

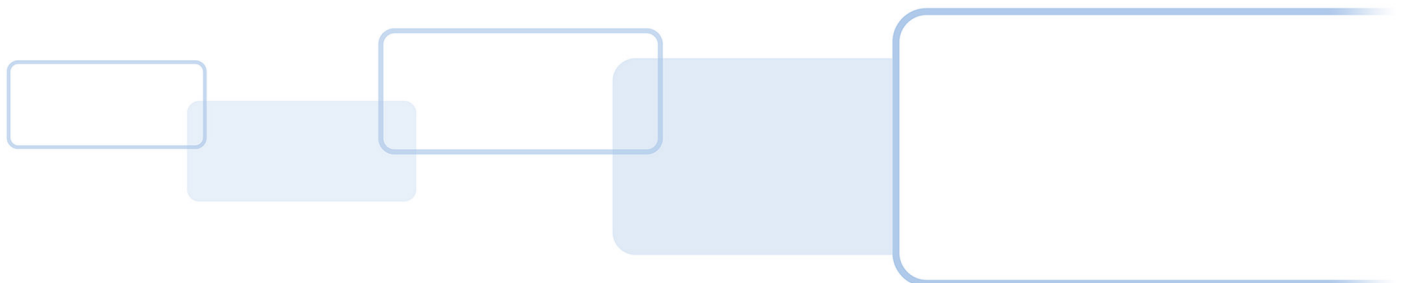


# **HDP<sup>®</sup>5000, HDP5600, HDP8500, AND HDP<sup>II</sup> PLUS ETHERNET**

## **USER GUIDE**

L001675, Rev. 1.2

July 2019





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## 1 Using the Ethernet option

### 1.1 Introduction

The Ethernet option includes the Ethernet port and the internal printer server.

- **Printer Management:** The printer driver provides bi-directional status information so you can monitor and manage the printer just as you would any other networked printer.
- **Compatibility:** The Ethernet option provides compatibility with TCP/IP and 802.3 Ethernet protocols with an IEEE 802.3 10/100Base-T Ethernet female RJ45 connector.
- **Application:** The Ethernet Option applies to the card printer/encoder. With the Ethernet option properly installed and configured, these printers are able to print in the same manner as a printer directly connected to the PC using a USB interface.

**Important:** Any reference to a specific printer name is for demonstration purposes only. Your printer name varies according to what you are using.

### 1.2 Technical Specification - Ethernet Option



For safety purposes, Ethernet is not intended for a direct connection outside of the building.

Function	Requirement
Network	An IEEE 802.3 10/100 Base-T Ethernet network is required.
Printer	A printer with the Ethernet option installed is required.
Printer Configuration	Since TCP/IP is used for the network communication, the printer must be configured with an IP address and a subnet mask (before it can be seen on the network). An additional network setting for the default gateway can also be configured, which allows communication across the subn ets.
Host Computer	A PC running Windows 7 (32- or64-bit), Windows 10 (32- and 64-bit), Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, and Windows Server 2016.
Host Printer Driver	The host PC must have the correct printer driver with Ethernet support installed. <b>Note:</b> This driver must be configured for printing to the IP address of the printer.

### 1.3 Functional Specification – Ethernet Option

The Ethernet option includes these features.

Feature	Description
Simultaneous Printing	Provides the ability to simultaneously print from multiple PCs to the network printer.
Printer Feedback	Provides status information from the network printer to the PC.
Web Pages	Provides easy printer configuration with any web browser.
Log Messages	Provides logging of usage and error events using e-mail, UDP or TCP/IP.
Password Security	Provides security with passwords and configurable user permission levels.
Telnet	Provides a Telnet command line interpreter for printer configuration.
SNMP	Provides an SNMP agent that supports MIB-II.
Upgrades	Provides support for firmware upgrades over the network.
Troubleshooting	Provides a Ping client for network troubleshooting.
IP Tracer	Provides a utility (IP Tracer) used to find the printers with Ethernet connection on a local network.



# Section 2

## 2 Network services overview

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The Ethernet option provides the services described in this section.

**Note:** Other additional services include a Ping client, address assignment, and printer discovery functions.

### 2.1 Print server

The print server provides printing services in the same manner as a printer connected directly to a USB interface except that the printer is connected through the local area network to the client PC. The print server must be properly configured to provide this printing capability.

- The print server is capable of queuing up to eight client PCs while printing. Communications between each PC and the Ethernet-enabled printer are implemented over a bi-directional TCP/IP interface.
- All clients are able to send print jobs to the printer and monitor printer jobs and errors with the standard Windows printing system using the printer driver installed on their local PC.

In this way, you know whether or not a print job has been successful. Also, you know what problems have been encountered while processing the print job. Printing using Ethernet works in a manner similar to the USB-connected PC/printer.

### 2.2 Web page server

An HTTP service serves web pages that provide an interface through which to configure and monitor the printer.

**Note:** Users may also monitor all print jobs that have been sent to the printer from any client PC.

### 2.3 Reviewing the Network Management interface

The Ethernet enabled printer operates as an SNMP agent to allow central administrators to monitor and configure the network interface and the printer.

**Note:** A standard host MIB-II is implemented to maximize the utility of the printer on the network.

## 2.4 Telnet server

The Ethernet interface has a command line interpreter. You can connect to the printer using a Telnet session on your PC, issue commands to the printer and receive responses from the printer.

The Telnet commands are primarily used for network administration, and they are not used by most users. These commands query the state of the printer and configure various settings for the printer. These include network settings, logging settings, user names, and user passwords.

## 2.5 Network Management interface

The SNMP interface is an Ethernet interface that is a fully-manageable SNMP agent that supports MIB-II. The Ethernet interface is MIB-II compliant, allowing SNMP managers to monitor protocol, network, and routing statistics.



# Section 3

## 3 Telnet server

The Ethernet interface has a command line interpreter. You can connect to the printer using a Telnet session on your PC, issue commands to the printer and receive responses from the printer.

The Telnet commands are primarily used for network administration, and they are not used by most users. These commands query the state of the printer and configure various settings for the printer. These include network settings, logging settings, user names, and user passwords.

### 3.1 Telnet client for Windows operating systems

If a Telnet client is not installed, download and install an appropriate Telnet client for your Windows operating system.

### 3.2 Telnet command line interface

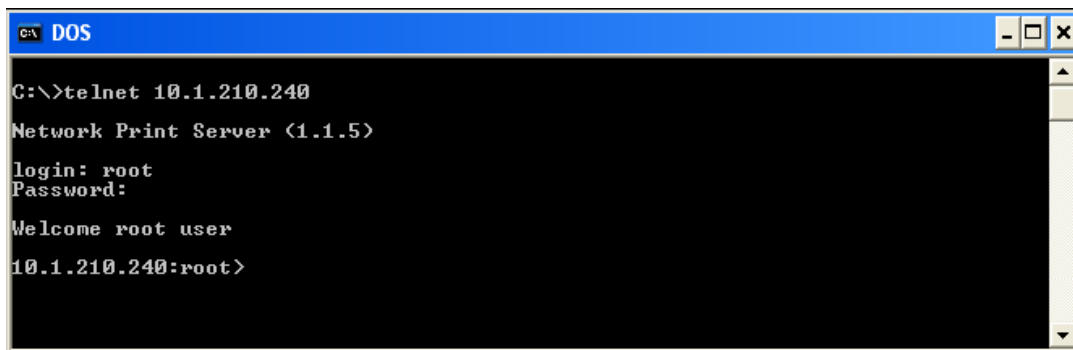
#### 3.2.1 Initiating a Telnet session

This procedure shows how to initiate a Telnet session from a PC to access the Telnet services provided by the printer. Use the following instructions to issue Telnet commands.

1. Identify the IP address of your printer. (See *Section 4.13.1 Accessing the IP address of your printer.*)
2. Initiate a Telnet session from a DOS window on your PC. At the DOS prompt, enter

```
telnet [IP Address]
```

For example: C:\>telnet 10.1.210.240.



```
C:\>telnet 10.1.210.240
Network Print Server (1.1.5)
login: root
Password:
Welcome root user
10.1.210.240:root>
```

- All Telnet responses from the printer are displayed in the Telnet session on the PC.
- All commands entered are sent to the Telnet client in the printer.
- Enter “help” or “?” to get an on-window list of supported Telnet commands.

### 3.2.2 Telnet command table

The following table describes available Telnet commands.

**Note:** You can enter partial full-word commands, the printer responds with additional help. For example, you can enter “list”, and the printer responds with all subcommands to the list command.

Telnet Command		Command Purpose	Command Format
?		Display help for Telnet commands.	?
help			
reset		Reset the Ethernet interface for the Printer/Encoder.	reset
ping		Send a ping command to another IP address as a test of the Ethernet interface.	ping <IPADDR>
	diff	Display all differences between current and stored network settings.	list diff
	uptime	Display how long since the interface was last reset.	list uptime
	sysinfo	Display information about the printer (i.e., model, label, contact, location, Firmware version and date, and serial number).	list sysinfo
	ribbon	Display information about the installed Ribbon in the printer.	list ribbon
	net	Display information about the current network settings of the Ethernet interface.	list net
stored	net	Display information about the stored network settings of the Ethernet interface.	list stored net
default	net	Display information about the default network settings of the Ethernet interface.	list default net
User		Display information about the defined User names and their type (root or guest privileges).	list User
lpq		Display information about print jobs and their settings.	list lpq
Printer		Display information about the printer (i.e., model number, Firmware version and serial number).	list printer
Printer	sm	Display information about the secure mark settings of the printer.	list printer sm

Telnet Command		Command Purpose	Command Format	
set	sysinfo	contact	Set the contact string.	set sysinfo label [<STRING>]
		location	Set the location string.	set sysinfo location [<STRING>]
		label	Set the label string.	set sysinfo label [<STRING>]
		from	Set all strings from default or current settings.	set sysinfo from default current
	syslog	name	Change the name of a system log path	set syslog <LOG_NAME> name <NEW_NAME>
		type	Change the type of a system log path. This starts or stops logging on start of jobs or on faults.	set syslog <LOG_NAME> type [[-]job] [[-]pfault]
		dest	Change the destination of a system log path. This may be set to none, e-mail, udp or tcp.	set syslog <LOG_NAME> dest none email udp tcp
		email	Change the e-mail address for e-mail notification for a system log path. It must specify a valid e-mail address.	set syslog <LOG_NAME> email <EMAIL>
		udp	Specify the IP address of the UPD system logging program.	set syslog <LOG_NAME> udp <IPADDRESS>
		from	Restore system log path settings from the default or current settings.	set syslog from default current
set	User	add	Add a new User definition. The printer allows only two (2) User definitions.	set User add <NAME>
		del	Delete a User definition.	set User del <NAME>
		passwd	Define a new password for a User.	set User passwd <NAME> [<PASSWORD>]
		type	Specify a User as root or guest. Only root Users have administrative rights to change network interface settings.	set User type <NAME> root guest
		from	Restore User setting from default or stored settings.	set User from default stored

Telnet Command		Command Purpose	Command Format	
store	net	addr	Store a new IP address.	store net addr <ADDRESS>
		mask	Store a new address mask.	store net mask <MASK>
		gateway	Store a new default gateway.	store net gateway <ADDRESS>
		dns	Store a new DNS server address.	store net dns <ADDRESS>
		domain	Store a new DNS domain suffix.	store net domain <STRING>
		opts	Enable or disable automatic address assignment using DHCP. Static (non-automatic) addresses will come from the stored or default settings, depending on the other settings.	To enable automatic address assignment: store net opts dhcp To disable automatic address assignment: store net opts -dhcp
	from	Restore the network settings from either the default settings or the current settings.	store net from default current	
	ifc	mode	Specify the Ethernet interface mode as: automatic, full or half duplex; 10 or 100 mHz. <b>Note:</b> 100 mHz. is not supported by the printer.	store ifc mode auto 10half 10full 100half 100full
from		Set the Ethernet mode settings from the default or current settings.	store ifc from default current	
save		Save all current settings as the stored settings in the permanent memory.	save	
load		Take the settings from the stored memory and make them the current settings.	load	
lpstat		Display information about the printer status. This includes the status and device response. See the printer web page description.	lpstat	
cancel		Cancel a specific print job from the print queue.	cancel 10	
quit		Stop the current Telnet session.	quit	

# Section 4

## 4 Ethernet web pages - standard procedures

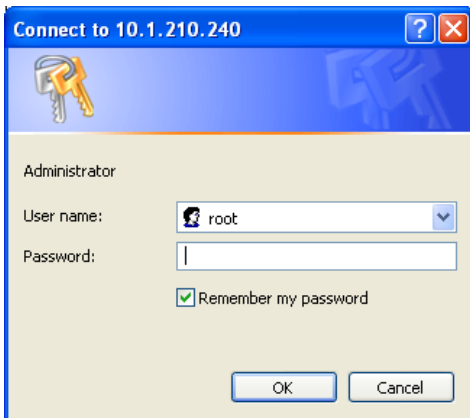
### 4.1 Web page security

You can use the web pages from your Ethernet-connected printer to view several attributes about the printer. You must have administrative rights and enter the correct password to alter settings of the printer.

### 4.2 Logging in

When you attempt to change any setting, you are prompted for a user name and password.

1. Enter the **User name**:
  - The default administrative user name is **root**.
  - The default non-administrative user name is **guest**.
  - Non-administrative users can only view settings.

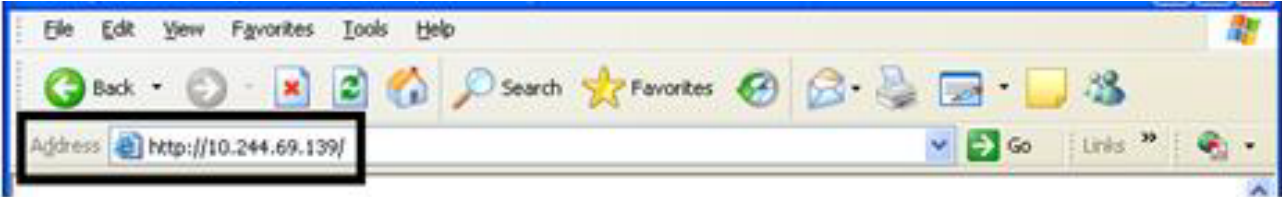


2. Enter the **Password**:
  - HDP®5000 and HDP8500: The default password is **idcard**.
  - See **Password** page procedure for changing passwords.
3. Press **Enter** or click **OK**.
4. If the name and password is not accepted, another log in prompt is displayed on the screen.

**Note:** Repeat this procedure with the correct user name and password.

### 4.3 Accessing the Home page

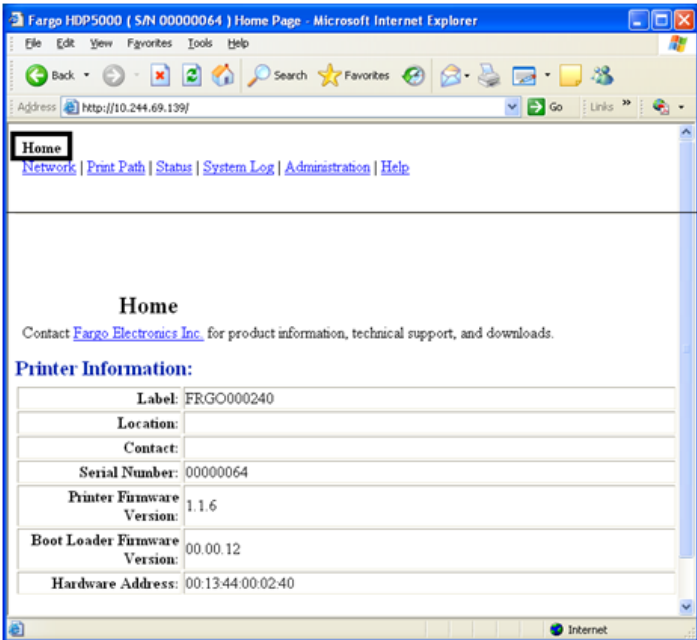
1. Open a window for your network browser application on your local PC.
2. Find the IP address of the printer. See (Section 4.13.1 Accessing the IP address of your printer
3. Enter the IP address of the printer you want to access into the address bar of the browser.



**Note:** The IP address changes for your printer installation.

4. Press **Enter** or click **GO**.
5. View the Home page. The Home page displays general information about the printer.

### 4.4 Home page

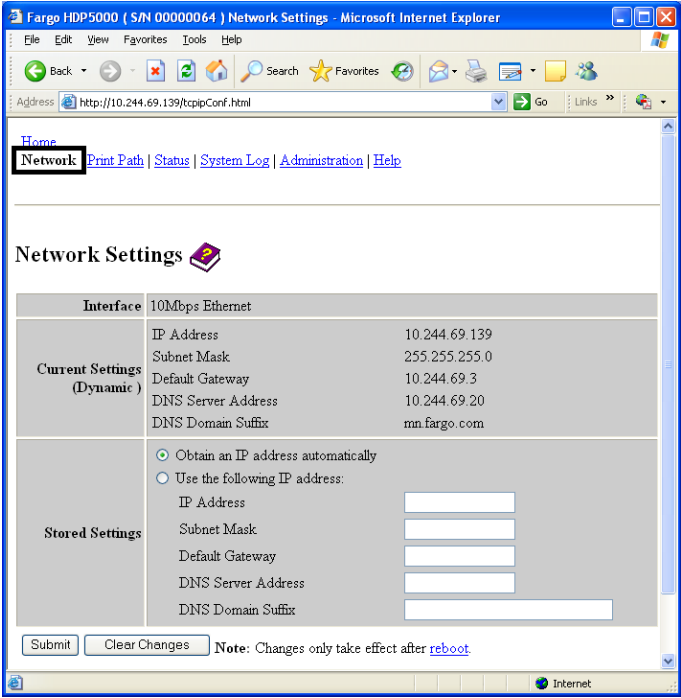


Category	Field	Purpose
Fixed for Printer	Serial Number	Displays the unique fixed serial number of the printer.
	Hardware Address	Displays the unique fixed hardware address (MAC) of the printer, which is the unique Ethernet device identifier.
Set by User (May be configured via Telnet or from the Administration web page.)	Label	Indicates the label that you assign to the printer. This label is reported to the DHCP server as the Host Name (that may be used by the DNS server to resolve the IP address of the printer). If left blank, the printer uses a unique label based on the MAC address of the printer.
	Location	Indicates the location string that you assign to the printer.
	Contact	Indicates the contact person string you assign to the printer.
Set by Firmware	Printer Firmware Version	Displays the current firmware version.
	Boot Loader Firmware Version (Printer only)	Displays the current boot loader firmware version.

## 4.5 Configuring the network settings

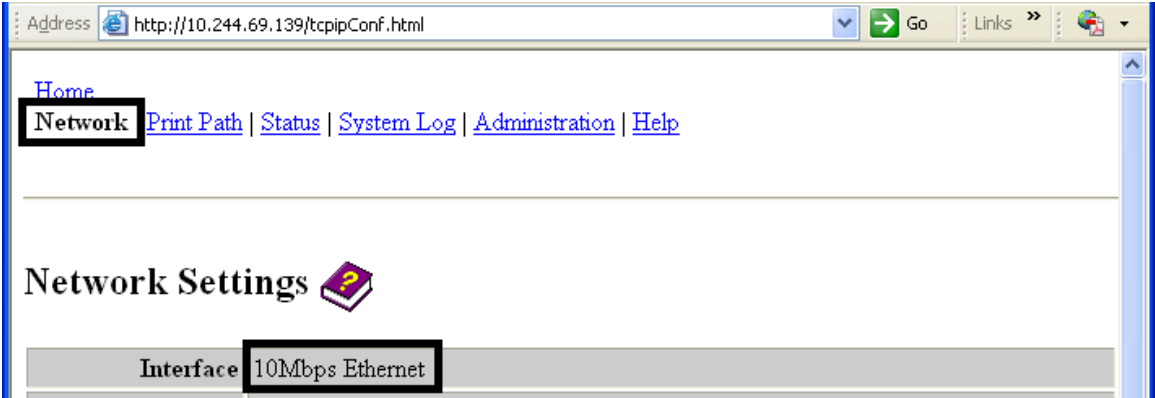
### 4.5.1 Accessing the Network settings page

The **Network** page displays the current network settings and allows you to change the settings. Click **Network** from any web page of the printer.



### 4.5.2 Reviewing the interface

The **Interface** display indicates the network speed supported by the printer.

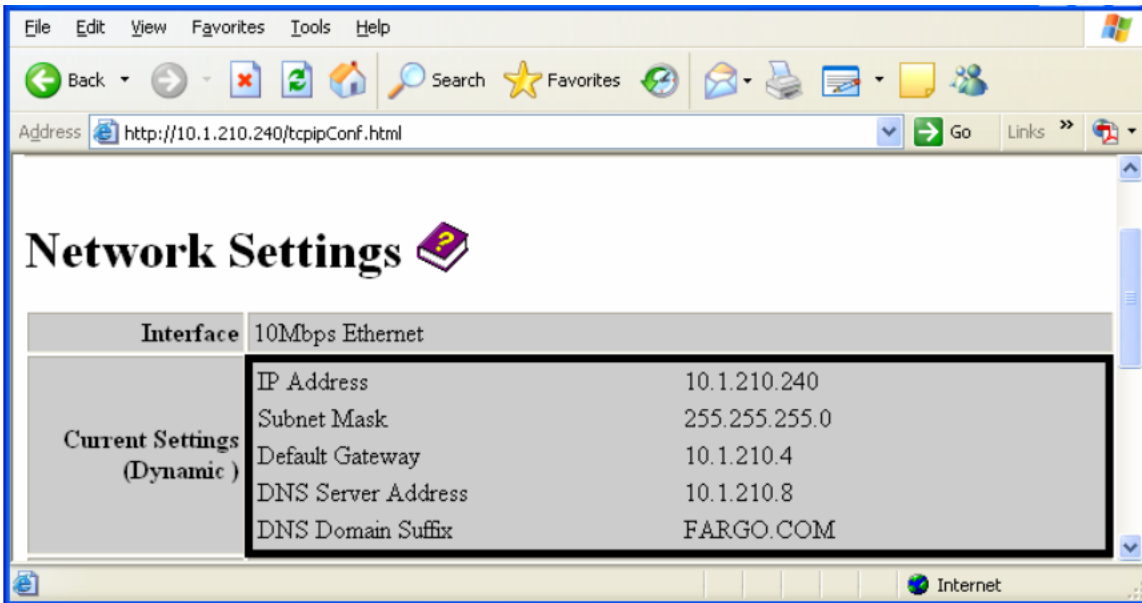




### 4.5.3 Reviewing the Current Settings

The **Current Settings** page section displays the current active network settings for the printer.

- These are also labeled as (Dynamic) if they were provided by DHCP or (Static) if they came from the stored settings.
- The current settings are (Dynamic) only if **Obtain an IP address automatically** was selected when the printer was restarted last.



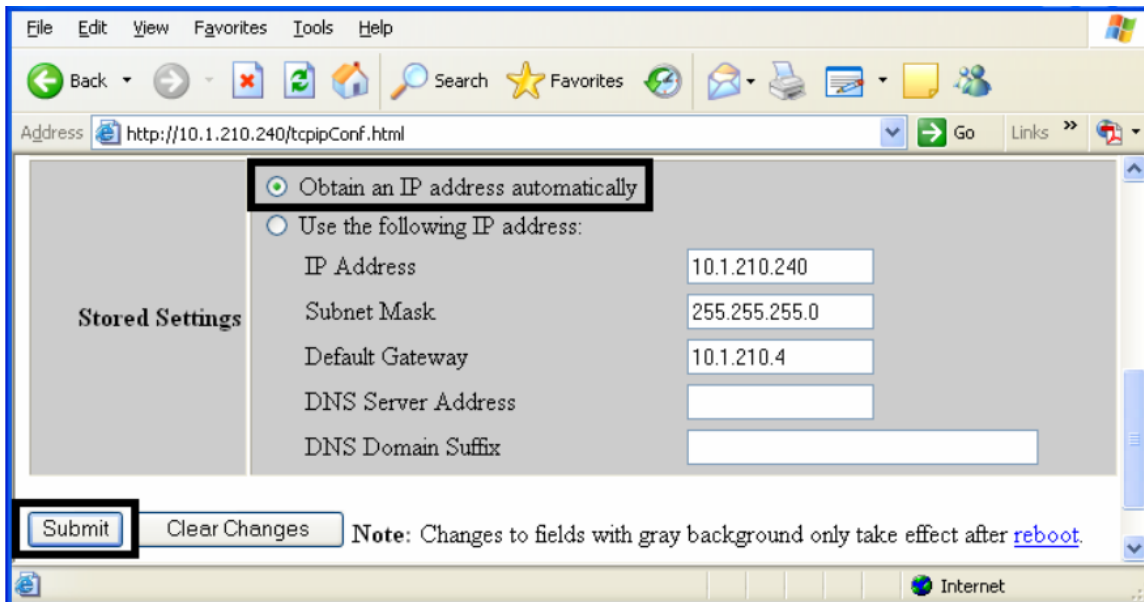
Interface	10Mbps Ethernet	
Current Settings (Dynamic)	IP Address	10.1.210.240
	Subnet Mask	255.255.255.0
	Default Gateway	10.1.210.4
	DNS Server Address	10.1.210.8
	DNS Domain Suffix	FARGO.COM

#### 4.5.4 Switching to automatic IP address mode

1. Click **Network** from any web page of the printer.
2. Select **Obtain an IP address automatically** to enable the DHCP/BOOTP, which automatically assigns the network settings.

Even with this option selected, you can enter Stored Settings, and the Stored Settings remain in memory.

**Note:** This is the default method.



3. Click **Submit** to save this setting.
4. Log in as a root user if you are prompted.

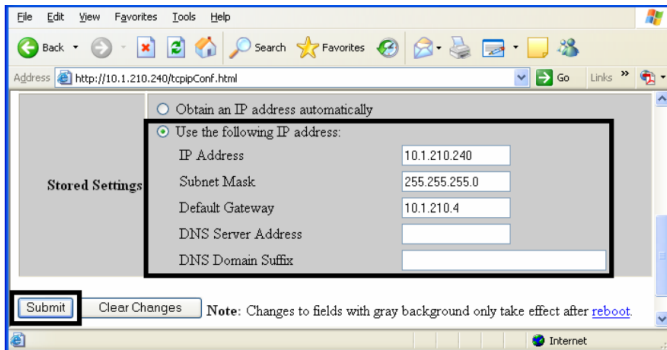
**Note:** Changes in settings are only accepted after you have successfully logged in.

5. Reboot the printer to save this change.

#### 4.5.5 Changing to static IP address mode

1. Click **Network** from any web page of the printer.
2. Select **Use the following IP address**, which prepares the printer to use network settings (that you have manually set).

**Note:** These manual settings are used the next time the printer is rebooted.



3. Enter the required **IP Address** and **Subnet Mask** network settings for Ethernet communications from within the same subnet.

With only these entries, you are unable to print from a subnet other than the subnet on which the printer is connected.

4. Enter the optional **Default Gateway** network setting for Ethernet communications across a router from other subnets.
5. Enter the optional **DNS Server Address** and **DNS Domain Suffix** network settings for DNS.
6. Select **Submit** to save these changes to the stored settings in the memory of the printer.

**Note:** These settings are not lost if the power is removed from the printer.

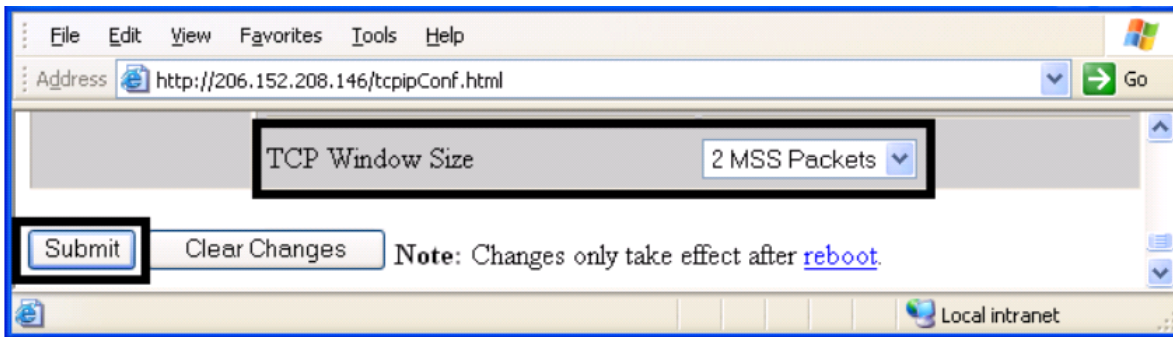
7. Log in as a root user if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.

8. Reboot the printer to save this change. See *Section 4.1 Web page security*.

### 4.5.6 Entering the TCP window size

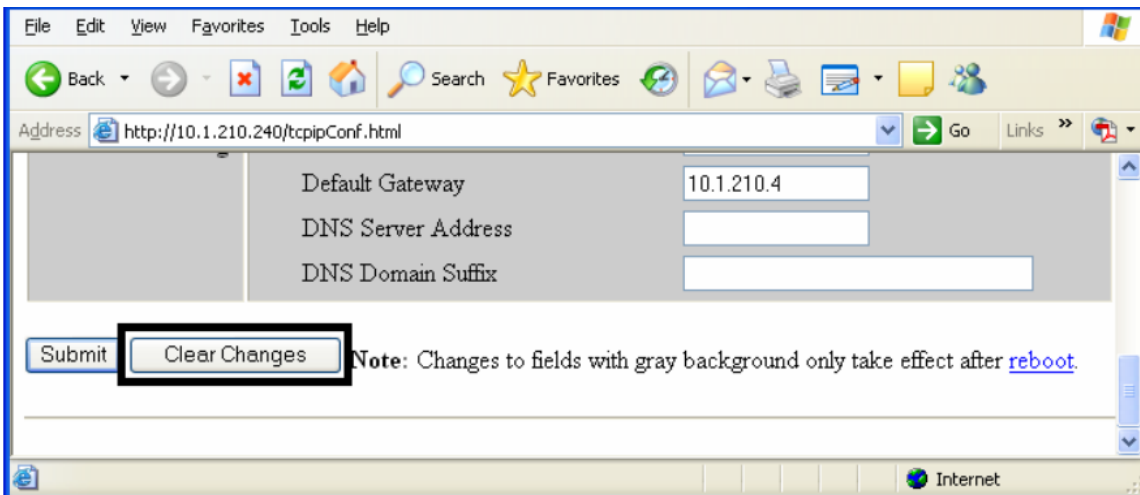
1. Click **Network** from any web page of the printer.
2. Select the **TCP Window Size** from the list.
  - This entry adjusts how much data can be sent to the printer at any one time.
  - It is recommended that the default value of **2 MSS Packets** be used to ensure good compatibility with all client applications.



3. Click **Submit** to save this setting.
4. Log in as a root user if you are prompted.
  - Note:** Any change of a setting is only accepted after you have successfully logged in.
5. Reboot the printer to save this change.

### 4.5.7 Using the clear changes button

Click **Clear Changes** to delete the information in the text boxes in **Stored Settings** area.

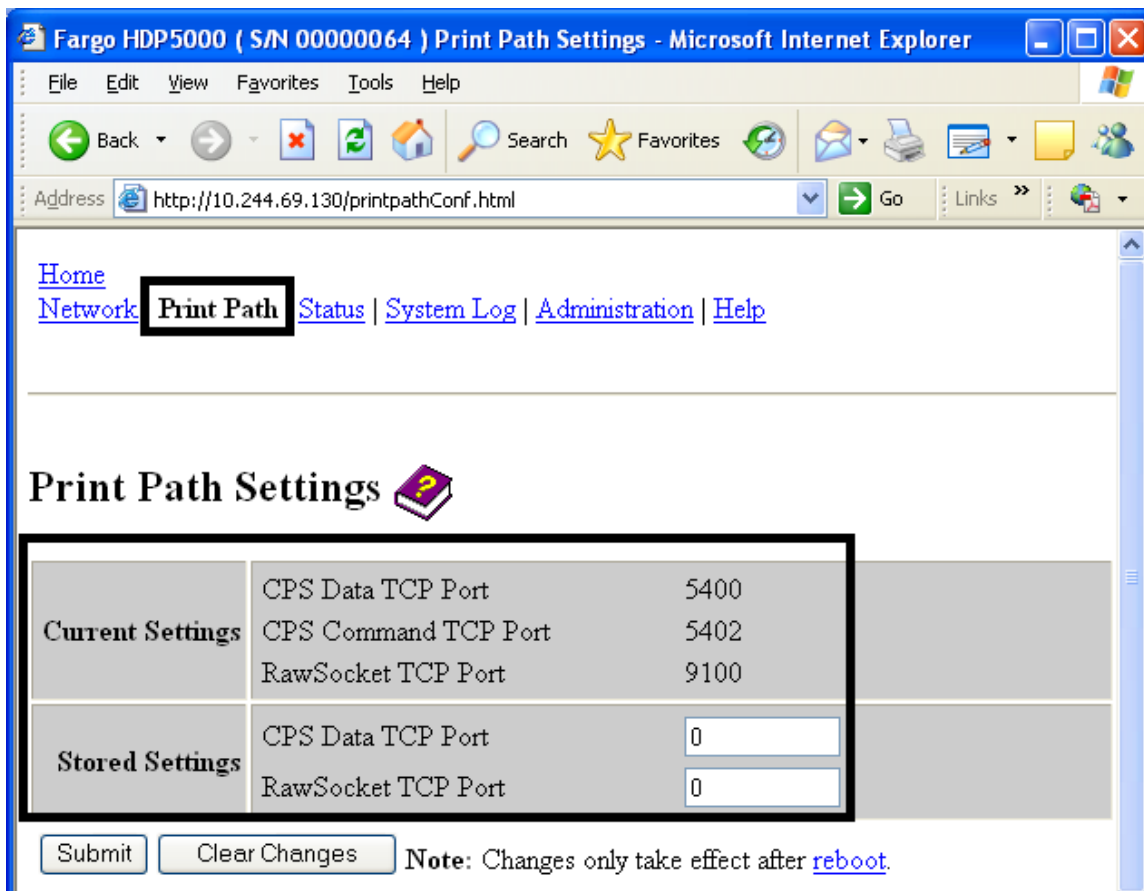


## 4.6 Print Path page

The Print Path page allows you to view or change the TCP port numbers used to communicate with the printer.

- If these settings are left to the default entry of 0 then the default ports of 9100, 5400 and 5402 are used for the **RawSocket TCP Port**, the **CPS Data TCP Port** and the **CPS Command TCP Port** respectively.
- The **CPS Command TCP Port** is dependent on the setting of the **CPS Data TCP Port** and always two units higher.

1. Click **Print Path**.
2. View the active configuration of the printer in the **Current Settings** area on this page.
3. Enter new port numbers in the **Stored Settings** area on this page.



**Print Path Settings**

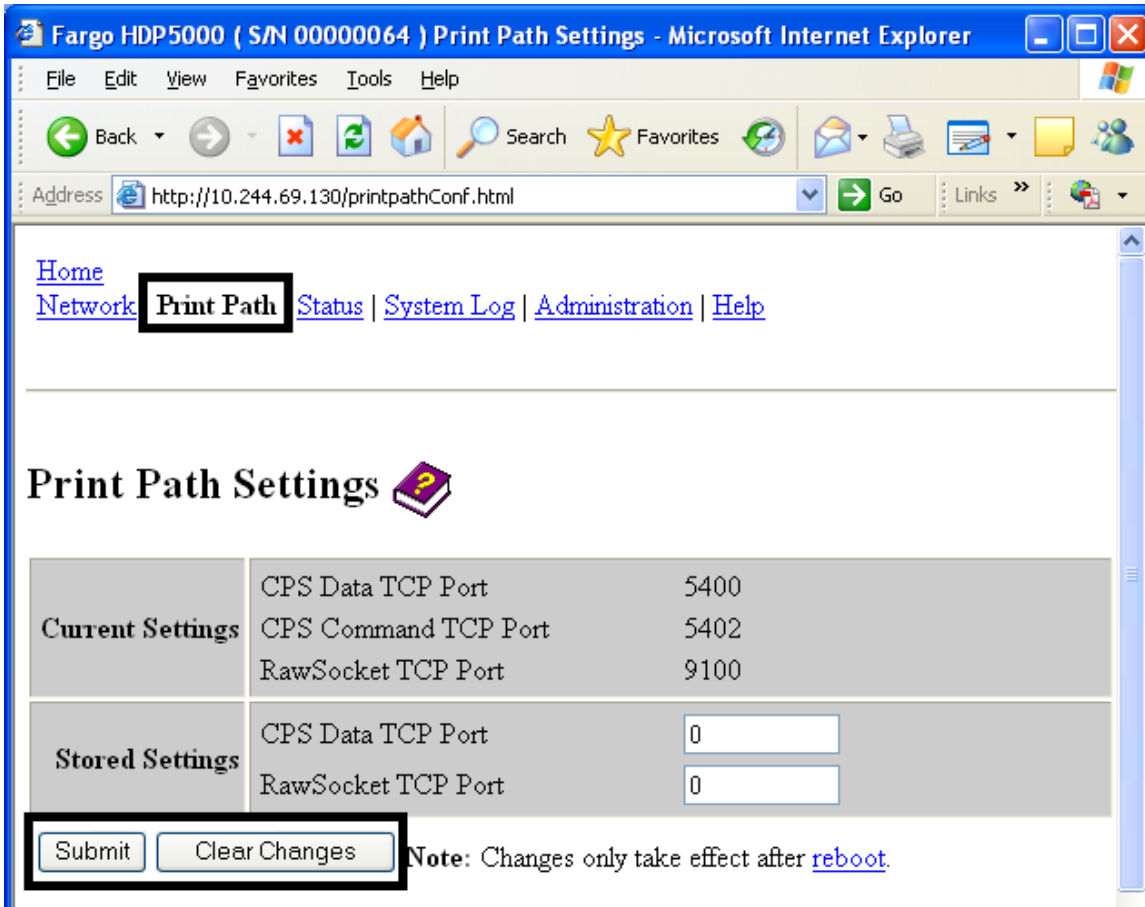
<b>Current Settings</b>	CPS Data TCP Port	5400
	CPS Command TCP Port	5402
	RawSocket TCP Port	9100
<b>Stored Settings</b>	CPS Data TCP Port	<input type="text" value="0"/>
	RawSocket TCP Port	<input type="text" value="0"/>

**Note:** Changes only take effect after [reboot](#).

4. Click **Submit** to save these changes to stored settings in the memory of the printer.

**Note:** These settings are not lost if the power is removed from the printer.

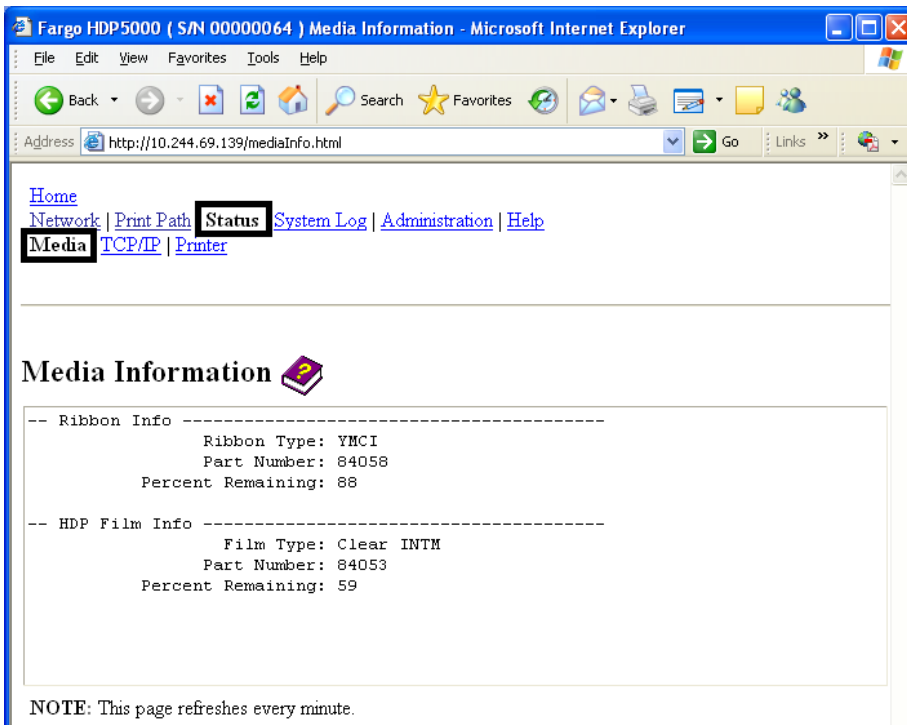
5. Click **Clear Changes** to delete these changes from this page.



## 4.7 Status/Media information page

This page displays media information about the currently installed ribbon and InTM film (if applicable).

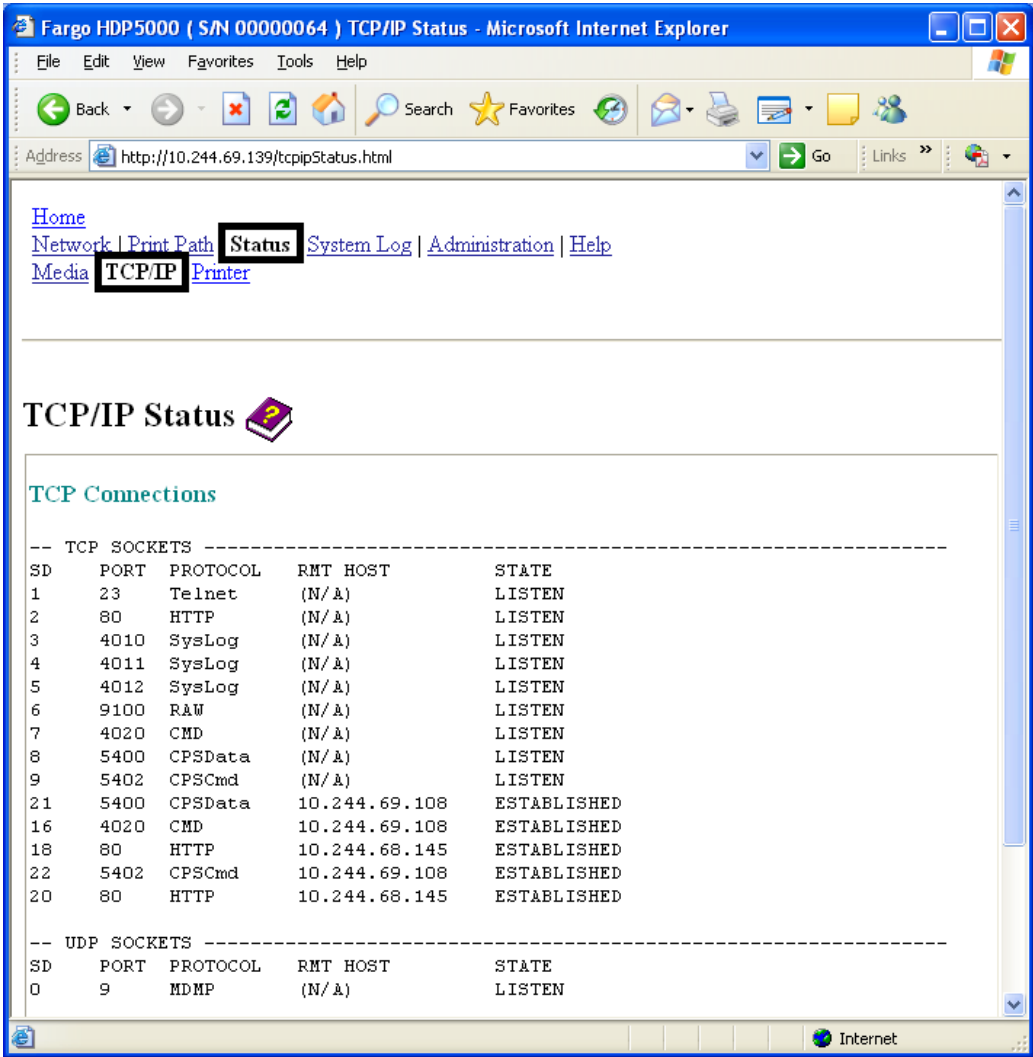
1. Click **Status** from any web page of the printer.
2. Click **Media**.
3. The following information is displayed for the currently-installed ribbon:
  - Ribbon Type
  - Part Number
  - Percent Remaining



### 4.7.1 TCP/IP page

The TCP/IP page displays the TCP/IP status of each printer connection. These connections are not configurable.

1. Click **Status** from any web page of the printer.
2. Click **TCP/IP**. Information for all current network connections is displayed in the **TCP Connections** area.

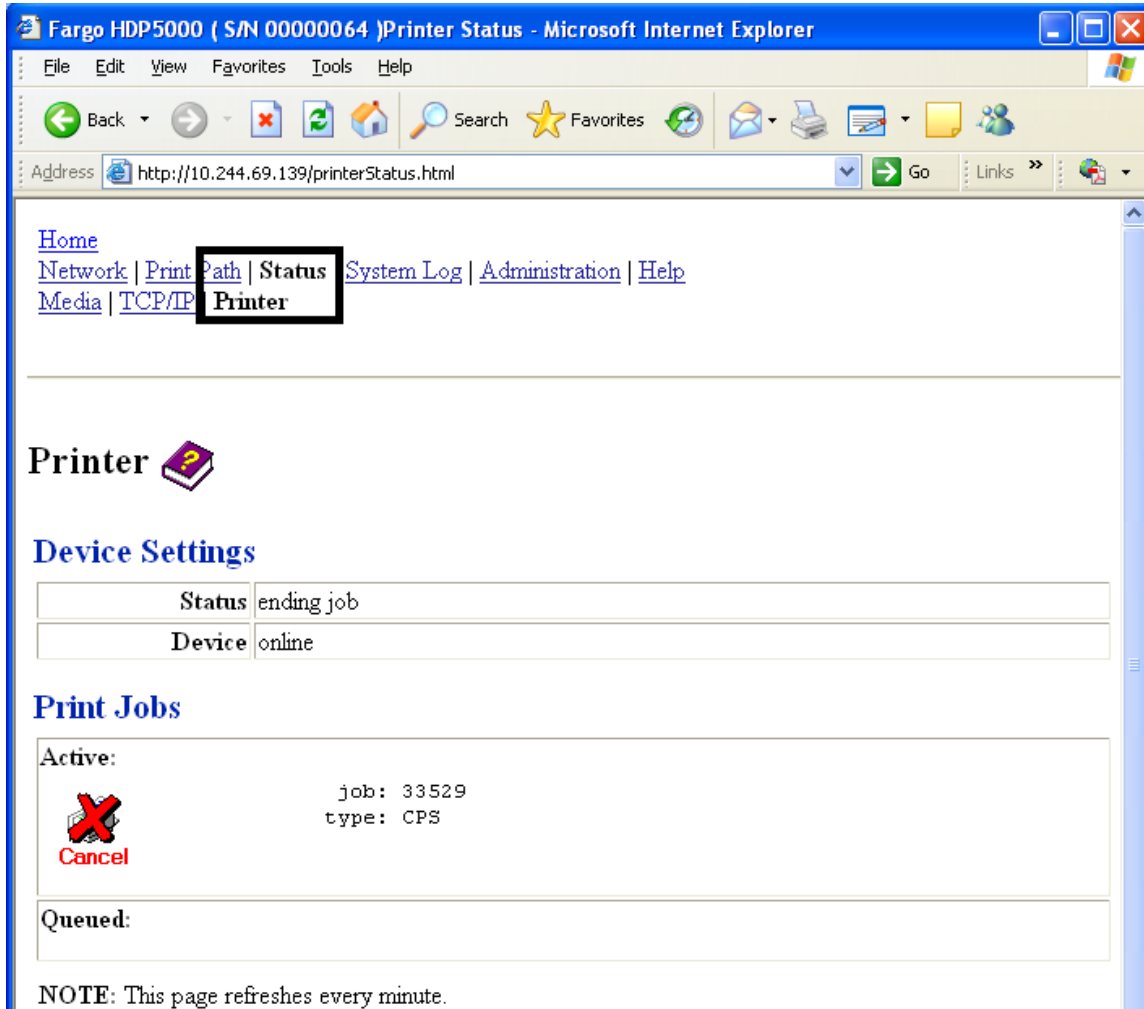




### 4.7.2 Printer page

Use the Printer page to review current information about the printer device settings and print jobs. Device settings include the following:

- The **status** which displays information about the current print job.
- The **device** which displays information about the printer.



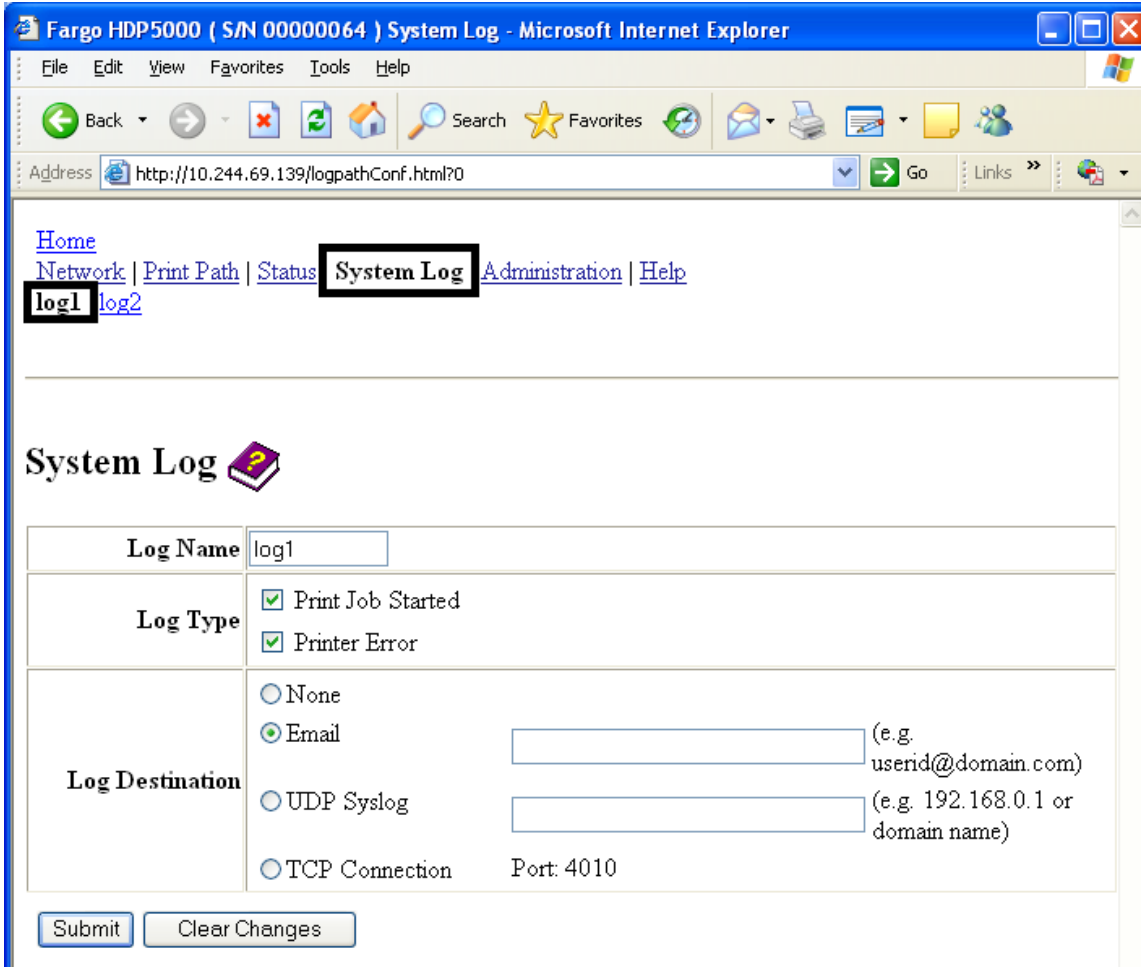
Field	Status	Description
status	Idle	Indicates that no print job is active.
	Printing	Indicates that the job is being sent to the printer.
	printing - waiting	Indicates that the communication is being slowed by print operations.
	printing - blocked	Indicates that the communication has been stopped by some condition.
	canceled	Indicates that the current job was canceled and is being rerouted.


device	online	Indicates it is ready to print.
	offline	Indicates that the Cover is open or the printer is not ready to print.
	Printer - error	Indicates that an error is detected.
	Busy	Indicates that printing is in progress.
Print Jobs		<p>This is a display of the current print jobs that have been sent to the printer.</p> <p><b>Note:</b> The current job that is being received by the interface is displayed as the active job.</p> <p>Cancel a specific print job by selecting the appropriate <b>Cancel</b> button, which appears when a print job is queued.</p>

## 4.8 System Log page

The System Log page displays the current system log settings and allows you to change the settings.

**Note:** These settings configure how system logging occurs. There are two logs.



**System Log** 

<b>Log Name</b>	<input type="text" value="log1"/>
<b>Log Type</b>	<input checked="" type="checkbox"/> Print Job Started <input checked="" type="checkbox"/> Printer Error
<b>Log Destination</b>	<input type="radio"/> None <input checked="" type="radio"/> Email <input type="text"/> (e.g. userid@domain.com) <input type="radio"/> UDP Syslog <input type="text"/> (e.g. 192.168.0.1 or domain name) <input type="radio"/> TCP Connection Port: 4010

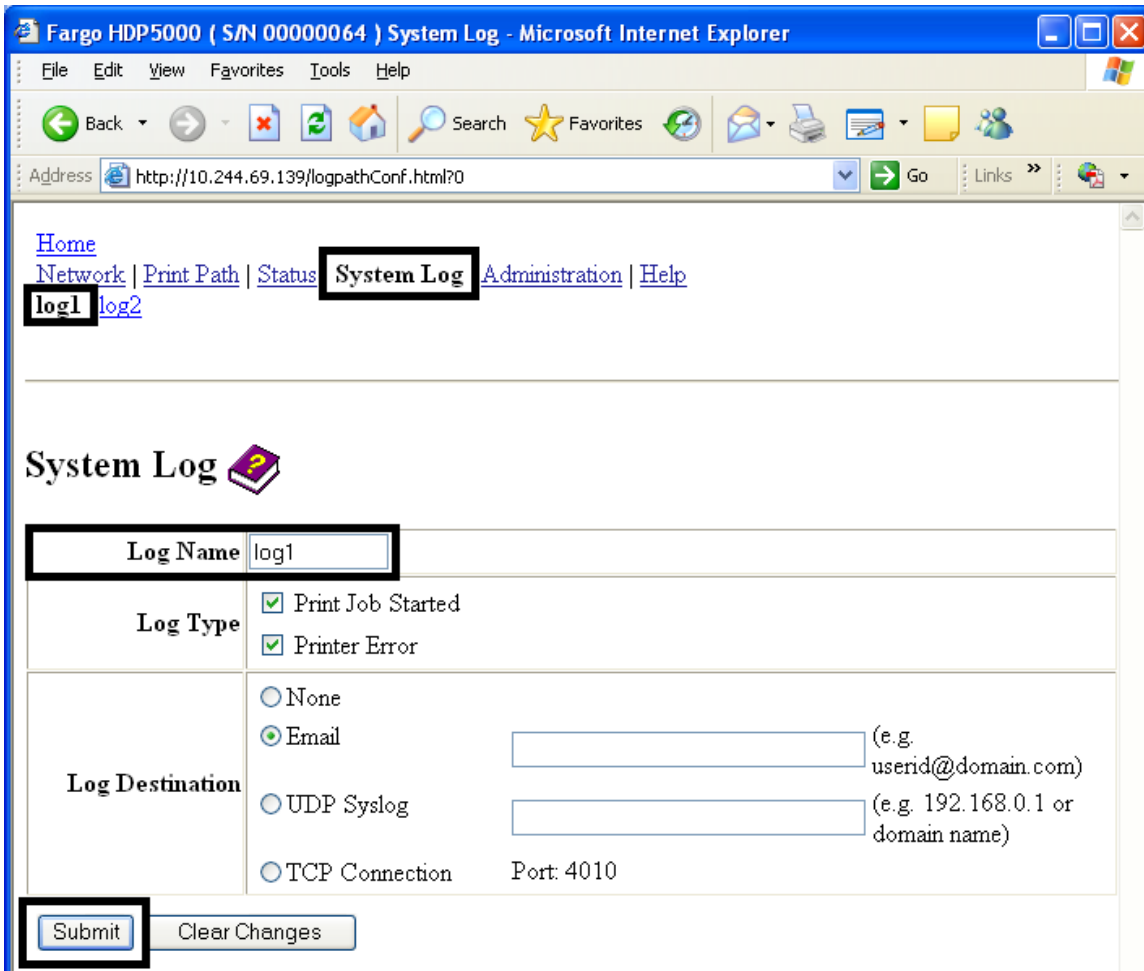
### 4.8.1 Changing the log name

By default the names are **log1** and **log2**. However, you can rename them from this page.

**Note:** This also updates the link to the corresponding web page.

1. Click **System Log**.
2. Click the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3. Enter a new log name in the text box.
4. Click **Submit** to save this change.
5. Log in as a root user if you are prompted.

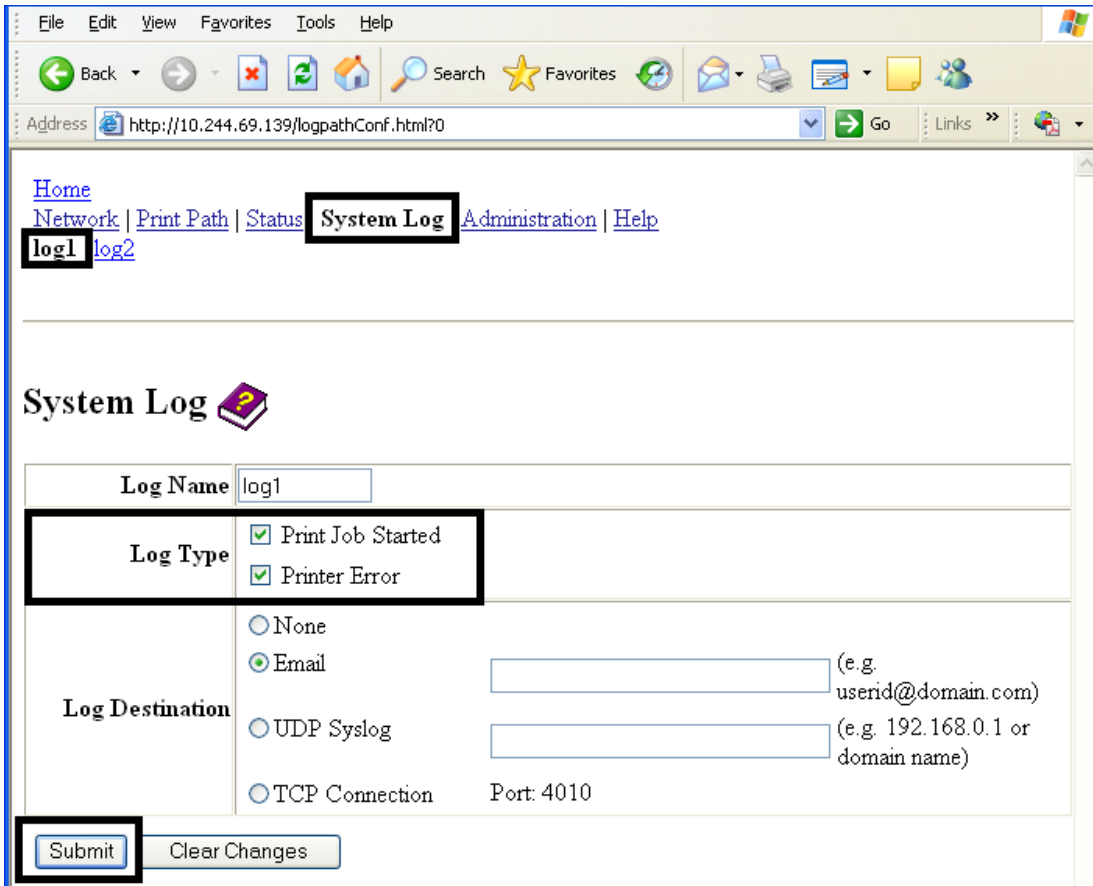
**Note:** Changes in settings are only accepted after you have successfully logged in.



## 4.8.2 Selecting the log type

1. Click **System Log**.
2. Click the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3. Select the **Print Job Started** check box to generate the log entries for each Print Job Started.
4. Select the **Printer Error** check box to generate the log entries for each printer error.
5. Click **Submit**.
6. Log in as a root user if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.



The screenshot shows a web browser window with the address bar displaying `http://10.244.69.139/logpathConf.html?0`. The page content includes a navigation menu with links for [Home](#), [Network](#), [Print Path](#), [Status](#), [System Log](#) (highlighted with a black box), [Administration](#), and [Help](#). Below the navigation menu, there are two links: [log1](#) (highlighted with a black box) and [log2](#). The main heading is "System Log" with a small icon. The configuration form contains the following fields:

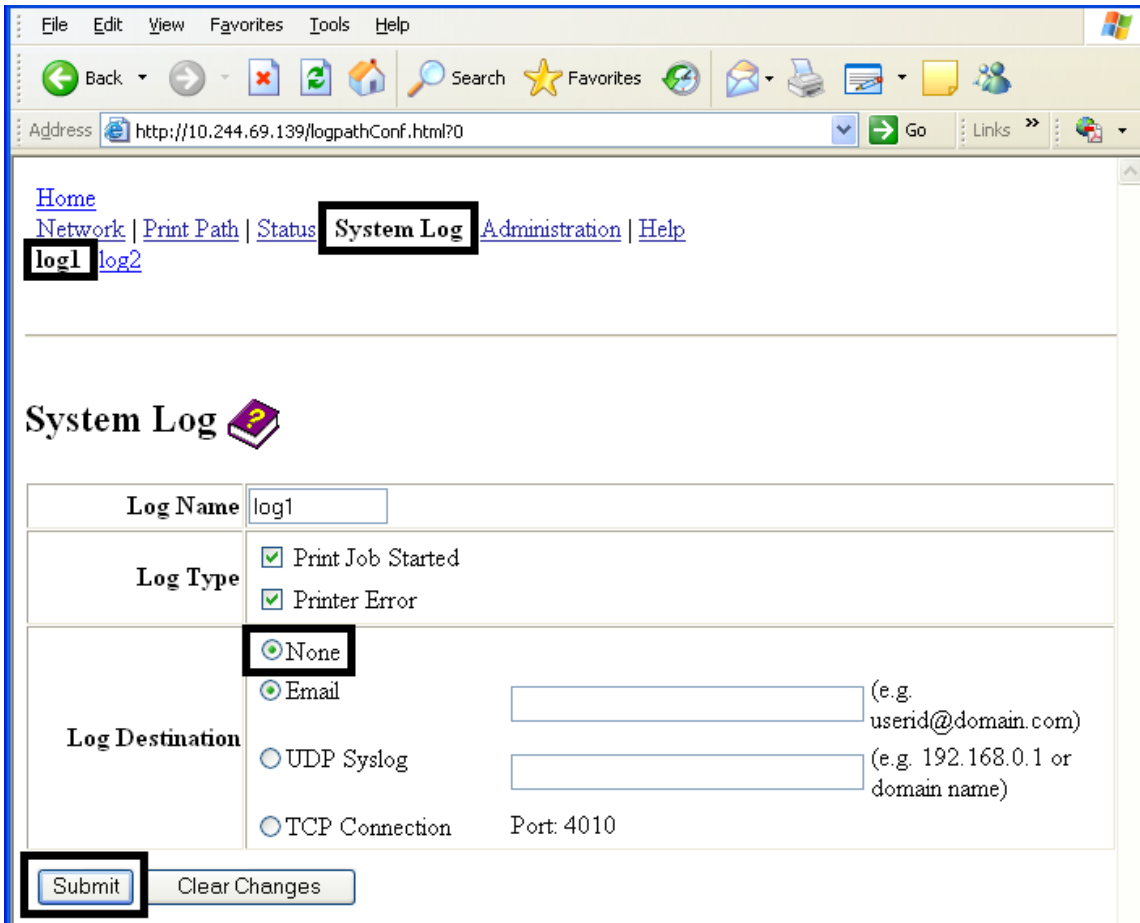
- Log Name:** A text input field containing "log1".
- Log Type:** A section with two checked checkboxes:  Print Job Started and  Printer Error. This section is highlighted with a black box.
- Log Destination:** A section with four radio button options:  None,  Email,  UDP Syslog, and  TCP Connection. The "Email" option is selected. To the right of the "Email" option is a text input field for an email address, with the example "(e.g. userid@domain.com)" shown. To the right of the "UDP Syslog" option is a text input field for a destination IP, with the example "(e.g. 192.168.0.1 or domain name)" shown. The "TCP Connection" option is accompanied by the text "Port: 4010".
- Buttons:** At the bottom left, there is a "Submit" button (highlighted with a black box) and a "Clear Changes" button.

### 4.8.3 Selecting the log destination

Specify one destination for the log.

**Note:** This selection does not include event logging.

1. Click **System Log**.
2. Click the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3. Select the **None** option when a log is not required. This is the default,
4. Click **Submit**.
5. Log in as a root user if you are prompted. Changes in settings are only accepted after you have successfully logged in.



#### 4.8.4 Setting up email event logging

1. Click **System Log**.
2. Click the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3. Select the **Email** option to choose email log notification.
4. Enter a valid e-mail address in the associated text box.
5. Click **Submit**.
6. Log in as a root user if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail Print Mail Print Mail Links

Address <http://10.244.69.139/logpathConf.html?0> Go Links

[Home](#)  
[Network](#) | [Print Path](#) | [Status](#) | **System Log** | [Administration](#) | [Help](#)  
**log1** | [log2](#)

---

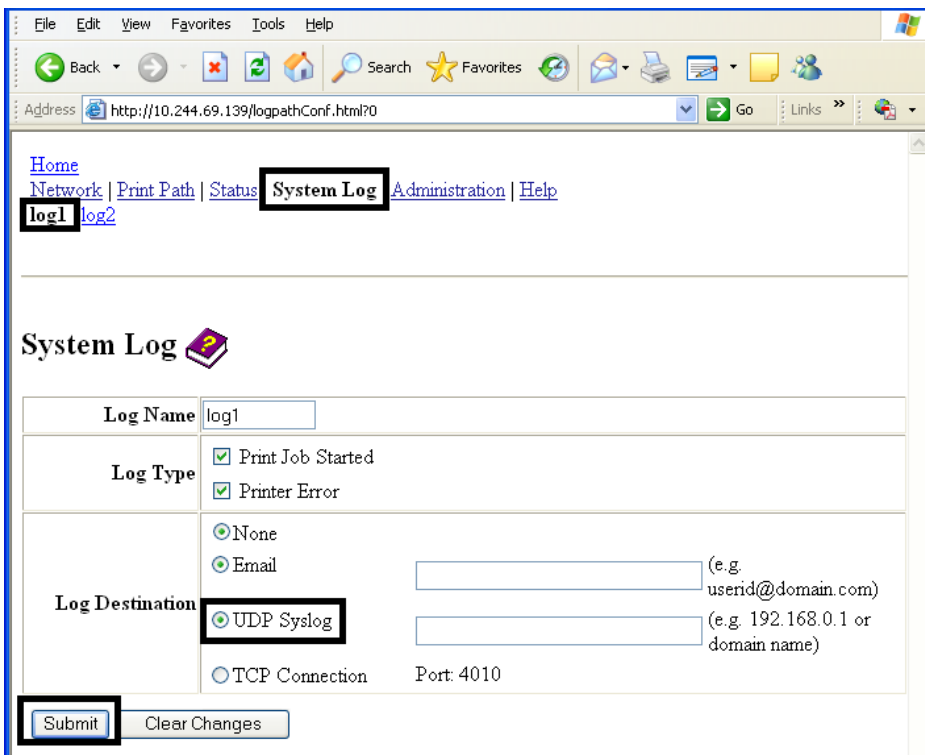
## System Log

Log Name	<input type="text" value="log1"/>
Log Type	<input checked="" type="checkbox"/> Print Job Started <input checked="" type="checkbox"/> Printer Error
Log Destination	<input checked="" type="radio"/> None <input checked="" type="radio"/> Email <input type="text" value=""/> <small>(e.g. userid@domain.com)</small> <input type="radio"/> UDP Syslog <input type="text" value=""/> <small>(e.g. 192.168.0.1 or domain name)</small> <input type="radio"/> TCP Connection Port: 4010

### 4.8.5 Specifying UDP event logging

1. Click **System Log**.
  - The messages are sent via UDP packets to the Syslog port (514) of the specified host.
  - It is up to the host program to listen to these messages for processing.
  - A syslog host program is necessary to use this method, such as, Kiwi Syslog Daemon or WinSysLog.
2. Click the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3. Select the **UDP Syslog** option.
4. Enter a valid IP address or domain name.
5. Click **Submit**.
6. Log in as a root user if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.

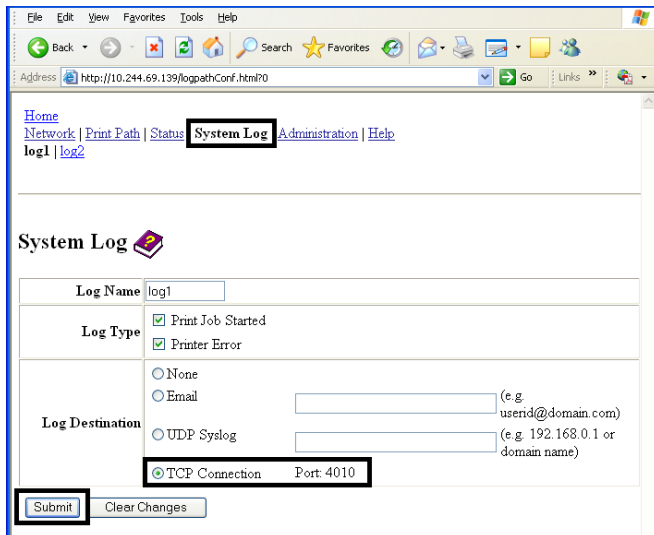




### 4.8.6 Specifying TCP event logging

Follow this procedure to send logging messages to a pre-existing IP connection made on the TCP port.

1. Click **System Log**.
2. Click the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3. Select the **TCP Connection** option.
4. Click **Submit**.
5. Log in as a root user if you are prompted. Changes in settings are only accepted after you have successfully logged in.



The screenshot shows a web browser window displaying the 'System Log' configuration page. The address bar shows 'http://10.244.69.139/logpathConf.html?0'. The page has a navigation menu with 'System Log' highlighted. Below the menu, the 'System Log' configuration form is visible. The 'Log Name' field contains 'log1'. The 'Log Type' section has 'Print Job Started' and 'Printer Error' checked. The 'Log Destination' section has 'TCP Connection' selected, with 'Port: 4010' entered in the adjacent field. The 'Submit' button is highlighted with a red box.

6. Use a host program such as Telnet to receive these TCP logging messages

**Note:** Other programs such as HyperTerminal are also used to monitor TCP connections).

- **Telnet Client:** You can use a Telnet client connected to the TCP port (log1 = 4010, log2 = 4011) rather than the default Telnet port (23).
- **Telnet Session:** If there is a printer at IP address 192.37.23.155 (and you have configured log1 for TCP logging), then you could initiate a Telnet session from a DOS window of a PC by entering Telnet 192.37.23.155 4010.
- **Log Messages:** All system log messages are then displayed in that Telnet session window.

**Note:** This is a one way connection for logging only. Any input to the printer on this connection is ignored.

## 4.9 Administration pages

The Administration pages allow you to upgrade, reboot, modify passwords, and enter user-specified system information strings.

### 4.9.1 Using the system information page

This page displays the current system information and allows you to change the system information (which appears on the Home page). See *Section 4.4 Home page* for definitions.

1. Click **Administration**.
2. Click **System**.
3. To change an attribute, type the new entry in the **Label**, **Location**, or **Contact** field.
4. Click **Submit**.
5. Log in as a root user if you are prompted. Changes in settings are only accepted after you have successfully logged in.

The screenshot shows a web browser window with the address bar displaying `http://10.244.69.139/adminConf.html`. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The address bar contains a Back button, a Go button, and a Links button. The main content area features a navigation menu with links for Home, Network, Print Path, Status, System Log, Administration, and Help. The Administration link is highlighted with a black box. Below the navigation menu, there are links for System, Passwords, and Reboot. The System link is also highlighted with a black box. The main content area is titled "System Information" with a question mark icon. Below the title, there is a table with three rows: Label, Location, and Contact. The Label field contains the value "FRGO000240". The Location and Contact fields are empty. Below the table, there are two buttons: Submit and Clear Changes. The Submit button is highlighted with a black box.

Label	FRGO000240
Location	
Contact	

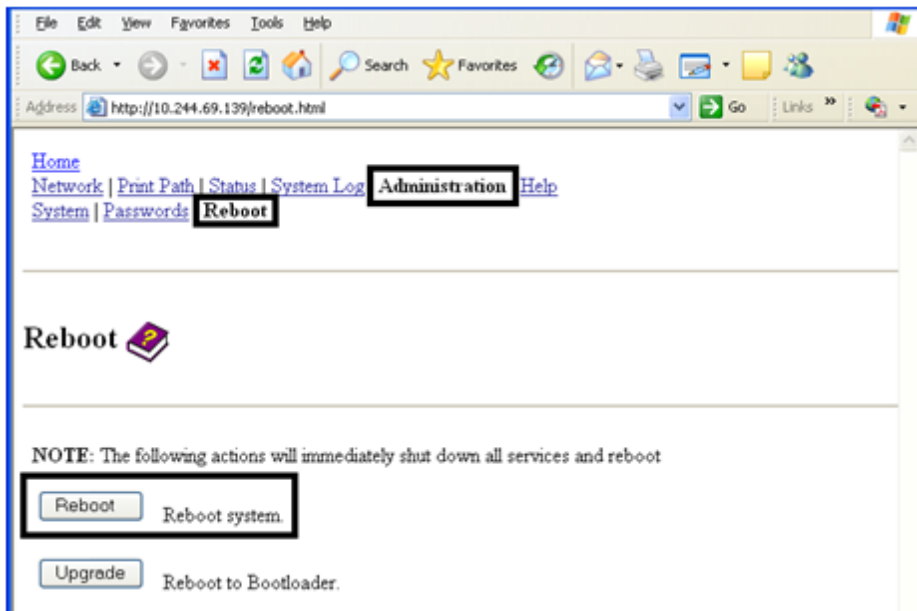
## 4.9.2 Changing the root password

The Passwords page allows you to change the passwords needed to log in as a user. Changes to all settings require a login.

**Note:** Changes are only protected by a password after the password has been set. Users can only be added or removed using Telnet commands.

1. Click **Administration**.
2. Click **Passwords**.
3. Enter the current password in the **Root Password Old** text box or leave it blank if no password has been previously set.
4. Enter the new password in the **Root Password New** text box or leave it blank if you want to remove the old password.
5. Re-enter the new password in the **Root Password Confirm** text box or leave it blank if you want to remove the old password.
6. Click **Submit**.
7. Log in as a root user (using the password) if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.



### 4.9.3 Reboot pages

Rebooting the printer restarts the complete printer, which includes the print server.

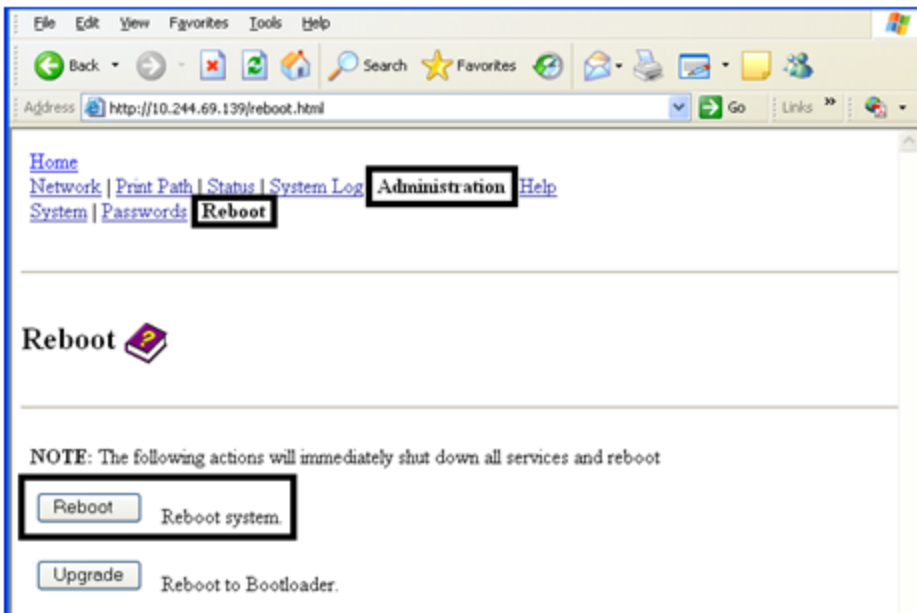
### 4.9.4 Rebooting the printer

The Reboot page allows the printer user to reboot or reset the printer and/or enter the upgrade mode.

1. Click **Administration**.
2. Log in as a root user (using the password) if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.

3. Click **Reboot**.
4. Click **Yes** when prompted.
5. Wait for the printer to reboot and display the Home page.



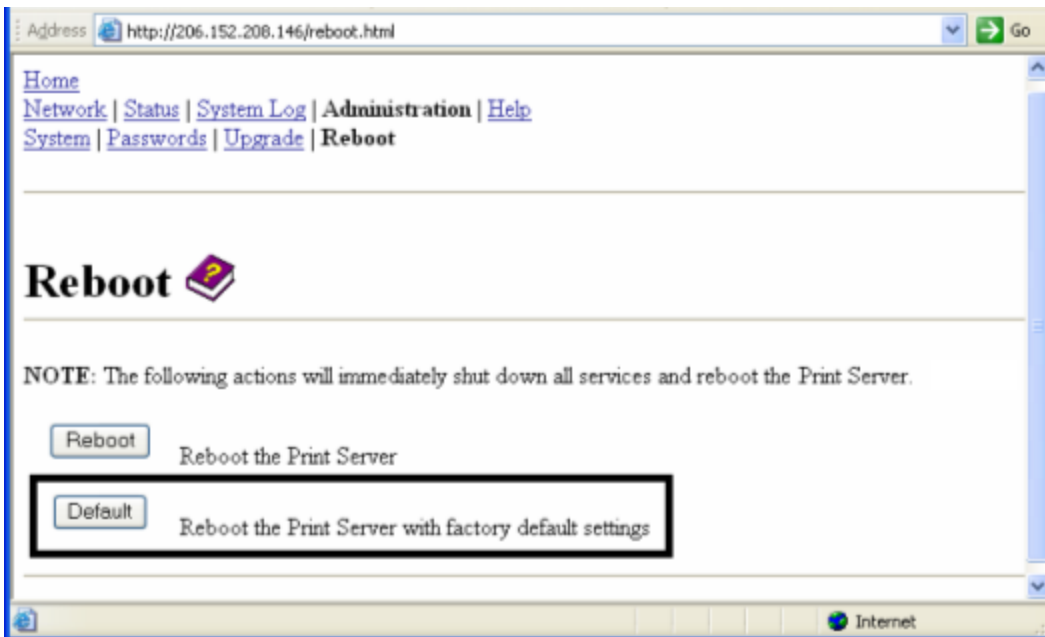
### 4.9.5 Reset the Default Settings

The Reboot page allows you to restart the Ethernet print server in a default mode. This transaction simply restarts the printer in a different state, temporarily ignoring the settings in memory.

1. Click **Administration**.
2. Log in as a root user (using the password) if you are prompted.

**Note:** Changes in settings are only accepted after you have successfully logged in.

3. Click **Reboot**.
4. Click **Default**.
5. Click **Yes** when prompted.
6. Wait for the printer to reboot and display the Home page.

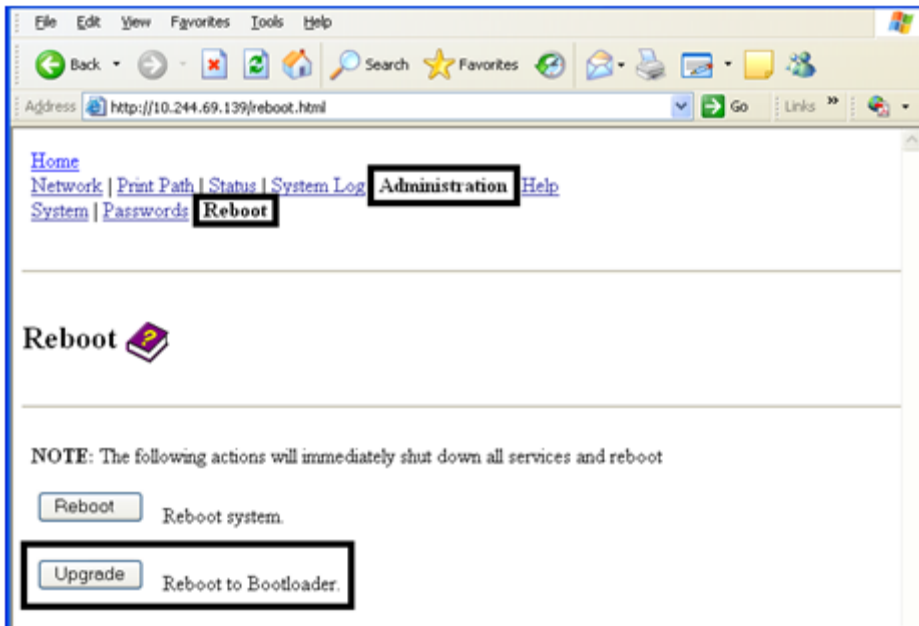


### 4.9.6 Upgrading the main firmware

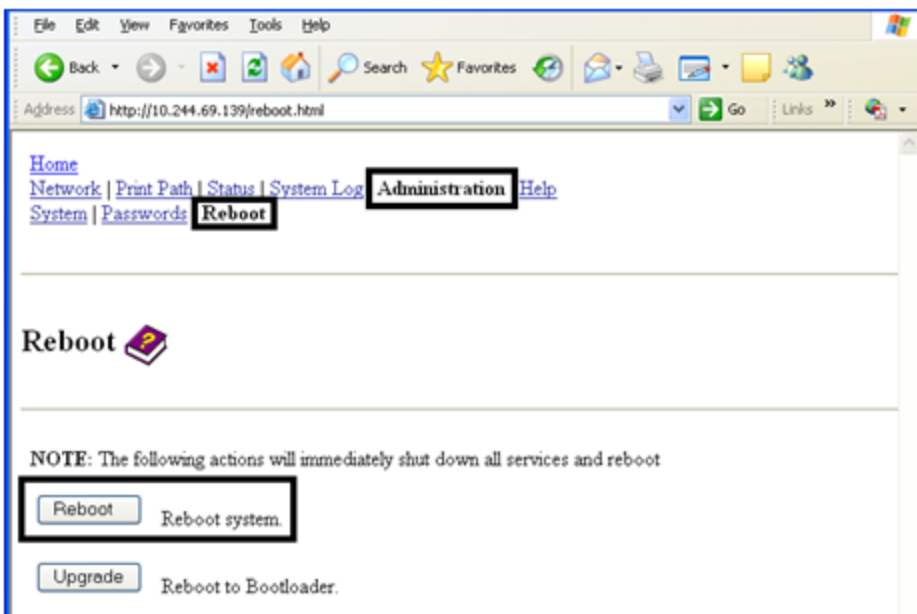
The Upgrade page allows you to upload new firmware to the printer. For the printer/encoder, this Upgrade page provides for upgrading the main printer firmware which includes the print server firmware.

It is only available to the printer after the printer has been rebooted into the upgrade mode.

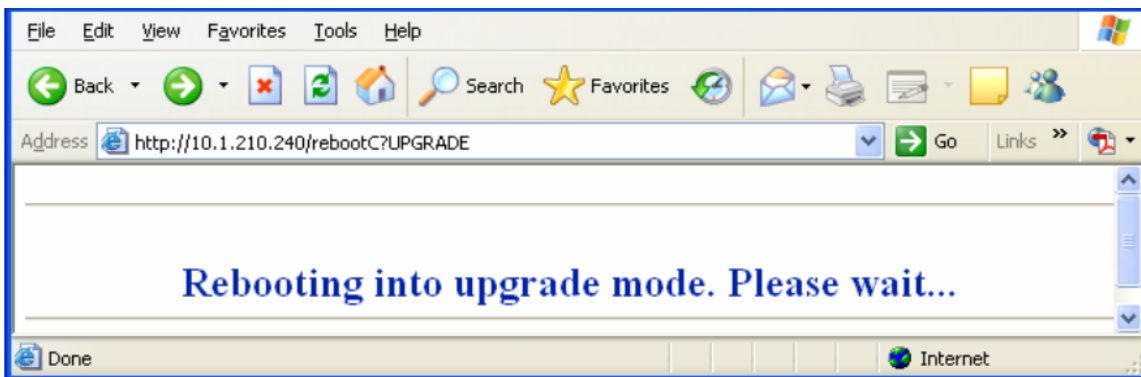
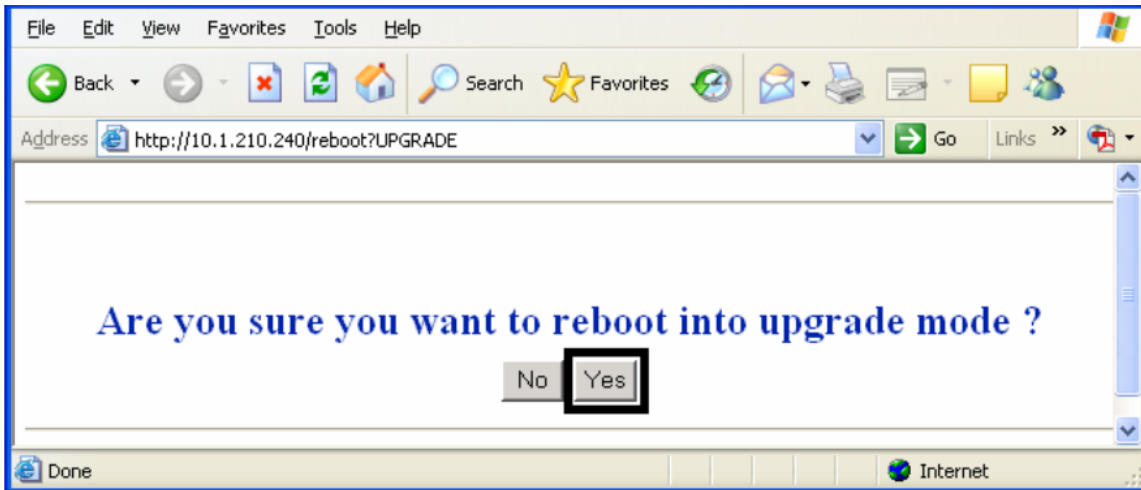
1. Click **Administration**.
2. Go to Step 7 if the **Upgrade** button is shown.



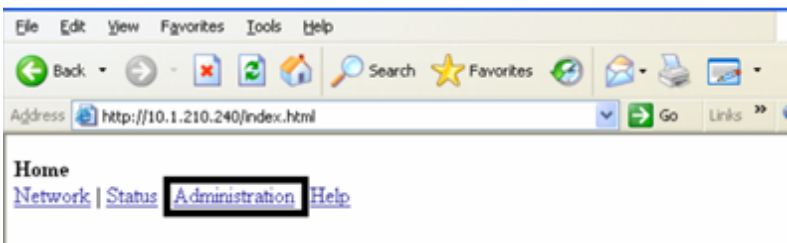
3. Click **Reboot** if the **Upgrade** button is not shown.



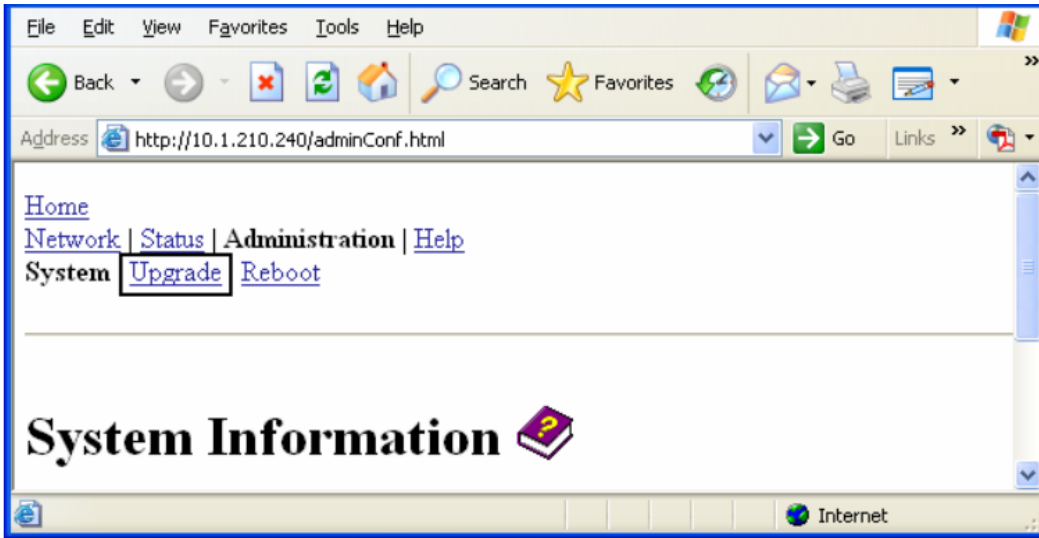
- Click **Upgrade** to get the printer into the upgrade mode.
- Click **Yes** and wait for reboot.



- Click **Administration** when the Home page is displayed.

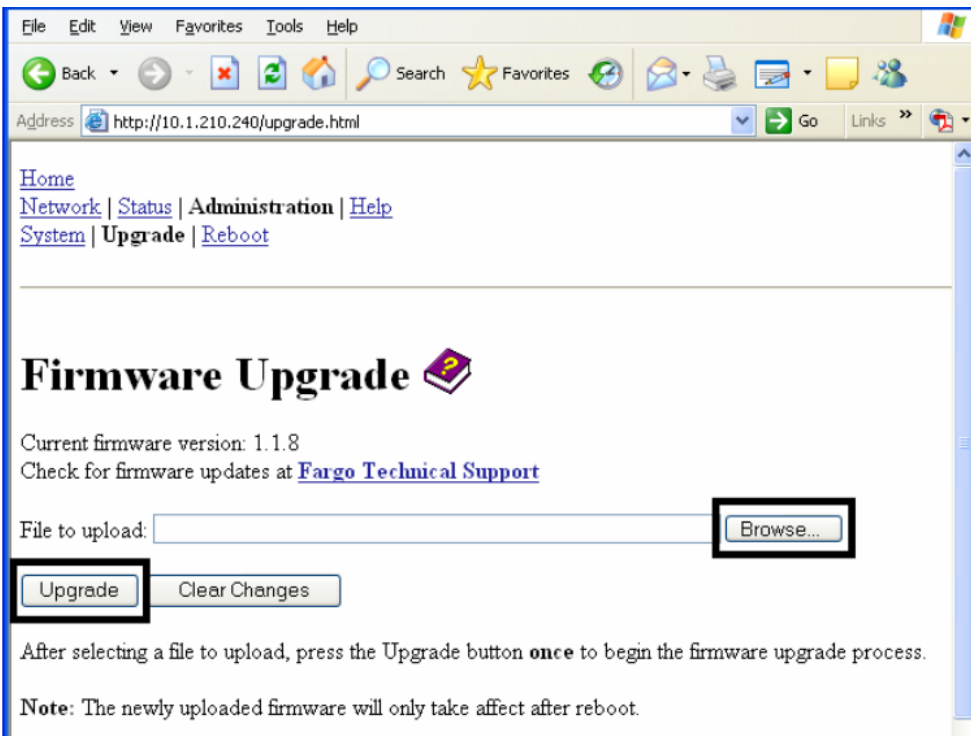


7. Select **Upgrade** to go to the upgrade page.



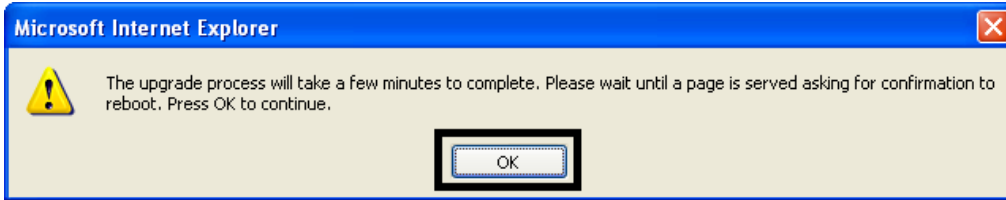
8. Click **Browse** to navigate to the appropriate file to upload.

9. Click **Upgrade** to start the firmware upload.





10. Click **Reboot** when requested.



## 4.10 Using the Help page

The Help page displays the help information.

1. Open this web page at the appropriate location by clicking the Help book icon at the top of each page.
2. Review the web interface for the Ethernet-enabled printer.

## 4.11 Accessing the Ethernet status LEDs

The Ethernet status LEDs can be found on the back of the printer.

### 4.11.1 Reviewing the printer LED Table

LED	Flash Rate	Indicates
Green LED (Left)	On	The Network link is present.
	Off	The Network link is not present.
Amber LED (Right)	Off	There is NO network traffic to this IP address.
	Blinking	There is network traffic to this IP address.

## 4.12 Restoring the factory settings for Ethernet

There may be times when you are unable to use the current configuration of the Ethernet interface.

**Note:** This could be because you have lost the password for your printer or you just cannot get it to work properly.

### 4.12.1 Resetting the printer settings

The printer has a menu selection that allows the user names and passwords to revert to default. To reset these settings, select **Menu > Setup Printer > Network Settings > Reset Passwords**.

### 4.12.2 Changing the printer LCD network settings

The printer/encoder displays new menu entries when

- The Ethernet option is installed and
- The printer has established communications to a host device.

You can use these procedures to change network settings by using the new LCD menus.

### 4.12.3 Accessing the network setup menu

1. Apply power to the printer.
2. Ensure that the printer is connected to your network.
3. Wait up to one (1) minute to allow the printer to configure the IP address.
4. Select **Options** on the LCD.
5. Select **Menu** on the LCD.
6. Select **Next** on the LCD until the **Network Settings** menu entry appears.
7. Press **Select** when **Network Settings** appears on the LCD.

### 4.12.4 Changing the DHCP setting

1. See *Section 4.5.1 Accessing the Network settings page* to access the **Network Settings** menu or select **Options > Menu > Next > Network Settings**.
2. Select **Next** on the LCD to view the **DHCP** menu entry.
  - DHCP Enabled indicates that the automatic IP assignment is selected.
  - DHCP Disabled indicates that the static IP assignment is selected.
3. Press **Change** to switch the DHCP setting.
4. If you change the setting, you are prompted to reboot the printer.

### 4.12.5 Changing the ANEG setting

The ANEG status indicates the current setting of the network configuration of the Ethernet interface.

- You can set this value explicitly to force the Ethernet interface configuration in cases where auto negotiation fails.
  - Failure of the automatic network configuration can cause slow data transmission, longer print times or network connection problems.
1. See *Section 4.5.1 Accessing the Network settings page* to access the **Network Settings** menu or select **Options > Menu > Next > Network Settings**.
  2. Select **Next** on the LCD to view the ANEG: menu entry.
  3. Press **Change** to change the auto negotiation setting for the printer, which rotates between the following:
    - **ANEG: AUTO:** Allows the auto negotiation between the printer and the host Ethernet interface.
    - **ANEG: Full Dup:** Forces the full duplex communications between the printer and the host Ethernet interface.
    - **ANEG: Half Dup:** Forces the half duplex communications between the printer and the host Ethernet interface.
  4. If you change the setting, you are prompted to reboot the printer..

### 4.12.6 Saving addresses

1. See *Section 4.5.1 Accessing the Network settings page* to access the Network Settings menu or select **Options > Menu > Next > Network Settings**.
2. Select **Next** on the LCD to view the **Save Addresses** menu entry.
3. Press **Select** to save the current network settings (IP address, GW, SN Mask) as the stored settings which are used when automatic address assignment using DHCP is disabled.

### 4.12.7 Resetting passwords

1. See *Section 4.5.1 Accessing the Network settings page* to access the Network Settings menu or select **Options > Menu > Next > Network Settings**.
2. Select **Next** on the LCD to view the **Reset Passwords** menu entry.
3. Press **Select** to reset the user passwords to the default settings of empty strings.

**Note:** This can be used when the passwords are not known.

## 4.13 Ethernet printer troubleshooting procedures

If you are having trouble connecting to your Ethernet printer or printing to it, you should go through each of the following procedures.

### 4.13.1 Accessing the IP address of your printer

The additional LCD menus for Ethernet-enabled printers are provided to view the IP address of the printer. Follow these procedures to access the IP address of your printer model.

**Note:** If your model does not have a display, then press and hold the **PAUSE** button for at least four seconds to print a settings card. The printer must be ready and idle for the card to print.

1. Apply power to the printer.
2. Ensure that the printer is connected to your network.
3. Wait up to one minute to allow the printer to configure the IP address.
4. Scroll through the informational messages on the LCD by selecting the INFO button.
5. View the IP address displayed as a dotted quad number, for example 168.192.1.1.

### 4.13.2 Verifying the printer connection

1. Ensure that your printer has a valid network connection.
2. Verify that the printer has the green LED on solidly and the amber LED is flashing with network activity.
3. If the LEDs do not indicate connection, verify the network connection with another device.
4. If the connection is OK, then something may be wrong with the Ethernet option installation. See *Section 4.13 Ethernet printer troubleshooting procedures*

### 4.13.3 Verifying the printer IP address

1. Check the LCD for a valid IP address (0.0.0.0 is not valid).
  - If the IP address is valid go to step 4.
  - If the IP address is not valid go to step 2.
3. If your network is using DHCP, then verify that the printer has not been configured to use a static address (unless you have a known unused static IP address assigned to this printer).
4. If you are using a static IP address, verify that there is no other device using the same address by removing your printer and ping to the desired address.

If any device responds, then you must find a different available IP address.
5. If the printer reports an IP address, verify that it matches subnet of the network where it is connected.

If your printer has DHCP disabled, then the static IP address may have been previously set for a different subnet.

#### 4.13.4 Verifying that your PC can access the printer using the ping command

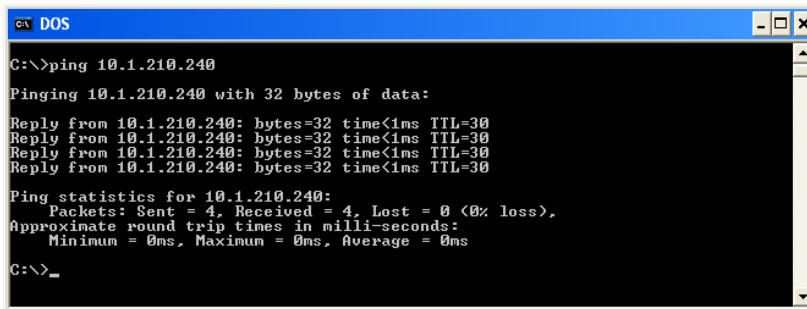
Follow these instructions to issue a ping command to the printer:

1. At a DOS prompt, enter

ping [IP Address]

For example: C:\>ping 210.1.10.240

- If the ping response is successful, move on to the next troubleshooting procedure.

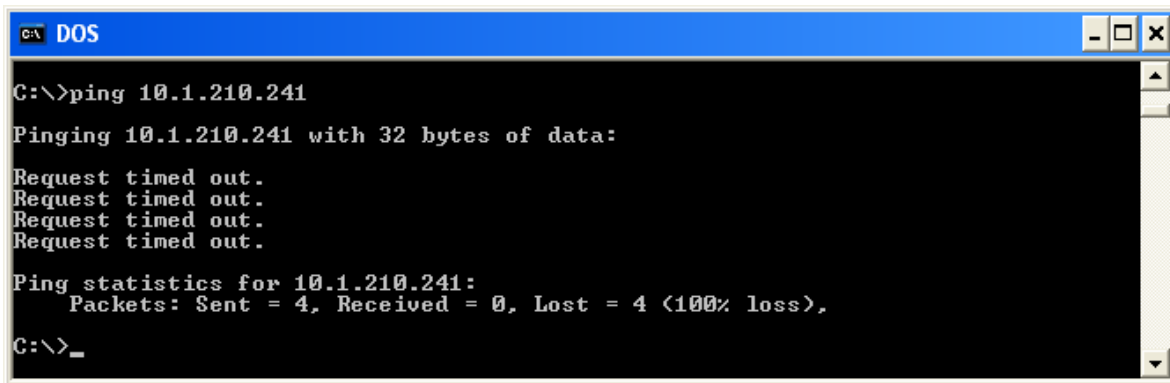


```

C:\>ping 10.1.210.240
Pinging 10.1.210.240 with 32 bytes of data:
Reply from 10.1.210.240: bytes=32 time<1ms TTL=30
Reply from 10.1.210.240: bytes=32 time<1ms TTL=30
Reply from 10.1.210.240: bytes=32 time<1ms TTL=30
Reply from 10.1.210.240: bytes=32 time<1ms TTL=30
Ping statistics for 10.1.210.240:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>_

```

- If the ping response is not successful, continue to step 2.



```

C:\>ping 10.1.210.241
Pinging 10.1.210.241 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 10.1.210.241:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>_

```

2. Verify that the PC and the printer are connected to the same network.
3. You may be on different subnets of your network and some of the network settings for the printer are not correct. See your network administrator about this.

**Note:** The subnet mask must be the same as other devices on the network, and that the unique IP address is part of the network specified by the subnet mask.

#### 4.13.5 Printing a test page

1. Try printing a test page from the printer driver properties window.
2. If you cannot print a test page, then consider the following:
  - There may be an error at the printer.
  - There may be a job in the Windows print queue which has stalled.
  - The printer may be paused or set to operate offline in the Windows print queue.

This page is intentionally left blank.

# Appendix A

## A References

### A.1 Frequently asked questions

Question	Answer
How do I know if my printer has the Ethernet option installed?	All printer models come with Ethernet installed as standard equipment.
What PC operating systems work with my Ethernet printer?	<ul style="list-style-type: none"><li>■ Windows 7 (32- and 64-bit)</li><li>■ Windows 10 (32- and 64-bit)</li><li>■ Windows Server 2008 R2</li><li>■ Windows Server 2012</li><li>■ Windows Server 2012 R2</li><li>■ Windows Server 2016</li></ul>
How do I connect my printer to my network?	You can connect from the RJ45 network connection on the back of your printer to an available connection on your network (not directly to your PC). You can use a good CAT-5 or better cable to make this connection.
How can I find the MAC address of my Ethernet printer?	If you know the IP address of your printer, you can see the MAC address on the home web page of the Print Server. or If you do not know the IP address or the printer does not work with a usable IP address, then the MAC address can be found by two methods. These are: <ul style="list-style-type: none"><li>■ The MAC address is listed in the data printed on the "Printer Settings" self-test card.</li><li>■ The FARGO® IP-Tracer software tool on the driver CD can be used to find the MAC address of the printer.</li></ul> <b>Note:</b> This can be installed and used to locate all the FARGO compatible printers on your network.
How can I find the IP address of my Ethernet printer?	You can find it in the printer display if the Ethernet option is functioning properly. Select <b>Info</b> , then select <b>Next</b> several times until the IP address is shown.
Can I print from my PC to multiple Ethernet printers?	Choose <b>Local printer...</b> unless a shared network printer is to be installed on a print server. Use the Windows <b>Add Printer Wizard</b> to create a printer instance to communicate to the printer at the new IP address. If the printer port is not listed as an existing port then a new <b>Card Printer TCP/IP Port</b> must be created and configured to communicate to the printer at the proper IP address. See the appropriate Windows documentation for additional help.

<p>Can multiple PCs print to my Ethernet printer?</p>	<p>Yes. Each PC must install the printer driver software for the specific Ethernet-enabled printer and connect to the intended printer, using the correct IP address.</p>
<p>Can I print from my PC to an Ethernet printer on a different network segment?</p>	<p>Yes. If you know the IP address of the printer on any segment of your network, you will be able to print to it.</p>
<p>Can I use FARGO IP-Tracer to locate Printers on a different work segment?</p>	<p>No. The IP-Tracer can only locate FARGO-compatible printers located in the same network segment (as the PC running IP-Tracer).</p>
<p>How do I upgrade the printer firmware in my Ethernet-enabled printer?</p>	<p>This is done in the same way as a USB-connected printer. The PC doing the upgrade must have a driver installed for the printer to be upgraded. Follow this procedure:</p> <ol style="list-style-type: none"> <li>1. Run the FARGO Workbench™ Printer Utility from the start menu: Go to the <b>Start &gt; Programs &gt; FARGO &gt; FARGO Workbench Printer Utility &gt; FARGO Workbench.</b></li> <li>2. Select the FARGO printer to upgrade from the drop-down box.</li> <li>3. Go to the <b>Firmware Updates</b> tab.</li> <li>4. If you need to download the update file from the Internet, select <b>Download Firmware.</b></li> <li>5. Choose the update file with <b>Select Firmware.</b></li> <li>6. Put your printer into the upgrade mode. See the instructions for your specific FARGO printer.</li> <li>7. Select <b>Send Firmware.</b></li> </ol>
<p>How do I upgrade the print server firmware for my printer?</p>	<p>Since the print server is integrated into the main print firmware on the printer, there is not a separate firmware upgrade for the printer server. <b>Note:</b> Therefore, the upgrades are done with the main printer firmware.</p>
<p>What is the default user name and password for the printer?</p>	<p>The default users are <b>root</b> as the administrative user and <b>guest</b> as a non-administrative user. The printer supports two users. The default password is <b>idcard.</b></p>
<p>What if I lose the password for my printer or it is not accepted?</p>	<p>The printer has a menu selection that allows the user names and passwords to revert to default: <b>Options &gt; Menu &gt; Network Settings &gt; Reset Passwords</b></p>
<p>What do I do if the IP address of my printer is being changed by my network?</p>	<p>Do one of the following:</p> <ul style="list-style-type: none"> <li>■ Contact your network administrator. Ask that your current IP address be reserved or ask that they provide a specific IP address that you can use to configure the Ethernet interface.</li> <li>■ Choose an IP address that you know will not be used by any other PC, server or network device. Use those settings to configure your printer with static network settings.</li> </ul> <p><b>Note:</b> Do not do this unless you know that these settings will always be available.</p>



<p>How do I reconfigure my PC printer driver to connect to a different printer or different IP address?</p>	<p>Choose <b>Local printer...</b> unless a shared network printer is to be installed on a print server.</p> <p>Use the Windows <b>Add Printer Wizard</b> to create a printer instance to communicate to the printer at the new IP address.</p> <p>If the printer port is not listed as an existing port then a new <b>Card Printer TCP/IP Port</b> must be created and configured to communicate to the printer at the proper IP address.</p> <p>See the appropriate Windows documentation for additional help.</p>
<p>How can I verify/change what IP address my installed printer driver is expecting to find my printer?</p>	<ol style="list-style-type: none"> <li>1. Open the printer driver properties window.</li> <li>2. Select <b>Start &gt; Settings &gt; Printers and Faxes &gt; [your printer driver] &gt; Properties</b>.</li> <li>3. From the <b>Ports</b> tab, select <b>Configure Port</b>. The <b>host name</b> indicates the IP address of the connected printer.</li> </ol> <p><b>Note:</b> If this does not match your printer's IP address, you can change it from this window.</p> <ol style="list-style-type: none"> <li>4. Enter the correct IP address.</li> <li>5. Click <b>OK</b>.</li> <li>6. Click <b>Apply</b>.</li> <li>7. Click <b>Close</b>.</li> </ol>
<p>How do I configure my printer's IP settings?</p>	<p>Do one of the following:</p> <ul style="list-style-type: none"> <li>■ By default, the printer is configured for dynamic IP address assignment. That is, it will try to get its IP address and other settings from your network. If it is given valid network settings, it will use them.</li> <li>■ You can choose to configure the printer, using a static IP address and network settings. This can be entered using the Network web page of the printer or the FARGO IP Tracer program.</li> </ul>
<p>How do I choose a static IP address for my Ethernet printer?</p>	<p>You can use the web pages if you know the current IP address. See <i>Section A References</i> procedure.</p> <p>or</p> <p>You can use FARGO IP-Tracer which allows you to find FARGO-compatible printers and specify their addresses.</p> <p>The printer also allows you to save the current network settings as static settings using the printer display menu (<b>Options&gt; Menu &gt; Network Settings &gt; Save Addresses</b>).</p> <p><b>Note:</b> You can save static addresses. However, they are not used until you reconfigure the printer to use those static addresses and reboot the printer.</p>
<p>How do I set the printer to work with a static IP address?</p>	<p>You can use the web pages if you know the current IP address.</p> <ul style="list-style-type: none"> <li>■ Select the <b>Use the following IP address</b> button on the Network web page.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>■ Use FARGO IP-Tracer, which allows you to find FARGO compatible printers and specify their addresses.</li> </ul> <p>The printer also allows you to use the LCD menus to save the current IP addresses as static (see above) and then switch DHCP (dynamic IP address selection) to DISABLED:</p> <p><b>Options&gt; Menu &gt; Network Settings &gt; DHCP &gt; Change</b></p>

What do the LEDs by the Ethernet connection on the back of the printer indicate?	The green LED indicates a valid Ethernet connection. The amber LED indicates network activity.
How do I print a test page from Windows to verify the Ethernet configuration of the printer and printer driver?	<ol style="list-style-type: none"><li>1. Open the printer driver properties window.</li><li>2. Select <b>Start &gt; Settings &gt; Printers and Faxes &gt; [your printer driver name (i.e., Card printer)] &gt; Properties.</b></li><li>3. Ensure that the printing preferences are set correctly for the ribbon installed in your printer. Select the <b>Print Test Page.</b></li></ol>

## A.2 Glossary of Terms

Term	Purpose
Default gateway	Specifies the address of the router (in a network using subnets) that forwards traffic to a destination outside of the subnet of the transmitting device.
DHCP (Dynamic Host Configuration Protocol)	The protocol used by a network to automatically assign network settings to connected devices so that they work together.
DNS (Domain Name System)	Defines the network protocol that allows devices to find IP addresses from a network name server.
DNS domain suffix	This is the suffix to be added to the domain name to make a complete name.
DNS server address	This is the address of the server that provides the translation from a descriptive name to an IP address.
Guest user	A user without rights to change printer settings.
ICMP (Internet Control Message Protocol)	The basic message protocol for the internet.
IP (Internet Protocol)	The network protocol that identifies devices and messages by addresses so that communications can occur between devices on different local networks.
IP addresses	Specifies the current IP addresses that are 32-bit values that are normally expressed in dotted-quad format. <b>Note:</b> This address must not be the same as another device on the same local network.
MAC (Media Access Control)	The unique numeric value address associated with a network device that gives the device a unique identity. This address is assigned by the device manufacturer to ensure its uniqueness.
MIB (Management Information Base)	A formal description of the way an agent can be accessed using SNMP and the functions that can be managed.
Network settings	The basic network parameters needed to configure the network interface. These include the IP address, the subnet mask, the default gateway, the DNS server address, and the DNS domain suffix.
Ping	A common utility or command that sends a message to network devices asking for a return message. This is used to diagnose if the device is on the network or to troubleshoot the connection.
Root user	A user with administrative rights to change any printer settings.
SNMP (Simple Network Management Protocol)	This protocol is for the network management services. This protocol provides a means for network compliant devices, called agents, to store data about themselves in a Management Information Base (MIB) and return this data to the SNMP requesters.
Subnet mask	Specifies a 32-bit value that routers use to send a message to the correct subnet.
Syslog	The standard method for logging system events.
TCP (Transmission Control Protocol)	The network protocol that allows reliable network communications between devices.
TCP/IP	Network communications using TCP and IP protocols.

Telnet	This is a common terminal emulation program that allows a user to send commands to a TCP/IP connected device and receive the responses.
UDP (User Datagram Protocol)	Defines a protocol for sending and receiving messages on a network.

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