	0	0	0	37209	33970	0	0
Unknown	0	0	0	1	1	0	3238

Database Backup and File Size Information

Displays general information about the iPrint Manager's database. The index file and the data file together comprise the iPrint Manager's database. The index should be roughly one-tenth the size of the **Database Data File Size**.

A large index file is indicative that a large number of database objects have been deleted. While this does not affect performance, you can resynchronize the database to update the index file size, if necessary.

Database Lock Operations

The iPrint Manager uses locks when accessing objects in its database. If the lock for an object cannot be acquired, the object cannot be accessed and that database operation fails. **Database Lock Operations** displays how many object lock operations have been attempted and how many have failed for the specified time.

Database Information

Displays statistics on the performance of the iPrint Manager's database. Excessive time is defined as 10 seconds. The **Average Access Time** should be 0 (zero).

Statistics for the **Max Access Time** are expected, and most entries are associated with file system backups.

Examine Database

Links to a page that gives details about the database objects.

Thread Pool Information

The iPrint Manager has a thread pool that it uses to process a variety of tasks. This table displays some statistics to monitor the performance and load on this thread pool.

Table 3-10 *Thread Pool Task Information*

Statistic	Description
Total Tasks Processed	Total number of tasks that have been processed by the thread pool since the referenced time.
Max Number of Queued Requests	Maximum number of request that were queued up (waiting) to be processed.
Max Request Queue Time	Longest time that a task waited to be processed.
Max Number of Threads	The iPrint Manager has the ability to create and to destroy threads for the thread pool as needed. The minimum number of threads in the thread pool is two. **Max Number of Threads** displays the maximum number of threads that were needed to process tasks. If this number consistently exceeds five, you should monitor the print system's performance and determine if you need an additional iPrint Manager.

3.2 iPrint Manager Information

Displays information about this iPrint Manager, including its version, how long it has been loaded on the server, associated DNS name, IP address, the version, and the restart count (the number of times the print manager "child" process has been restarted automatically by the monitor process).

NOTE: In instances when the print manager or its child process crashes automatically or is killed using a command such as `SIGKILL`, the monitor process restarts the print manager, incrementing the restart count.

Figure 3-9 *iPrint Manager Information Page*

iPrint Manager Information				
Version	Up Time	DNS Name	IP Address	Restart Count
3.0.0	0 Days, 0 Hours, 55 Minutes	cs-dta-221.labs.blr.novell.com	127.0.0.2	0

3.3 iPrint Manager Up Time History

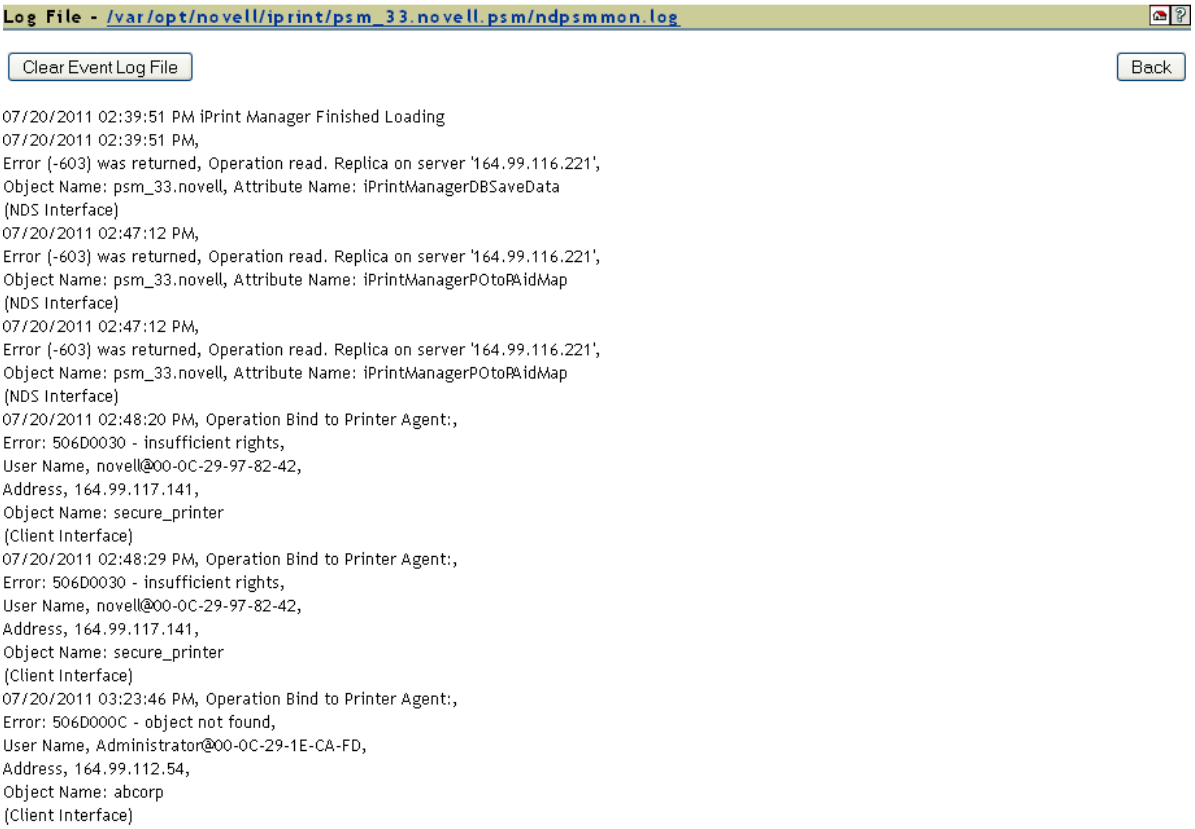
Links to a page that displays how long the iPrint Manager has been running, the amount of time it was down in between loads, and information about how the Manager was unloaded. If the Manager was shut down properly by bringing down the server or unloading the `ipsmd`, **Clean Unload** is displayed. For all other situations, **Probable Server Abend** or **Power Cycle** is displayed.

At the bottom of the page is a **Totals** row showing uptime, downtime, and the percent of time the iPrint Manager was loaded.

3.4 View Log File

The iPrint Manager's log file contains all the events collected from each interface. This link displays the last 20 KB of the file. The filename and path are displayed at the top of the View Log File page.

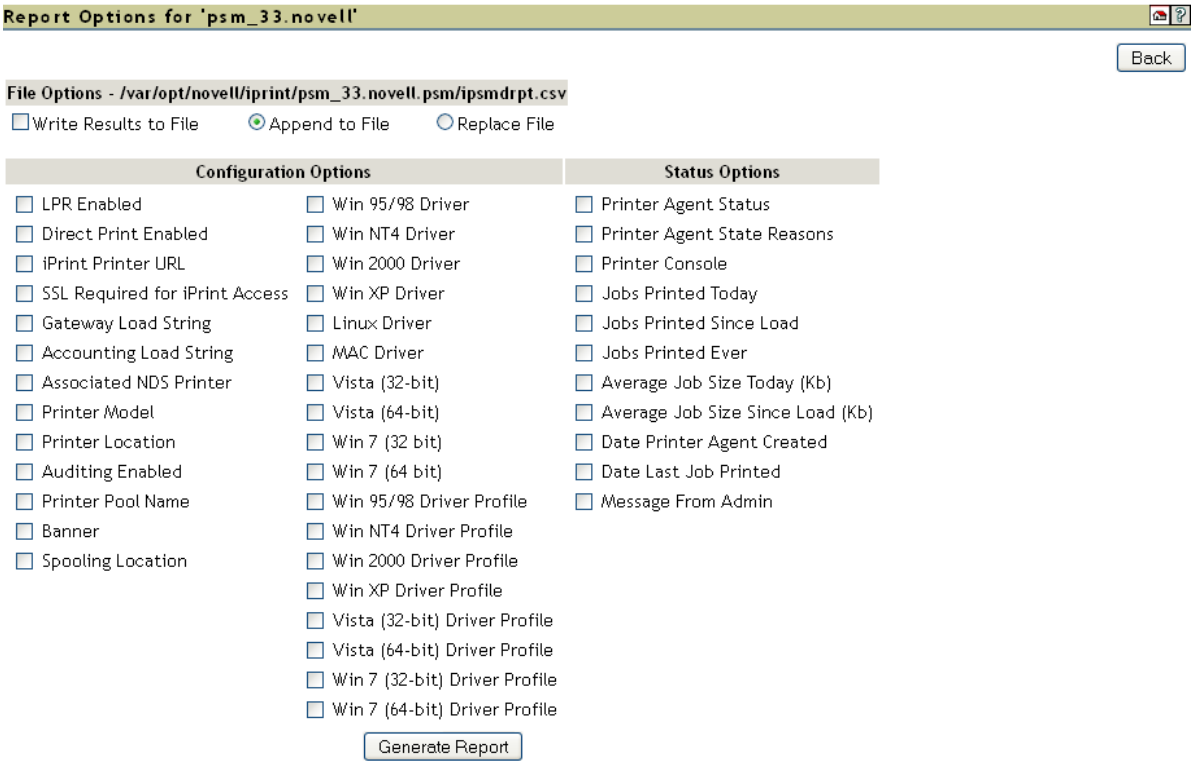
Figure 3-10 *Sample Log File*



3.5 Generate Report

Use this link to create reports about your printing system. For information on recommended reports, see Section 4.2, “Generating Reports,” on page 37.

Figure 3-11 *Generate Report Options Page*



3.6 Internal Auditing

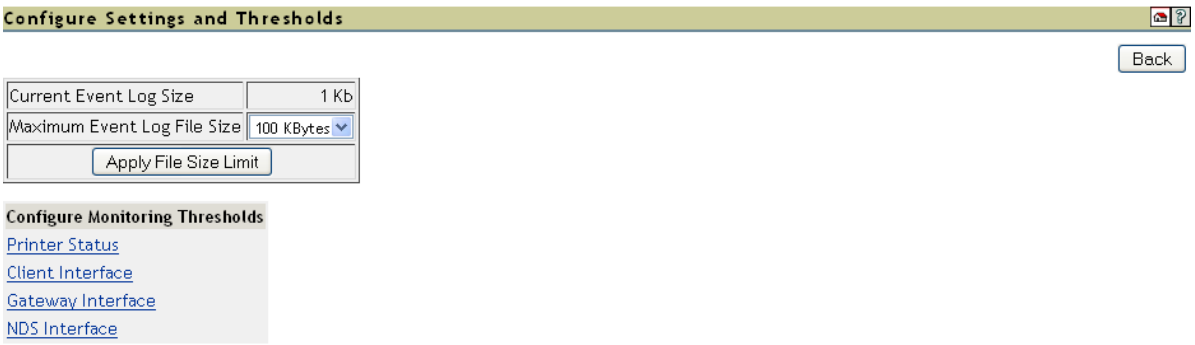
Internal auditing creates an audit log file of who printed how many pages to which printer on a given date for printers that have internal auditing enabled. You can enable auditing for all or just a few Printer Agents using NetIQ iManager, or you can use the Printer Agent page in the Health Monitor to enable internal auditing for a Printer Agent. For more information, see Section 4.6, “Using Print Auditing,” on page 39

3.7 Configure Settings and Thresholds

Use the Configure Settings and Thresholds page to modify the default settings for the Print Services Manager Health Monitor. For most print systems, you do not need to change the default settings. This link is accessible only to the administrator of iPrint Manager.

NOTE: These settings are global. Changes made earlier by an administrator are overwritten by subsequent modifications to the settings.

Figure 3-12 *Configure Settings and Thresholds Page*



3.7.1 Current Event Log Size

Displays the current size of the event log file.

3.7.2 Maximum Event Log File Size

Sets the maximum file size for the event log. When the indicated file size is reached, the log file is restarted.

3.7.3 Configuring the Monitoring Thresholds

This list links to configuration pages where error definitions and thresholds can be set. Changing these settings can impact the Current iPrint Manager Status on the Health Monitor's home page.

Printer Status

Define Printer Status Severity: Lets you define the severity of the associated printer states. The following table shows the default settings.

Table 3-11 *Default Printer Severities*

State	Severity Setting
Error Printing	Error
Input Paused	Warning
Not Bound	Warning
Output Paused	Warning
Shut Down	Warning

Use Printer Status in Determining iPrint Manager Status: Lets you decide whether printer status should be used in determining the iPrint Manager status in the Server Health Monitoring page. The default is set to False so that toner low, out of paper, etc., do not affect the overall server health of Novell Remote Manager.

Default = False (printer status not used)

Client Interface

Threshold for Excessive Time Used in a Client Operation: The amount of time (in seconds) it takes the iPrint Manager to accomplish a task can fluctuate. For example, network conditions, file server load, or hardware can affect processing time. **Threshold for Excessive Time Used in a Client Operation** allows the user to define a reasonable time limit. Any operation that takes longer than the specified time is considered to have used excessive time.

Default = 10 seconds

Maximum Allowed Percentage of Operations That Use Excessive Time: Occasionally it takes longer than normal to accomplish an operation. This is to be expected. **Maximum Allowed Percentage of Operations That Use Excessive Time** lets you set a threshold to indicate a problem with this interface by selecting the percentage of operations that use excessive time.

Default = 1.0%

Maximum Allowed Percentage of Operations That Fail: Select a failure percentage rate to indicate a problem with this interface. Some errors are to be expected; however, if you are in the process of modifying your print system, you might want to set this higher so that your modifications do not impact the printing health. After the modifications are complete, you can lower this setting to an acceptable level and create a baseline for you system.

Default = 1.0%

Minimum Required Problems before Indicating an Error State: Select the minimum number of errors, because of failures and excessive time usage, that must occur to indicate a problem with this interface. If this is set too low, the Health Monitor displays an error when the iPrint Manager is initially loaded or becomes active after a slow period. This is because the printing statistics are low or 0 during these times.

Default = 10 errors

Use Client Interface Problems in Determining iPrint Manager Status: Lets you decide whether problems with this interface are considered in determining iPrint Manager Status in the Server Health Monitoring page.

Default = True (problems are considered)

Gateway Interface

Threshold for Excessive Time Used in a Gateway Operation: The amount of time (in seconds) it takes the iPrint Manager to accomplish a task can fluctuate. For example, network conditions, file server load, or hardware can affect processing time. **Threshold for Excessive Time Used in a Gateway Operation** lets the you define a reasonable time limit. Any operation that takes longer than the specified time is considered to have used excessive time.

Default = 10 seconds

Maximum Allowed Percentage of Operations That Use Excessive Time: Occasionally it takes longer than normal to accomplish an operation. This is to be expected. **Maximum Allowed Percentage of Operations That Use Excessive Time** lets you set a threshold to indicate a problem with this interface by selecting the percentage of operations that use excessive time before an error state.

Default = 1.0%

Maximum Allowed Percentage of Operations That Fail: Select a failure percentage rate to indicate a problem with this interface.

Default = 1.0%

Minimum Required Problems before Indicating an Error State: Select the minimum number of errors, because of to failures and excessive time usage, that must occur to indicate a problem with this interface. If this is set too low, the Health Monitor displays an error when the iPrint Manager is initially loaded or becomes active after a slow period. This is because the printing statistics are low or 0 during these times.

Default = 10 errors

Use Gateway Interface Problems in Determining iPrint Manager Status: Lets you decide whether problems with this interface are considered in determining iPrint Manager Status in the Server Health Monitoring page.

Default = True (problems are considered)

NDS Interface

Threshold for Excessive Time Used in an NDS Operation: The amount of time (in seconds) it takes the iPrint Manager to accomplish a task can fluctuate. For example, network conditions, file server load, or hardware can affect processing time. **Threshold for Excessive Time Used in an NDS Operation** lets you define a reasonable time limit. Any operation that takes longer than the specified time is considered to have used excessive time.

Default = 10 seconds

Maximum Allowed Percentage of Operations That Use Excessive Time: Occasionally it takes longer than normal to accomplish an operation. This is to be expected. *Maximum Allowed Percentage of Operations That Use Excessive Time* lets you set a threshold to indicate a problem with this interface by selecting the percentage of operations that use excessive time.

Default = 1.0%

Maximum Allowed Percentage of Operations That Fail: Select a failure percentage rate to indicate a problem with this interface.

Default = 1.0%

Minimum Required Problems before Indicating an Error State: Select the minimum number of errors, because of failures and excessive time usage, that must occur to indicate a problem with this interface. If this is set too low, the Health Monitor displays an error when the iPrint Manager is initially loaded or becomes active after a slow period. This is because the printing statistics are low or 0 during these times.

Default = 10 errors

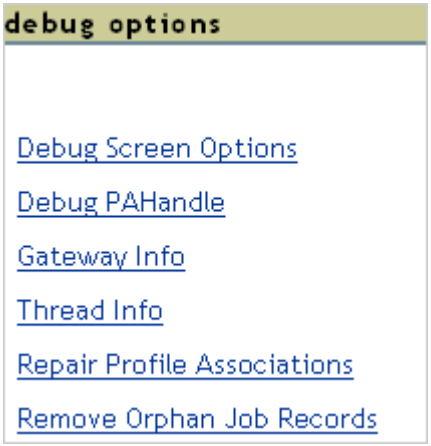
Use Interface Problems in Determining iPrint Manager Status: Lets you decide whether problems with this interface are considered in determining iPrint Manager Status in the Server Health Monitoring page.

Default = True (problems are considered)

3.8 Debug Options

These options provide advanced information of the iPrint Manager and it is used by the Novell Technical Support team when debugging issues.

Figure 3-13 *Debug Options Page*



3.8.1 Debug Screen Options

Use this page to enable logging of the debug information for iPrint Manager. Select the parameters for which you want to log the information, then click **Apply**.

IMPORTANT: When these options are enabled, the iPrint manager logs extensive information in the `debug.log` file. The log file size is limited to your disk space.

3.8.2 Debug PA Handle

For every printer agent under the printer manager, there exists an identification handle. The **Debug PA Handle** menu lists all the PA handles for a particular print manager.

3.8.3 Gateway Info

Printer hardwares in a zone communicate with the printer agent through a gateway. The **Gateway Info** menu lists the general details of the gateway that a particular printer agent uses.

3.8.4 Thread Info

Whenever you start an action using Micro Focus iPrint, one new action thread is created to handle your user request. Some threads deal with maintenance processes and some threads deal with printer tasks. The **Thread Info** menu lists the details of all the threads for a particular printer agent.

3.8.5 Repair Profile Associations

Use this option to set right corrupter profile associations for a particular printer agent.

3.8.6 Remove Orphan Job Records

Removes corrupted print job records. The log file located at `/var/opt/novell/log/iprint/ipsmd.log` contains information about the orphan job records.

4 Using the iPrint Manager Health Monitor

This section discusses the following:

- Section 4.1, “Accessing the iPrint Manager Health Monitor,” on page 37
- Section 4.2, “Generating Reports,” on page 37
- Section 4.3, “Configuring Health Monitor Settings,” on page 38
- Section 4.4, “Posting Administrator Messages about a Printer,” on page 39
- Section 4.5, “Viewing a Printer’s Job List,” on page 39
- Section 4.6, “Using Print Auditing,” on page 39

4.1 Accessing the iPrint Manager Health Monitor

To access the Health Monitor, launch the iPrint Appliance Management Console, then click **iPrint Printer Status**.

1. On a Web browser, specify either the DNS name or the IP address of the iPrint Appliance Management Console. For example, https://10.0.0.1:9443 or https://iprint.example.com:9443.
2. Specify the Username and Password, then click **Log in**.
3. Click **iPrint Printer Status.**

The Health Monitor opens in a new browser window. You must log in as a user with Administrator rights or as a manager of the iPrint Manager object.

4.2 Generating Reports

The report feature of the Health Monitor lets you generate a report that can be displayed on the screen or saved as a comma-separated-value (`.csv`) file that can be used in a spreadsheet program.

1. On the iPrint Manager Health Monitor main page, click **Advanced iPrint Manager Information** > **Generate Report**.
2. Select the information you want included in the report by selecting the corresponding check boxes.
3. (Optional) If you want to save the report as a file, select the **Write Results to File** check box.
4. Click **Generate Report**.

The following are some common reports that you might want to generate:

Printer Configurations. To determine what features are enabled for each Printer Agent, select the following:

- SSL Required for iPrint Access
- Auditing Enabled

Printer's Current State. To view the states of the printers and any printer console messages, select the following:

- Printer Agent Status
- Printer Agent State Reasons
- Printer Console

Printing Statistics. To view statistics about your print system, select the following:

- Jobs Printed Ever
- Jobs Printed Since Load
- Jobs Printed Today
- Average Job Size Since Load
- Average Job Size Today

Gateway Information. To view information about a gateway associated with the Printer Agents including the gateway's IP address, select the following:

- Gateway Load String

Printer Driver Associations. To view the printer drivers associated with each printer, select the following:

- Windows 95/98 Driver
- Windows NT4 Driver
- Windows 2000/XP Driver
- Windows Vista Driver
- Windows 7 Driver

Printer and Printer Agent Associations. Because a Printer Agent can service more than one printer, use the **Associated NDS Printers** option to view the number of printers serviced by each Printer Agent.

Creating a Baseline of Your Print System. After your print system is configured, you can create a baseline report by selecting all report items. This baseline report should be saved. Then you can use the report to periodically compare statistics, re-create a Printer Agent, and track changes to your print system.

4.3 Configuring Health Monitor Settings

You can configure settings in the Health Monitor to control the overall health indicator, Current iPrint Manager Status, displayed on the Health Monitor's home page. The default settings are sufficient for most print systems. You should modify these settings only if there is a compelling reason or if instructed by Novell Technical Support.

1. On the iPrint Manager Health Monitor main page, click **Advanced iPrint Manager Information** > **Configure Settings and Error Thresholds**.
2. Click the setting you want to adjust, then modify these settings:

Table 4-1 Confuguring Settings and Thresholds

Function	Description
Current Event Log Size	Displays the current size of the event log file in kilobytes.
Maximum Event Log File Size	Sets the maximum file size for the event log. When the indicated file size is reached, the log file is restarted. If you change the event log file size, click Apply File Size Limit for the change to take affect.
Configure Monitoring Thresholds	Displays links to configuration pages where error definitions and thresholds can be set.

4.4 Posting Administrator Messages about a Printer

Suppose a printer has been taken offline and sent to the manufacture for repairs, but you keep getting phone calls from other administrators that the printer has an error in the Health Monitor. This can quickly be corrected by leaving a message about the printer in Health Monitor. Users can see the message, but only administrators can edit it.

1. On the iPrint Manager Health Monitor main page, click the printer you want.
2. Click **Message from Admin**.
3. Type the text you want displayed for this printer in the iPrint Manager Health Monitor.
4. Click **Apply**.

To remove a message, follow the steps above but delete the text.

4.5 Viewing a Printer's Job List

You can use the printer's job list to troubleshoot printer communication problems. Users require admin rights to view a printer's job list.

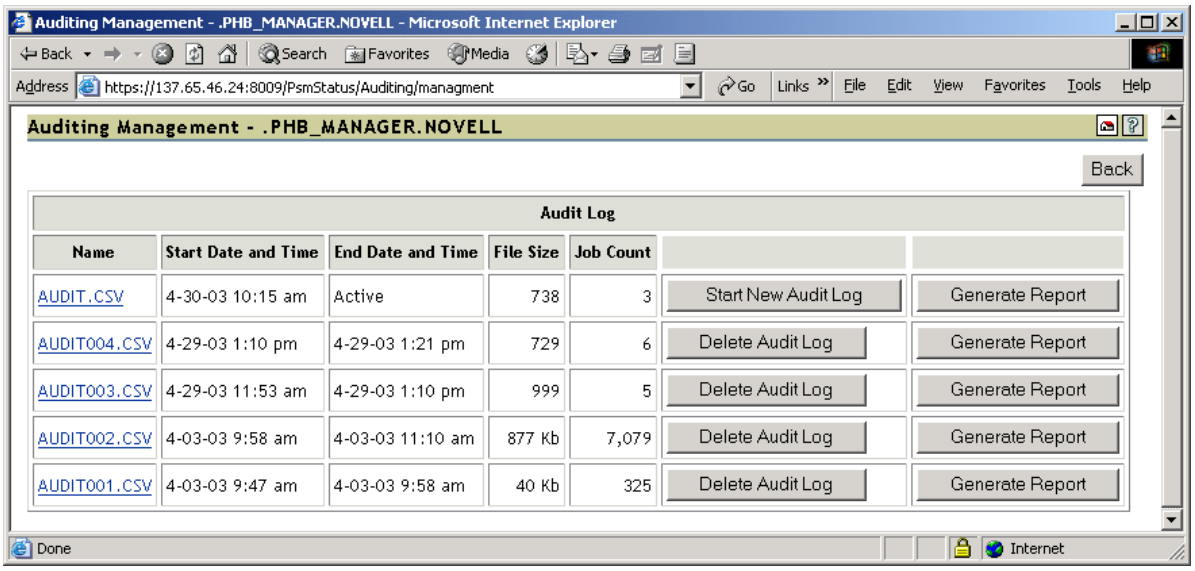
1. On the iPrint Manager Health Monitor main page, click the printer you want.
2. Click **Job List**.
3. Select print jobs and use the buttons to take the desired action (**Refresh, Delete**, **Pause**, **Resume**, **Delete All Jobs**)

   The **Pause** and **Resume** buttons are not available for WalkUp printers.

4.6 Using Print Auditing

When auditing is enabled for a Printer Agent, a log file is created indicating who printed how many pages to which printer on a given date. The log file is in a comma-separated format (`.csv`). The data from this log file can be viewed from the Health Monitor or downloaded into a spreadsheet.

Figure 4-1 *Auditing Page*



From the Internal Auditing page you can complete the following tasks:

- Viewing Auditing Information (page 40)
- Managing Audit Logs (page 42)
- Downloading an Audit Report (page 43)

4.6.1 Enabling Auditing

You can use either iManager or the iPrint Health Monitor to enable auditing.

Using iManager to Enable Auditing

1. In iManager, click **iPrint** > **Manage Printer**, and select the printer.
2. Click **Configuration** > **Auditing**.
3. Click the **Enable Auditing** check box.

Using the Health Monitor to Enable Auditing

1. On the iPrint Manager Health Monitor page, select the printer that you want to audit.
2. Click **Configuration Options**.
3. Click the **Enable Auditing** check box.

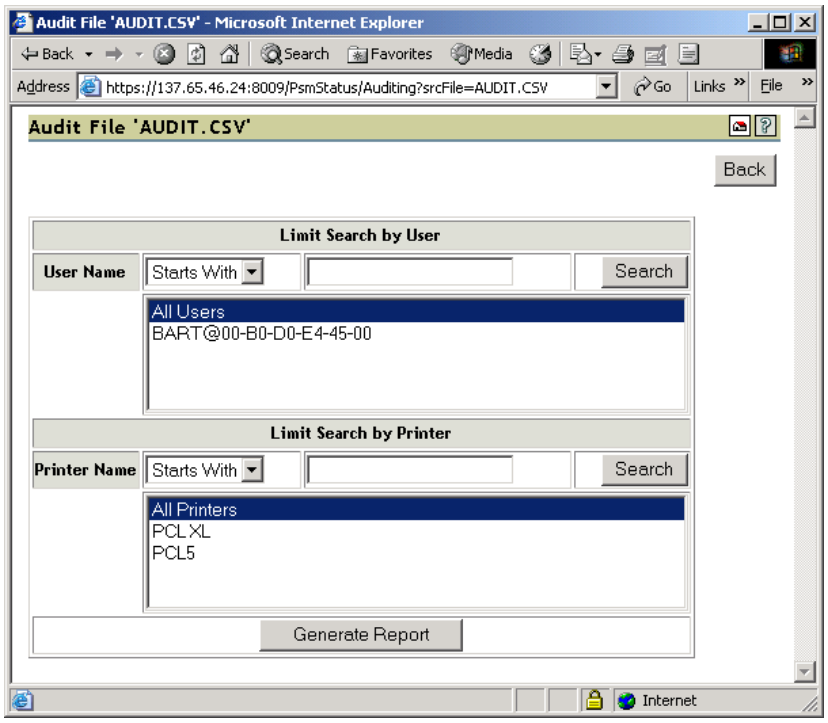
4.6.2 Viewing Auditing Information

You can generate an audit report that shows all print jobs. You can also filter the report based on a user or a printer, or both.

1. On the iPrint Manager Health Monitor page, click **Advanced iPrint Manager Information > Auditing**.
2. Click **Generate Report**.

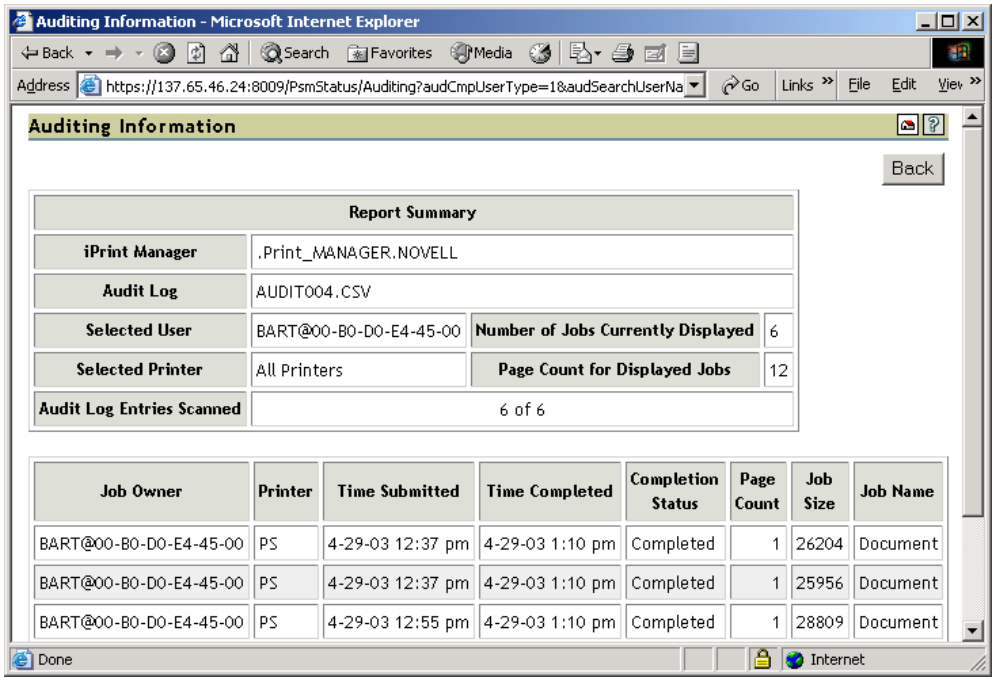
If there is more than one audit log, click **Generate Report** for the audit log you want to view.

3 (Optional) Filter the search by using the **Limit Search by User** and **Limit Search by Printer** filters.



4 Click **Generate Report** to view the report.

Only 250 print jobs are listed at a time. To view more print jobs in the report, click **Next**.



Report Summary			
iPrint Manager	.Print_MANAGER.NOVELL		
Audit Log	AUDIT004.CSV		
Selected User	BART@00-B0-D0-E4-45-00	Number of Jobs Currently Displayed	6
Selected Printer	All Printers	Page Count for Displayed Jobs	12
Audit Log Entries Scanned	6 of 6		

Job Owner	Printer	Time Submitted	Time Completed	Completion Status	Page Count	Job Size	Job Name
BART@00-B0-D0-E4-45-00	PS	4-29-03 12:37 pm	4-29-03 1:10 pm	Completed	1	26204	Document
BART@00-B0-D0-E4-45-00	PS	4-29-03 12:37 pm	4-29-03 1:10 pm	Completed	1	25956	Document
BART@00-B0-D0-E4-45-00	PS	4-29-03 12:55 pm	4-29-03 1:10 pm	Completed	1	28809	Document

The following table describes what is displayed in the report.

Table 4-2 Report Summary Information

Field	Description
iPrint Manager	The iPrint Manager that the information is from.
Audit Log	The audit log filename that was used to create the report.
Selected User	Any user filter criteria that were used to create the report.
Selected Printer	Any printer filter criteria that were used to create the report.
Number of Jobs	The number of jobs submitted by the indicated users and printers.

The following table describes what is displayed in the body of the report.

Table 4-3 Report Fields

Field	Description
Job Owner	The owner of the print job.
Printer	The printer the print job was sent to.
Time Submitted	The time the print job was submitted to the printer.
Time Completed	The time the print job was printed on the printer.
Completion Status	The completion status of the submitted print job. Completed, Cancelled by User, Cancelled by Operator, or Other, which indicates the job was aborted by the system.
Page Count	The number of pages printed.
Job Size	The size of the print job in bytes.
Job Name	The print job filename that was submitted and the type of print client that submitted the print job.

4.6.3 Managing Audit Logs

You can manage your audit logs by using the displayed buttons on the Auditing Management page. When audit logs are no longer needed, you can manually delete them. To automatically save and create new logs, see Section 4.6.4, “Configuring Automatic Log Rotation,” on page 43.

The active audit log file (`audit.csv`) logs data for all printers that have been enabled for auditing. You can generate a report from this file or you can move the data to a saved file using **Start New Audit Log**. You cannot download the `audit.csv` file. To download a file, it must be saved as a separate audit log. When you move the data to a saved audit log using the **Start New Audit Log** button, the log file is named `auditxxx.csv`, where *xxx* is the next sequential number of the log. After a log file is saved, you can download the file to your workstation and import it into a spreadsheet program.

4.6.4 Configuring Automatic Log Rotation

Audit Log Rotation automatically creates a new log when certain criteria is met.

1. In the Print Manager Health Monitor, click **Advanced iPrint Manager Information** > **Auditing** > **Configure Log Rotation**.
2. Select **Enable Audit Log Rotation**.
3. Enter the number of logs to keep.

   When the number of logs to keep is reached, the oldest log is deleted when the next log is created. When setting this number, take in to account the criteria you are using to create a new log file. If you want a years worth of logs, set the number of audit logs to keep to 12 and the select the **By Date** and **By Month** options.
4. Choose the criteria used for log rotation:

   By Job Count: Enter the maximum number of print jobs that a audit log can contain before a new log is created.

   By Date: Select when you want the audit logs to rotate.

   - Day: The log rotates each day at midnight.
   - Week: The log rotates each Sunday. If the Print Manager is not loaded on Sunday, the log is rotated the next time the Print Manager starts.
   - Month: The log rotates at midnight on the first day of the month.

   NOTE: If you select **Day** or **Week**, ensure that the **Maximum Number of Audit Logs to Keep** entry is large enough so that logs are not rotated before you need the data.

   By File Size: Specify the maximum file size in kilobytes before a new log is created. The maximum file size is 4 gigabytes.

4.6.5 Downloading an Audit Report

1. On the iPrint Manager Health Monitor main page, click **Advanced iPrint Manager Information** > **Auditing**.
2. Right-click the name of the audit log you want to download, then click **Save Target As**.
3. Follow the prompts and save the file to your desired location.

When the file is downloaded, you can open the report in a spreadsheet application to sort, view, and format the data to meet your needs.

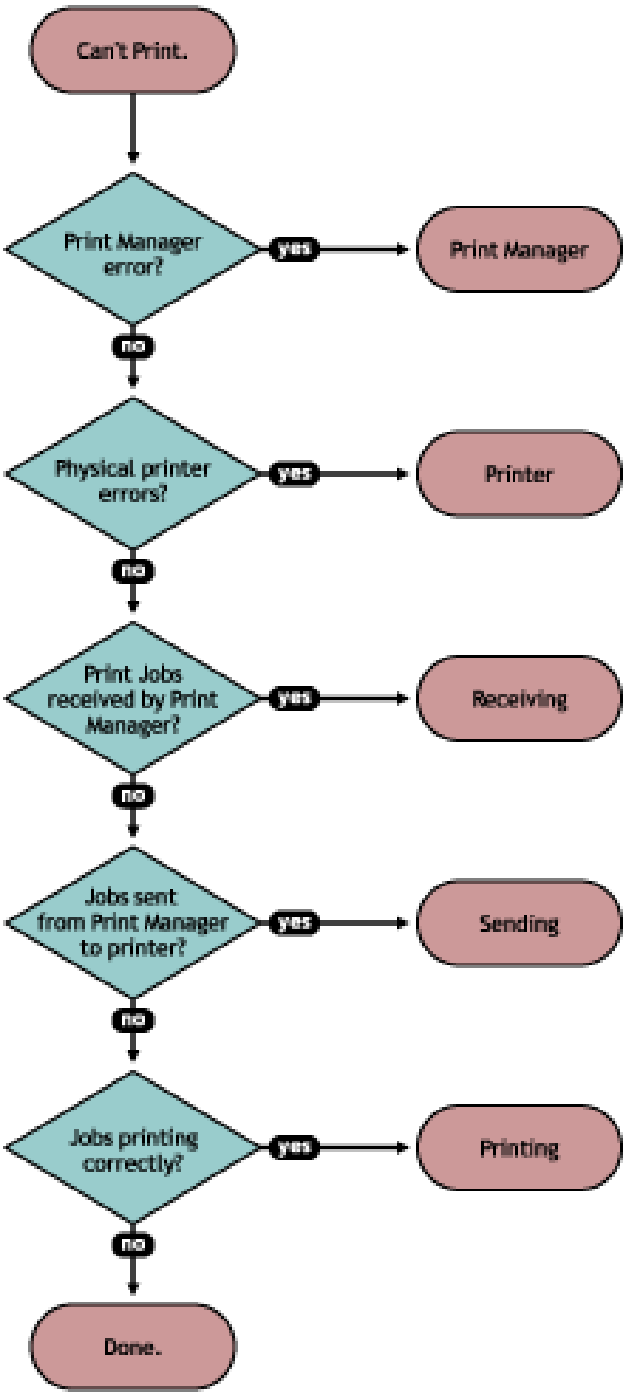
5 Troubleshooting Print System Errors

Using the iPrint Manager Health Monitor, you can determine and resolve many printing problems. This section discusses how to troubleshoot print system errors. The following flowcharts show you the basic steps you can do to quickly determine errors.

Most printer problems can be identified or localized by answering the following questions. If any answer is No, follow the link to the correct troubleshooting section.

- ❒ Is the iPrint Manager healthy? (page 47)
- ❒ Is the physical printer reporting errors? (page 48)
- ❒ Are print jobs being received by the iPrint Manager? (page 49)
- ❒ Are jobs being sent from the iPrint Manager to the printer? (page 51)
- ❒ Is the job printing correctly? (page 52)

Figure 5-1 *Flowchart for Troubleshooting*



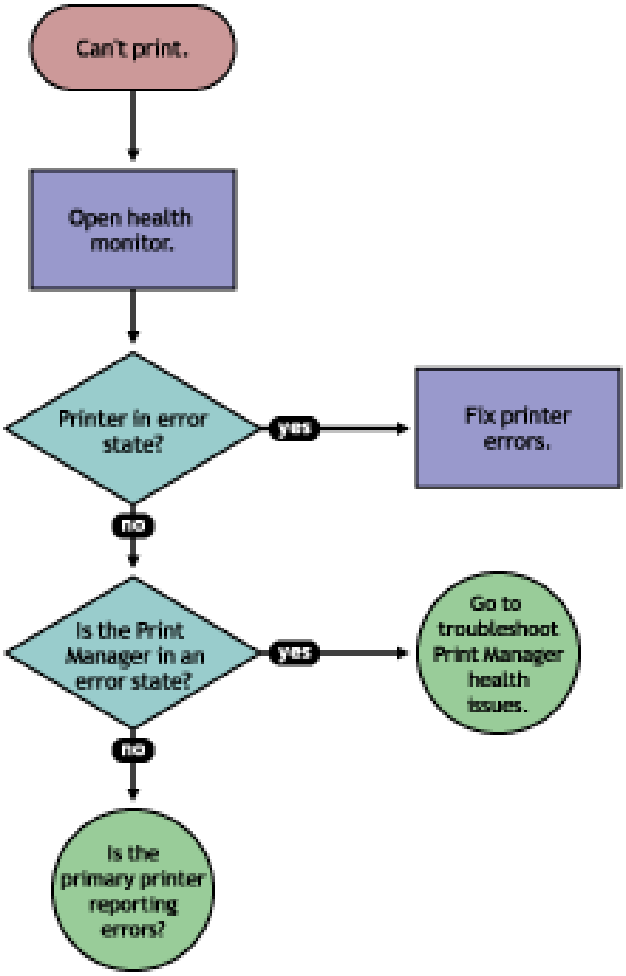
Flowchart Target	Section Reference
Print Manager	Section 5.1, “Is the iPrint Manager healthy?,” on page 47
Printer	Section 5.2, “Is the physical printer reporting errors?,” on page 48
Receiving	Section 5.3, “Are print jobs being received by the iPrint Manager?,” on page 49
Sending	Section 5.4, “Are jobs being sent from the iPrint Manager to the printer?,” on page 51
Printing	Section 5.5, “Is the job printing correctly?,” on page 52

Issues not resolved by using this process might require technical support from the printer vendor or Micro Focus.

5.1 Is the iPrint Manager healthy?

On the iPrint Manager Health Monitor home page, you can quickly determine the health of your print system and the iPrint Manager.

Figure 5-2 Flowchart to Resolve Physical Printer Errors

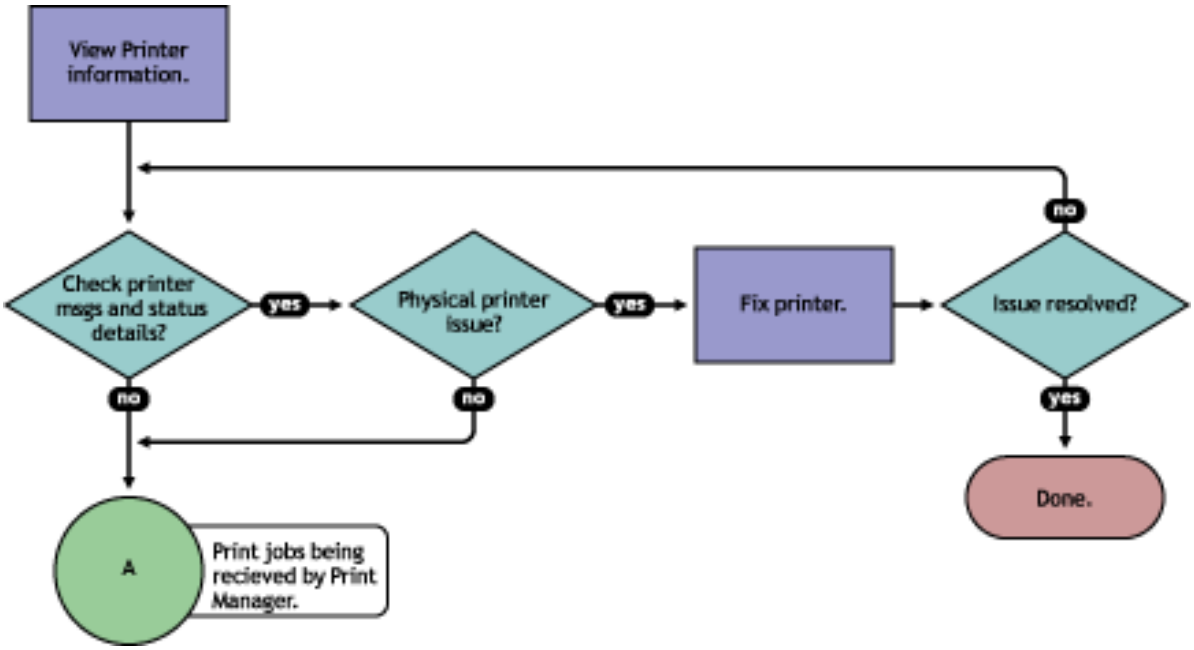


If the **Current iPrint Manager Status** is not green, click **Advanced iPrint Manager Information** to troubleshoot the iPrint Manager. For more information see Section 5.6, "Troubleshooting iPrint Manager Health Issues," on page 54.

5.2 Is the physical printer reporting errors?

Using the Print Services Health Monitor, you can view printer status details and printer console errors being displayed on the printer, if the printer supports SNMP. Use this information to correct any errors on the physical printer. You can also use this to help prevent printer errors. For example, you can see when a printer is low on toner and change the toner before users see the problem and cannot print.

Figure 5-3 Flowchart to Determine Physical Printer Errors



To view printer status and printer console errors:

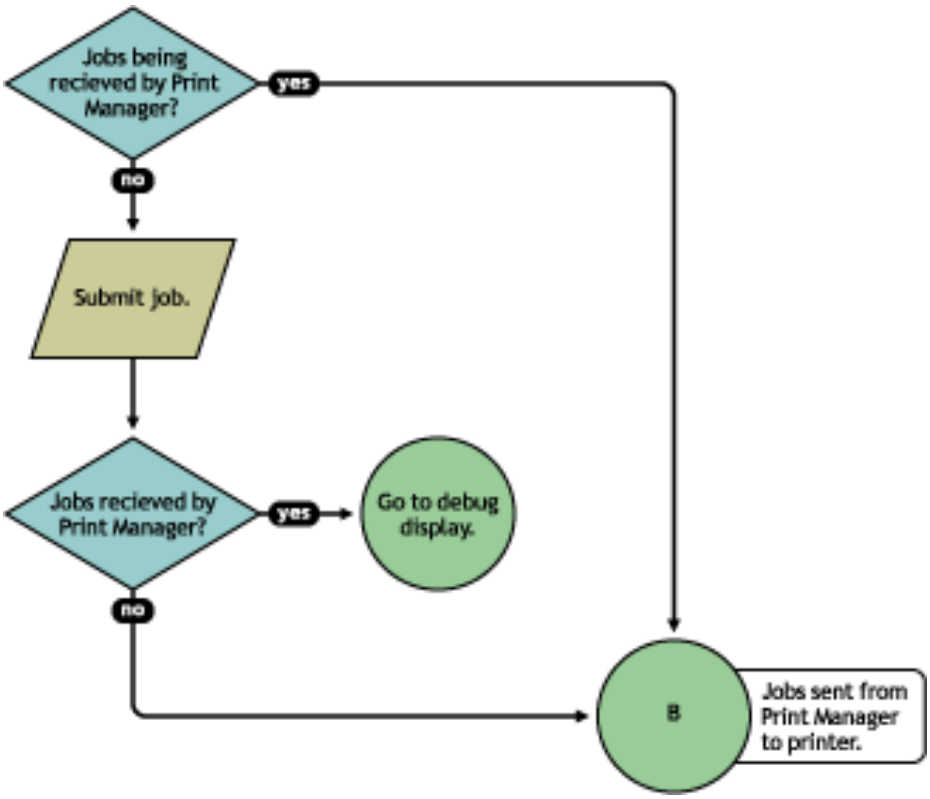
1. On the iPrint Manager Health Monitor main page, click the Printer Agent that is in a suspect (yellow) or error (red) state.
2. View the **Printer Agent Status** and **Printer Console Message** fields.

   The **Printer Console Message** field appears only if the Health Monitor can communicate with the printer and the printer responds to SNMP requests.
3. Correct any errors on the printer.
4. Repeat Step 2 until all Printer Console errors have been resolved.

5.3 Are print jobs being received by the iPrint Manager?

When troubleshooting printing problems, you need to track the print job. By determining if the iPrint Manager is receiving the print job, you know where communication is breaking down. If the server is not receiving print jobs, you should check the communication between the client and the server. Questions to ask include: Is the servers HTTP stack communicating? Is the Web server functioning properly?

Figure 5-4 Flowchart to Determine if Print Manager Is Receiving Print Jobs



Complete the following to determine if print jobs are being received by the iPrint Manager:

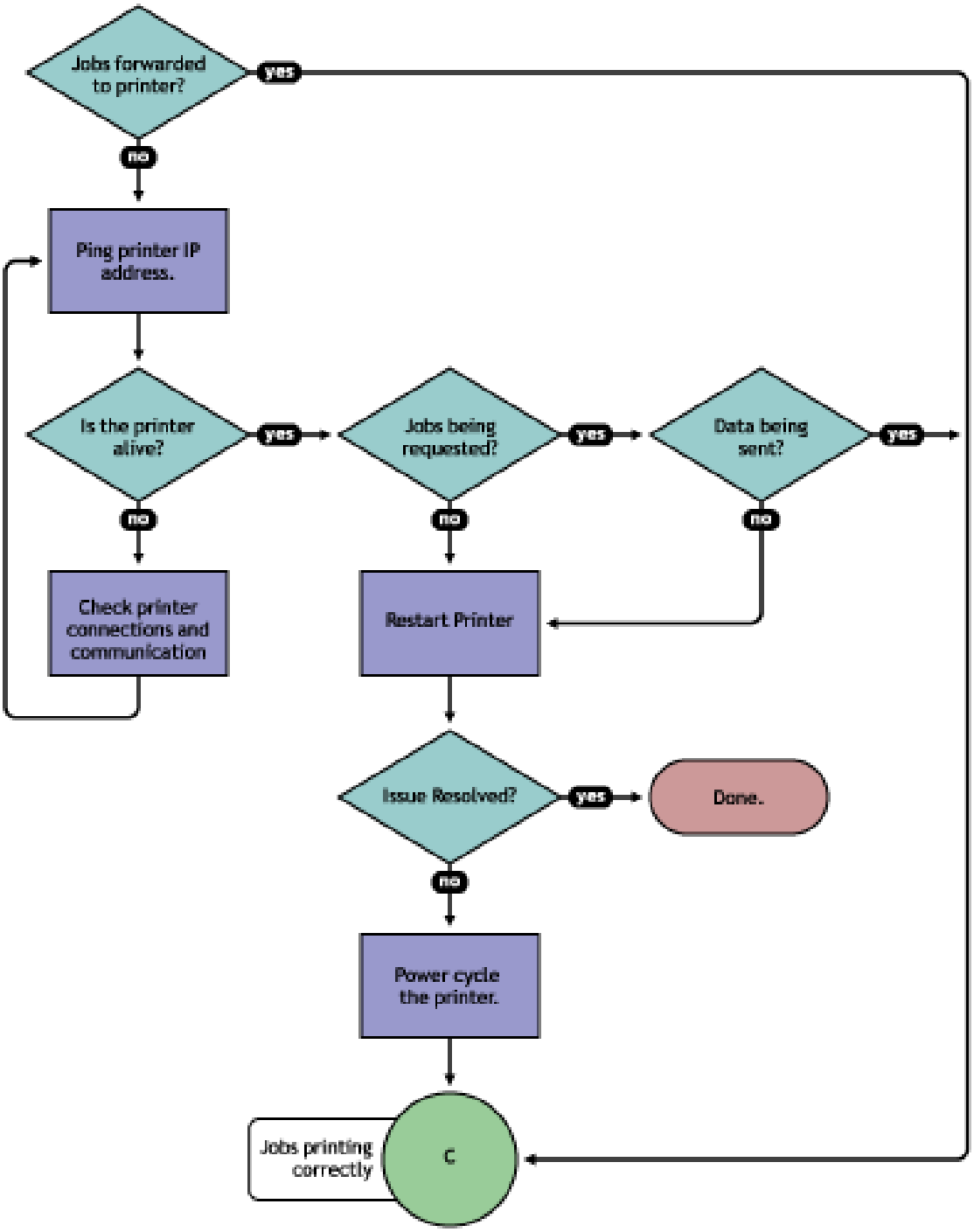
1. On the iPrint Health Monitor main page, click the Printer Agent for the problem printer.
2. Review the job processing information.
3. Submit a print job to the printer.
4. Review the job processing information again.

   If the **Jobs Scheduled** count increased by one, then the iPrint Manager is receiving print jobs. You can continue to Section 5.4, "Are jobs being sent from the iPrint Manager to the printer?," on page 51.

   If the **Job Scheduled** count did not increase by one, then the iPrint Manager is not receiving print jobs. Check to make sure the workstation sending the print job is not receiving any errors, that the correct printer is installed, and that the user has selected the correct printer.

5.4 Are jobs being sent from the iPrint Manager to the printer?

Figure 5-5 *Flowchart to Determine if Print Jobs Are Being Sent from Print Manager to the Printer*



To determine if the iPrint Manager is forwarding print jobs to the printer:

1. On the iPrint Manager Health Monitor page, click the Printer Agent for the problem printer.
2. In the **Printer Information** table, review the **Gateway** string.

3 Ping the printer using the TCP/IP address in the **Gateway** field.

   If you cannot ping the printer, check the printer's physical connections and resolve the communication issue.

   You should also check to see if there is a **Message from Admin** in case the printer was taken down for maintenance or some other reason.

4 Determine if the printer is requesting jobs by looking at the **Job Processing Information** to see if a job has been requested.

   4a If jobs are being requested, check to see if data is being sent by looking at the **Job List**.

   Review the submission time and started time and if any bytes have been sent. If no bytes have been sent, then continue with Step 4b; otherwise, skip to Section 5.5, "Is the job printing correctly?," on page 52.

   4b To determine if data is being sent to the printer, review the Job List and compare the **Job Submission Time** and **Started Printing**.

   If the job has not started printing, there is a communication issue.

5 Restart the Printer Agent by clicking **Shutdown Printer** > **Start Up Printer**.

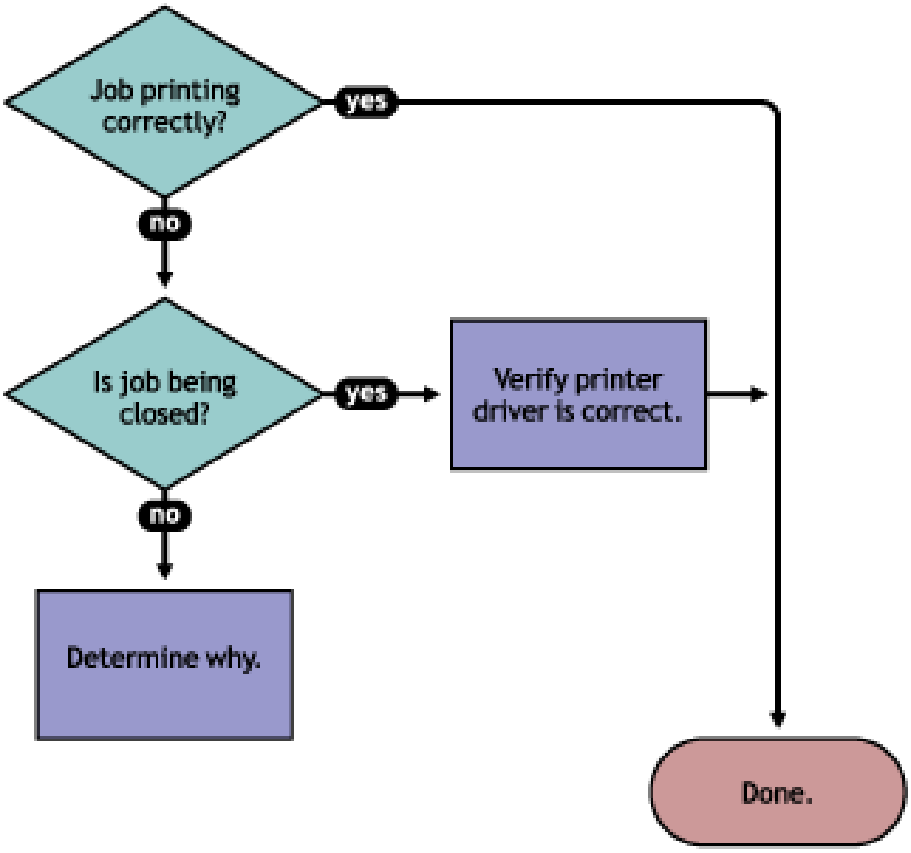
6 If the issue is not resolved, power cycle the printer.

After the **Jobs Requested** count is 1, continue with Section 5.5, "Is the job printing correctly?," on page 52.

5.5 Is the job printing correctly?

By correcting issues in the preceding sections, print jobs should be reaching the printer. Now you need to look at the printer output.

Figure 5-6 Flowchart to Determine if the Job Is Printing Correctly



If the print job is not printing correctly, first check to see if the print job is being closed—the data is sent to the printer—by checking the job list. If the print job is not closing, determine what is preventing the job from closing.

If the job is being closed correctly and the output is still unacceptable, check to ensure the correct printer driver is being used to submit the job on the workstation and that the correct printer driver is associated with the Printer Agent. You can check on the printer driver in the Printer Agent page in the Health Monitor.

The printer driver associated with a printer can have adverse effects on the print system throughput and print quality of the output. This is often manifest in the following ways:

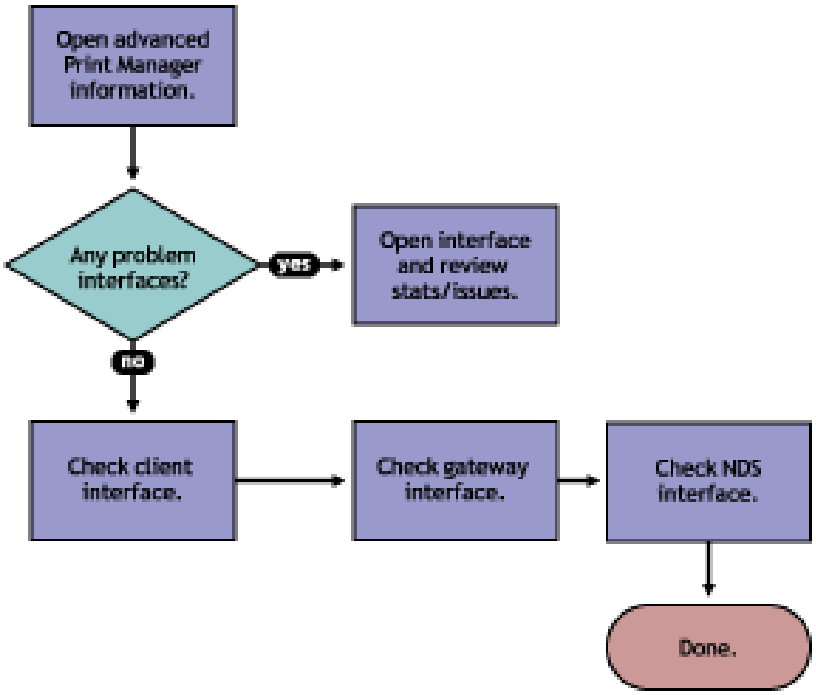
- Corrupt characters on printed output
- Slow printing
- Print job printed but no output produced

Check the printer driver installed on the client workstation to ensure the correct driver is being used. Use the Printer Agent page in the iPrint Manager Health Monitor to view the printer drivers associated with this printer. To change a printer driver association, use iManager to reassociate the driver using the **iPrint** > **Manage Printer** > **Drivers** task.

5.6 Troubleshooting iPrint Manager Health Issues

If the iPrint Manager Health Monitor shows that the iPrint Manager is suspect (yellow) or in an error (red) state, click **Advanced iPrint Manager Information**. Use the following flow chart and the color coding in the Health Monitor to determine where the iPrint Manager health issues exist and resolve those issues.

Figure 5-7 *Flowchart to Troubleshoot Print Manager Issues*



5.6.1 Check Advanced iPrint Manager Information

Click **Advanced iPrint Manager Information** to display the iPrint Manager summary page.

5.6.2 Check for Problem Interfaces

Review the current status of the interfaces. If an interface has entered an error state, select the interface and determine what operations have caused it to enter the error state.

1. Any parameters highlighted? If yes, click and determine what statistics are irregular.
2. Check latest events for an Unknown Object error, which indicates the Printer object does not exist.
3. Check excessive time needed for events.

The key interfaces to check are the Client and eDirectory™ interfaces. Check these to see which operations are being done and which operations are using excessive time. You can check the latest event log for more information on the events that have transpired. If you have secure printing turned on, the iPrint Manager must communicate with NDS to obtain the effective rights for a user submitting a print job to a specific printer. If NDS is not healthy, some operations fail or use excessive time.

You should also look at the iPrint Manager Internal information for operations that might be affecting the iPrint Manager database.

5.7 Quick Checks

Some other things you can quickly check to ensure the settings are correct include:

- Section 5.7.1, “Is the Printer Driver Compatible?,” on page 55
- Section 5.7.2, “Is my server at capacity for handling printing?,” on page 55

5.7.1 Is the Printer Driver Compatible?

The printer driver associated with a printer can have adverse effects on the print system throughput and print quality of the output. This is often manifest in the following ways:

- Corrupt characters on printed output
- Slow printing
- Print job printed but no output produced

5.7.2 Is my server at capacity for handling printing?

To determine how well your server is handling printing, generate a report of the **Average Job Size Today** and **Jobs Printed Today**. Compare this report to your baseline report. Now that you know if printing has increased or decreased, you can check your server’s current statistics against any baseline statistics to determine how your server has handled your change in printing.

To generate reports, launch iManager, and click **iPrint > Manager Health Monitor > Advanced iPrint Manager Information > Generate Report**.

6 Examples of Troubleshooting Print Problems

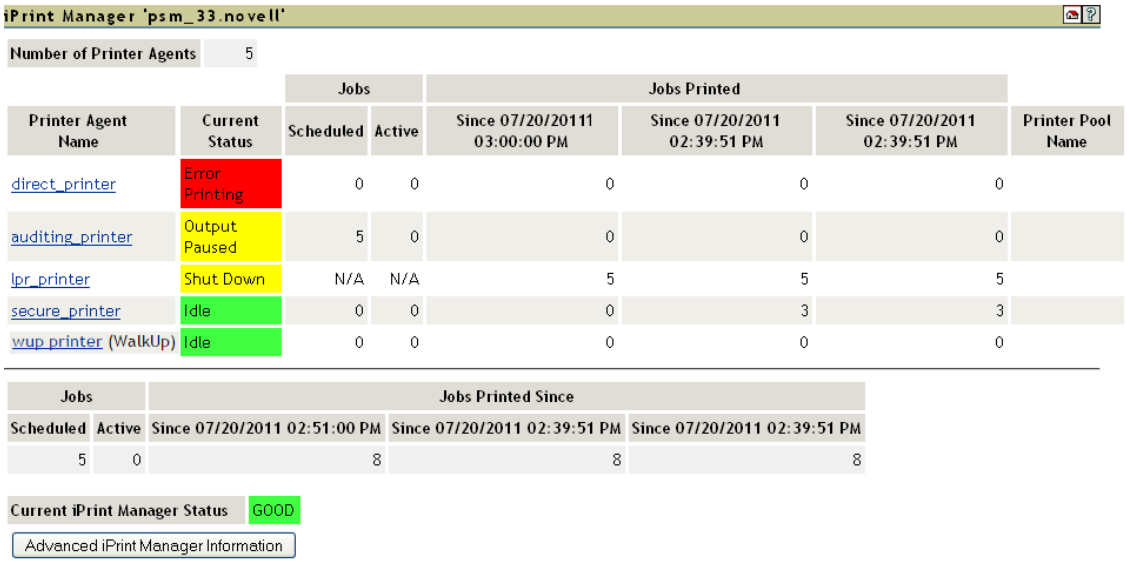
Using the flowcharts and steps from Chapter 5, “Troubleshooting Print System Errors,” on page 45, the following example scenarios step through the troubleshooting process.

- Section 6.1, “Example 1: No Printer Output,” on page 57
- Section 6.2, “Example 2: No Printer Output,” on page 58
- Section 6.3, “Example 3: Printer Output Is Not Correct,” on page 60
- Section 6.4, “Example 4: Printing Is Slow,” on page 60

6.1 Example 1: No Printer Output

Thomas reports that he is printing to direct_printer, but nothing is coming out of the printer.

1 In the iPrint Manager Health Monitor, locate direct_printer in the list.



iPrint Manager 'psm_33.novell'

Number of Printer Agents	5

Printer Agent Name	Current Status	Jobs		Jobs Printed			Printer Pool Name
		Scheduled	Active	Since 07/20/20111 03:00:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM	
direct_printer	Error Printing	0	0	0	0	0	
auditing_printer	Output Paused	5	0	0	0	0	
lpr_printer	Shut Down	N/A	N/A	5	5	5	
secure_printer	Idle	0	0	0	3	3	
wup printer (WalkUp)	Idle	0	0	0	0	0	

Jobs		Jobs Printed Since		
Scheduled	Active	Since 07/20/2011 02:51:00 PM	Since 07/20/2011 02:39:51 PM	Since 07/20/2011 02:39:51 PM
5	0	8	8	8

Current iPrint Manager Status	GOOD

Advanced iPrint Manager Information

2 Check the status of the iPrint Manager which is listed at the bottom of the page.

In this example, the iPrint Manager is not showing any errors.

3 Click the printer agent name and review the printers messages and status details.

A printer console message shows that the printer needs black toner.

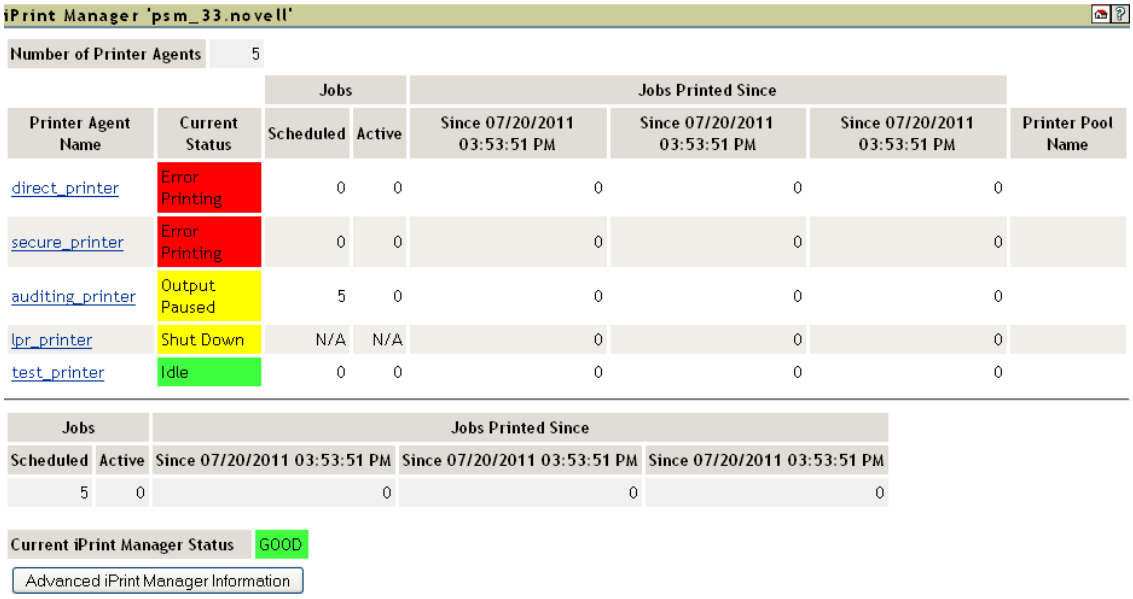
4 Install black toner on the printer.

Thomas is now able to print again.

6.2 Example 2: No Printer Output

Angela reports that she is printing to secure_printer, but nothing is coming out of the printer.

1 In the iPrint Manager Health Monitor, locate secure_printer in the list.



iPrint Manager 'psm_33.novell'

Number of Printer Agents	5

		Jobs		Jobs Printed Since			
Printer Agent Name	Current Status	Scheduled	Active	Since 07/20/2011 03:53:51 PM	Since 07/20/2011 03:53:51 PM	Since 07/20/2011 03:53:51 PM	Printer Pool Name
direct_printer	Error Printing	0	0	0	0	0	
secure_printer	Error Printing	0	0	0	0	0	
auditing_printer	Output Paused	5	0	0	0	0	
lpr_printer	Shut Down	N/A	N/A	0	0	0	
test_printer	Idle	0	0	0	0	0	

Jobs		Jobs Printed Since		
Scheduled	Active	Since 07/20/2011 03:53:51 PM	Since 07/20/2011 03:53:51 PM	Since 07/20/2011 03:53:51 PM
5	0	0	0	0

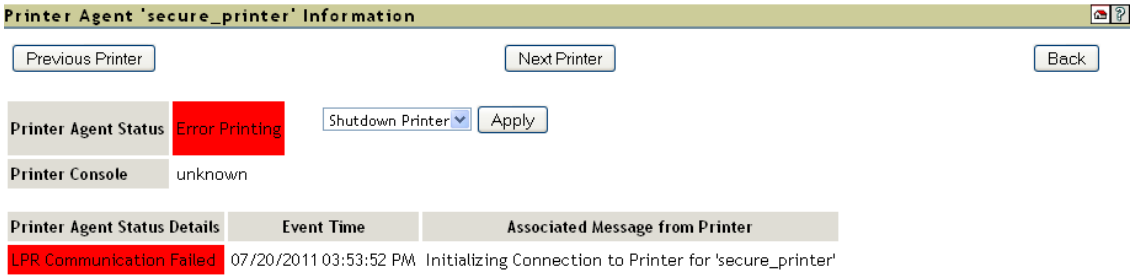
Current iPrint Manager Status	GOOD

Advanced iPrint Manager Information

secure_printer shows a printing error.

2 Click the printer agent name.

Reviewing the **Printer Agent Status Details**, you determine that the iPrint Manager and the printer are not communicating.



Printer Agent 'secure_printer' Information

Previous Printer | Next Printer | Back

Printer Agent Status	Error Printing
Printer Console	unknown

Shutdown Printer | Apply

Printer Agent Status Details	Event Time	Associated Message from Printer
LPR Communication Failed	07/20/2011 03:53:52 PM	Initializing Connection to Printer for 'secure_printer'

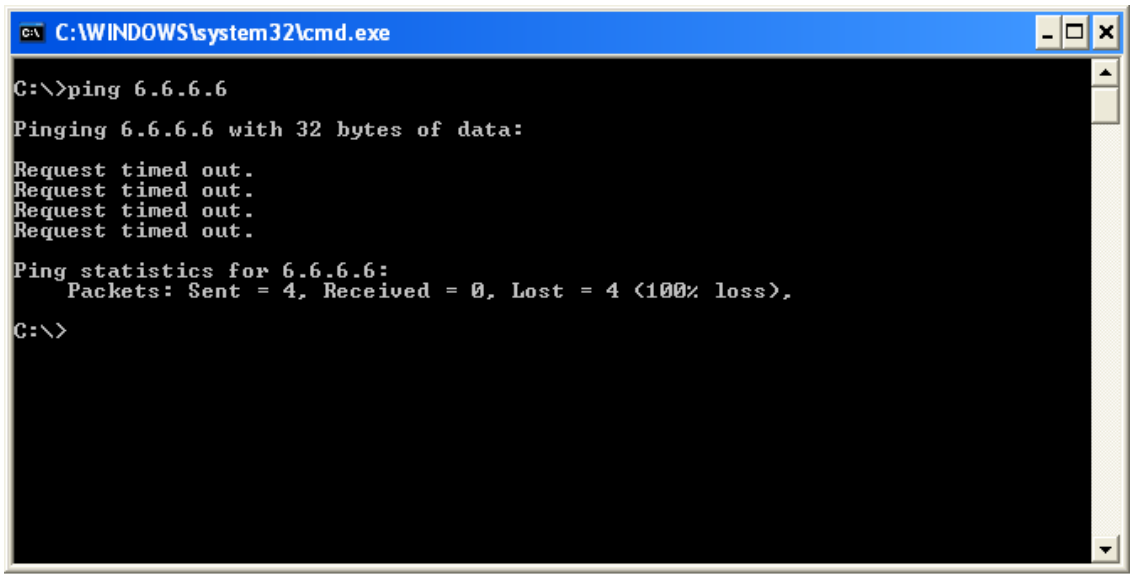
3 Obtain the IP address from the **Gateway** field in the **Printer Information** table.

Printer Information	
Gateway	iprintgw PORT=LPR HOSTADDRESS=6.6.6.6 PRINTERNAME=PASSTHROUGH
Accounting Load String	(none)
Date Printer Agent Created	07/20/2011 02:47:12 PM
Printer Model	HP LaserJet P3005
Printer Manufacturer	Hewlett-Packard
Associated NDS Printer Object	secure_printer.novell
SSL Required	TRUE
Printer URL	ipp://cs-dta-221.labs.blr.novell.com/ipp/secure_printer
Spooling Location	/var/opt/novell/iprint/psm_33.novell.psm/4E269D18.PA
Banner	

Operating System	Driver Name	Driver Profile Name
Win 7 (32-bit)	HP LaserJet 4250 PCL6	prof_win7

4 Ping the IP address.

Figure 6-1 *Ping Command Screen*



You discover that you cannot ping the IP address, so the printer must be disconnected from the network or turned off.

5 Check for any messages from the administrator by clicking **Message from Admin**.

The **Message from Admin** shows that the printer is disconnected from the network.

6 Have Angela install and print to a different printer.

6.3 Example 3: Printer Output Is Not Correct

Thomas installed a Xerox* printer on his workstation. His print jobs are not printing correctly. The printout contains different ASCII characters instead of the text in his document.

1 Complete the procedure in Section 6.1, “Example 1: No Printer Output,” on page 57.

   You do not see any errors. You know that the printer is healthy, print jobs are being received by the iPrint Manager, and the iPrint Manager is forwarding the jobs to the printer.

2 On the Printer Agent page of the iPrint Manager Health Monitor, scroll down and look at the printer drivers that are being used.

Printer Information	
Gateway	iprintgw PORT=LPR HOSTADDRESS=164.99.140.241 PRINTERNAME=PASSTHROUGH
Accounting Load String	(none)
Date Printer Agent Created	07/20/2011 02:47:12 PM
Printer Model	Xerox WorkCentre 5632 v1 Multifunction System
Printer Manufacturer	Xerox
Associated NDS Printer Object	secure_printer.novell
SSL Required	TRUE
Printer URL	ipp://cs-dta-221.labs.blr.novell.com/ipp/secure_printer
Spooling Location	/var/opt/novell/iprint/psm_33.novell.psm/4E269D18.PA
Banner	

Operating System	Driver Name	Driver Profile Name
Win 7 (32-bit)	Xerox Global Print Driver PCL6	
Win 7 (64-bit)	HP LaserJet 2430 PCL 5	

   Thomas is printing from a Windows 7 64-bit workstation, and you can see the wrong printer driver is installed.

3 Using iManager, associate the correct printer driver for this printer and have Thomas reinstall the printer.

6.4 Example 4: Printing Is Slow

You received several reports that printing is slow.

1 Open the iPrint Manager Health Monitor. You can access the iPrint

   No Printer Agents appear in an error state, but the **Current iPrint Manager Status** is in an error state.

2 Click **Advanced iPrint Manager Information**.

   Two of the interfaces, **Client** and **NDS**, are in an error state.

3 Click **Client Interface**.

   Bind to Printer Agent is highlighted in yellow, showing that it has exceeded the thresholds set for this statistic.

4 Click **Bind to Printer Agent** to display the statistics.

The statistics show that in the last hour, 22 of the last 30 operations used excessive time and the average time to bind was 16 seconds.

5 Click **Back** > **NDS Interface**.

6 Under **File Server Containing Replica**, click the name of your file server.

You can see that some of the statistics are using excessive time.

7 Click **Latest NDS Events** to determine the NDS events that are using excessive time.

Because some client interface operations are dependent on eDirectory™, you must ensure that eDirectory is healthy.

As you review the Latest NDS Events log, you see the iPrint Manager is receiving Get Effective Rights errors.

8 Use Novell Remote Manager to check the health of eDirectory.

You can use Novell Remote Manager to view if DS is loaded and open, to view the DS thread usage, and to access NDS iMonitor for more in-depth information.

7 Running iPrint Manager Health Monitor in a Virtualized Environment

iPrint Manager Health Monitor runs in a virtualized environment just as it does on a physical server running OES, and requires no special configuration or other changes.

To get started with Xen virtualization, see the Virtualisation with Xen documentation.