Novell
Open Enterprise Services

www.novell.com

November 1, 2005

IPRINT MANAGER HEALTH MONITOR FOR LINUX ADMINISTRATION GUIDE

Novell®

Legal Notices

Novell, Inc. makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc. reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, Novell, Inc. makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc. reserves the right to make changes to any and all parts of Novell software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classification to export, re-export, or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in the U.S. export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical biological weaponry end uses. Please refer to www.novell.com/info/exports/ for more information on exporting Novell software. Novell assumes no responsibility for your failure to obtain any necessary export approvals.

Copyright © 2005 Novell, Inc. All rights reserved. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of the publisher.

Novell, Inc. has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at http://www.novell.com/company/legal/patents/ and one or more additional patents or pending patent applications in the U.S. and in other countries.

Novell, Inc.
404 Wyman Street, Suite 500
Waltham, MA 02451
U.S.A.
www.novell.com

Online Documentation: To access the online documentation for this and other Novell products, and to get updates, see www.novell.com/documentation.

Novell Trademarks

eDirectory is a trademark of Novell, Inc.

Internetwork Packet Exchange and IPX are trademarks of Novell, Inc.

NetWare is a registered trademark of Novell, Inc., in the United States and other countries.

Novell is a registered trademark of Novell, Inc., in the United States and other countries.

Novell Directory Services and NDS are registered trademarks of Novell, Inc., in the United States and other countries.

Third-Party Materials

All third-party trademarks are the property of their respective owners.

Contents

About This Guide 7

1 An Overview of the iPrint Manager Health Monitor 9

2 Understanding the iPrint Manager Health Monitor Screens 11

2.1 Navigating in the iPrint Manager Health Monitor . . . 11
2.2 iPrint Manager Health Monitor Main Page . . . 11
2.2.1 iPrint Manager iPrint_Manager_Object Context . . . 12
2.2.2 Number of Printer Agents . . . 12
2.2.3 Printer Agent Name . . . 12
2.2.4 Jobs/Jobs Printed Since (for iPrint Manager) . . . 14
2.2.5 Current iPrint Manager State . . . 14
2.2.6 Advanced iPrint Manager Information . . . 14
2.3 Printer Agent Information Page . . . 14
2.3.1 Printer Agent Status . . . 15
2.3.2 Printer Console . . . 16
2.3.3 Printer Agent Status Details, Event Time, Message . . . 16
2.3.4 Job List . . . 17
2.3.5 Shutdown/Startup History . . . 17
2.3.6 Message from Admin . . . 18
2.3.7 Configuration Options . . . 19
2.3.8 Job Processing Information . . . 20
2.3.9 Job History . . . 20
2.3.10 Printer Information . . . 21
2.3.11 Operating System and Driver Name . . . 22

3 Advanced iPrint Manager Information Page 23

3.1 Interface, Current Status, and Latest Event Log Information . . . 24
3.1.1 Client Interface . . . 25
3.1.2 Gateway Interface . . . 27
3.1.3 NDS Interface . . . 28
3.1.4 iPrint Manager Internal . . . 30
3.2 iPrint Manager Information . . . 31
3.3 iPrint Manager Up Time History . . . 32
3.4 View Log File . . . 32
3.5 Generate Report . . . 33
3.6 Internal Auditing . . . 34
3.7 Configure Settings and Thresholds . . . 34
3.7.1 Current Event Log Size . . . 35
3.7.2 Maximum Event Log File Size . . . 35
3.7.3 Configuring the Monitoring Thresholds . . . 35

4 Using the iPrint Manager Health Monitor 39

4.1 Accessing the iPrint Manager Health Monitor . . . 39
4.2 Generating Reports . . . 39
4.3 Configuring Health Monitor Settings . . . 40
4.4 Posting Administrator Messages about a Printer . . . 41

4.5 Viewing a Printer's Job List . . . 41
4.6 Using Print Auditing . . . 41
4.6.1 Enabling Auditing . . . 42
4.6.2 Viewing Auditing Information . . . 42
4.6.3 Managing Audit Logs . . . 44
4.6.4 Configuring Automatic Log Rotation . . . 44
4.6.5 Downloading an Audit Report . . . 45

5 Troubleshooting Print System Errors 47

5.1 Is the iPrint Manager healthy? . . . 49
5.2 Is the physical printer reporting errors? . . . 50
5.3 Are print jobs being received by the iPrint Manager? . . . 50
5.4 Are jobs being sent from the iPrint Manager to the printer? . . . 52
5.5 Is the job printing correctly? . . . 53
5.6 Troubleshooting iPrint Manager Health Issues . . . 55
5.6.1 Check Advanced iPrint Manager Information . . . 55
5.6.2 Check for Problem Interfaces . . . 55
5.7 Quick Checks . . . 56
5.7.1 Is the Printer Driver Compatible? . . . 56
5.7.2 Is my server at capacity for handling printing? . . . 56

6 Examples of Troubleshooting Print Problems 57

6.1 Example 1: No Printer Output . . . 57
6.2 Example 2: No Printer Output . . . 58
6.3 Example 3: Printer Output Is Not Correct . . . 63
6.4 Example 4: Printing Is Slow . . . 64

A Documentation Updates 71

A.1 November 1, 2005 . . . 71
A.2 August 19, 2005 (Open Enterprise Server SP1) . . . 71

About This Guide

This guide describes how to monitor and manage your print system using the iPrint Print Manager Health Monitor in a Novell® Open Enterprise Services for Linux deployment of iPrint. This guide discusses the following topics:

- Chapter 1, "An Overview of the iPrint Manager Health Monitor," on page 9
- Chapter 2, "Understanding the iPrint Manager Health Monitor Screens," on page 11
- Chapter 3, "Advanced iPrint Manager Information Page," on page 23
- Chapter 4, "Using the iPrint Manager Health Monitor," on page 39
- Chapter 5, "Troubleshooting Print System Errors," on page 47
- Chapter 6, "Examples of Troubleshooting Print Problems," on page 57

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, or go to www.novell.com/documentation/feedback.html and enter your comments there.

Documentation Updates

The latest version of this documentation is available at the Novell documentation Web site (http://www.novell.com/documentation/oes).

Additional Documentation

For documentation on installing and running iPrint, see the *OES iPrint Administration Guide for Linux*.

Documentation Conventions

In this documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux* or UNIX*, should use forward slashes as required by your software.

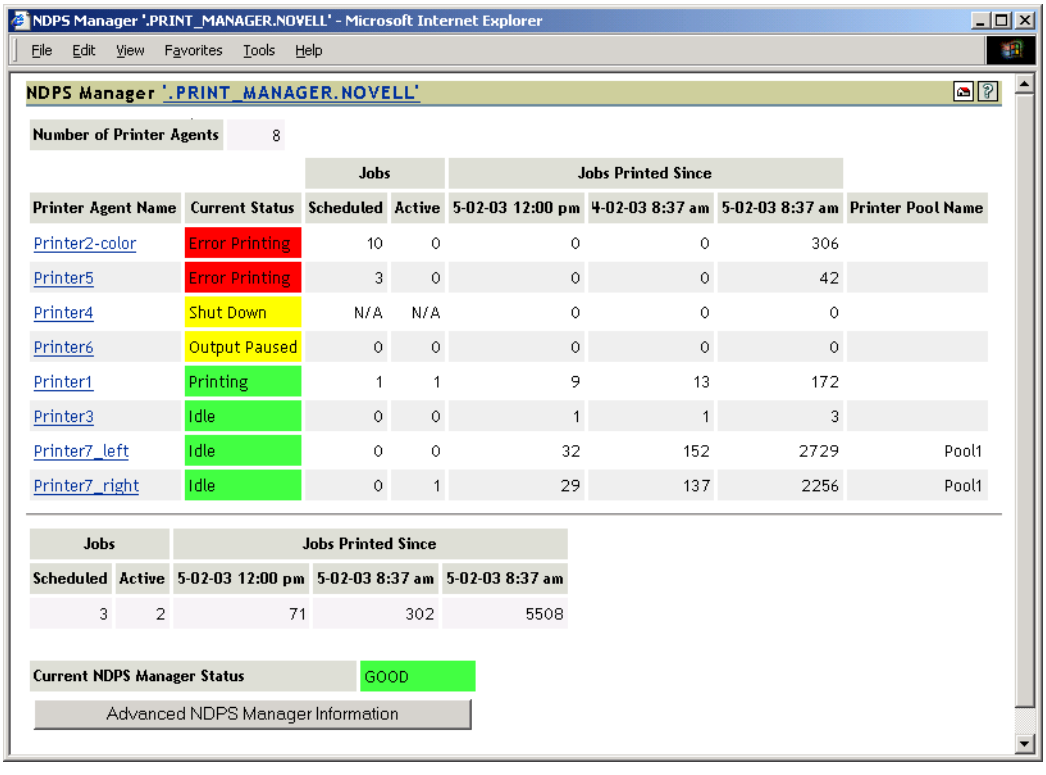
An Overview of the iPrint Manager Health Monitor

1

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*



The Health Monitor can be accessed from the Manage Print Manager task in iManager or at http://*server_address*/psmstatus. From the Health Monitor you can view current Printer Agent states, start up and shut down Printer Agents, and view other information about your print system.

Understanding the iPrint Manager Health Monitor Screens

2

Although the default settings in Novell® iPrint 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 2.2, “iPrint Manager Health Monitor Main Page,” on page 11
- Section 2.3, “Printer Agent Information Page,” on page 14

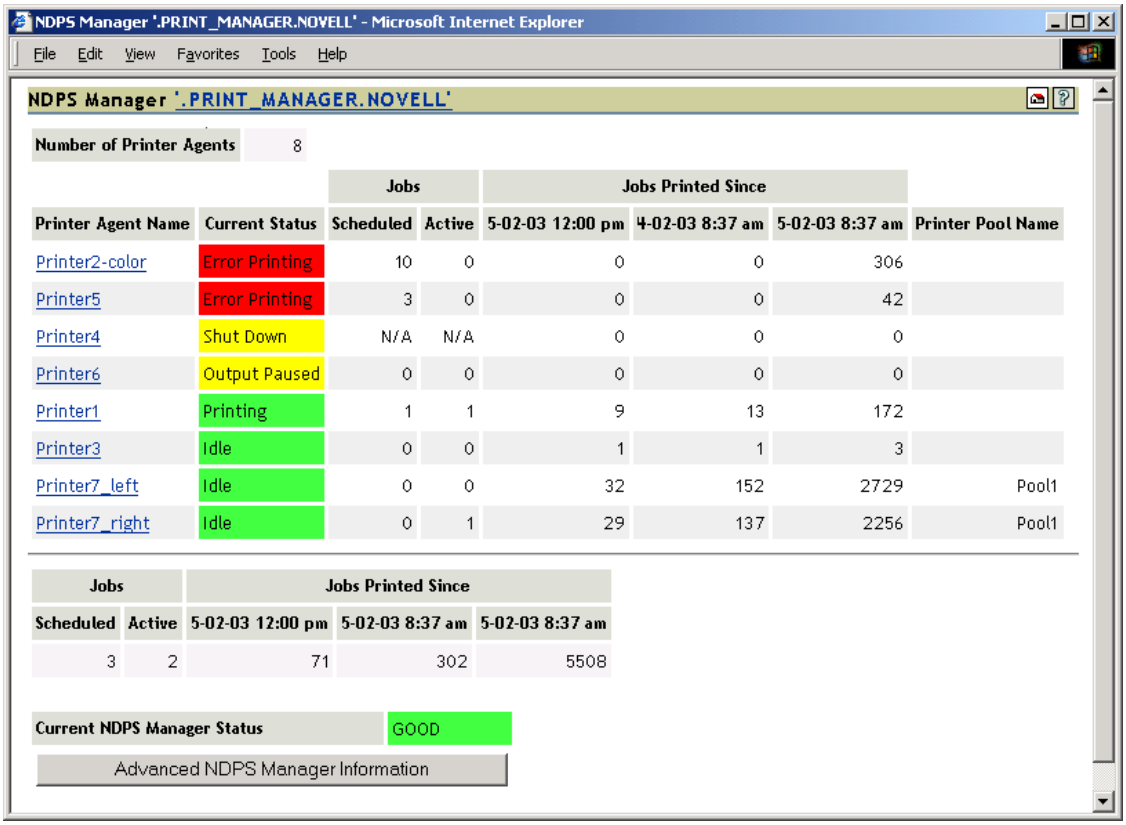
2.1 Navigating in the iPrint Manager Health Monitor

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 should 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*



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

- iPrint Manager iPrint_Manager_Object Context (page 12)
- Number of Printer Agents (page 12)
- Printer Agent Name (page 12)
- Jobs and Jobs Printed Since (for Printer Agents) (page 13)
- Current iPrint Manager State (page 14)
- Advanced iPrint Manager Information (page 14)

2.2.1 iPrint Manager *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 14.

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 35 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 34.

table of states.

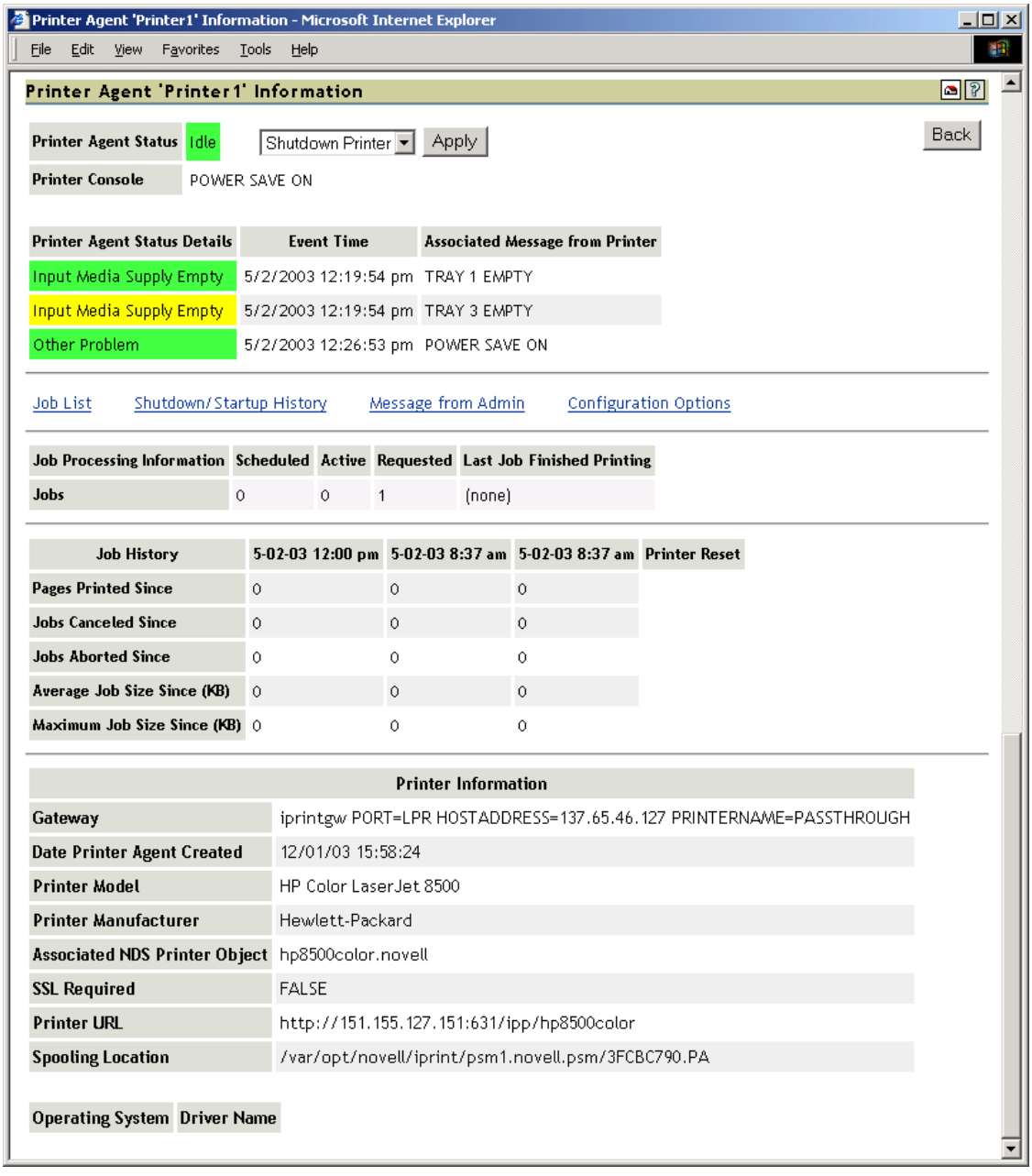
2.2.6 Advanced iPrint Manager Information

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 23.

2.3 Printer Agent Information Page

If you select a Printer Agent from the iPrint Manager main page, the following page appears. This section describes the information presented on the Printer Agent Information page.

Figure 2-2 *Printer Agent Information Page*



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.

Status	Description
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.
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 35 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.

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.

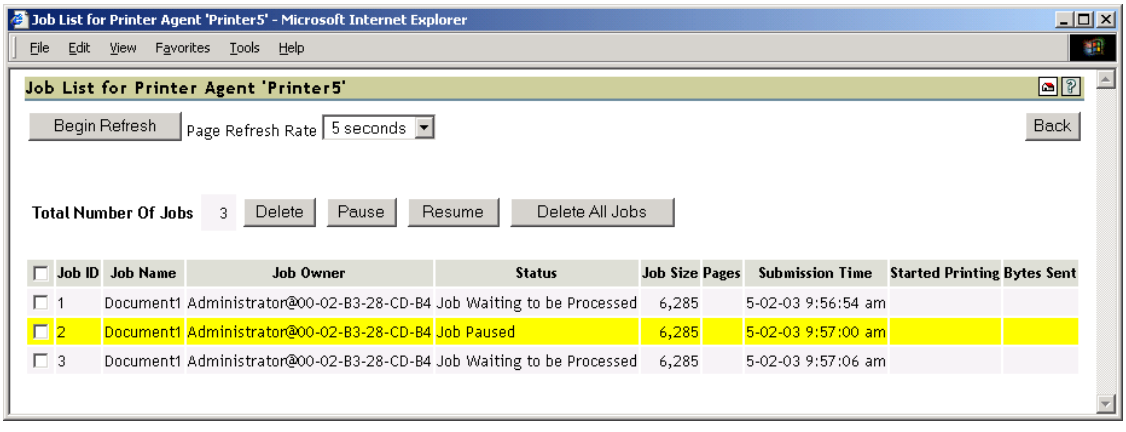
2.3.4 Job List

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. Jobs in the Job List are associated with one of the following colors:

Table 2-5 *Job Status Color Indicators*

Color	Description
Gray	Job is waiting to be printed.
Cyan	Job is printing.
Yellow	Job is not in a printable state because of a Job Hold or Printing Pause.

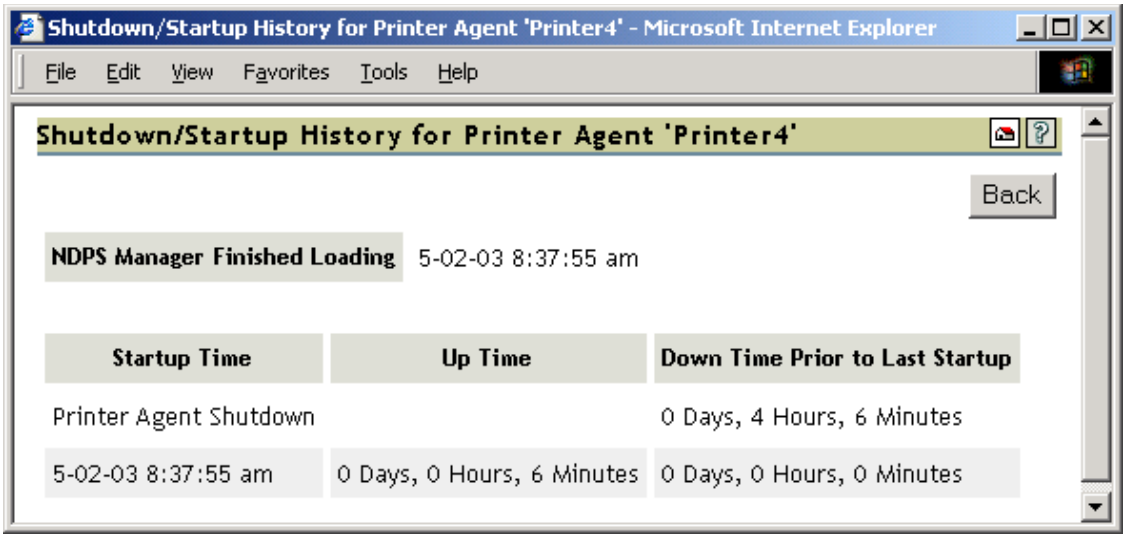
Figure 2-3 *Job List Page*



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.

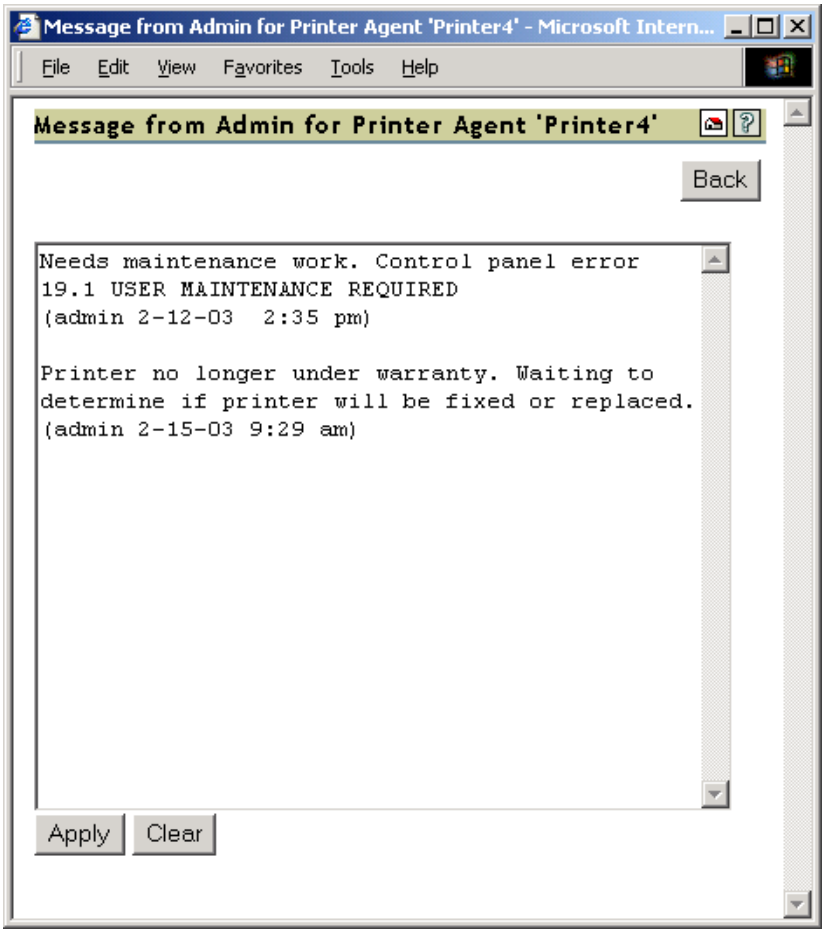
Figure 2-4 *Print Manager Shutdown and Startup History*



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 2-5 *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 2-6 *Configuration Options Page*

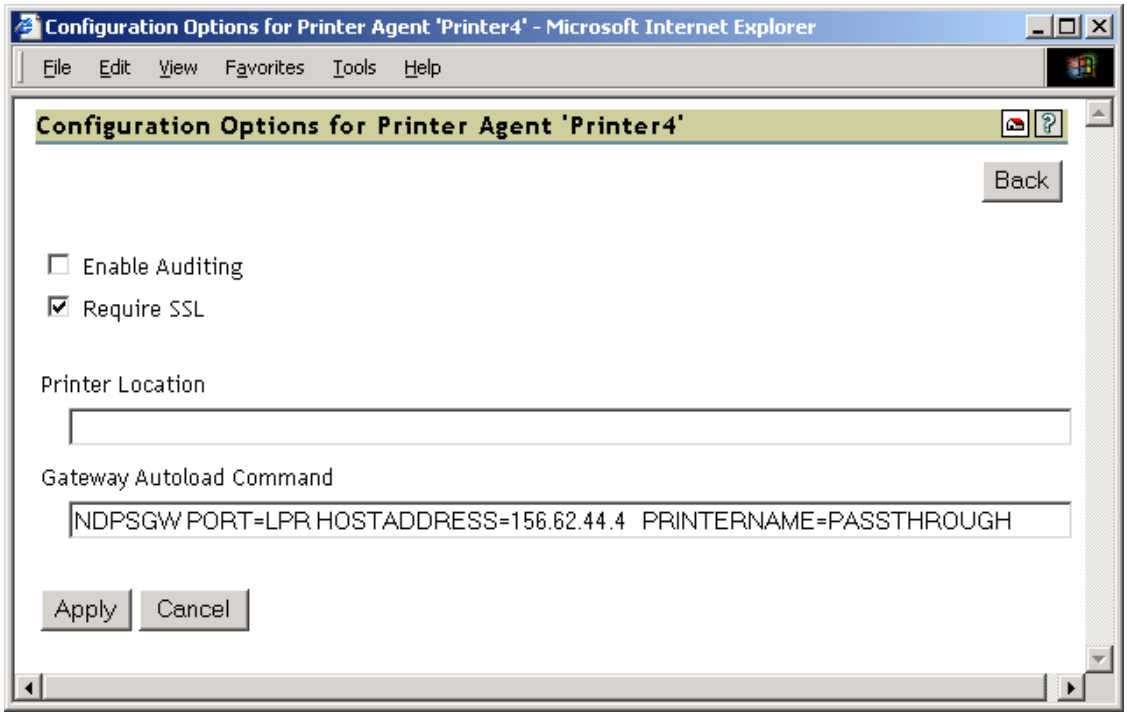


Table 2-6 *Configuration Options Descriptions*

Option	Description
Enable Auditing	Enables auditing for this printer, which tracks who printed how many pages to this printer.
Require SSL	Clients must use SSL to communicate with this printer. This option requires the printer to be an iPrint printer.
Printer Location	Lets you specify a printer location associated with this printer. Use this field to add information that helps you and users locate this printer.
Gateway Load String	Lets you edit the gateway load string for this printer. You must restart the Printer Agent for the changes to take effect.

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 21
- “Average Job Size Since (KB)” on page 21

- “Maximum Job Size Since (KB)” on page 21

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 Since 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.

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 21
- “Date Printer Agent Created” on page 21
- “Printer Model and Printer Manufacturer” on page 21
- “Associated NDS Printer Object” on page 22
- “SSL Required” on page 22
- “Printer URL” on page 22
- “Spooling Location” on page 22

Gateway

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

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.

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.

Clicking a link displays the NDS attribute information for the object.

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 "Setting Up a Secure Printing Environment" in the *iPrint Administration Guide for Linux*.

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.

2.3.11 Operating System and Driver Name

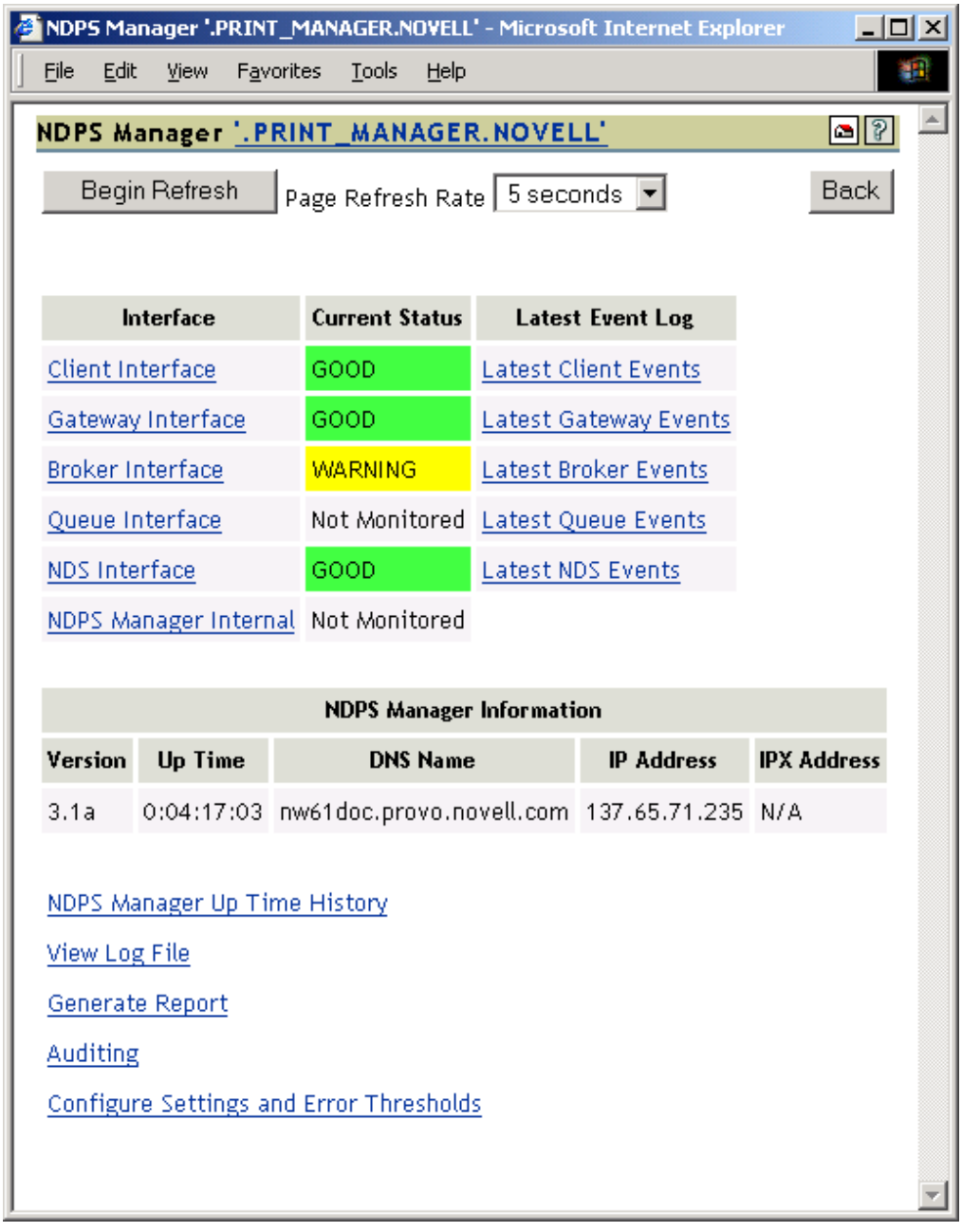
Displays the printer driver associations for this printer for each operating system.

Advanced iPrint Manager Information Page

3

The Advanced iPrint Manager Information page lets you view statistical information to help you monitor and troubleshoot your print system. By monitoring your system and creating a baseline, you familiarize enough with your print system to understand what statistics affect your configuration.

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 24
- Section 3.2, “iPrint Manager Information,” on page 31
- Section 3.3, “iPrint Manager Up Time History,” on page 32
- Section 3.4, “View Log File,” on page 32
- Section 3.5, “Generate Report,” on page 33
- Section 3.6, “Internal Auditing,” on page 34
- Section 3.7, “Configure Settings and Thresholds,” 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.

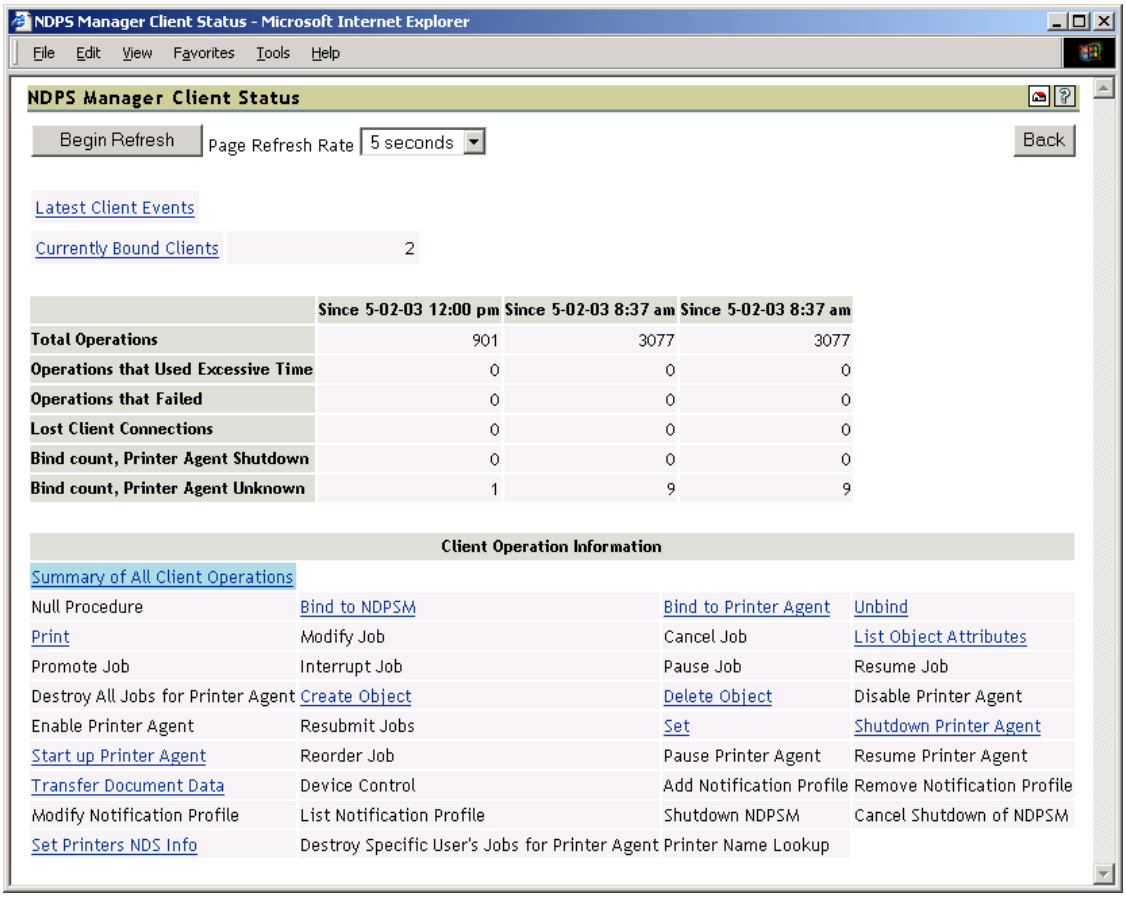
Table 3-1 *Interface Color Indicators*

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.

Latest Event Log: Displays the last 20 events for the given interface.

3.1.1 Client Interface

Figure 3-2 *Client Interface Page*



Begin Refresh Rate

Use the *Begin Refresh* button to have the page refresh automatically at the indicated interval. To stop the page from being refreshed automatically, click the button again.

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.

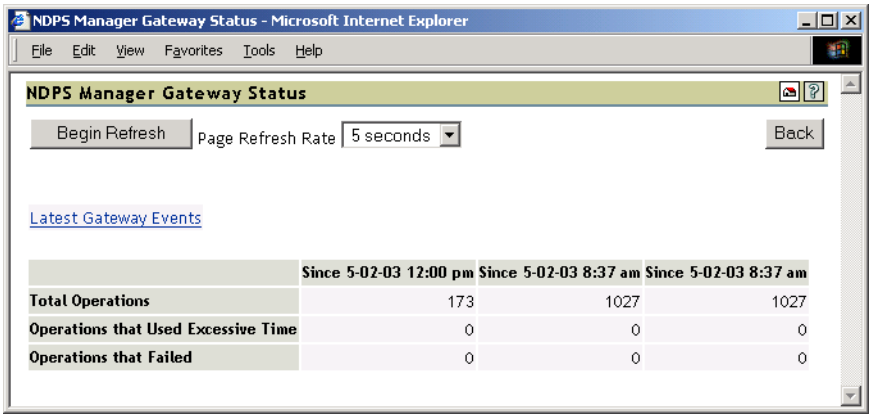
When an operation event occurs, the operation is changed to a link. When you click a link, the statistics for that operation for the last hour are displayed above the *Client Operation Information* and the operation is highlighted with the color Cyan. The following are all the colors that can be used.

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 3-3 *Gateway Interface Page*



Begin Refresh Rate

Use the *Begin Refresh* button to have the page refresh automatically at the indicated interval. To stop the page from being refreshed automatically, click the button again.

Latest Client Events

Displays the last 20 events for the given interface.

Gateway Operations

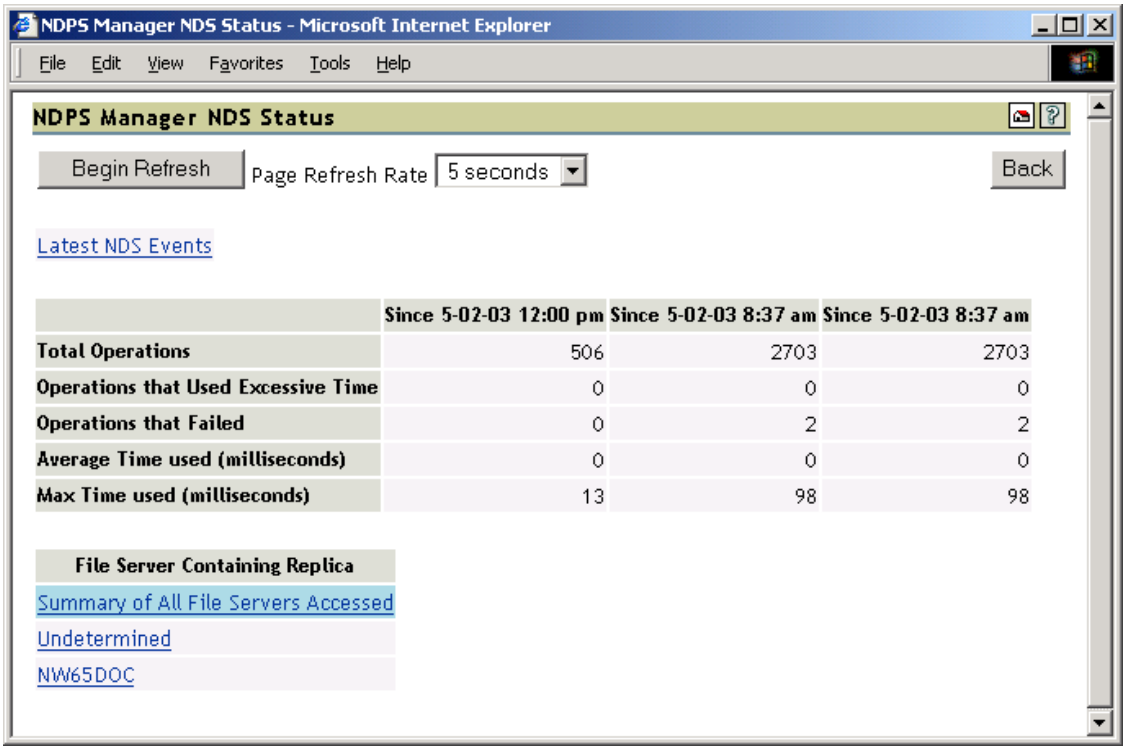
Displays statistics regarding the operations that have occurred since the referenced time, typically the last hour, since midnight, and since the Printer Agent was started.

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 3-4 *NDS Interface Page*



Begin Refresh Rate

Use the *Begin Refresh* button to have the page refresh automatically at the indicated interval. To stop the page from being refreshed automatically, click the button again.

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 to perform NDS® operations to the selected server.

Statistic	Description
Maximum Time Used	Maximum time used to perform NDS operations to the selected server.

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

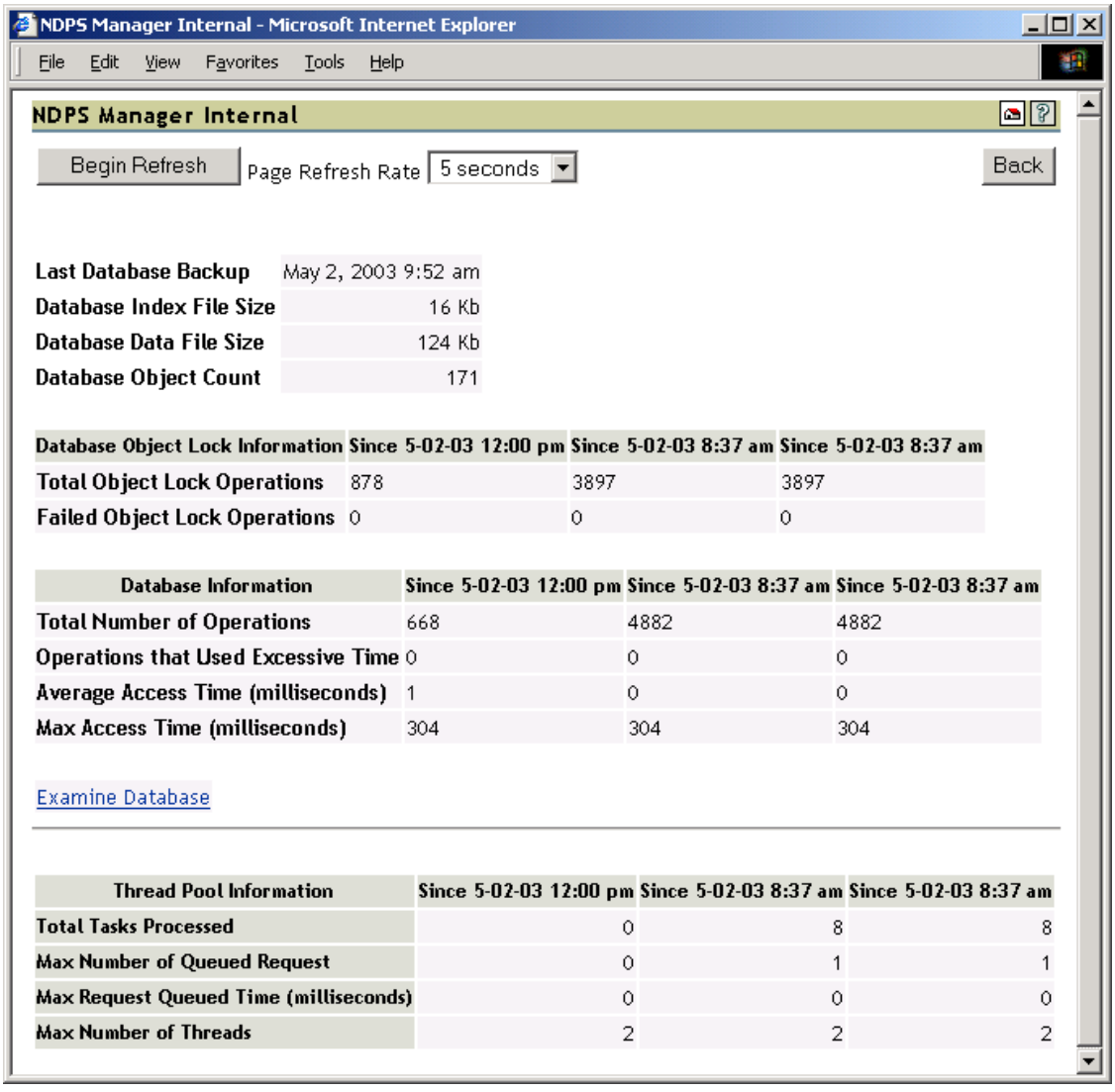
If a file server has been selected under *File Server Containing Replica*, this displays the date and time that the iPrint Manager last accessed a replica on that file server.

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 iPrint Manager Internal

Figure 3-5 *Print Services Manager Internal Page*



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 3-8 *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, and IPX™ address.

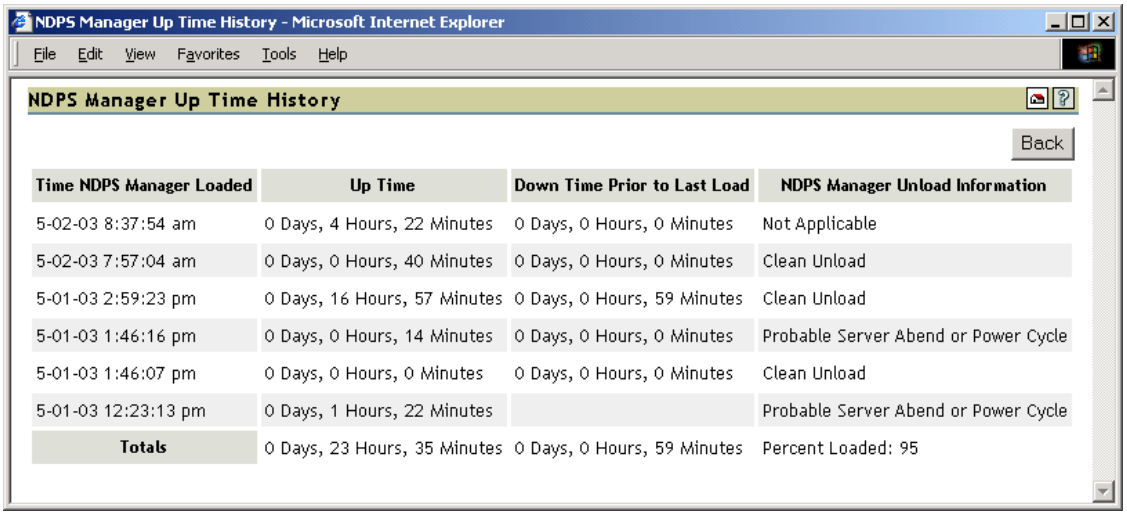
Figure 3-6 *NDPS Manager Information Page*

NDPS Manager Information				
Version	Up Time	DNS Name	IP Address	IPX Address
3.1a	0:04:17:03	nw65doc.provo.novell.com	156.62.44.1	N/A

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.

Figure 3-7 *Print Manager Load History*

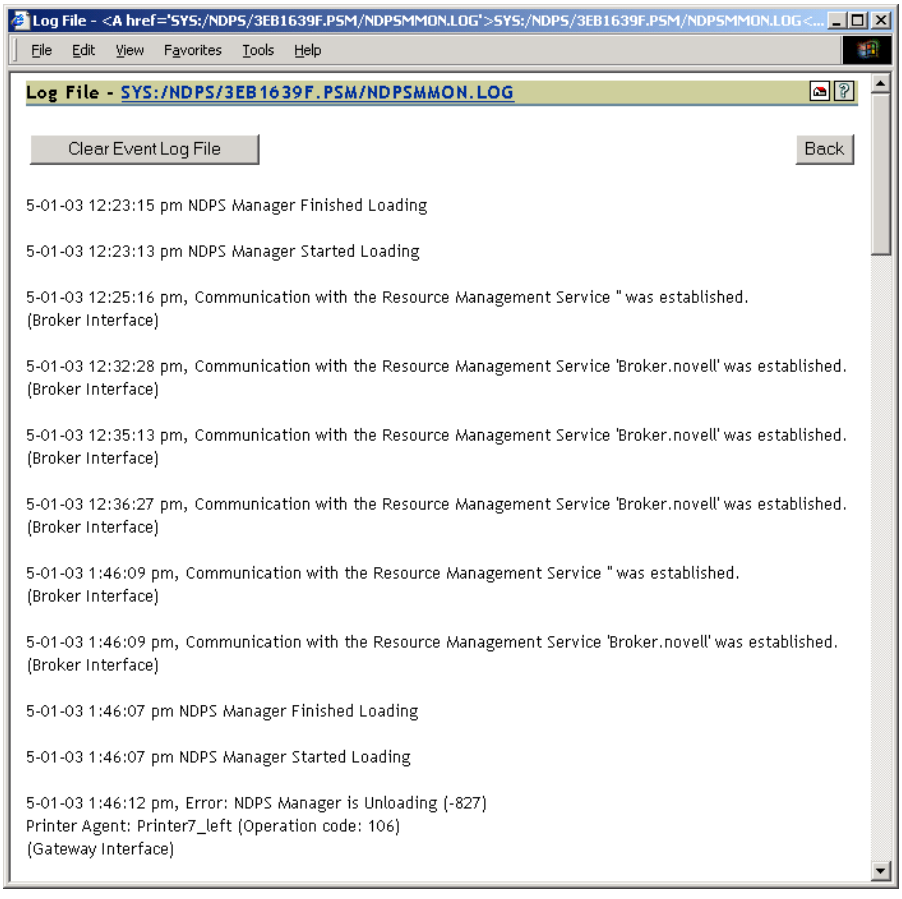


At the bottom of the page is a *Totals* row showing uptime, downtime, and the percent of time the iPrint Manager was loaded.

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.

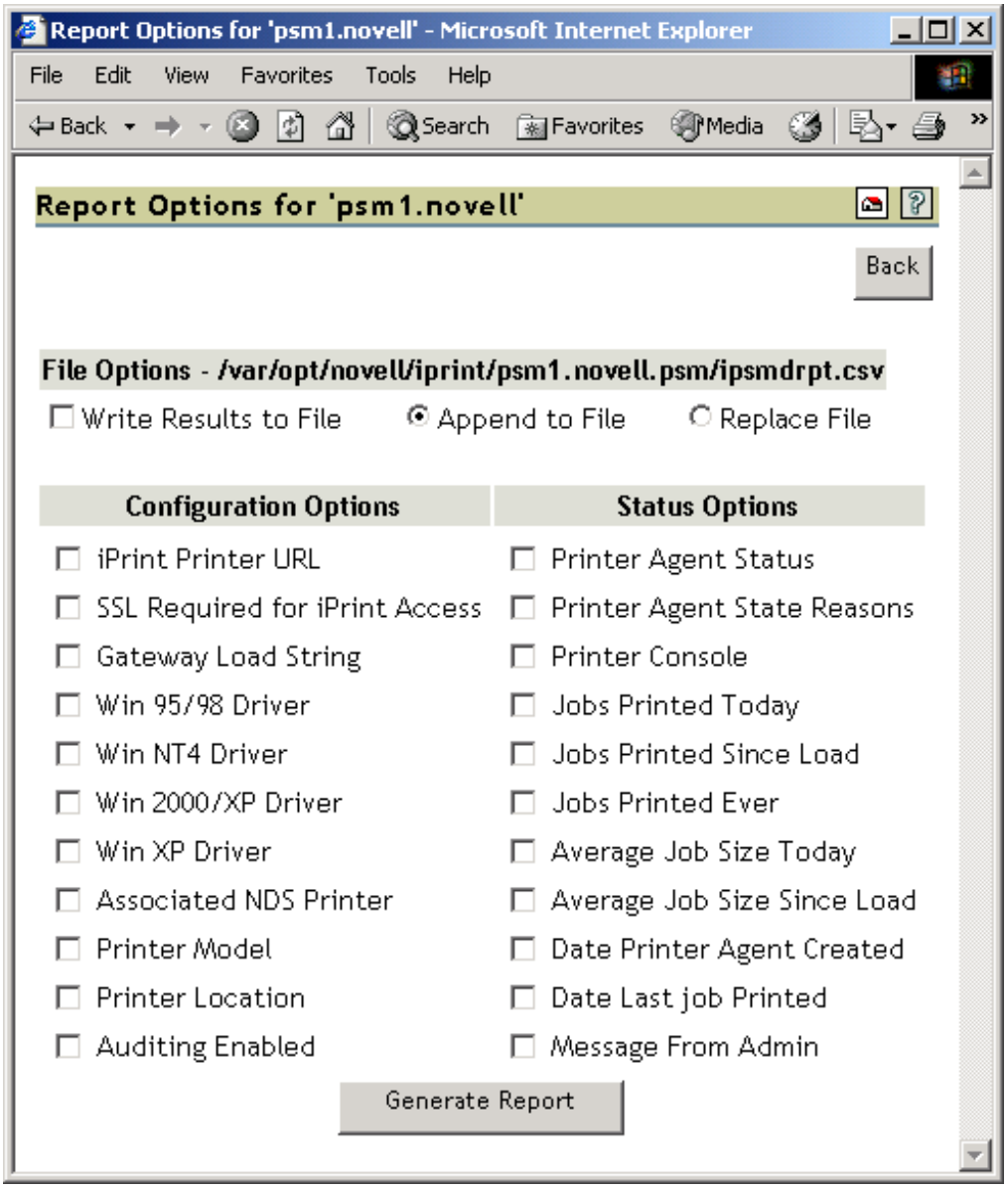
Figure 3-8 *Sample Log File*



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 39.

Figure 3-9 *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 Novell 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 41

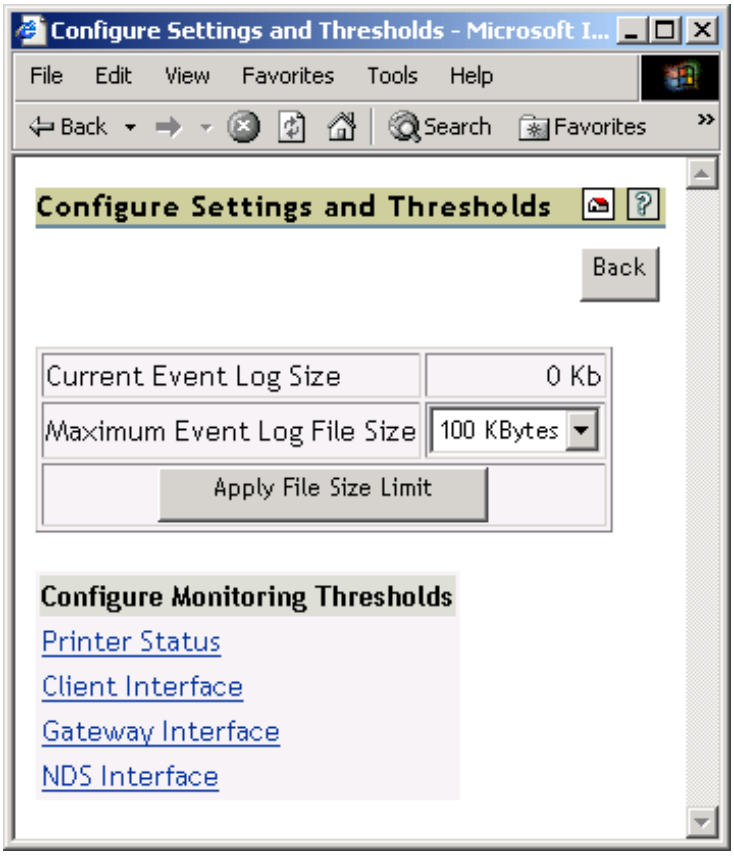
3.7 Configure Settings and Thresholds

Use the Configure Settings and Thresholds page to modify the default settings for the Print Services Manger Health Monitor. For most print systems, you do not need to change the default settings. This

link is accessible only to managers of the iPrint Manager. For other users, or if you are not logged in, this link is not displayed.

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

Figure 3-10 *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 3-9 *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 an 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 an 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

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 = .5%

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 = .5%

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 = 5

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

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 = .5%

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

Default = .5%

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 = 5

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

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%

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

Default = .5%

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 = 5

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)

Using the iPrint Manager Health Monitor

4

This section discusses the following:

- Section 4.1, “Accessing the iPrint Manager Health Monitor,” on page 39
- Section 4.2, “Generating Reports,” on page 39
- Section 4.3, “Configuring Health Monitor Settings,” on page 40
- Section 4.4, “Posting Administrator Messages about a Printer,” on page 41
- Section 4.5, “Viewing a Printer’s Job List,” on page 41
- Section 4.6, “Using Print Auditing,” on page 41

4.1 Accessing the iPrint Manager Health Monitor

The Health Monitor can be accessed from the Manage Print Manager task in iManager or at http://*server_address*/psmstatus.

1. User your Web browser to access iManager.
2. Click *iPrint* > *Manage Print Manager*, then browse to and select the iPrint Manager.
3. Click *Manager Health Monitor*.

   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.

You can now view current Printer Agent states, start up or shut down Printer Agents, and view other information about your print system.

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

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® 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 the settings.

   See the online help for more information about the available settings.

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

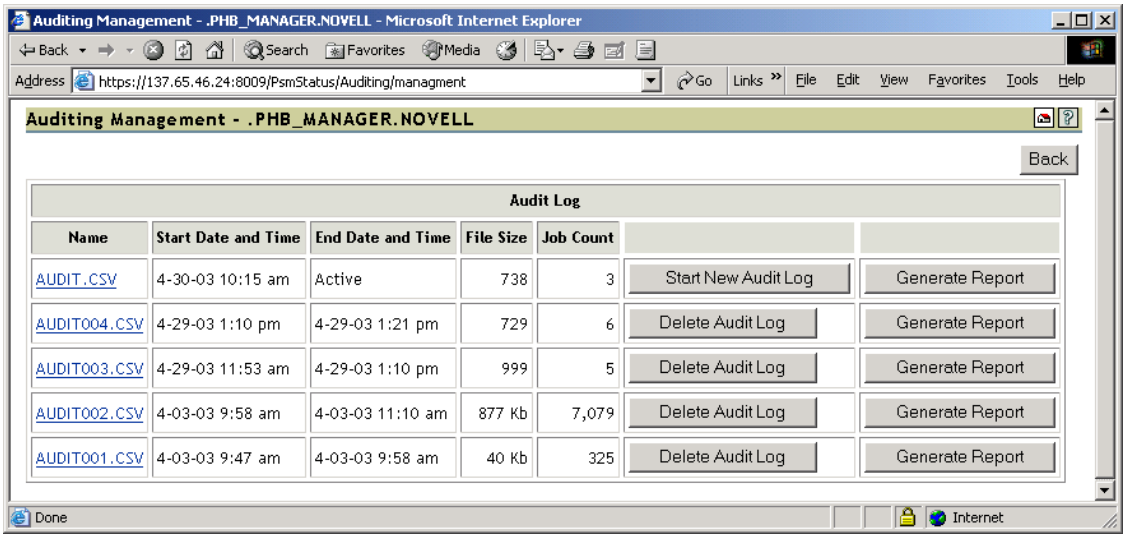
Often it is useful to view the job list for a printer to troubleshoot printer communication problems. To view a printers job list requires admin rights.

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 (*Delete*, *Pause*, *Resume*, *Delete All Jobs*)

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 42)
- Managing Audit Logs (page 44)
- Downloading an Audit Report (page 45)

4.6.1 Enabling Auditing

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

Using Novell iManager to Enable Auditing

You need to enable auditing for each printer you want to audit.

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

Using the Health Monitor to Enable Auditing

You need to enable auditing for each printer you want to audit.

1. On the iPrint Manager Health Monitor main page, click the printer you want to enable auditing for.
2. Click *Configuration Options*.
3. Click the *Enable Auditing* check box.

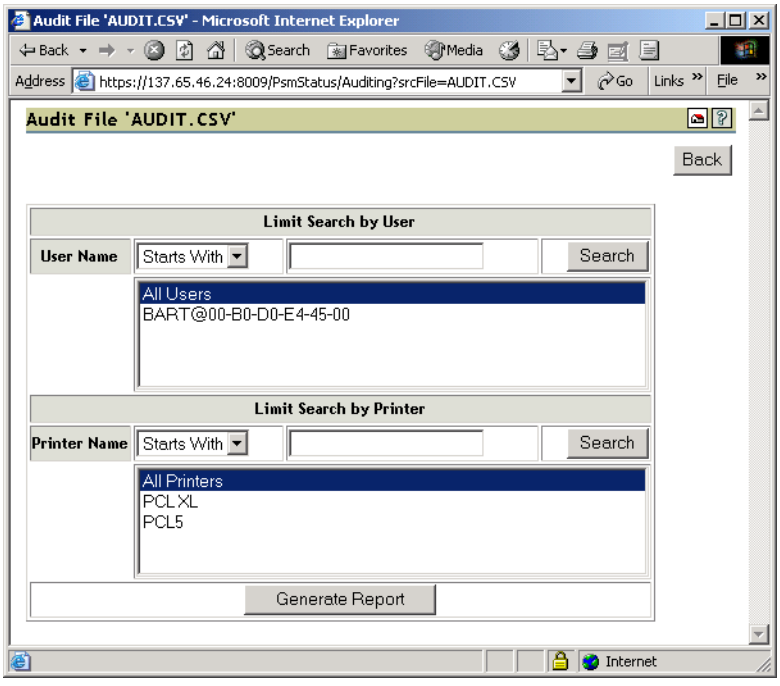
4.6.2 Viewing Auditing Information

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

1. In iPrint Manager Health Monitor, 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.

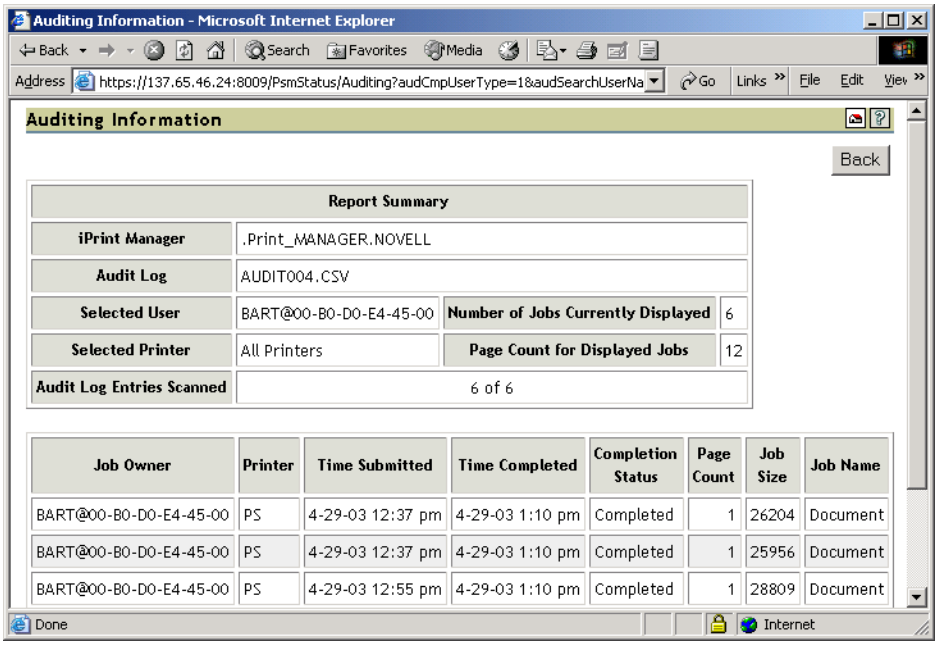
Description: Auditing Search Page



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*.

Description: Auditing Report



The following table describes what is displayed in the report.

Table 4-1 *Report Summary Information*

Field	Description
i*Print 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 4-2 *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 44.

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 `audit`*xxx*`.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.

Troubleshooting Print System Errors

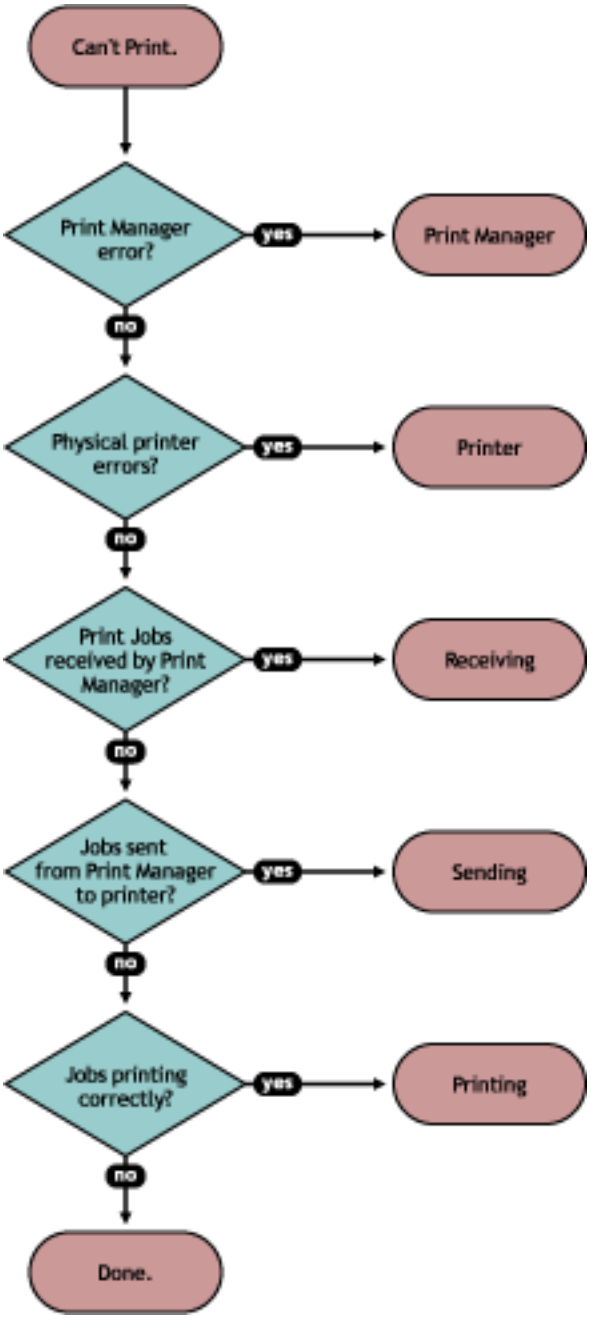
5

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 49)
- Is the physical printer reporting errors? (page 50)
- Are print jobs being received by the iPrint Manager? (page 50)
- Are jobs being sent from the iPrint Manager to the printer? (page 52)
- Is the job printing correctly? (page 53)

Figure 5-1 *Flowchart for Troubleshooting*



Flowchart Target	Section Reference
Print Manager	Section 5.1, “Is the iPrint Manager healthy?,” on page 49
Printer	Section 5.2, “Is the physical printer reporting errors?,” on page 50
Receiving	Section 5.3, “Are print jobs being received by the iPrint Manager?,” on page 50

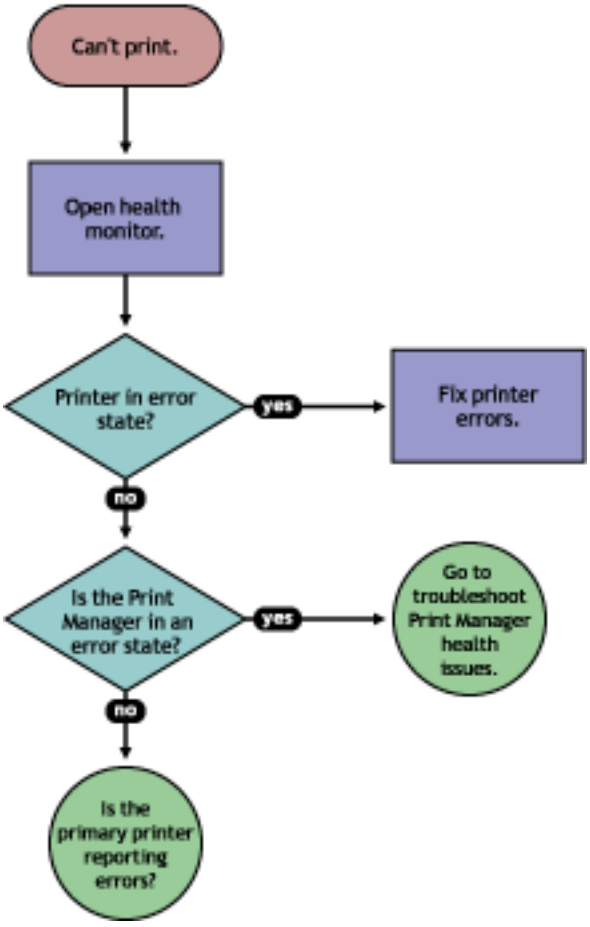
Flowchart Target	Section Reference
Sending	Section 5.4, “Are jobs being sent from the iPrint Manager to the printer?,” on page 52
Printing	Section 5.5, “Is the job printing correctly?,” on page 53

Issues not resolved by using this process might require technical support from the printer vendor or from Novell®, Inc.

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*

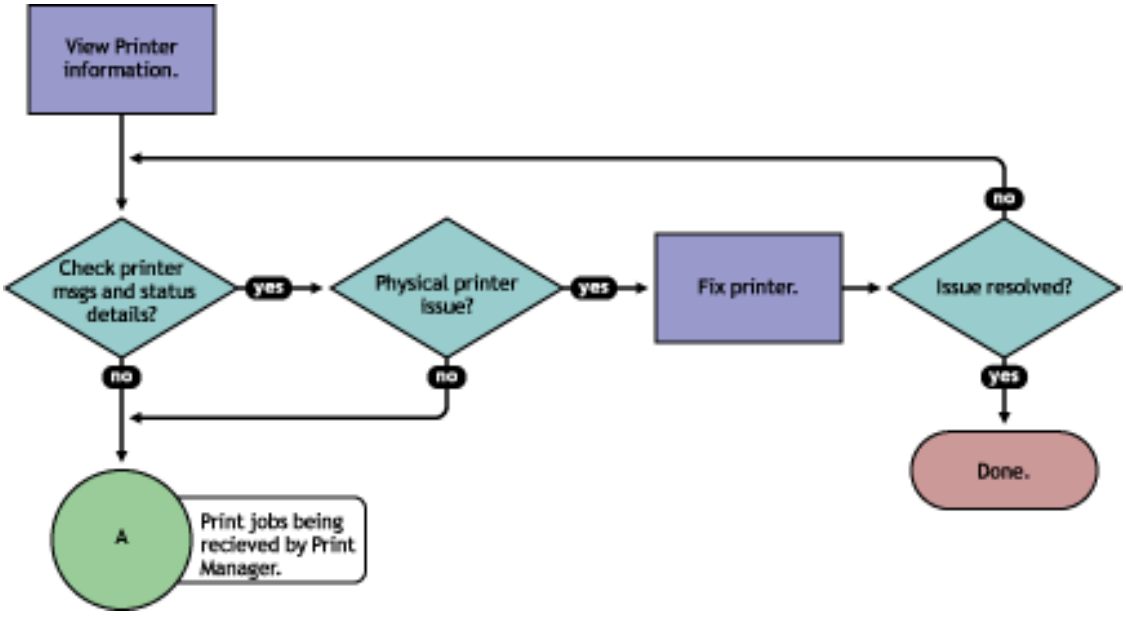


If the *Current iPrint Manager Status* is not green, click *Advanced iPrint Manager Information* to troubleshoot the iPrint Manager. For more information see Section 5.6, “Troubleshooting iPrint Manager Health Issues,” on page 55.

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:

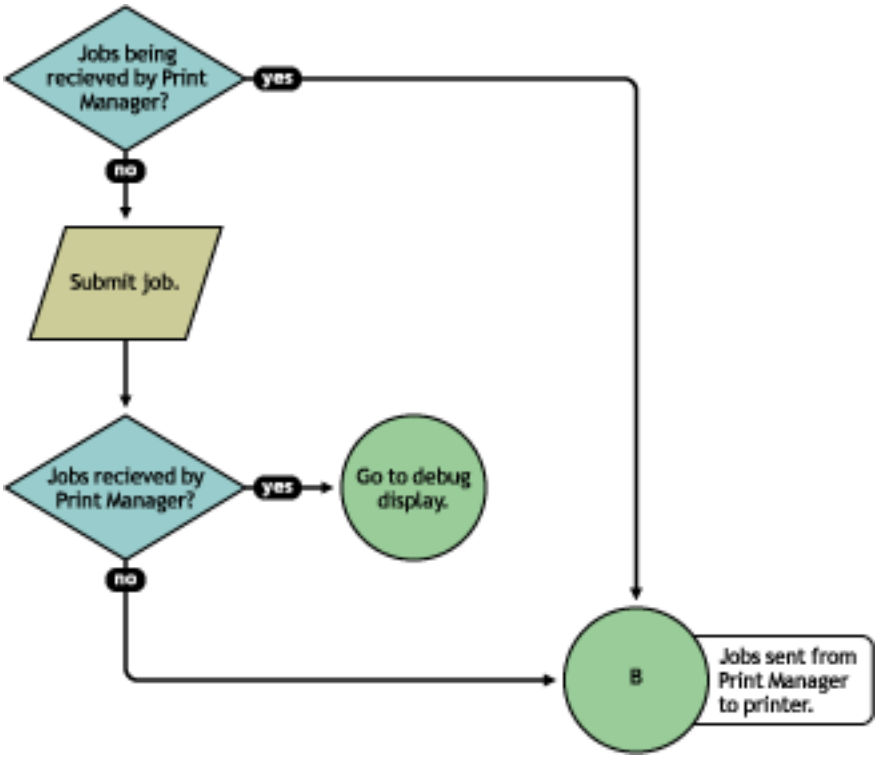
1. On the iPrint Manager Health Monitor main page, click the Printer Agent that is in a suspect (yellow) or error (red) state.
2. View the *Printer Agent Status* and *Printer Console Message* fields.

   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:

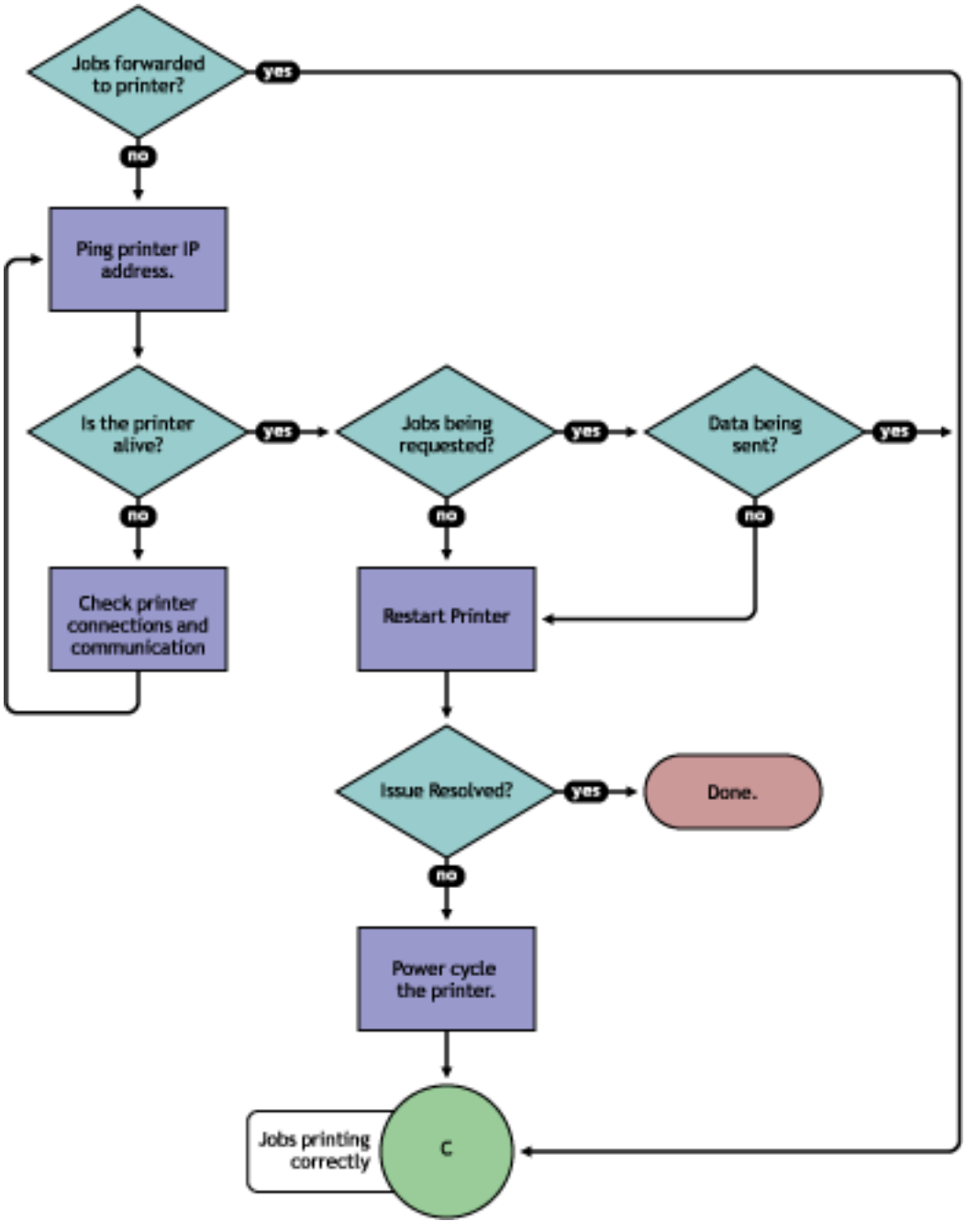
1. On the iPrint Health Monitor main page, click the Printer Agent for the problem printer.
2. Review the job processing information.
3. Submit a print job to the printer.
4. Review the job processing information again.

   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 52.

   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 53.

   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.

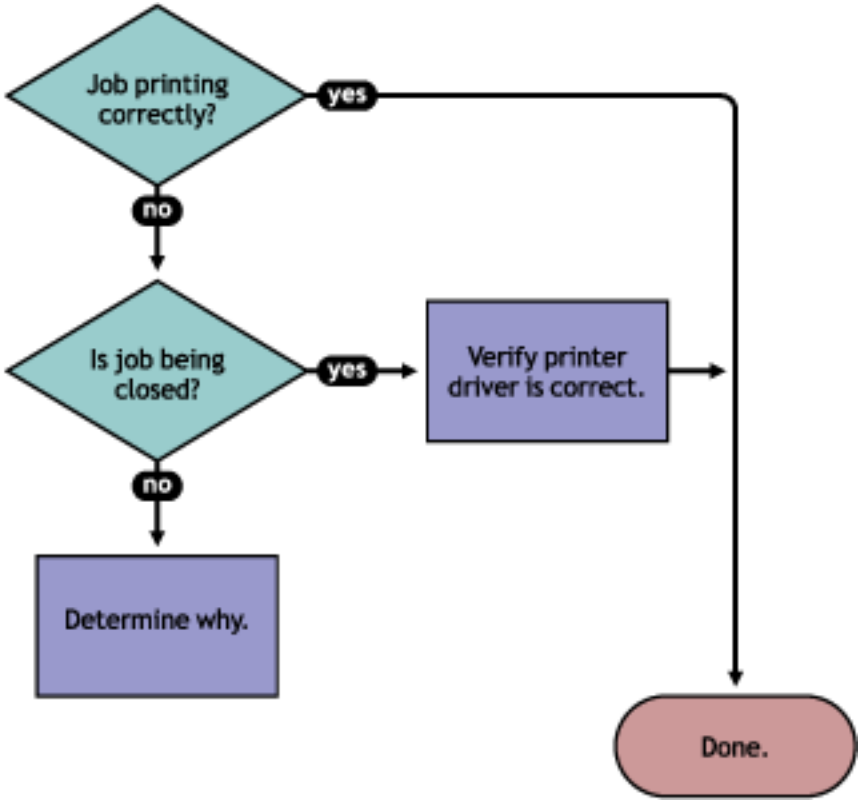
5. Restart the Printer Agent by clicking *Shutdown Printer* > *Start Up Printer*.
6. If the issue is not resolved, power cycle the printer.

After the *Jobs Requested* count is 1, continue with Section 5.5, "Is the job printing correctly?," on page 53.

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:

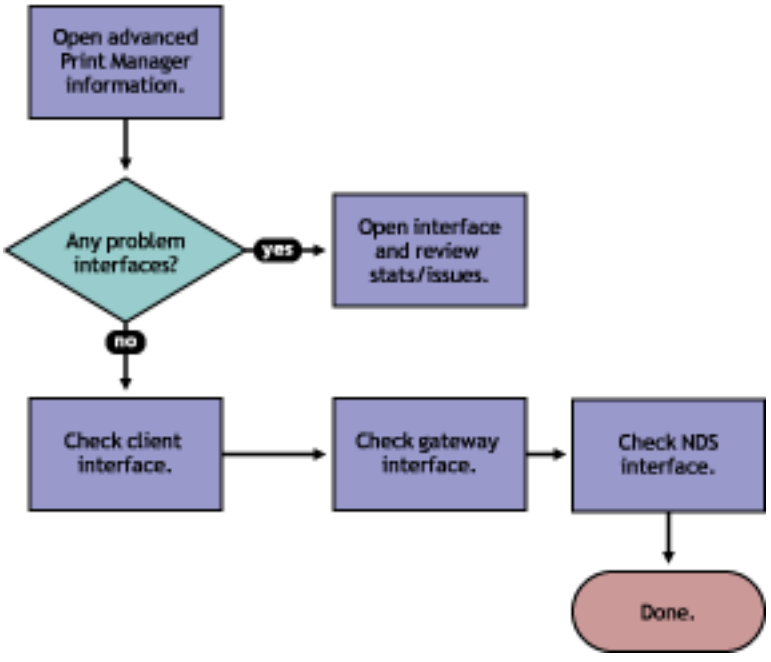
- Corrupt characters on printed output
- Slow printing
- Print job printed but no output produced

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 56
- Section 5.7.2, “Is my server at capacity for handling printing?,” on page 56

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* 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.

Examples of Troubleshooting Print Problems

6

Using the flowcharts and steps from Chapter 5, “Troubleshooting Print System Errors,” on page 47, the following example scenarios step through the troubleshooting process.

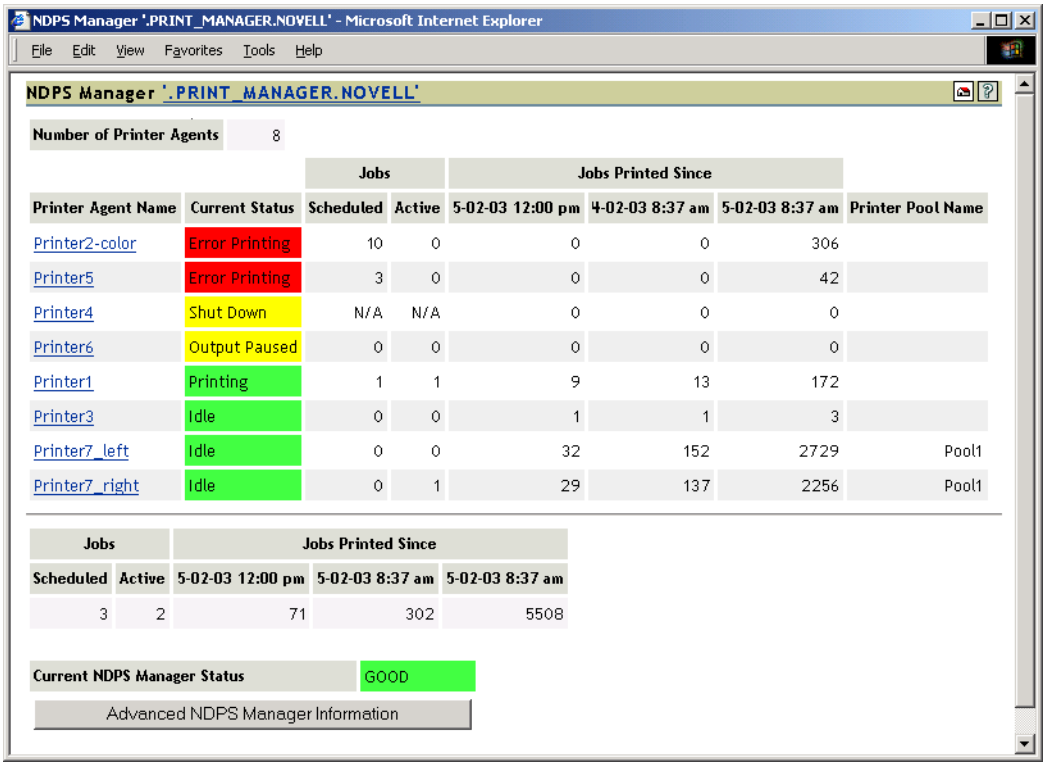
- Section 6.1, “Example 1: No Printer Output,” on page 57
- Section 6.2, “Example 2: No Printer Output,” on page 58
- Section 6.3, “Example 3: Printer Output Is Not Correct,” on page 63
- Section 6.4, “Example 4: Printing Is Slow,” on page 64

6.1 Example 1: No Printer Output

Thomas reports that he is printing to Printer5, but nothing is coming out of the printer.

1 In the iPrint Manager Health Monitor, locate Printer5 in the list.

Description: Print Manager Health Monitor Summary Page

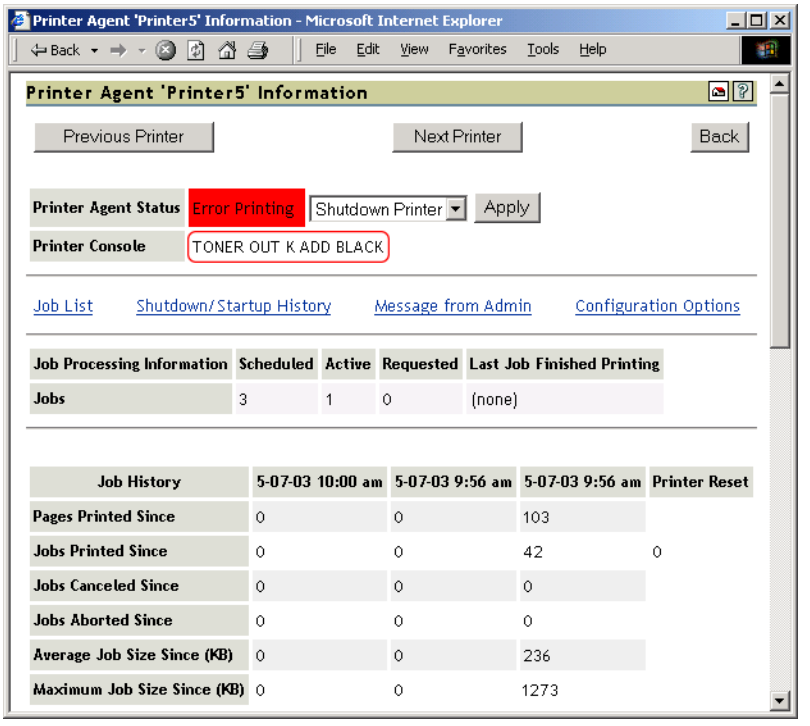


2 Check the state of the iPrint Manager which is listed at the bottom of the of the page.

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.

Description: Printer Agent Summary Page



There is a printer console message that the printer needs black toner.

4 Install black toner on the printer.

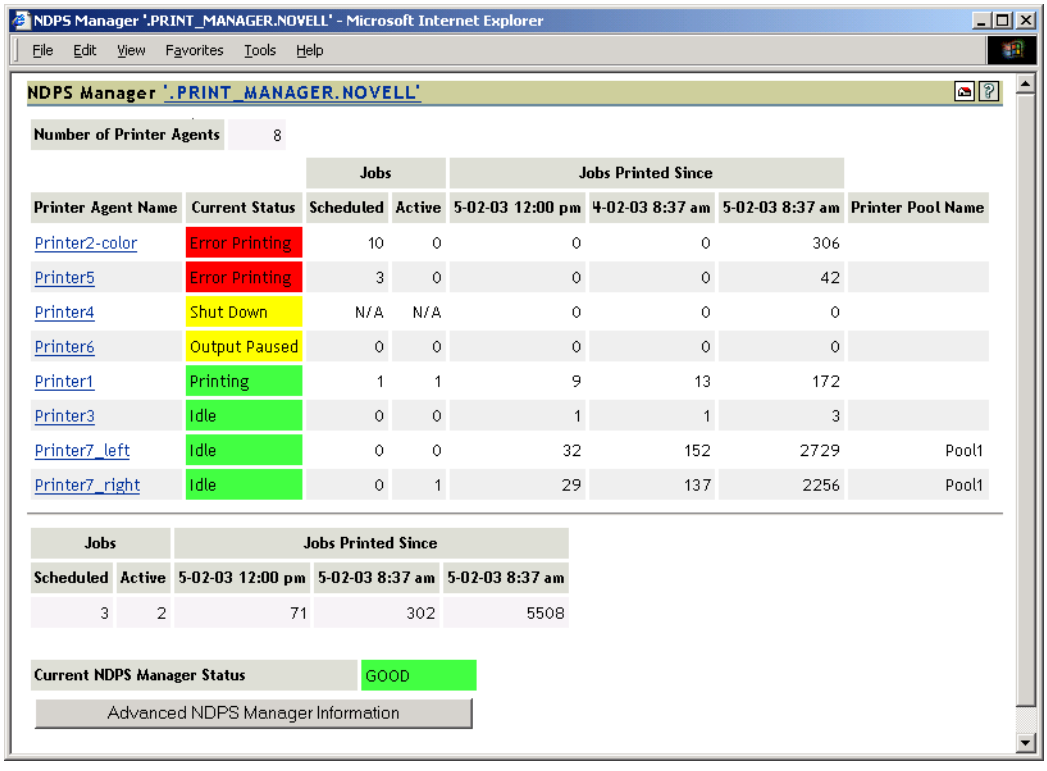
Thomas is now able to print again.

6.2 Example 2: No Printer Output

Angela reports that she is printing to Printer2, but nothing is coming out of the printer.

1 In the iPrint Manager Health Monitor, locate Printer2 in the list.

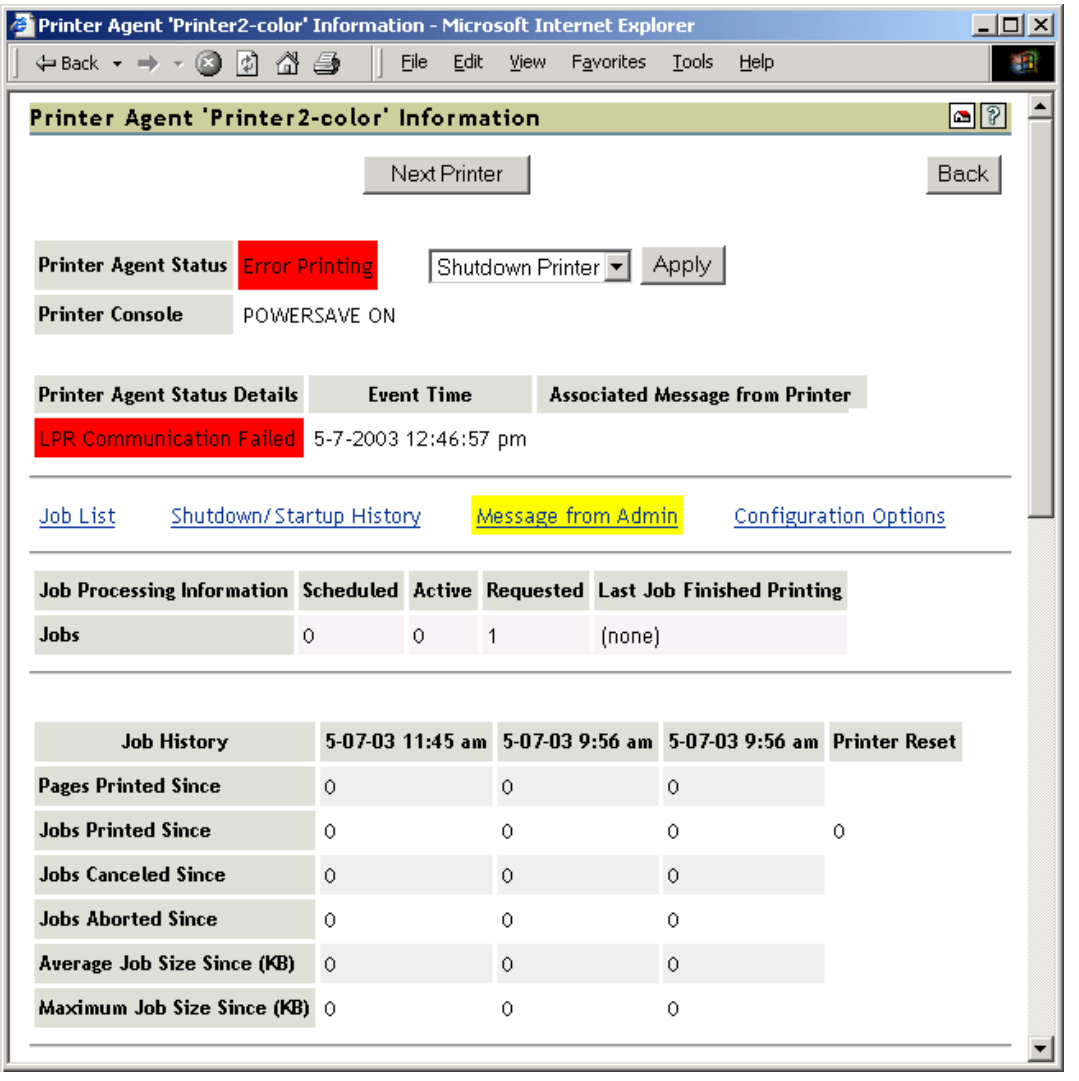
Description: Printer Agent Summary



Printer2 shows a printing error.

2 Click the printer agent name.

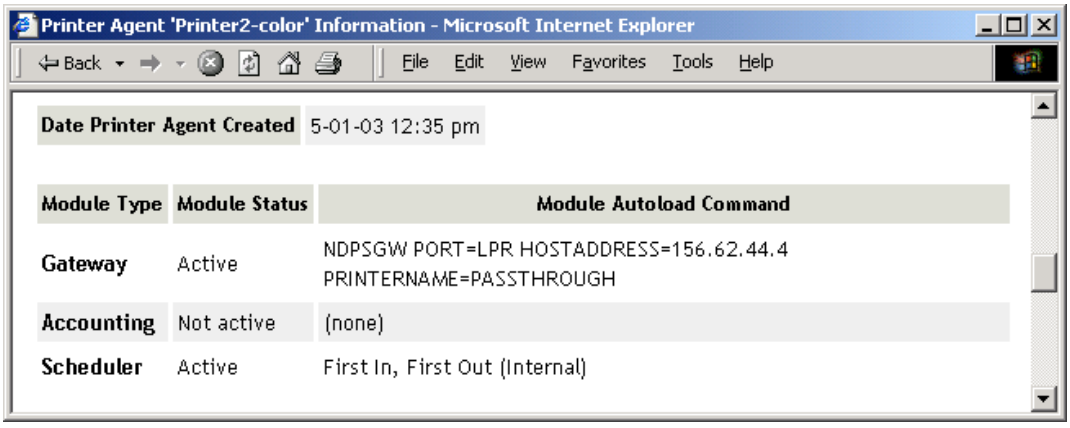
Description: Job History for a Printer Agent



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

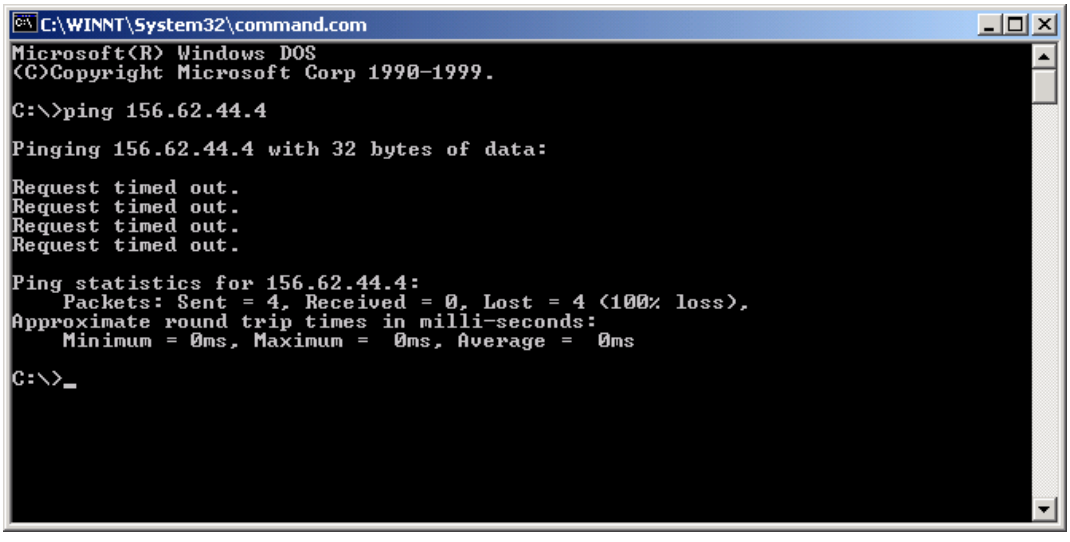
3 Obtain the IP address from the *Gateway* field in the *Printer Information* table.

Description: IP address from the Module Autoload Command for the Gateway



4 Ping the IP address.

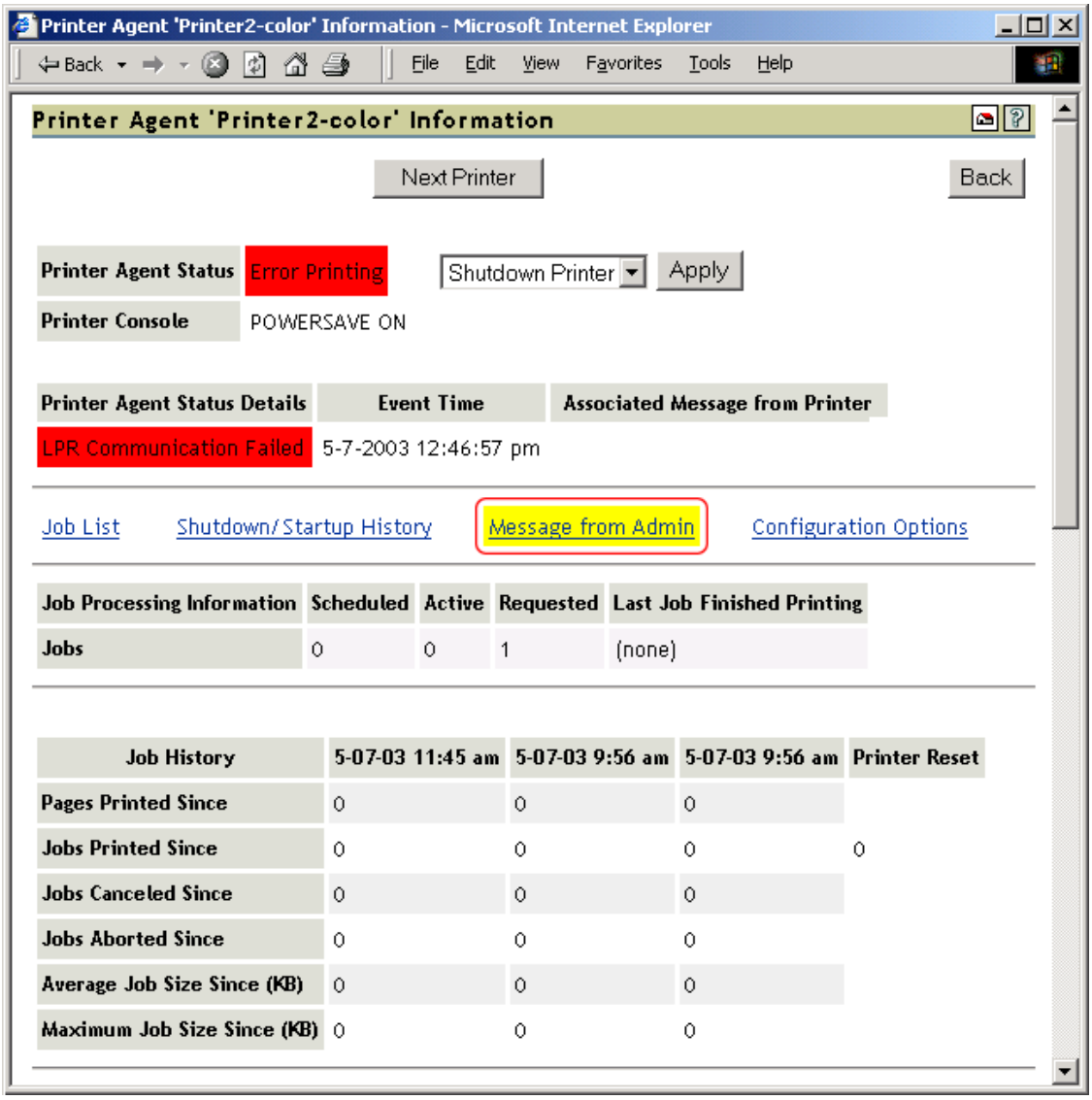
Figure 6-1 *Ping Command Screen*



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

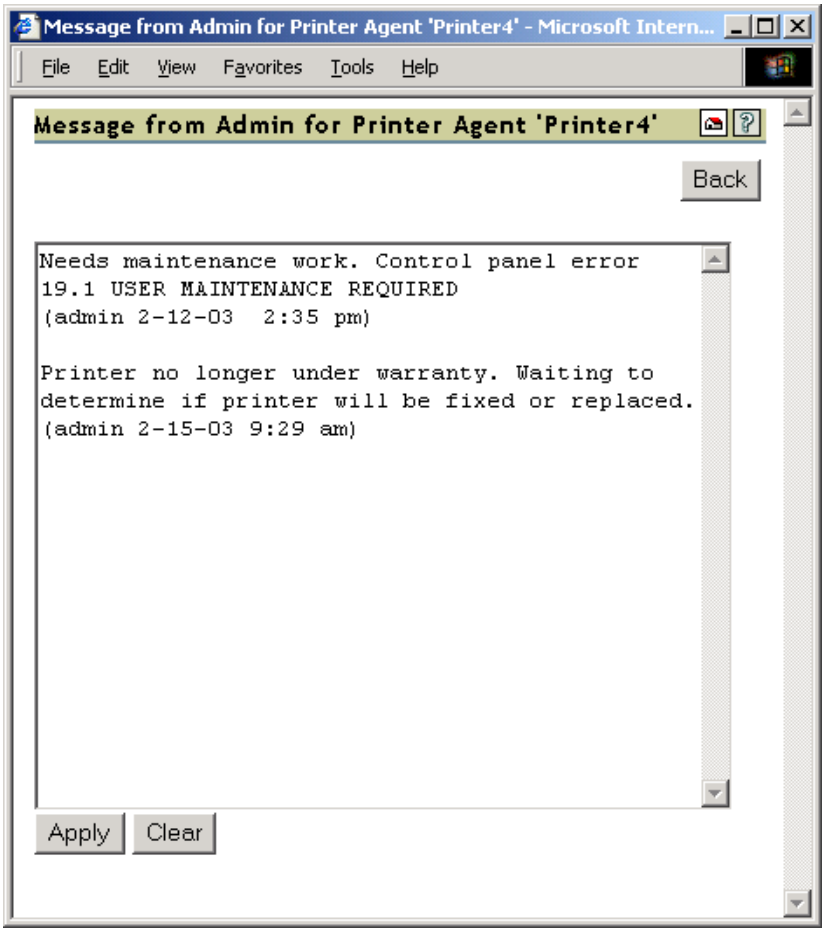
5 Check for any messages from the administrator by clicking *Message from Admin*.

Description: Printer Agent Summary



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

Description: Message from Admin Page



6 Have Angela install and print to a different printer.

6.3 Example 3: Printer Output Is Not Correct

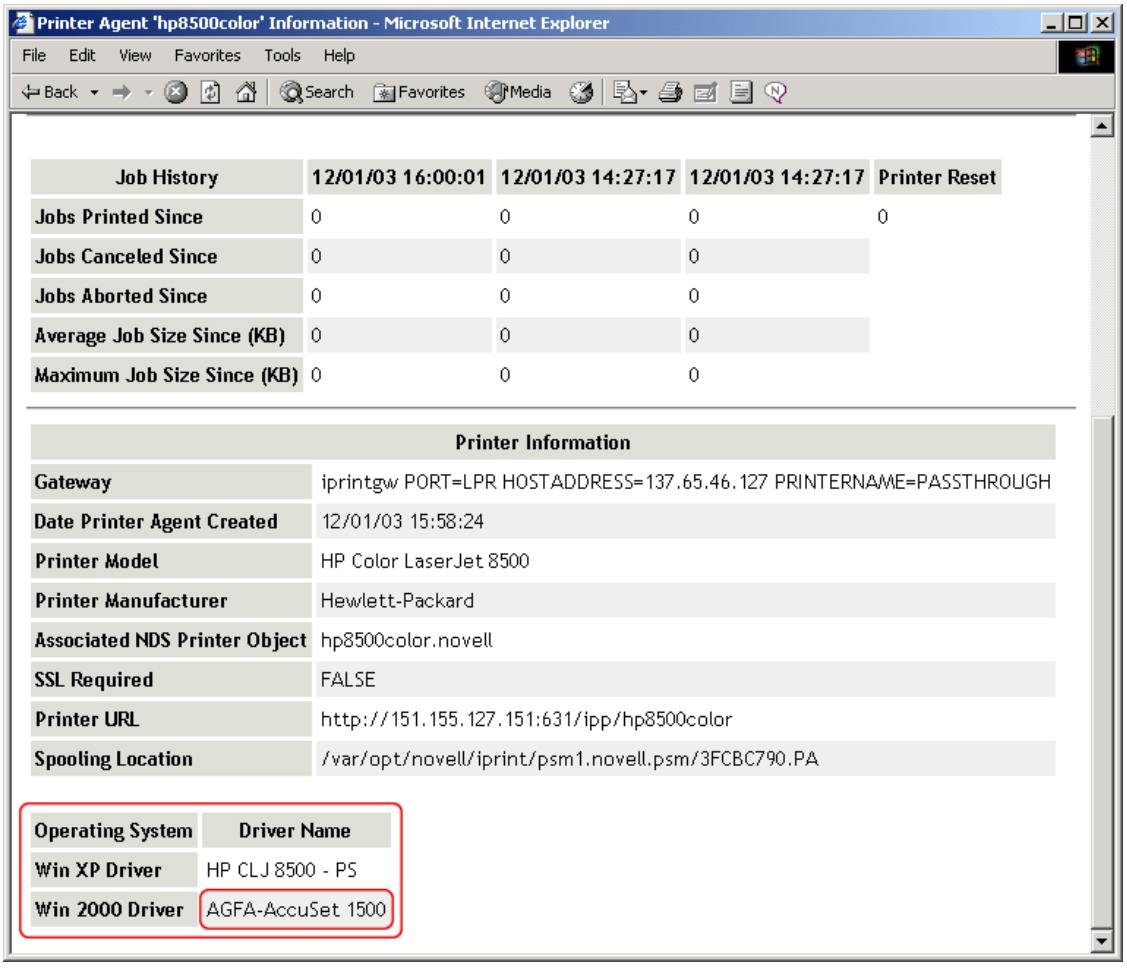
Thomas installed a Xerox* printer on his workstation. His print jobs are not printing correctly. The printout contains different ASCII characters instead of the text in his document.

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.

Description: Associated Printer Drivers for a Printer Agent



Job History	12/01/03 16:00:01	12/01/03 14:27:17	12/01/03 14:27:17	Printer Reset
Jobs Printed Since	0	0	0	0
Jobs Canceled Since	0	0	0	
Jobs Aborted Since	0	0	0	
Average Job Size Since (KB)	0	0	0	
Maximum Job Size Since (KB)	0	0	0	

Printer Information	
Gateway	iprintgw PORT=LPR HOSTADDRESS=137.65.46.127 PRINTERNAME=PASSTHROUGH
Date Printer Agent Created	12/01/03 15:58:24
Printer Model	HP Color LaserJet 8500
Printer Manufacturer	Hewlett-Packard
Associated NDS Printer Object	hp8500color.novell
SSL Required	FALSE
Printer URL	http://151.155.127.151:631/ipp/hp8500color
Spooling Location	/var/opt/novell/iprint/psm1.novell.psm/3FCBC790.PA

Operating System	Driver Name
Win XP Driver	HP CLJ 8500 - PS
Win 2000 Driver	AGFA-AccuSet 1500

Thomas is printing from a Windows XP workstation, and you can see the wrong printer driver is installed.

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

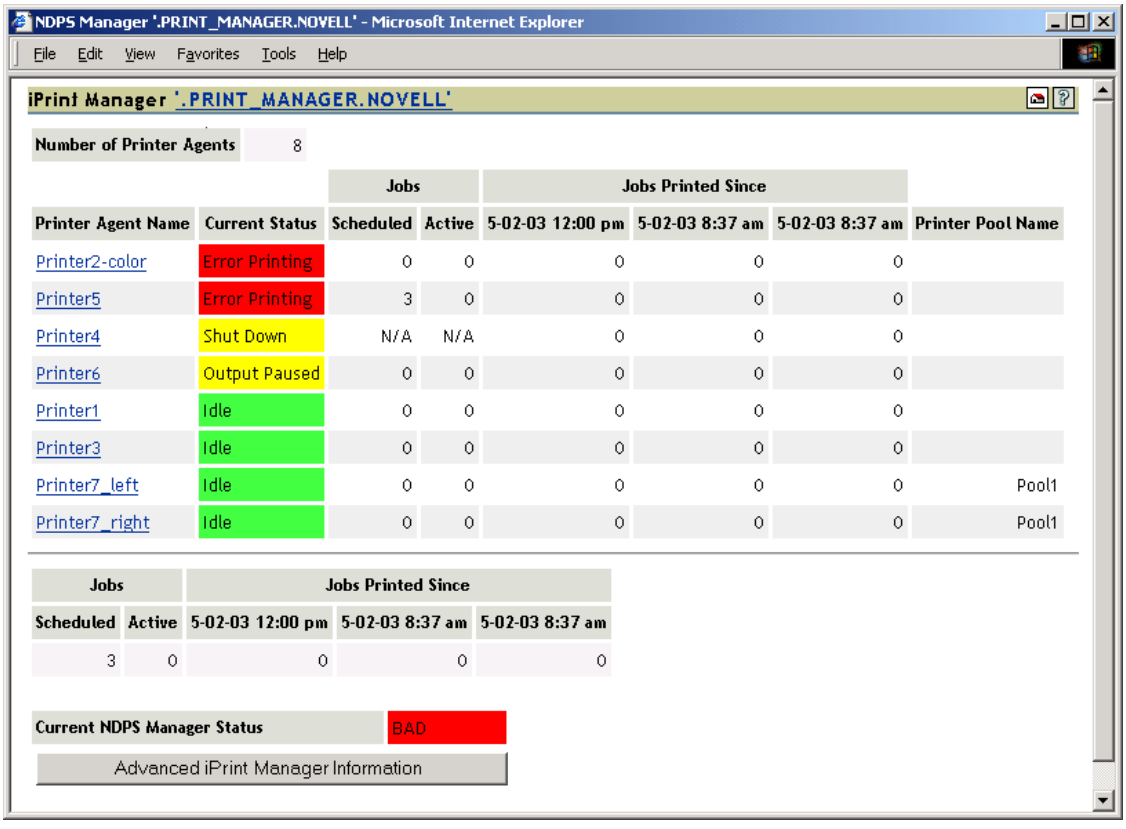
6.4 Example 4: Printing Is Slow

You received several reports that printing is slow.

1 Open the iPrint Manager Health Monitor.

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

Description: Print Manager Health Monitor summAry



2 Click *Advanced iPrint Manager Information*.

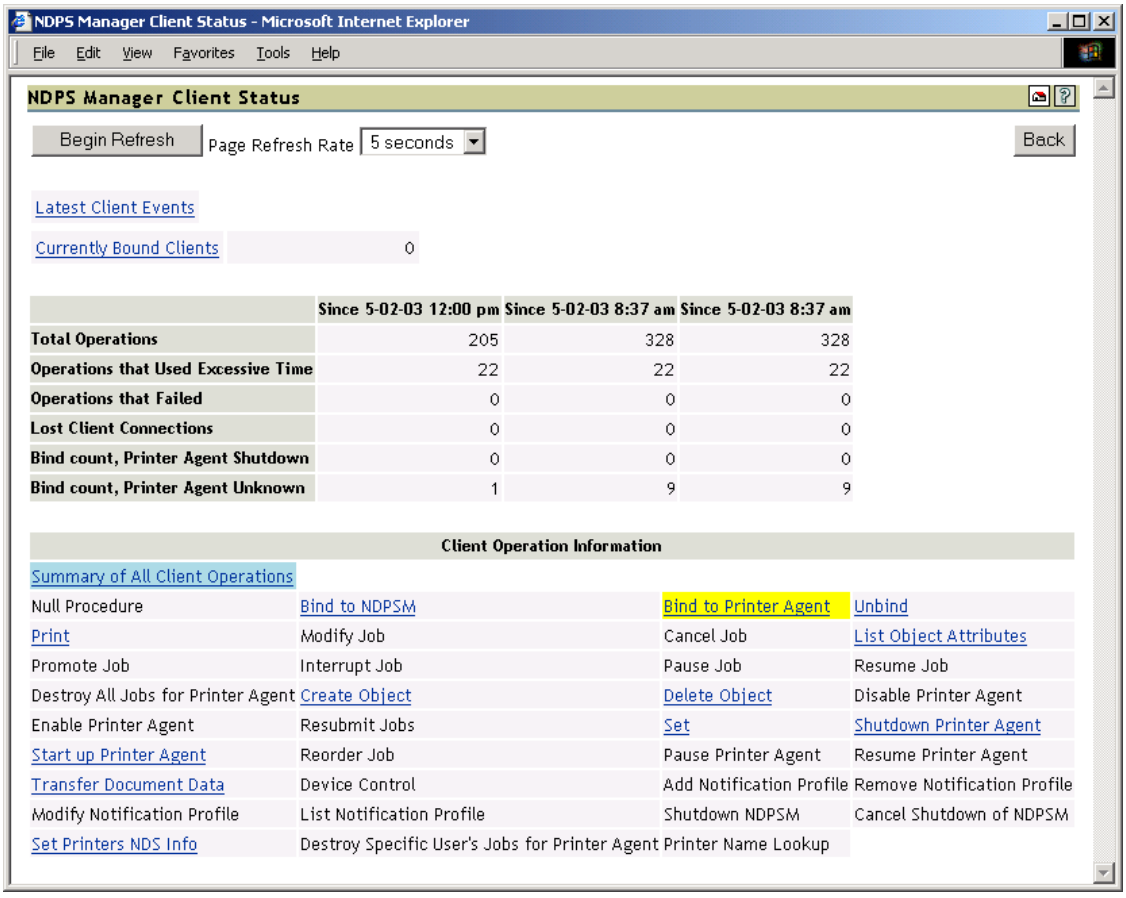
Two of the interfaces, *Client* and *NDS*, are in an error state.

Description: Advanced Print Manager Summary

3 Click *Client Interface*.

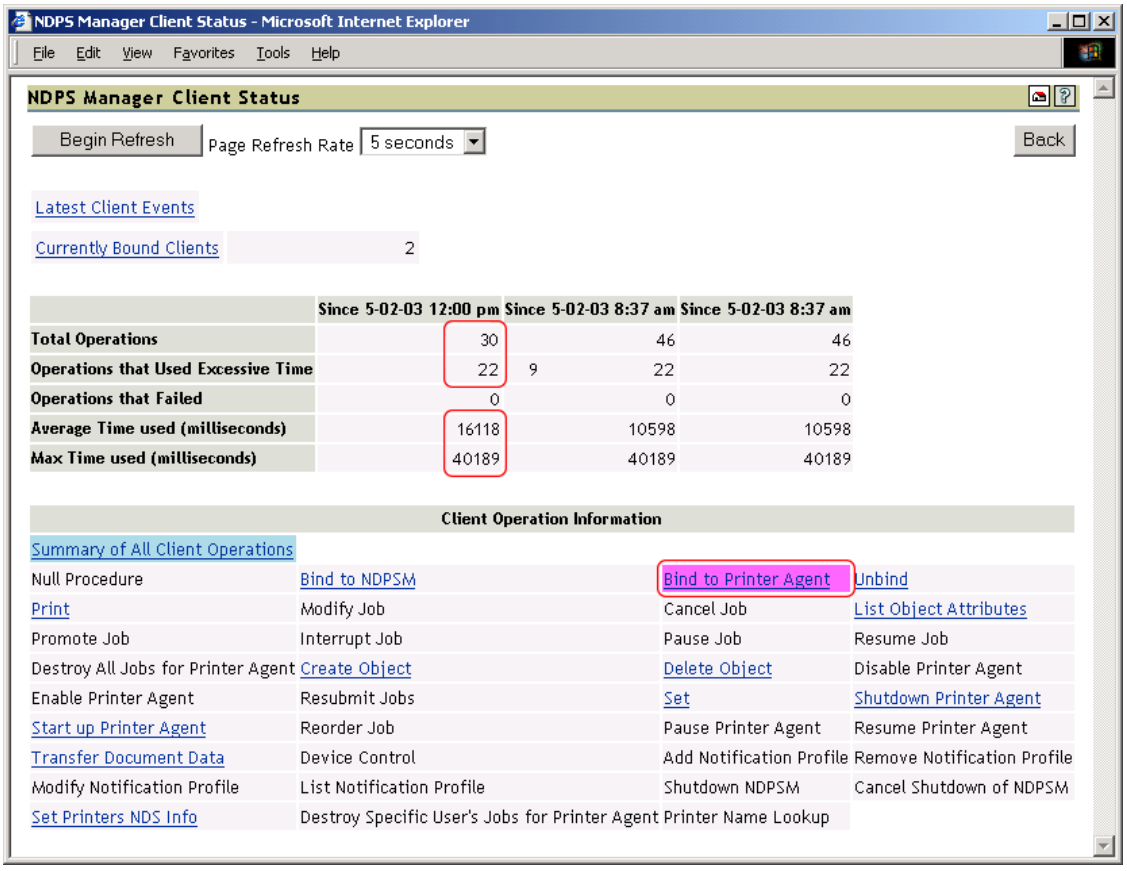
Bind to Printer Agent is highlighted in yellow, showing that it has exceeded the thresholds set for this statistic.

Description: Client Interface Screen



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

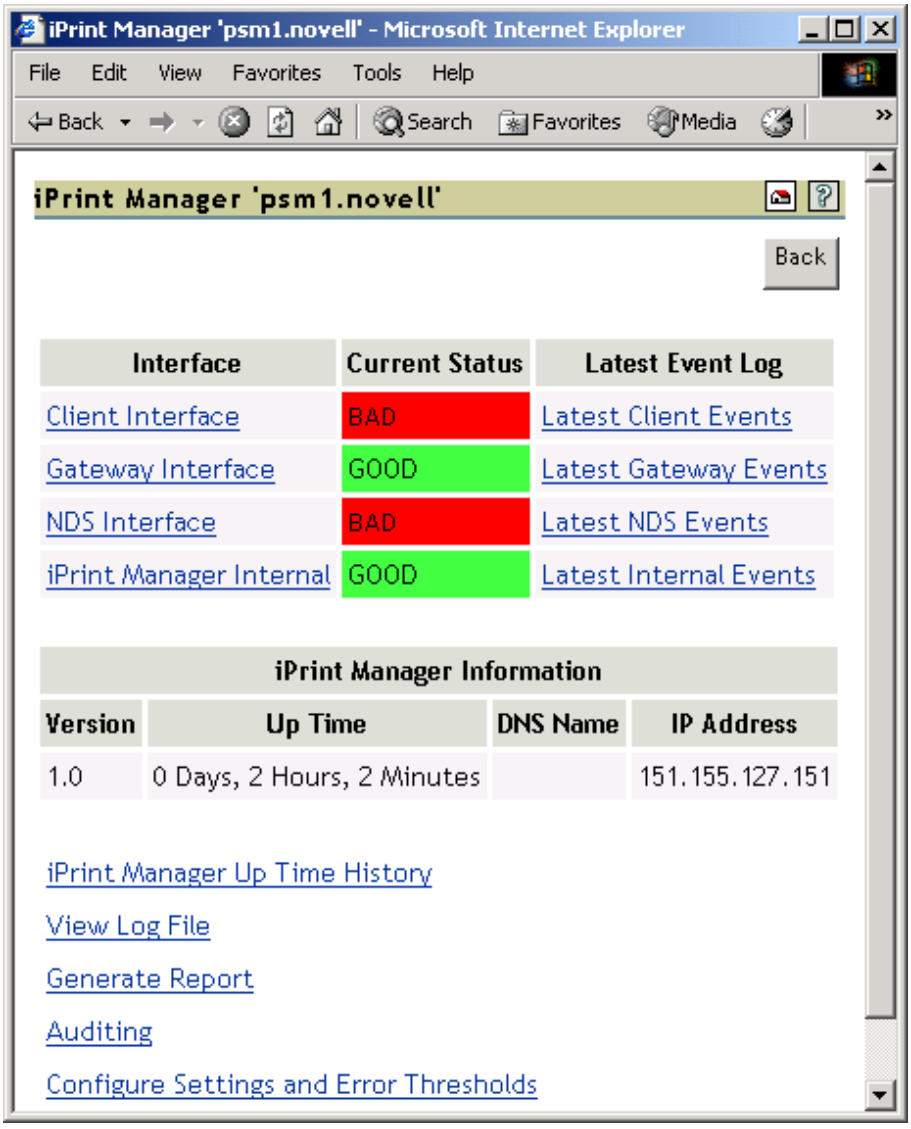
Description: Client Interface Page with Bind to Printer Agent Selected



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*.

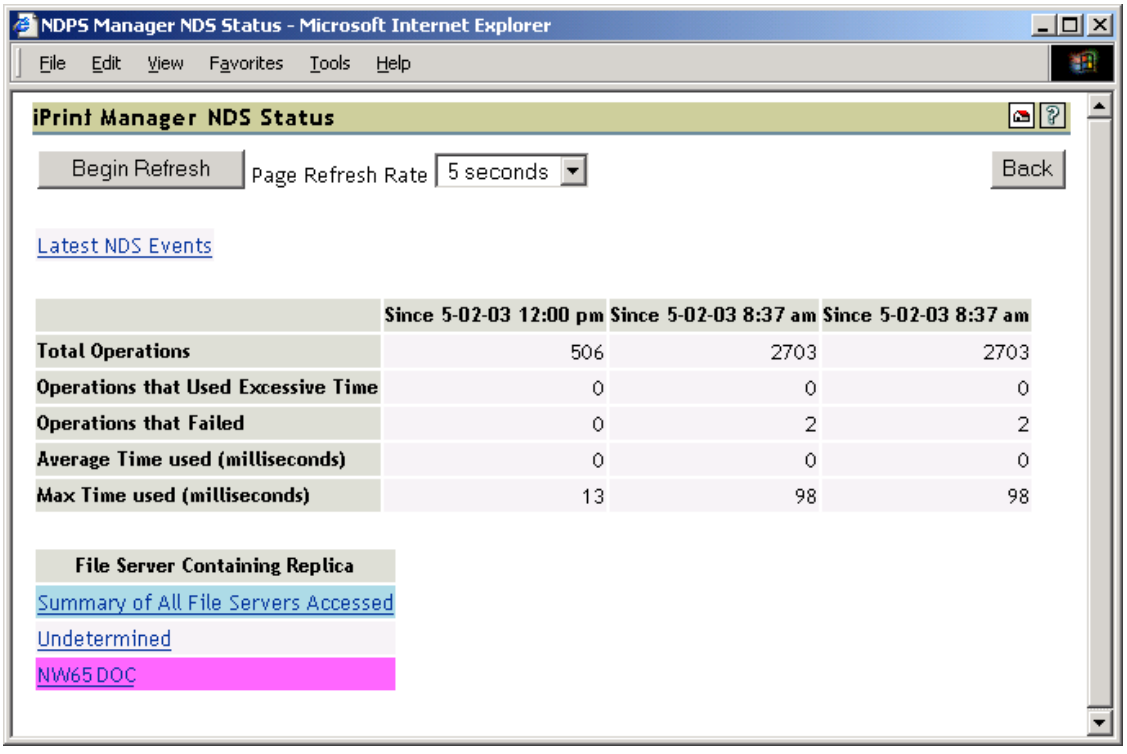
Description: Advanced Print Manager Summary



6 Click the *File Server Containing Replica* for Falcon3.

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

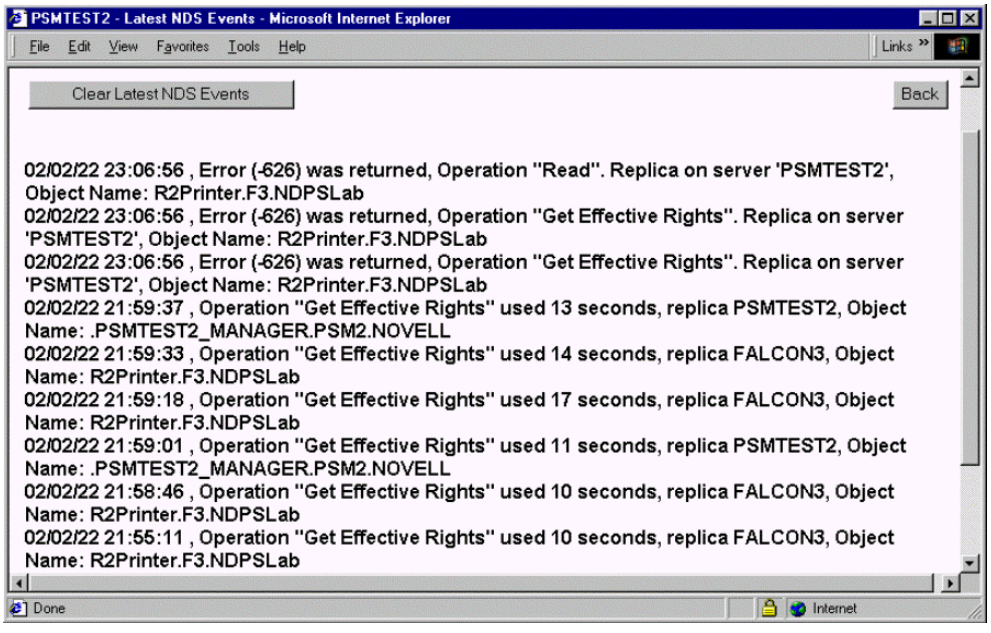
Description: NDS Interface Page



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 want to ensure that eDirectory is healthy.

Description: Latest NDS Events Log



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.

Documentation Updates

A

The *iPrint Manager Health Monitor for Linux Administration Guide* has been updated for the following dates:

- Section A.1, “November 1, 2005,” on page 71
- Section A.2, “August 19, 2005 (Open Enterprise Server SP1),” on page 71

A.1 November 1, 2005

Location	Change
Entire guide.	Page design reformatted to comply with revised Novell® documentation standards.

A.2 August 19, 2005 (Open Enterprise Server SP1)

Location	Change
Section 4.6.4, “Configuring Automatic Log Rotation,” on page 44	Section added.