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Embedded Ethernet Interface Web Page

Overview

The Ethernet Interface comes with an extremely powerful printer management tool that allows you to monitor, configure, and manage both the printer and its print job. The Ethernet Interface comes with an embedded web server that allows System Administrators and users access to its printer management capabilities from a standard web browser.

The Ethernet Interface printer's IP address is used as a URL, similar to the URL of an Internet web page. When a web browser is activated and the printer's IP address is entered, the printer's embedded web server will display its home page, with links to the printer's status and configuration settings.

All of the Ethernet Interface's configuration settings are protected by a password so unauthorized users cannot make changes. When you try to open any of the Ethernet Interface's configuration pages, you are asked for your user name and password. At the prompt, you need to enter **root** (unless you have another user configured with root privileges) followed by the associated password. If there is no password, just press **ENTER**. For more information on setting passwords, refer to "Ethernet Interface Security" on page 313.

After you configure the Ethernet Interface settings, and click the SUBMIT button on the related form, re-power the Ethernet Interface should to ensure the latest settings are in use. To reset the Ethernet Interface, go to the System form under the Configuration Menu and click the REBOOT button.

The embedded Ethernet Interface Web server gives you the ability to configure the network adapter, monitor printer status, and to manage print jobs. The Ethernet Interface Web page structure is divided into several menus, as shown in Figure 4.

Configuration

The Configuration menu items allow you to configure the settings for the following items:

- Network - this menu item allows you to change the network setting for each protocol: TCP/IP, NetBIOS over TCP/IP, and Netware.

- Print Path - this menu item allows you to change the name of the destination queues, and define how the print job will be preprocessed before printing. It allows you to select what information to log, and to specify the SMTP server's IP address.

- Print Model - this menu item displays model settings one at a time.

- Log Path - this menu item displays log path settings one at a time.

- TN5250/3270 - this menu item allows you to configure the TN5250/3270 settings.

- SNMP - this menu item allows you to configure the SNMP trap manager settings. It also allows you to define the printer event types to monitor, and the e-mail address that should receive alert notifications.

- Administration - this menu item allows you to define or change the printer name, location, description, etc. It also allows you to change the root and guest user passwords.

- System - this menu item allows you to reboot the Ethernet Interface, or restore its settings to the factory default.

Network Configuration

The network configuration allows you to specify the setting for each network protocol. Beside each protocol name is a checkbox which allows you to enable or disable each protocol depending on your network printing needs.

NOTE: TCP/IP is the only supported protocol which is always enabled.

TCP/IP Network

Figure 6. TCP/IP Network Configuration

Interface

The two edit fields contain the Ethernet Interface's IP address and subnet mask. The check boxes enable the RARP, BOOTP, and DHCP protocols, which are alternate methods of assigning IP addresses. On most networks, you want to enter a permanent IP address and subnet mask and disable RARP, BOOTP, and DHCP. However, if your network requires one of these, you should clear the IP address (and possibly the subnet mask) fields and ensure that the appropriate check box is selected.

Routing

The routing table tells the Ethernet Interface which router or gateway to use to access other subnets or hosts. In most situations, you can simply add your router's IP address as the default router. All packets destined for other subnets will be forwarded to the default router for delivery to the destination host. If you have more complex routing requirements, add static routing entries for specific hosts or networks in the remaining Routing rows. Packets with IP addresses that match a given Destination and Mask (from the first two fields in a Routing row) will be routed to the router/gateway named in the third field. Packets which do not match any of the listed Destinations and Masks will be routed to the default router if one is set.

Windows Network (NetBIOS TCP/IP)

TCP/IP is used for Windows (i.e. Windows NT, Windows 95, and Windows for Workgroups) printing unless another protocol like IPX is available. Therefore, mandatory TCP/IP settings (i.e. IP address and subnet mask) are necessary on the Ethernet Interface. Go to "TCP/IP Network" on this form to fill in these settings if you haven't done so already.

Windows (NetBIOS TCP/IP)

NOTE: This setting relies on NetBIOS over a TCP/IP Network

Protocol	☑ Enable
Workgroup Name	WORKGROUP

Figure 7. Windows Network (NetBIOS TCP/IP) Configuration

Workgroup Name

This name specifies which Windows workgroup the Ethernet Interface will reside in.

Novell Network

Figure 8. Novell Network Configuration

FrameType

This option determines which framing scheme will be used in processing Novell signals. The different types of Ethernet packet formats include:

- Auto Sensing (the default)

- Ethernet II

- Ethernet 802.3

- Ethernet 802.2

- 802.2 Snap

Service Type

Allows you to change the Nest Server. The options are:

- Bindery

- NDS

- Auto

File Server

Define a Novell file server for the Ethernet Interface to service as either a PSERVER or an RPRINTER.

NDS

NDS (Novell Directory Services) is a distributed database of network information. An NDS contains information that defines every object on the network. For more information please see your Novell administrator.

Pserver

Define a password for the Ethernet Interface to use when logging in to the file server as a PSERVER. This is an optional file server security feature.

Rprinter

Define an RPRINTER setup so the Ethernet Interface knows to service a PSERVER.NLM on a Novell file server. Define the PSERVER.NLM name, the number of the printer serviced by the Ethernet Interface within this PSERVER.NLM, and the destination on the Ethernet Interface you want the print jobs to pass through.

Print Path Configuration

The Ethernet Interface print path is the path a print job takes when it reaches the network adapter. First the job goes to a destination/ queue (e.g. d1prn) where it then passes through an associated model (e.g. m1) for extra processing and logpath (e.g., l1) for job and printer logging. Finally the job reaches the Ethernet Interface's I/O port (e.g. PRN) where it passes through to the attached printer. The "Print Path" form displays one destination's settings at a time. From here, you can then select another destination or you can go directly to an I/O port to configure port settings.

Destination Settings

Figure 9. Print Path Configuration, Destination Settings

Name

Name of the destination. The default destination queue names are d1prn, d2prn, d3prn, and d4prn, d5prn, d6prn, d7prn, and d8prn.

Back Channel

I/O port to receive printer feedback when a print job passes through this destination. By default all print queues have no backchannel.

Services

Define what type(s) of print services the destination will support. By default all services are enabled.

- socket - printing to a TCP port number (e.g. 4000) on the Ethernet Interface

- lpd - remote printing using the Line Printer Daemon

- lpsched - System V printing using the "lp" command

- rprinter - Novell's remote printer setup

- pserver - Novell's PSERVER setup

- netbios - printing from Windows stations relying on NetBIOS over TCP/IP

- ftpd - printing using the File Transfer Protocol (FTP).

- tn5250/3270 - printing using tn5250/3270 configuration

Selected Model

Defines the model configuration that is to be associated with the current destination. The default model names are m1, m2, m3, m4, m5, m6, m7, and m8.

Current Model Settings

Figure 10. Print Path Configuration, Current Model Settings

Model Type

The option is available on the Print Model web page. For a description, see page 51.

Banner Page

The option is available on the Print Model web page. For a description, see page page 52.

Filter

The option is available on the Print Model web page. For a description, see page 52.

Header String

The option is available on the Print Model web page. For a description, see page 52.

Trailer String

The option is available on the on the Print Model web page. For a description, see page 53.

Printer Configuration

The option is available on the Print Model web page. For a description, see page 53.

Selected Log Path

This option defines the log path configuration that is to be associated with the current destination.

Current Log Path Settings

Figure 11. Print Path Configuration, Current Log Path Settings

Log Path Type

The option is available on the Log Path web page. For a description, see page 54.

Log Path Port

The option is available on the Log Path web page. For a description, see page 55.

Print Model Configuration

Print Model

Model Settings: m1

Name	m1
Model Type	☑ raw
Banner Page	Type: ⦿ none ○ text Position: ⦿ before ○ after
Filter	☐ insert carriage return after line feed
Header String	(None) (None) (None) (None)
Trailer String	(None) (None) (None)
Printer Configuration	(None)

Submit   Clear Form

Figure 12. Print Model Configuration

Name

Name of the model. The default model names are m1, m2, m3, m4, m5, m6, m7, and m8.

Model Type

Define what processing (if any) will be performed on print jobs passing through the associated destination. If set to "raw", the job will not be touched by the network adapter.

Banner Page

Tell the Ethernet Interface to produce a banner page with each print job. The type of banner page data can be text. You can also specify whether the banner page should come at the front or the end of a print job.

Filter

Specify whether the Ethernet Interface is to add carriage returns to print jobs passing through that contain solitary linefeeds. This is common with Unix text jobs resulting in stair-stepped output.

Header String

Define an escape sequence to be sent to the printer before each print job. For example, you may want to send a sequence to print the job in landscape mode or to a certain tray on the printer. You can specify up to four separate sequences per header string. The Ethernet Interface will execute them in order from top to bottom. If specifying fewer than four sequences, be sure to start at the top leaving undefined fields at the bottom.

The most common sequences are listed on the form:

- Print landscape - tells the printer to print in landscape mode.
- Print portrait - tells the printer to print in portrait mode.

Trailer String

Define an escape sequence to be sent to the printer after each print job. For example, you may want to send a sequence to add a formfeed so you don't have to manually press the formfeed button on the printer. You may also want to tell the printer to reset itself in case you have set a header string which tells the printer to do something special with the job. You can specify up to three separate sequences per trailer string. The Ethernet Interface executes them in order from top to bottom. If specifying fewer than four sequences, be sure to start at the top leaving undefined fields at the bottom.

The most common sequences are listed on the form:

- PCL Reset - tells the printer to reset itself once the data completes

- End of Transmission (EOT) - tells the printer to force the end of the job

- Formfeed - tells the printer to do a formfeed at the end of the data.

Printer Configuration

Specify a printer configuration number to be loaded before processing the print job. This ability to associate a printer configurations to a logical printer model allows you to define up to eight unique and independent printer personalities in a single printer. Using this feature, you effectively have four different printers in one.

To associate a printer configuration to the currently selected destination queue, just select the desired printer configuration number from the drop down list. Once a printer configuration have been associated with a destination queue, any print job sent to that destination queue name will cause the printer to load the associated printer configuration before processing the print job.

Log Path Configuration

Log Path

Log Path Settings: l1

Name	l1
Logpath Type	☐ job ☐ user ☐ i/o port ☐ checksum ☐ printer
Logpath Port	○ pm ⊙ none ○ TCP/IP Port [ ] (e.g. 4010) ○ syslog 10.22.1.68 ○ email slsac@printronix.com

[Submit] [Clear Form]

Figure 13. Log Path Configuration

Name

Name of the log path. The default names are l1, l2, l3, l4, l5, l6, l7, and l8.

Logpath Type

Define what type of log information will be tracked for each print job passing through the associated destination. The types are:

- job - job ID, username, etc.

- user - user ID and three messages per job about the start and finish

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- checksum - value used when troubleshooting integrity of data transferred
- printer - miscellaneous messages from the printer
- i/o port - status of the printer based on the port interface signals.

Logpath Port

Define where logging information for print jobs passing through the associated destination will be reported. The choices are:

- prn - reported to the PRN port
- none - don't report any logging information
- TCP/IP port - to a TCP port number (specified in the edit field)
- syslog - to a host (specified by the IP address in the edit field) running a SYSLOG daemon
- email - to an e-mail address (specified by the e-mail address and the SMTP server IP address edit fields). You can set the option on the Administration web page.

NOTE: The values defined in Logpath Type and Logpath Port are common among all destination queue.

Default: no logging turned on.

TN5250/3270 Configuration

The TN5250/3270 configuration form allows you to specify settings for up to eight different TN5250/3270 sessions.

NOTE: The standard Printronix NIC module does not support TN5250 protocol. However, the TN5250 software is available as an option you can order or as factory installed.

TN5250/3270 Configuration

Configuration for Print Path d1prn

NOTE: Changes will only take effect after you reset the WLAN PrintNet Enterprise from the System page.

Mode: TN5250 Click here for TN3270 mode

AS400 Host [   ] ok
(eg. 204.191.175.114 or as400.domain.com)

Port [23]

Device Description [   ]

Message Queue Name [QSYSOPR]

Message Queue Library [*LIBL]

Device Type IBM

WSCST Name [   ]

WSCST Library [*LIBL]

Host Transform ☐

Auto Connect ☐

Start Auto Connect Click here

[Submit] [Clear Form]

Figure 14. TN5250/3270 Configuration, TN5250 Mode

TN5250/3270 Configuration 📖

Configuration for Print Path d1prn

NOTE: Changes will only take effect after you reset the WLAN PrintNet Enterprise from the System page.

Mode: TN3270 Click here for TN5250 mode

AS/400 Host [   ] ok

(eg. 204.191.175.114 or as400.domain.com)

Port [23]

Resource Name [   ]

Auto Connect ☐

Start Auto Connect Click here

[Submit] [Clear Form]

Figure 15. TN5250/3270 Configuration, TN3270 Mode

Mode

Specifies the TN protocol mode for the current configuration.

Default: TN5250

Host IP

Specifies the IP address or domain name of the host (AS/400 for TN5250) for the current configuration.

Default: Unconfigured (empty) host.

Port

Specifies the UDP port number of the TN5250 or TN3270 server for the current configuration.

Default: 23

Resource Name

(TN3270 mode) Specifies the name of the AS/400 LU session for the current configuration. The resource name entered will be the name of the printer device created on the AS/400 host for the current session. The name is limited to 10 characters in length, must start with an alpha character (a-z, A-Z), and contain only alphanumeric characters and underscores.

Default: Unconfigured (empty) resource name

Device Description

(TN5250 mode) Specifies the name of the printer device for the current configuration. The description entered will be the name of the printer device created on the AS/400 host for the current session. The name is limited to 10 characters in length, must start with an alpha character (a-z, A-Z), and contain only alphanumeric characters and underscores.

Default: Unconfigured (empty) description

Message Queue Name

(TN5250 mode) Specifies the queue name to which system messages will be logged.

Default: QSYSOPR

Message Queue Library

(TN5250 mode) Specifies the queue library to which system messages will be logged.

Default: *LIBL

Device Type

By default, the device type is always set to IBM.

WSCST Name

(TN5250 mode) As declared on the AS/400 host for the created printer device.

Default: *NONE

WSCST Library

(TN5250 mode) As declared on the AS/400 host for the created printer device.

Auto Connect

Specifies whether the PrintNet Enterprise will automatically connect to the AS/400 host.

Default: Disabled
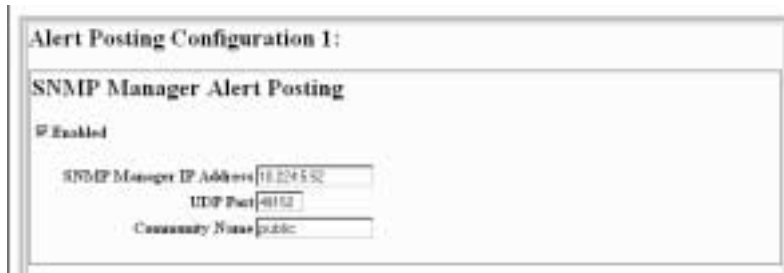
Start/Stop Auto Connect

Specifies whether the PrintNet Enterprise should retry automatic connection to the AS/400 host.

Default: 'Start' if Auto Connect is currently stopped, 'Stop' if Auto Connect is currently started.

SNMP Configuration

The SNMP Configuration form allows you to configure SNMP trap managers and the e-mail alert features of the Ethernet Interface. It allows you to configure how SNMP alerts are processed by a SNMP trap manager, an Unix syslog logging daemon, and/or have e-mail notifications sent. Up to 10 SNMP trap managers and e-mail recipients may be specified. Individual alerts fall into one of 12 alert group categories, providing the ability to filter alert notices as desired.

SNMP Manager Alert Posting Settings

Figure 16. SNMP Manager Alert Posting Configuration

Specifies whether alerts from the enabled alert group categories for this configuration will be sent to the SNMP manager. If this option is enabled, the following information must be entered:

- SNMP Manager IP Address - specifies the IP address of the SNMP trap manager

- UDP Port - specifies the UDP port number used by the SNMP trap manager for receiving trap messages. Acceptable values are 162, and 49152 through 65535

- Community Name - up to 15 character string specifying the trap community name.

Syslog Alert Posting Settings

Figure 17. SNMP Syslog Alert Posting Configuration

Specifies whether alerts from the enabled alert group categories for this configuration will be sent to the Unix syslog daemon. If this option is enabled, the syslog daemon IP address must be entered in the syslog field in the Logpath Port section under the PrintPath menu item.

Email Alert Posting Settings

Figure 18. SNMP Email Alert Posting Configuration

Specifies whether alerts from the enabled alert group categories for this configuration will be sent to the specified e-mail address. If this option is enabled, the following information must be entered:

• Email Address - specifies an e-mail address to which alert information will be sent.

- Short E-mail Format - specifies whether a short (15-80 character) alert e-mail message should be sent.

  If enabled, the message will contain the alert description, the severity level, and device name (unless the length of the message exceeds the Short E-mail Message Length, in which case the message will be truncated.

  If disabled, the message will contain additional information including the device name and location, alert description, alert group, and alert severity level, and printer status.

  Default: Disabled

- Short E-mail Message Length - specifies the maximum size of the short e-mail message. Acceptable values are 15 to 80 characters.

  Default: 80 characters

- Send Test Message - provides a way to test the validity of the e-mail address/SMTP server address. If checked, a test message will be sent to the specified e-mail address when the submit button is pressed.

  Default: All alert groups are disabled by default.

If the alert message is to be sent to a cellular phone or pager, the Short Email Format option should be enabled. Once this option is enabled, you may specify the maximum e-mail message length (15-80 characters). When enabled, the message will contain the alert description, the severity level, and device name (unless the length of the message exceeds the Short Email Message Length, in which case the message will be truncated).

If the Short Email format is disabled, the message will contain additional information including the device name and location, alert description, alert group, alert severity level, and printer status.

To test the validity of the e-mail address and the SMTP server address, enable the Send Test Message option. If the Send Test Message box is checked, a test message will be sent to the specified email address when the submit button is pressed.

Alert Groups

Figure 19. SNMP Alert Groups Configuration

Specifies which alert groups are enabled for reporting for this configuration. When an alert occurs that is contained in one of the enabled alert groups, it will be posted to the specified SNMP manager, Unix syslog daemon, and/or e-mail address. The following table describes which printer events belongs to which Alert Group.

Table 7. Alert Groups and Printer Events

Alert Group	Printer Events
Offline	Printer is Offline Hold Print Time Out
Warning	COMM Check Invalid Address CU Time Out CU Not Enabled File System Full File Exist Hex Dump Mode Half Speed Mode Printer Warm Print Head Warm 2B-Toner Density Too High 2C-Toner Density Too Low

Table 7. Alert Groups and Printer Events

Alert Group	Printer Events
Media Input	Load Paper Paper Out Time Out Fanfold Paper Empty No Fanfold Paper 63-CutSheet Feeder Fail Cutsheet Pick Miss No Paper Tray Paper Jam at Entrance Cutsheet Cover Open Cutsheet Paper Empty Tray Mismatch
Media Output	Stacker Full Stacker Jam Time Out Stacker Full Time Out Stacker Fault Time Out Stacker Jam Stacker Fault Stack Over Flow Stack Under Flow Stacker Fail Stacker Interlock Fail Stacker Not Ready

Table 7. Alert Groups and Printer Events

Alert Group	Printer Events
Media Path	Clear Paper Jam Paper Jam Time Out Paper Jam Fuser Paper Jam Exit Cutsheet Path Open Paper Jam at Drum Paper Jam at Fuser Paper Jam at Exit Tractor MTR FWD Speed Error Tracker MTR BKWD Speed Error Paper Jam at Entrance Cutsheet Motor Fail Cutsheet Feeder Fail Clear Jam at Fuser Input Clear Jam at Fuser Exit Clear Jam Near TOF Lever
Marker	Ribbon Stall Time Out Ribbon Ink Out Ribbon Stall Ribbon Drive Shuttle Over Speed Ribbon Fault Ribbon Detected Print Head Up Ribbon Broken Ribbon Load Bad Ribbon Take-up Full 2A-Toner Empty Add Toner Install Toner Cup
Cutter	Cutter Fault Cutter Fail
Bar Code	Barcode Fail Specification Barcode Quiet Zone Too Small Barcode Improper Data Format

Table 7. Alert Groups and Printer Events

Alert Group	Printer Events
Scanner	Unscannable Check Media Poor Scanning Check Head and Heat Poor Scanning Inspect Head Poor Scanning Check Media Contrast Too Low Check Media
Intervention	These are error messages that need some kind of user intervention to solve them.
Consumable	Ribbon Low Toner Low
Label	Label Present Gap Not Detected

NOTE: Not all of the alerts are available on all of the printers. The alerts available for monitoring will depend on the printer type and the options installed on the printer.

Administration Configuration

The Administration Configuration form is broken down into general print server-related settings and password security.

System Information

Figure 20. Administration Configuration, System Information

The System Information form allows you to specify the following information about the printer:

Name

Name given to the print server in Novell and Windows environments. The default name is "M_xxxxxx" where "xxxxxx" equals the last six digits of the network adapter's Ethernet address (e.g. M_031C1A).

Description

Optional field to help identify the printer's features and capabilities.

Location

Optional field to help identify the printer's physical location.

Contact

Optional field to help identify the individual or group responsible for the printer.

Printer Serial Number

A serial number that the user can enter through the PrintNet Webpage to keep track of the PrintNet/printer.

Syslog

Specifies the IP address of a host running the SYSLOG daemon. IBM 6400i debugging or printer logging information can be sent to the IP address.

Default: Unconfigured (empty).

Email

Defines the user email address to receive printer and job logging information from log paths on the IBM 6400i.

Default: Unconfigured (empty).

SMTP Server

Specifies the IP address of the SMTP server to be used for processing email messages generated by the IBM 6400i.

Default: Unconfigured (empty).

DNS Server

Specifies the IP address of the domain name server to be used for resolving host names (e.g. host.domain.com) to IP addresses (e.g. 192.168.0.42).

Default: Unconfigured (empty).

Passwords

Figure 21. Administration Configuration, Passwords

Only a user with root privileges can alter the Ethernet Interface's settings. Guest users can only view settings but cannot alter them. Both types of users can be assigned passwords. To change a password, type in the old password in the "Old" field. Then type the new password twice: once in the "New" field, and once in the "Confirm" field.

Default: No passwords for root or guest users.

System Configuration

Figure 22. System Configuration

The System Configuration form allows you to change the Ethernet Interface's operation mode. Select "Reboot" to re-power the print server. Select "Default" to reset the print server and have it come up with factory default settings.

Status

The Status menu items allow you to view the current status of both the printer and the network. The submenu items available are as follows:

- I/O Port - this menu item allows you to view the current status of the printer, including the print jobs that are queued or are currently active.

- Network - this menu item allows you to view the current status of the network connection.

Status - I/O Port

The I/O Port Status form allows you to remotely see what is happening on the Ethernet Interface I/O port. The port's status and a list of active and queued jobs will be displayed. You can cancel a job (as long as you have permission to) by clicking on the Cancel icon beside the desired job. If you see "waiting" in the "Status" line, this indicates the network adapter is either waiting for data from the host or for feedback from the printer. If you see "blocked" in this line, this indicates the printer is not allowing the Ethernet Interface to send anymore data. The printer could be busy processing data it has already received or it could be in an error state.

The printer status display is automatically refreshed every minute.

NOTE: You cannot cancel a print job with an IPDS Emulation. Do not click the Cancel icon.

Status - Network

This form allows you to view the current status of the network. The statistical data provided is broken down by network protocol. You can use this form to troubleshoot network-related problems.

IBM Printing Systems

The IBM Printing Systems web site which contains product information, technical support, and more.