



ZebraNet®
10/100 Print Server

User Guide



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About This Document

This section provides you with contact information, document structure and organization, and additional reference documents.

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Who Should Use This Document

This User Guide is intended to be used by any person who will install and work with the 10/100 PS.

How This Document Is Organized

This User Guide is set up as follows:

Section	Description
<i>Introduction</i>	This chapter provides a high-level overview of the 10/100 PS device, installation types, standard network configurations, and how to work with 10/100 PS.
<i>Getting Started</i>	This chapter provides you with information and procedures for working with the most frequently used 10/100 PS features.
<i>Installation</i>	This chapter provides information on how to install the 10/100 PS and the ZebraNet Utilities.
<i>Printing Configurations</i>	This chapter provides information and instructions on configuring your printer.
<i>Using Printing Protocols</i>	In this chapter, you are given steps to set up your 10/100 PS to support Internet Printing Protocol (IPP). Also, an exercise is provided to experiment with File Transfer Protocol (FTP) support.
<i>ZebraLink on page 73</i>	The appendix provides you with detailed information that allows you to use the enhanced functionality of your ZebraLink-enabled printer with the 10/100 PS.
<i>10/100 Print Server on page 91</i>	This appendix provides you with details on the 10/100 PS features that were not covered in the chapter Getting Started on page 21.
<i>ZebraNet Utilities on page 113</i>	The appendix provides you with details on ZebraNet Utilities, the software suite of printer administration tools that complements and enhances both ZebraLink and the ZebraNet family of connectivity products.
<i>Hardware Troubleshooting on page 127</i>	This section provides you with solutions to known issues.
<i>Frequently Asked Questions on page 133</i>	This section provides a group of frequently asked questions (FAQs) about 10/100 PS.
<i>Glossary on page 137</i>	This appendix is a list of terms and associated definitions.

Contacts

Technical Support via the Internet is available 24 hours per day, 365 days per year.

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E-mail Back Technical Library:

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Subject line: Emailist

Self Service Knowledge Base: www.zebra.com/knowledgebase

Online Case Registration: www.zebra.com/techrequest

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Key: T: Telephone
F: Facsimile
E: E-mail

Document Conventions

The following conventions are used throughout this document to convey certain information:

Alternate Color (online only) Cross-references contain links to other sections in this guide. If you are viewing this guide online, click the [blue text](#) to jump to its location.

Command Line Examples All command line examples appear in Courier New font. For example, type the following to get to the Post-Install scripts in the bin directory:

```
Ztools
```

Files and Directories All file names and directories appear in Courier New font. For example, the Zebra<version number>.tar file and the /root directory.

Cautions, Important, Note, and Example



Caution • Warns you of the potential for electrostatic discharge.



Caution • Warns you of a potential electric shock situation.



Caution • Warns you of a situation where excessive heat could cause a burn.



Caution • Advises you that failure to take or avoid a specific action could result in physical harm to you.

Caution • Advises you that failure to take or avoid a specific action could result in physical harm to the hardware.



Caution • Advises you need to wear protective eye wear.



Important • Advises you of information that is essential to complete a task.



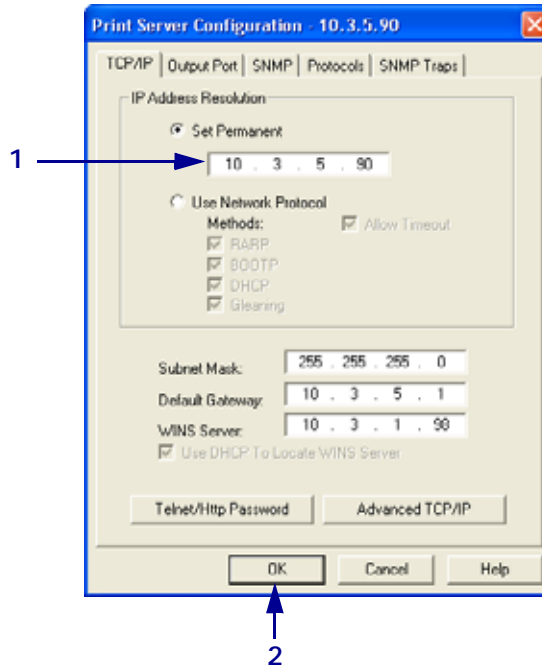
Note • Indicates neutral or positive information that emphasizes or supplements important points of the main text.



Example • Provides an example, often a scenario, to better clarify a section of text.

Illustration Instructions Used when an illustration contains either information about a dialog box or step(s) to accomplish in a dialog box.

One illustration instruction identifies a section of the dialog box and the other shows steps to follow.



1	Set Permanent text-box.
2	<p>a. In the Set Permanent text-box, type in the print server's IP address.</p> <p>b. When you are finished, click OK.</p>

Related Documents

The following documents might be helpful references:

- *ZebraNet Wireless Print Server User Guide*
- *ZPL II® Programming Guide For x.10 through x.13 Firmware*
- *ZPL II® Programming Guide For x.14 Firmware and Above*
- *ZebraNet PrintServer II™ Installation and User Guide*



Introduction

This chapter provides a high-level overview of the 10/100 PS device, installation types, standard network configurations, and how to work with 10/100 PS.

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Overview

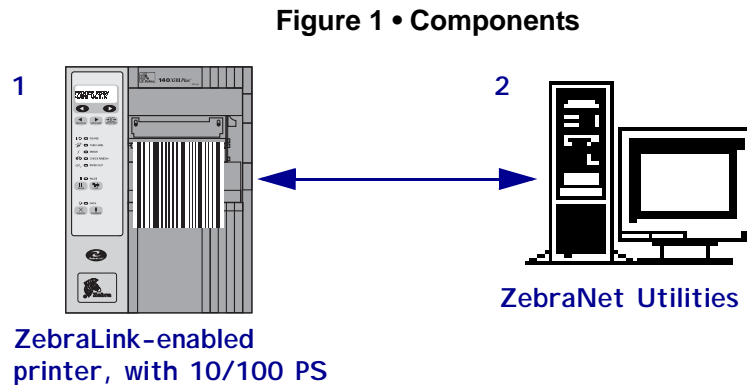
The 10/100 Print Server (PS) is an optional factory- or field-installed device that connects the network and your ZebraLink-enabled printer. 10/100 PS provides you with a browser user interface for printer and 10/100 PS settings. If you use the ZebraNet Utilities, you can easily access the specialized features of a ZebraLink enabled printer. For details, see [ZebraNet Utilities](#) on page 113.



Important • You can download the most recent version of ZebraNet Utilities from http://www.zebra.com/printer_management.html.

Illustration

Figure 1 shows the flow of components that work with 10/100 PS. The table that follows identifies the components and how they enhance each respective device:



1	<p>ZebraLink-enabled printer with 10/100 PS—A ZebraLink-enabled printer with 10/100 PS gives you the following features:</p> <ul style="list-style-type: none">• Printer alerts• Print server and printer setup using a browser• Remote monitoring and configuration capability of the 10/100 PS using a browser• The ability for you to send unsolicited printer status messages via e-mail-enabled devices <p>The 10/100 PS can be either field- or factory-installed. For details, see Installation Types on page 18.</p>
2	<p>ZebraNet Utilities—ZebraNet Utilities is a suite of software programs that work with 10/100 PS and enhance the features of ZebraLink resident within ZPL-based printers. The features include:</p> <ul style="list-style-type: none">• <i>ZebraNet Alert</i> lets you configure multiple event alerts per device with different alerts going to different people. You are notified of alerts from either visual or audio cues. You can also generate advanced alert reports.• <i>ZebraNet Connect IP</i> allows you to discover a print server on a network and define a port for printing.• <i>ZebraNet View</i> allows you to locate printers automatically. ZebraNet View searches on parameters such as IP address, subnet, printer model, printer status, and many other user-defined characteristics. It also offers powerful device management capabilities.• <i>ZebraNet View Java Applet</i> is a Java-based version of the popular ZebraNet View. It gives you ZebraNet View capabilities in a non-Windows environment.

Requirements

This section lists the minimum requirements for 10/100 PS, which include software, browser support, protocols, and hardware.

Software

These are the platforms supported by ZebraNet Utilities:

Microsoft® Windows® 95/98/Me/NT/2000/XP:

- Client mode for peer-to-peer printing via TCP/IP
- Print Protocols & Methods (all simultaneously active):
 - TCP/IP
 - LPR/LPD
 - Telnet
 - FTP
 - IPP v1.0
 - Raw printer port (port 9100)

The ZebraNet View Java Applet is supported by most Java-enabled browsers:

UNIX® Linux, and other systems supporting TCP/IP:

- Print Protocols & Methods (all simultaneously active):
 - TCP/IP
 - LPR/LPD
 - Telnet
 - FTP
 - IPP v1.0
 - Raw printer port (port 9100)

Browser Support

- HTML v3.2 or higher
- Internet Explorer or Netscape Navigator

Protocols

- TCP/IP: ARP, RARP
- TCP/IP & UDP: DHCP, BOOTP, SNMP v1.0
- HTTP v1.0

Hardware

The following are the 10/100 Print Server (10/100 PS) options available for different printer models:

Printers	External	Internal Field Upgrade	Internal Factory
105SL™	•	•	•
R110Xi™	•	•	•
R170Xi™	•	•	•
PAX4™ series	•	•	•
S4M™	•	•	•
S600™	•		
XiIIIPlus™	•	•	•
Xi4	•		
Z4Mplus™	•	•	•
Z6Mplus™	•	•	•
ZM400™	•		
ZM600™	•		

Compatibility

This section identifies the various components that are compatible with 10/100 PS.

ZebraNet Wireless Print Server 10/100 PS is fully compatible with the Wireless Print Server.

ZebraNet Wireless Plus Print Server 10/100 PS is also fully compatible with the Wireless Plus Print Server.

Software IBM®: Tivoli® v7.1.3, HP®: Web JetAdmin™ v7.0, OpenView™ v6.4, and any SNMP management application via Zebra Management Information Base (MIB) all work with 10/100 PS.

Installation Types

10/100 PS can be factory- or field-installed, as follows:

Factory Factory installations are for new Zebra printers that are built with the internal 10/100 PS option.

Field Field installations are for Zebra printers already in the field that do not have the 10/100 PS device installed. The 10/100 PS option can be installed on existing printers, as follows:

- **External 10/100 PS** — attaches to the printer parallel port
- **Internal 10/100 PS** — for the appropriate Zebra printers, this option connects directly to the main logic board



Caution • A qualified service technician must perform this installation.

External 10/100 PS Specifications

General Specifications			
Network Connection		Ethernet 10BaseT and 100BaseT UTP RJ-45 connection Half and Full Duplex Communications	
Printer Connection		Bi-directional, IEEE-1284 Centronics parallel port (Compatibility, Nibble, and ECP)	
User Interface		LED activity indicators: <ul style="list-style-type: none"> • bi-color display of operational status • bi-color display of speed and network activity 	
Height (external dimensions)		1.2 in.	30.48 mm
Width (external dimensions)		2.8 in.	71.12 mm
Length (external dimensions)		3.2 in.	81.28 mm
Weight		2.7 oz	77 g
Electrical		Maximum 450mA at 5.25VDC Power provided by the printer (Centronics pin 18, 5VDC at 450mA)	
Temperature	Operating	32° to 104°F	0° to 40°C
	Storage	-40° to 140°F	-40° to 60°C
Relative Humidity	Operating	20% to 85%, non-condensing	
	Storage	5% to 85%, non-condensing	
Agency Approvals		Agency Approvals <ul style="list-style-type: none"> • IEC 60950 • EN 55022, class B • EN 55024 • AS/NZS3548 Agency Marks <ul style="list-style-type: none"> • FCC - B • ICES-003 • VCCI • C-Tick 	



Getting Started

This chapter provides you with information and procedures for working with the most frequently used 10/100 PS features.

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Before You Begin

10/100 PS offers many features, but how you access and work with them is dependent on your environment. Before you begin, you need to get information from the 10/100 PS configuration label.



Important • Make sure the printer is turned off (O).

In order to print the 10/100 PS configuration label, the correct media size must be loaded in the printer. For all printers, the minimum label length is 4 in. (101.60 mm). [Table 1](#) shows the minimum label widths needed to print a 10/100 PS configuration label with different DPI printheads.

Table 1 • Label Width

DPI	Inches	MM
600	1.25	31.75
300	2.50	63.50
200	3.69	93.73
150	5.0	127.00

To print a 10/100 PS configuration label, complete these steps:

1. Turn on (I) the printer and let it complete its power-up cycle.
2. When the POST cycle is complete, press the Test button and hold it in for a few seconds before you release it.

A 10/100 PS configuration label prints. Your configuration label looks similar to this:

Figure 2 • 10/100 PS Configuration Label

TCP/IP	
ENABLED	STATUS
10.3.5.74	ADDRESS
255.255.255.0	SUBNET MASK
10.3.5.1	DEFAULT GATEWAY
Enabled	TIMEOUT CHECKING
NETWARE	
DISABLED	STATUS
	FRAME FORMAT
	MODE
GENERAL	
2279500	SERIAL NUMBER
00074D22C84C	HARDWARE ADDRESS
1.00	FIRMWARE VERSION
ERROR	
None	GENERAL
None	TCP/IP
None	NETWARE
JET ADMIN	
ENABLED	STATUS
PORT CONFIGURATION	
Online	PORT NAME
Enabled	PRINTER STATUS
ZTC 140XiIIIPlus-200dpi	BIDIRECTIONAL
None	CONNECTED TO
	ERROR
ZebraNet™ PRINT SERVER CONFIGURATION	
FIRMWARE IN THIS PRINTER IS COPYRIGHTED	

- From the configuration label, you need to look for these numbers:
 - ADDRESS (IP address)
 - SUBNET MASK
 - DEFAULT GATEWAY
 - SERIAL NUMBER
 - HARDWARE ADDRESS (MAC address)
- On the configuration label that prints out for your 10/100 PS device, circle the aforementioned settings. You can now proceed to [Assigning an IP Address on page 24](#).

Assigning an IP Address

Before you can begin working with 10/100 PS, you must get or assign an IP address for the 10/100 PS device.

There are four different ways to assign an IP address. Here is a list and a brief description of each method:

- Web View — Browser-enabled method to assign an IP address.
- ZebraNet View — Utility that remotely manages ZebraLink-enabled printers.
- DHCP — See your LAN administrator for more information.
- Telnet — DOS command to assign an IP address.



Important • Throughout the procedures in this chapter, there are some features that require the default User ID and/or default password. If you are prompted, these are the defaults:

- **User ID:** admin
- **Password:** 1234

With Dynamic Host Configuration Protocol (DHCP)

If your network uses DHCP, your 10/100 PS device is assigned a temporary IP address.



Note • Check with your Network Administrator to see whether your network uses DHCP.

Without DHCP

If your network does not use a dynamic IP addressing system (such as DHCP), you need to set a permanent IP address for the 10/100 PS device. ZebraNet View is the Windows-based print server management and configuration utility that comes with your 10/100 PS.



Important • The remaining sections are dependent on the successful installation of ZebraNet Utilities. To install, see [ZebraNet Utilities on page 58](#).

Assigning an IP Address with DHCP

To assign an IP address using ZebraNet View, complete these steps:

1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View.



Important • On the illustration that follows, take note of the H/W address column and Serial # column. Compare what you see in ZebraNet View with the configuration label you printed out.

The ZebraNet View dialog opens:

Figure 3 • ZebraNet View

System Name	IP Address	H/W Address	Serial #	Subnet Mask	Default Ga...	Product Type	Product #	Datecode	Status
Focus	10.3.4.102	0040681D6BAB	1928107	255.255.255.0	10.3.4.1	ZebraNet PrintServer	46686	A021A	Warning
Testlab-107	10.3.4.138	0040681D935F	1938271	255.255.255.0	10.3.4.1	ZebraNet PrintServer	46687	A242A	Good
XML/ZPL Hybrid	10.3.4.179	0040681D935A	1938266	255.255.255.0	10.3.4.1	ZebraNet PrintServer	46687	A021A	Good

2. Compare the H/W Address or Serial Number on the 10/100 PS configuration label with the H/W Address column on the screen to find the 10/100 PS you are working with.
3. When you locate your 10/100 PS, select it.
4. From the menu bar, select PrintServer > Configuration.



Important • If the 10/100 PS does not have an IP address, it shows in the main screen with an IP of **0.0.0.0**. If, after 2 minutes, you do not assign an IP Address, the 10/100 PS defaults to IP Address **192.168.254.254**.

5. If your 10/100 PS does not have an IP address, complete these steps:
 - Find your 10/100 PS and right-click.
 - In the small dialog that opens, enter an IP Address, click OK.
 - The ZebraNet View dialog opens.

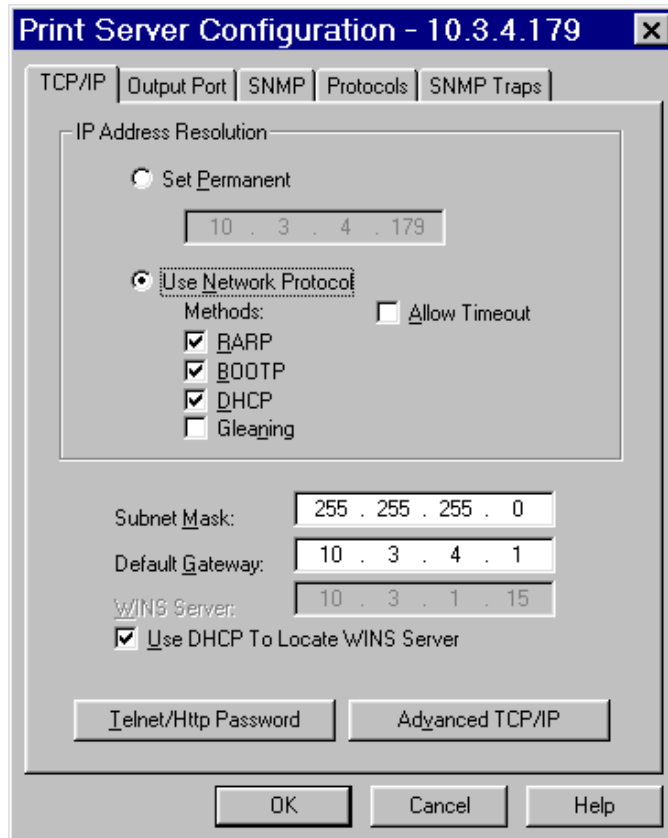
Setting the Subnet

To set the subnet, complete these steps:

1. From the ZebraNet View menu bar, select PrintServer > Configuration.
2. Click the TCP/IP tab.
3. From the Print Server Configuration > TCP/IP tab, in the Subnet Mask text-box, type in your subnet mask.
4. Confirm it is accurate, and click OK.

The Print Server Configuration dialog opens:

Figure 4 • Printer Server Configuration



5. To set a permanent IP address, enable the **Set Permanent** option button.
6. In the **Set Permanent** text box, type a new IP address, and then click OK.

Setting the Default Gateway

These steps are optional.

To set the default gateway, complete these steps:

1. From the ZebraNet View menu bar, select PrintServer > Configuration.
2. Click the TCP/IP tab.
3. From the Print Server Configuration>TCP/IP tab, in the Default Gateway text-box, type in your default gateway.
4. Confirm it is accurate, and click OK.

In a Non-Windows Environment

These steps can be used with all printers. However, the liquid crystal display (LCD) instructions are for printers with a control panel (also known as an LCD).

Assigning an IP address from the printer LCD

To assign an IP address from the printer LCD, complete these steps:



Important • Your 10/100 PS must have firmware 1.00 and higher and your Zebra printer must have firmware x.10 or higher with an LCD.

1. Turn on **(I)** the printer and wait until the LCD says **PRINTER READY**. If you do not have a network cable in the port, the 10/100 PS prints the configuration label when it is ready.
2. On the printer control panel, press **SETUP/EXIT**.
3. On the printer control panel, press **PREVIOUS** until you reach the **NETWORK SETTINGS** menu item.
4. You can edit any of the following network settings in order to communicate with any 10/100 PS in your network environment.



Important • To change any of these settings, you need to enter the printer password. The default password is 1234.

- `ip resolution` (dynamic, permanent) The printer menu item **IP RESOLUTION** must be set to **PERMANENT** if attempting to assign the IP address from the control panel.
- `default gateway` (default setting of 000.000.000.000)
- `subnet mask` (default setting 255.0.0.0)
- `ip address` (if initial default setting is 0.0.0.0, after 2 minutes this defaults to **192.168.254.254**)
- `ip protocol` (gleaning only, RARP, BOOTP, DHCP, DHCP and BOOTP, all)

Assigning an IP address via a Telnet session

If your environment is not Windows-based, this section is for you. However, this method can be used in a Windows environment, too.

The methods used for assigning an IP address with a Telnet session are **Static Route** and **Gleaning**.



Important • This applies to any TCP/IP capable workstation/host networked with the Zebra printer. Both the workstation/host and the 10/100 PS must be on the same network segment.

Before you can Telnet to the 10/100 PS and configure it, you must first assign the 10/100 PS a temporary IP address.

Static Route

To use this method, complete these steps:

1. Turn on **(I)** the printer and wait for 2 minutes to allow for the device to complete the self-test.

During this time, the 10/100 PS performs an address broadcast. If no address is assigned to the unit (via DHCP or Bootp), it uses a default address. The default address for 10/100 PS is **192.168.254.254**. Print the 10/100 PS configuration label to confirm the address. For details, see *Before You Begin* on page 22.

2. You can use the `route add` command to place the default IP address into the workstation's network routing table.
3. At the workstation/host command prompt (in Windows, at the DOS prompt), type:

```
route add **** "IP address of the workstation" 0
```

where **** is the IP address on the 10/100 PS configuration label



Note • The zero (0) placed at the end of the “route add” command is optional on some systems.

4. Telnet to the 10/100 PS by typing:
"Telnet xxx.xxx.xxx.xxx"
The password is 1234.

5. At this point, you can alter the settings as desired. When complete, do a reset and allow the 10/100 PS self test to complete before proceeding with any communications activity.

Gleaning

To use this method, complete these steps:

A method by which the 10/100 PS uses the IP address of the first ping packet that is sent to its hardware address.



Note • Gleaning works **only** on local subnets at routers. It does not pass Address Resolution Protocol (ARP) broadcasts.

To use this method, complete these steps:

1. Add an entry to the ARP table that assigns an IP address to an Ethernet (hardware) address.

The syntax for this command is:

```
arp -s "temporary ipaddress of print server" "MAC Address  
(print server hardware address)" arp -s <temporary ip  
address> <MAC Address>
```



Example • You would type: `arp -s 10.3.50.59 00-07-4d-1D-B9-86`

2. Power cycle the printer.
3. As the printer reboots, begin a continuous ping to the address assigned previously.



Note • Most UNIX systems use a continuous ping.

To use a continuous ping from a Windows host, you must issue the following command:
`ping -t "ipaddress"`

4. When the 10/100 PS begins to respond, stop the ping activity.
In Windows, Ctrl + C halts the pinging.
5. Telnet to the 10/100 PS and assign the appropriate IP address, subnet mask, and gateway if applicable.
6. Once this is complete, reset the 10/100 PS.
For details on resetting the 10/100 PS, see [Reset on page 103](#).

Setting Alerts

It is important to understand the relationship between the 10/100 PS and the printer when you are establishing alerts. Here are the relationships you need to be aware of:

- Non-ZebraLink-enabled printers — can only send alerts on a specific set of printer errors that are reported in the IEEE 1284 protocol.
- ZebraLink-enabled printers — ZebraLink allows for the printer to send alerts outside of the IEEE 1284 protocol.

ZebraNet View

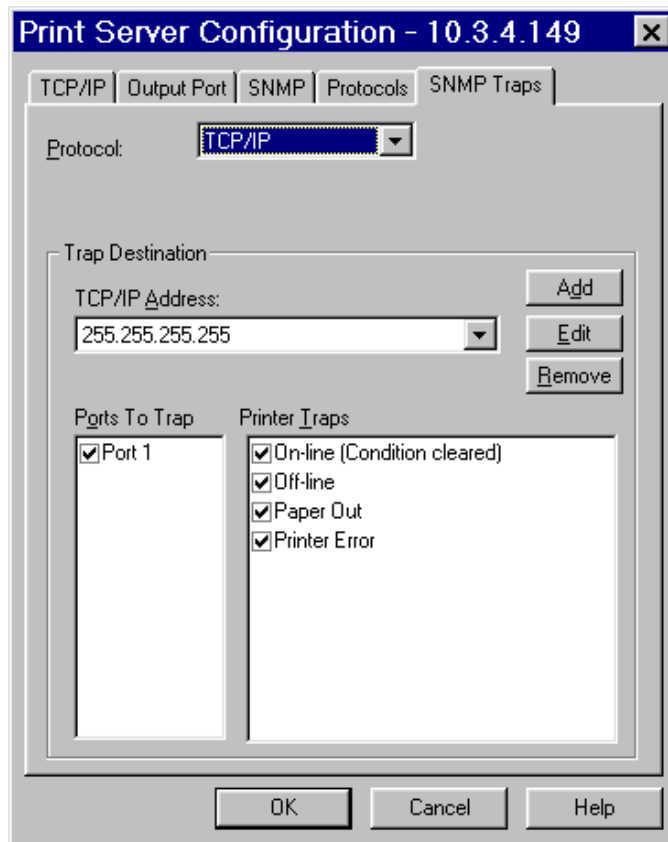
This section includes step-by-step instructions for setting up an alert using ZebraNet View. For information on setting up alerts using ZebraLink, see [ZebraLink on page 32](#).

To set alerts (traps) using ZebraNet View, complete these steps:

1. In the ZebraNet View dialog, from the menu bar select Print Server > Configuration.
2. Click the SNMP Traps tab.

The Printer Traps check boxes are the alerts you can set from ZebraNet View.

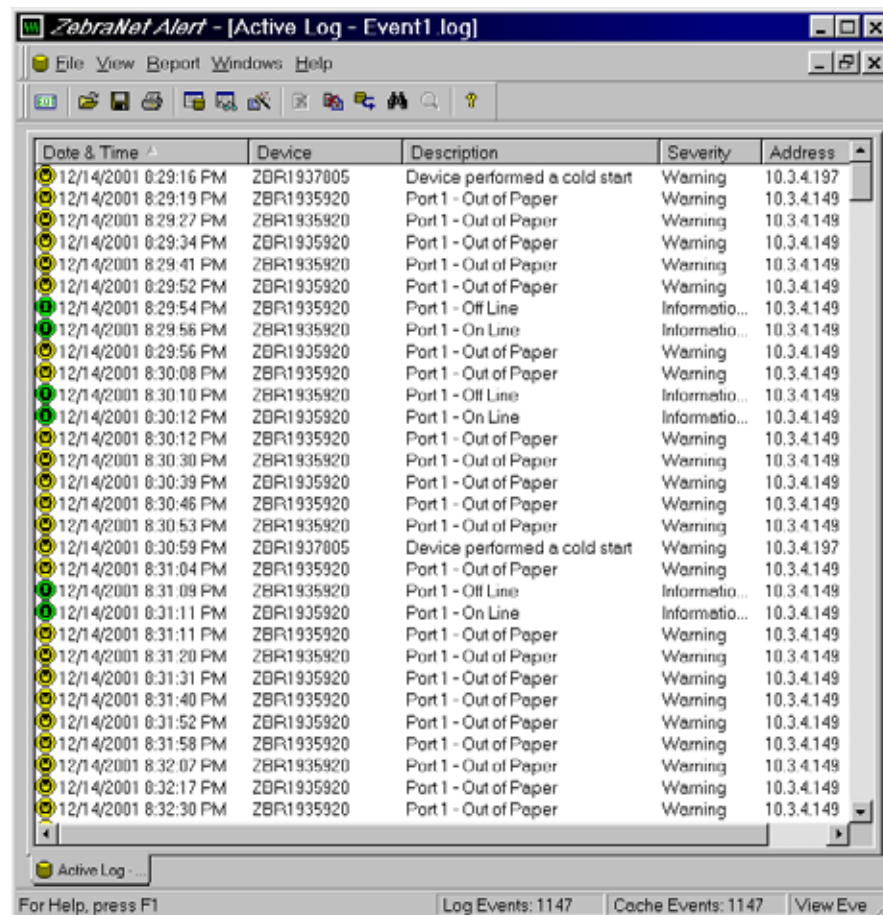
Figure 5 • SNMP Traps



3. Enable the alerts (printer traps) you want to set here and click OK.
4. To monitor the alerts you established, from the task bar select Start > ZebraNet Utilities > ZebraNet Alert.

The ZebraNet Alert dialog opens:

Figure 6 • ZebraNet Alert



In this dialog you can view the log of errors and monitor the activity of your printer(s).

ZebraLink

This section has step-by-step instructions for setting up an alert using ZebraLink™. For information on setting up alerts using ZebraNet View, see [ZebraNet View on page 38](#).



Important • If you do not have a ZebraLink-enabled printer, these steps will not work.

To view Alert Setup using ZebraLink, complete these steps:

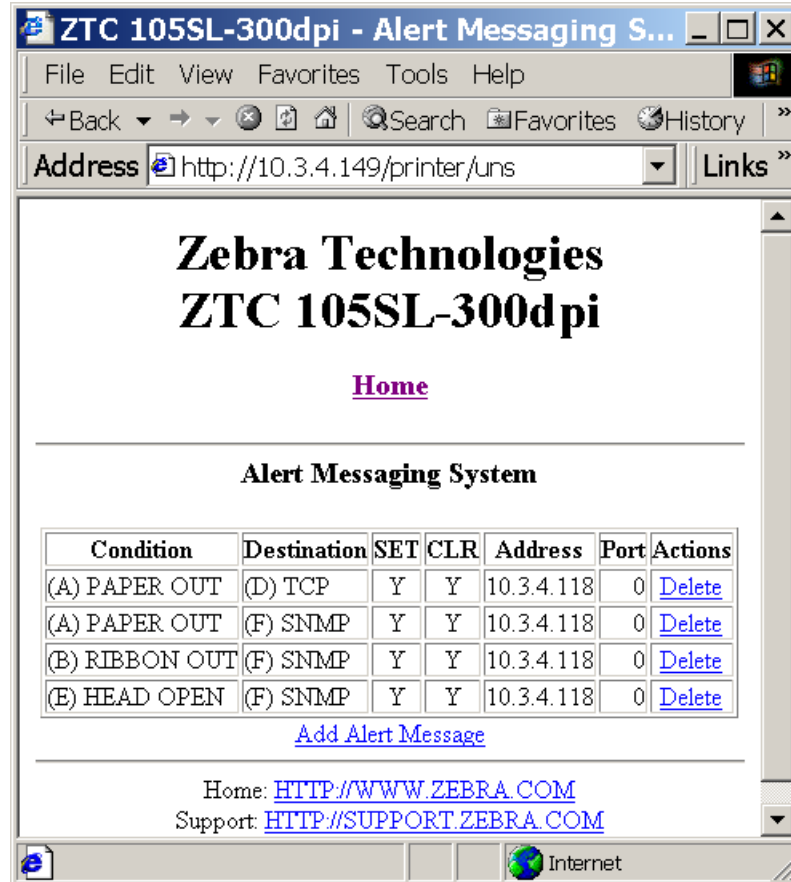
1. Open a Web browser.
2. In the Address text-box, type your printer's IP address, and press Enter.
The Printer Home Page dialog opens.

Figure 7 • Printer Home Page



3. From the Printer Home Page, click Alert Setup.
The Alert Messaging System dialog opens:

Figure 8 • Alert Messaging System



To add an alert, you need the default password.

4. To add an alert, click Add Alert Message.
5. Select accordingly.
6. You can use ZebraNet Alert to monitor alerts set through a ZebraLink-enabled printer.
From this Web page you can add alert messages notifying you when a printer is out of paper, needs a ribbon, and so on.

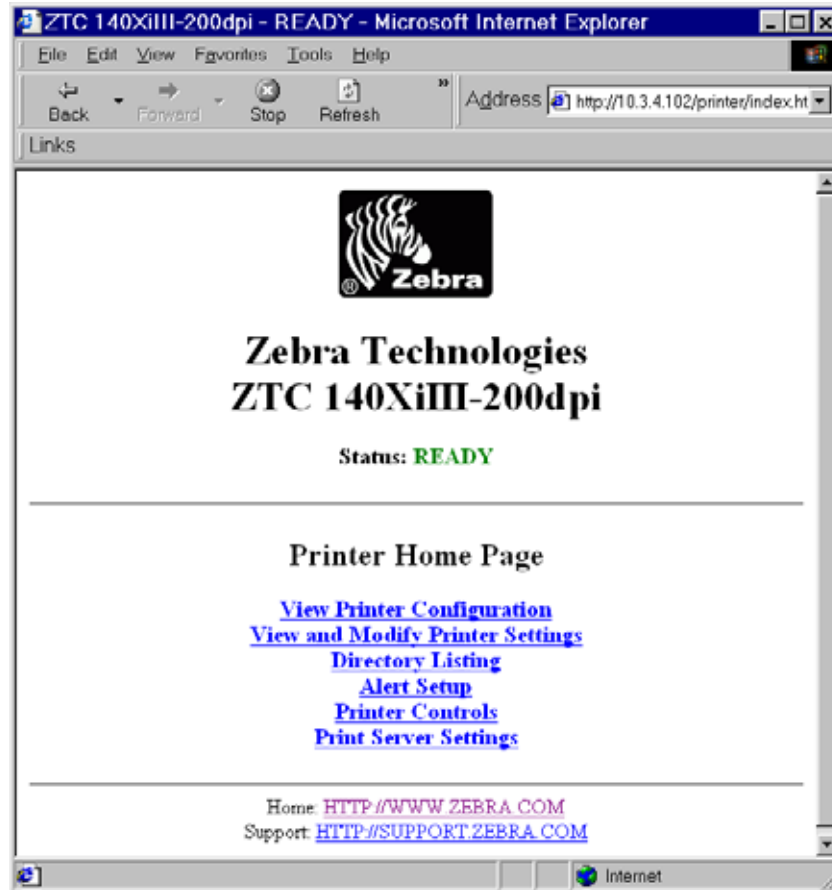
Establishing Email Alert Messaging

ZebraNet Alert supports email notification of printer errors sent directly to any valid email address. You can have multiple email addresses set up for routing different error messages, or split notifications between email and other network management tools.

To begin receiving email notification of errors, complete these steps:

1. Open a Web browser.
2. In the Address text-box, type in the printer's IP address.
The Printer Home Page opens.

Figure 9 • Printer Home Page



3. From the *Printer Home Page*, click Alert Setup.
The Alert Setup page shows a list of message notifications and their respective destinations (if no notifications are listed).

- To set up email notification, go to the Alert Setup page and click Add Alert Message.



Important • The printer accepts only the last configuration made.

The Add Alert Message page opens.

Figure 10 • Add Alert

- Specify the condition to send over email, such as **HEAD ELEMENT BAD** or **PAPER OUT**.
- Set destination to Email.
- In the SET drop-down box, select YES.
You will be notified via email whenever your specific condition is detected.
- In the CLR drop-down box, select YES if you wish to be notified when the specific condition is cleared.
- Enter a valid email address for the messages to be sent to.



Example • admin@yourcompany.net (The Port field can be ignored for email setup.)



Important • A password is required. If you forget to enter the password, the alerts you just set are deleted.

10. Click Add Alert Message.

To receive email alert, you must give 10/100 PS the IP address of your mail server that is running SMTP.

11. To save current settings, click Save Printer Setting.

12. Enter the password and click Save Current Configuration.

13. You can continue to add more Alerts, if finished:

- From the Printer Home Page, select PrintServer Settings > Network Communications Setup.
- Click SMTP Email Alerts.
- Specify your SMTP server address.

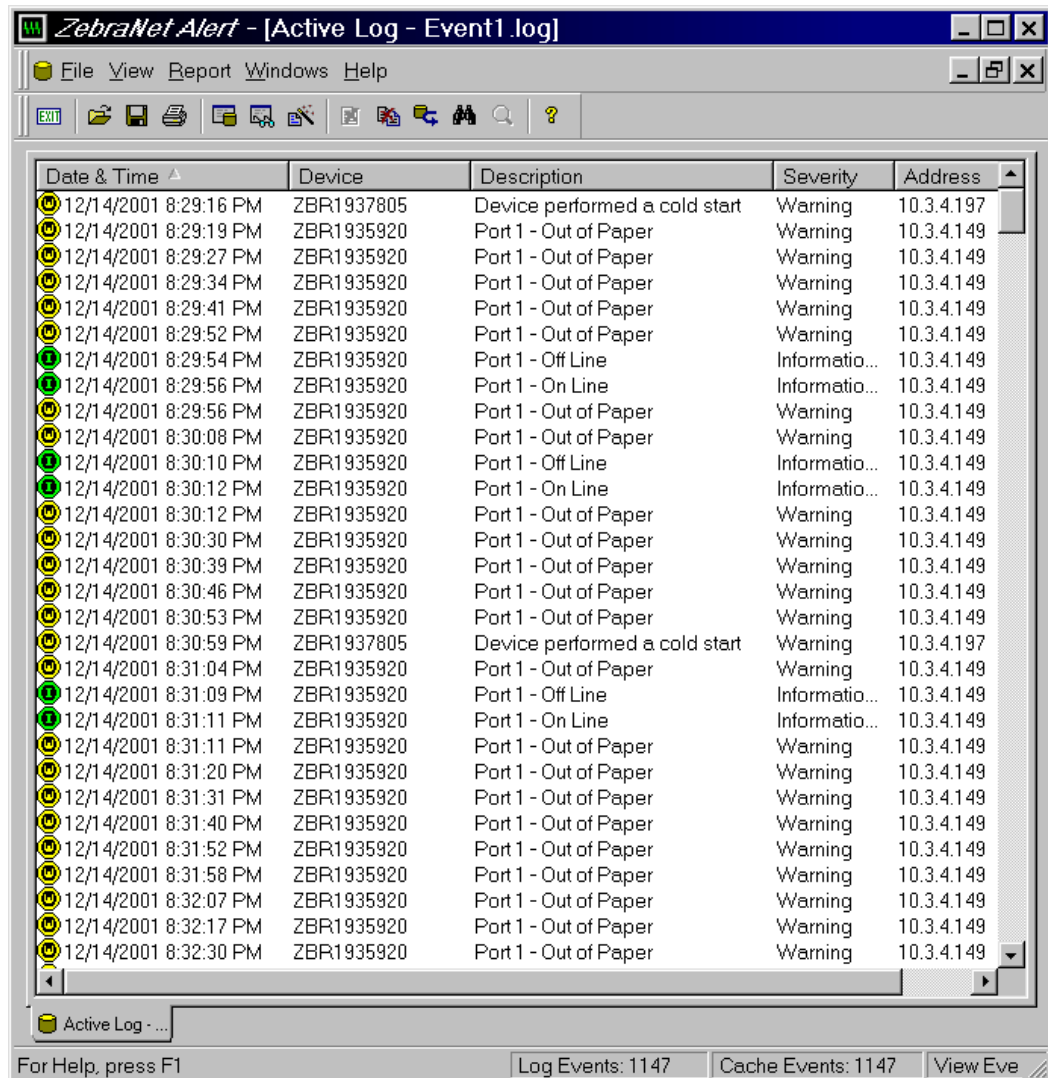


Note • The SMTP Server address might be referred to as Mail Server address.

When these steps are done, you can begin receiving email notification messages.

To monitor alerts, complete these steps:

1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet Alert.
The Active Log dialog opens, displaying a list of all the logged alerts.

Figure 11 • Active Log Dialog

2. From this dialog, you can track the printer(s) activity and status.
3. From the menu bar, you can explore all of the other features, such as Reports.

Checking 10/100 PS Configuration Settings

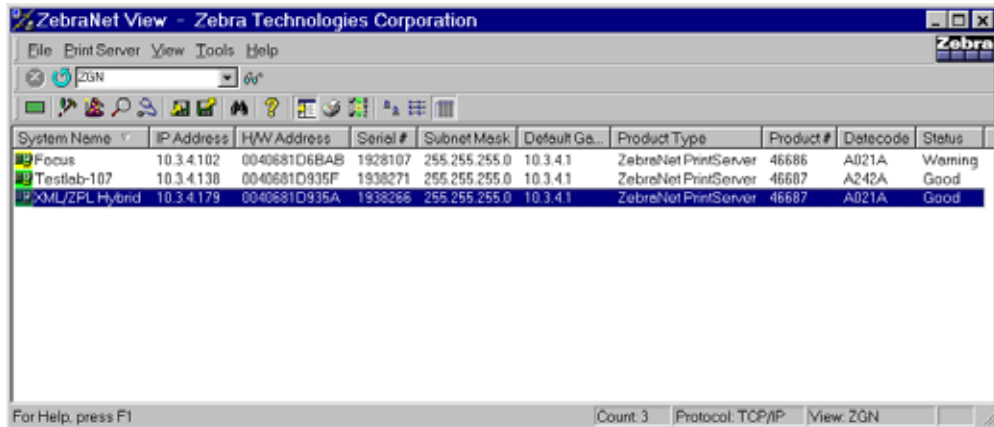
This section provides steps on how to check the 10/100 PS configuration settings using ZebraNet View and a browser.

ZebraNet View

To check configuration settings, complete these steps:

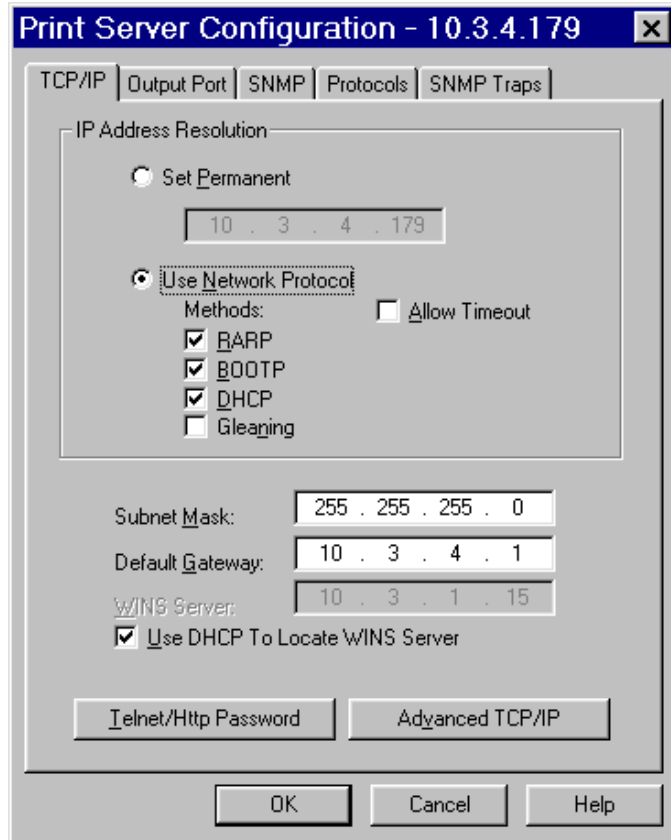
1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View.
The ZebraNet View dialog opens.

Figure 12 • ZebraNet View



2. From the menu bar, select Print Server > Configuration.
The Print Server Configuration dialog opens:

Figure 13 • Print Server Configuration



This dialog offers multiple tabs to choose from. Each tab contains various configuration settings that you can change.

For details on the configurations, see [ZebraNet View on page 114](#).

Browser

This section provides steps on how to check the 10/100 PS configuration settings using its Web pages.

To access the 10/100 PS settings, complete these steps:

1. Open a Web browser.
2. In the Address text-box, type your printer's IP address, and then press Enter.
Your browser page looks similar to [Figure 14](#).

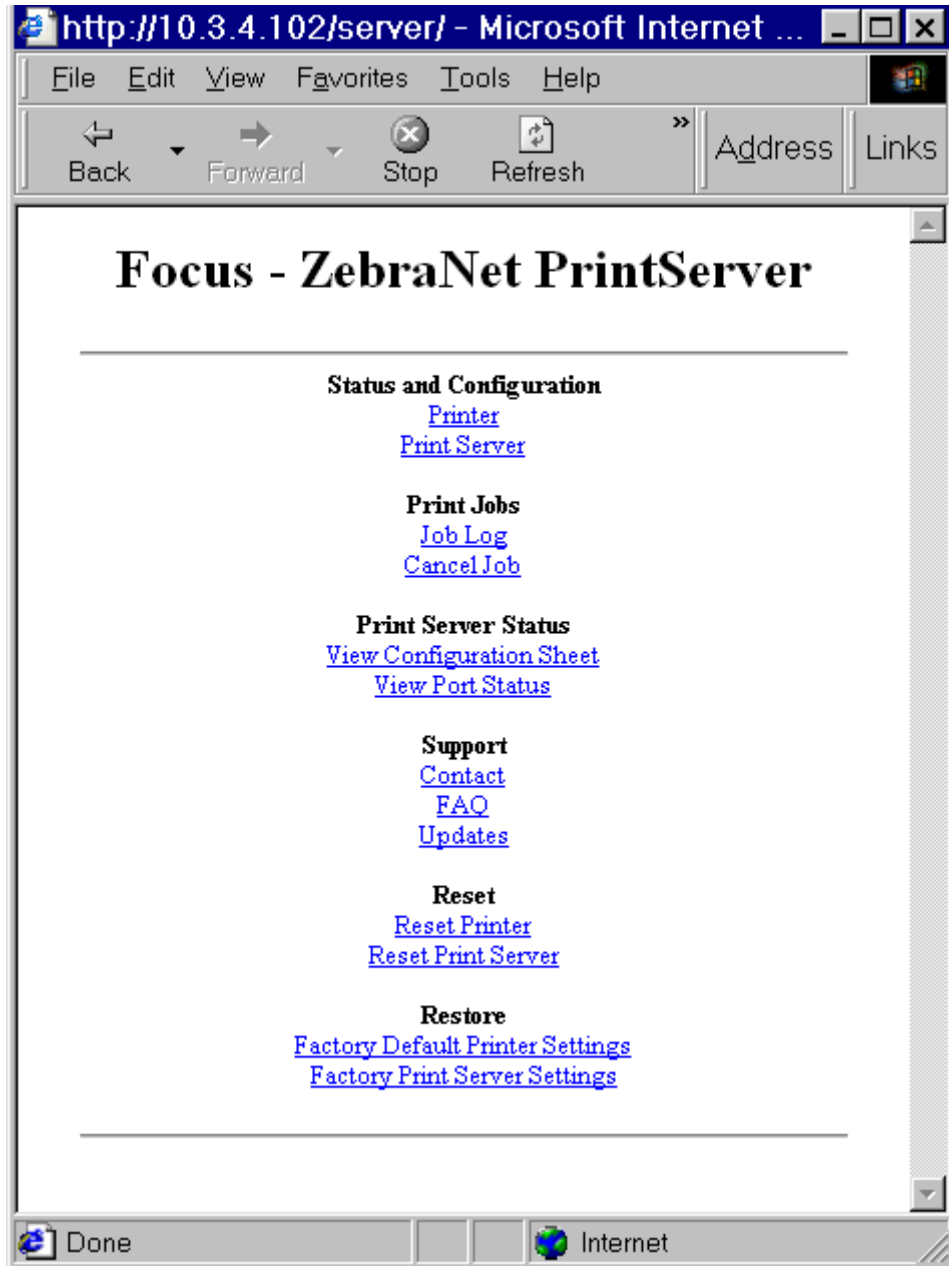
Figure 14 • Browser View



Note • Your printer firmware determines how this page looks. This page is from a printer with firmware x.15 and above.

- From the Printer Home Page, click Print Server Settings.
The default User ID and password are required.
The Print Server Configuration Page opens.

Figure 15 • Print Server Configuration Page

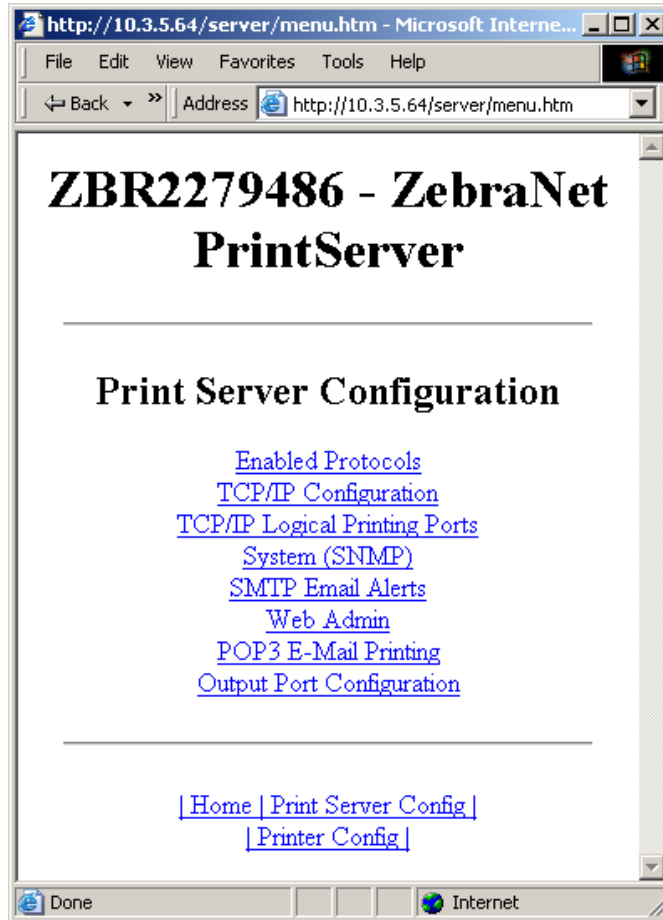


Note • Your printer firmware determines how this page looks. This page is from a printer with firmware x.15 and above.

To access the 10/100 PS settings, complete these steps:

1. From the Print Server page, click Print Server.
The Print Server Configuration page opens:

Figure 16 • Access Settings



2. For details on the configuration choices, see *Checking 10/100 PS Configuration Settings* on page 38.

Setting up a ZebraNet Connect IP

ZebraNet Connect IP allows you to send jobs to print servers that use Dynamic IP addresses (DHCP). It also notifies you of printer errors, such as **paper out** or **head open**. When print jobs are printed through ZebraNet Connect IP, they are sent directly to 10/100 PS and are not routed through a network server, resulting in a reduction of network traffic.



Note • The DHCP feature of ZebraNet Connect IP can rediscover a 10/100 PS on the local subnet, even when its IP address might be changing (for example, when using DHCP for IP address resolution). The 10/100 PS is relocated by its port name as configured through ZebraNet View (the default name is Serial Number-Port Number). This feature is enabled on the local subnet only. A non-local 10/100 PS device is not rediscovered if the IP address changes.

If you have printing problems while using the ZebraNet Connect IP printing port, you may check the status of the port or change its settings through the printer Properties dialog.

- For Windows 95/98, select Port Settings under the Details tab.
- For Windows NT 4.0 or Windows 2000, select Configure Port under the Ports tab.

Windows NT 4.0/Windows 2000

If you are using the Windows NT 4.0 or Windows 2000 operating system, use the following procedure to set up a printer port for the 10/100 PS.

To set up a printer port for the 10/100 PS, complete these steps:

1. From the task bar, select Start > Settings > Printers.
2. Select the Windows printer to use when printing with the 10/100 PS.
3. From the menu bar, select File > Properties.
4. To add a ZebraNet Connect IP port, in the Ports tab select Add Port.
5. From the list of Available Printer Ports, select ZebraNet Connect Monitor as the type of port to add, and click New Port.



Note • If ZebraNet Connect IP monitor is not listed, verify that the ZebraNet Connect IP software has been properly installed. To do this, you need to reinstall the software and choose Modify.

From the Add ZebraNet Connect Port screen, there is a list of all 10/100 PS devices available on the local subnet.

- The TCP/IP monitor searches only the local subnet.
6. If the port you want to add is listed in the Ports Available on Local Subnet window, select the port name. If the port you want to use is not listed, you can:
 - Select Cancel and repeat step 5 to rediscover the print servers.

- In ZebraNet Connect, click the Locate Non-local Device button and enter the static TCP/IP Address used for the 10/100 PS.



Note • The ZebraNet Connect for TCP/IP DHCP discovery feature relocates a 10/100 PS device on the local subnet by its port name, even if the IP address changes. This feature is enabled on the local subnet only. A non-local 10/100 PS device is not rediscovered if the IP address changes.

7. Click Add.
8. To close the Printer Ports dialog, click Cancel.
9. To save the configuration, click OK.

Now you can use ZebraNet Connect. Whenever you print to the Windows printer configured with ZebraNet Connect, your print job will go directly to the ZebraNet 10/100 PS port.

Windows 95/98/Me

To set up a 10/100 PS port using Windows 95/Windows 98/Me, complete these steps:

1. From the task bar, select Start > Settings > Printers.
2. Select the Windows printer that you want to print with ZebraNet Connect IP.



Note • Under Windows 95, you have to set up the printer for a local port first, then open Properties from the File menu and continue with the configurations.

3. From the file menu, select File > Properties.
4. To add a ZebraNet Connect IP port, in the Details tab select Add Port.
5. From the Add Port dialog, select Other, then select the ZebraNet Connect Monitor as the type of port to add.



Note • If ZebraNet Connect IP is not listed, verify that the software has been properly installed.

6. Click OK.
The Add ZebraNet Connect Port screen opens. There is a list of all 10/100 PS devices discovered on the network.
 - The TCP/IP monitor searches only the local subnet.
7. If the port you want to add is listed in the Ports Available on Local Subnet window, select the port name. If the port you want to use is not listed, you can:
 - Select Cancel and repeat step 5 to rediscover the 10/100 PS devices.
 - In ZebraNet Connect IP, click the Locate Non-local Device button and enter the static TCP/IP address used for the 10/100 PS.
8. Click Add.

9. To save the configuration, click OK.

Now, you can use ZebraNet Connect IP. Whenever you print to the Windows printer configured with ZebraNet Connect IP, your print job will go directly to the 10/100 PS port.

Enabling Protocols

You can enable protocols with WebView or ZebraNet View. This section provides you with directions for accessing and enabling protocols using both WebView and ZebraNet View.

WebView

This section contains directions for accessing protocols using WebView. The browser illustrations were captured from a ZebraLink-enabled printer.

To enable protocols using WebView, complete these steps:

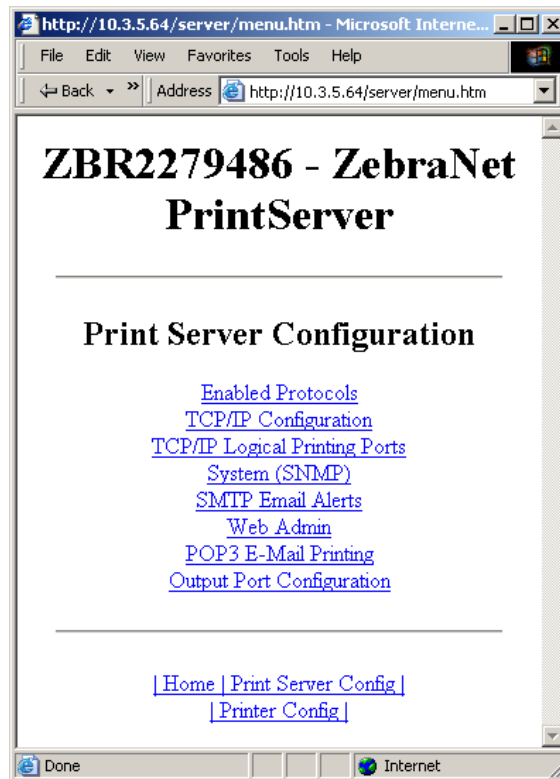
1. Open a Web browser.
2. In the Address text-box, type your printer's IP address, then press Enter.
Your browser page looks similar to [Figure 17](#).

Figure 17 • Address Text-Box



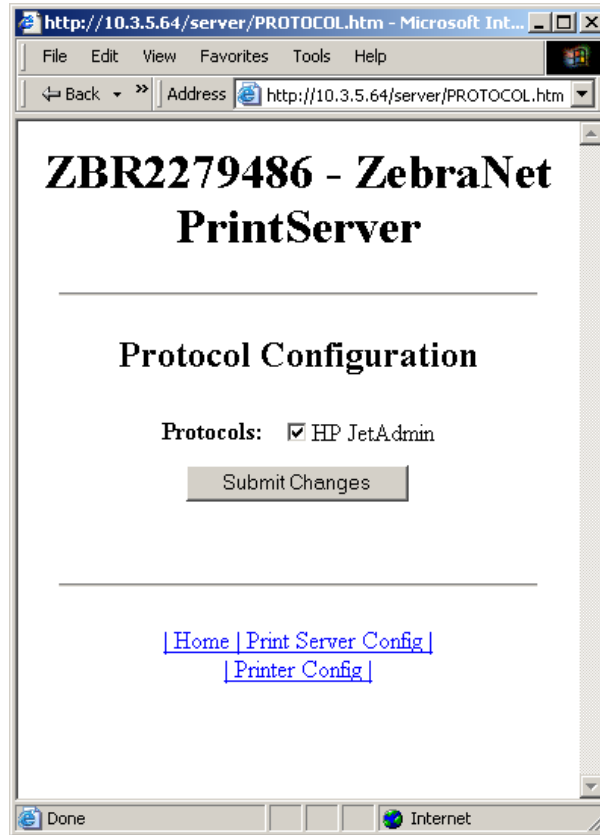
3. From the Printer Home Page, click Print Server Settings.
The default User ID and password are required.
4. From the Print Server page, click Print Server.
The Print Server Configuration page opens:

Figure 18 • Print Server Configuration



- From the Print Server Configuration page, click Enabled Protocols.
The Protocol Configuration page opens:

Figure 19 • Protocol Configuration



- Select the protocols you want to enable, then click Submit Changes.
You get a confirmation to reset the unit for changes to take place.

ZebraNet View

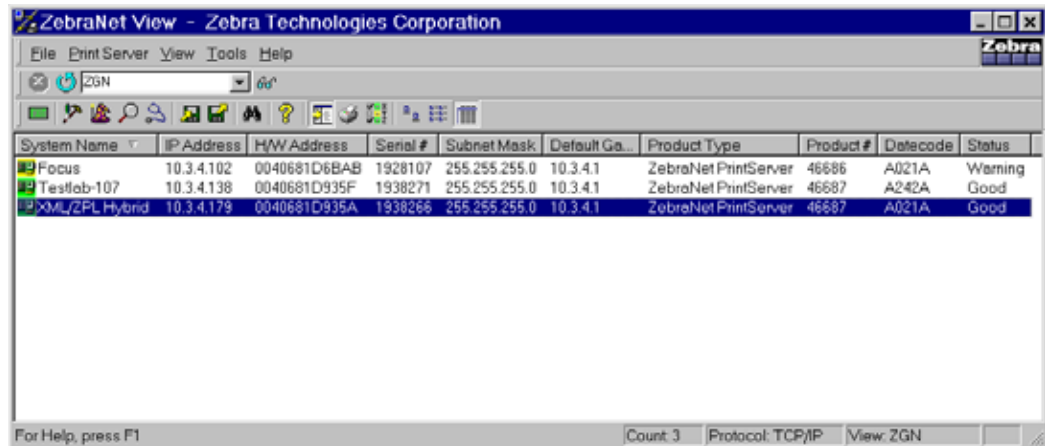
This section contains directions for accessing protocols using ZebraNet View.

To enable protocols using WebView, complete these steps:

1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View.

The ZebraNet View dialog opens:

Figure 20 • ZebraNet View



2. From the menu bar, select Print Server > Configuration.
3. Click the Protocols tab.
The Protocols tab opens.
4. Select the protocols you want to enable, then click OK.
A confirmation message opens.
5. To accept changes, click OK.

Defaulting the 10/100 PS

This section provides you with instructions for defaulting the 10/100 PS to factory settings using WebView, ZebraNet View, and the Test button.

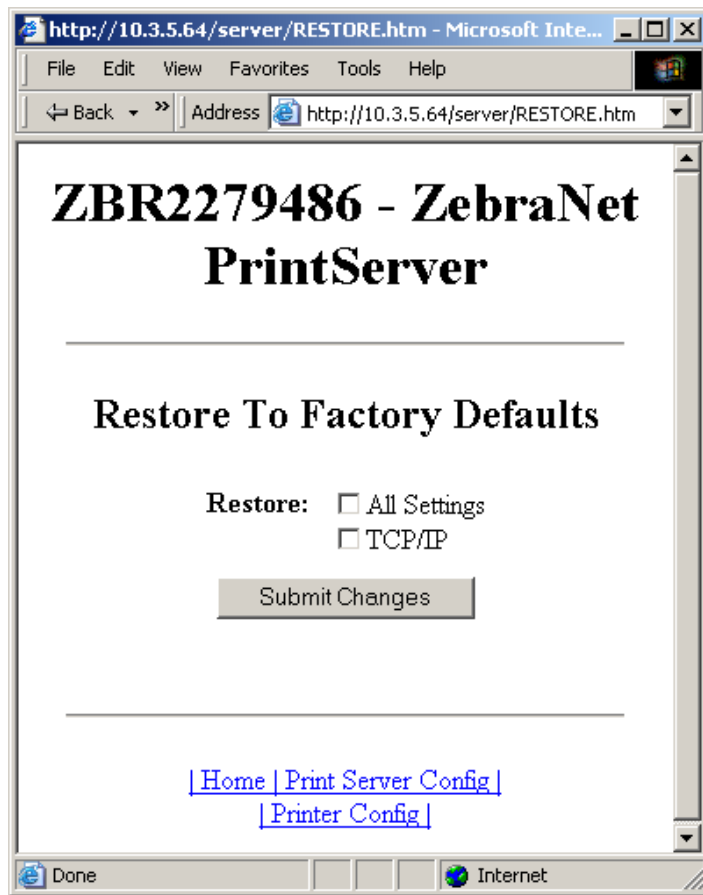
WebView

To default the 10/100 PS to factory settings using WebView, complete these steps:

1. From the ZebraNet PrintServer view, click Factory Print Server Settings.

The Restore to Factory Defaults page opens:

Figure 21 • Restore to Factory Defaults



2. Enable the check box for the settings you want to reset, and click Submit Changes.



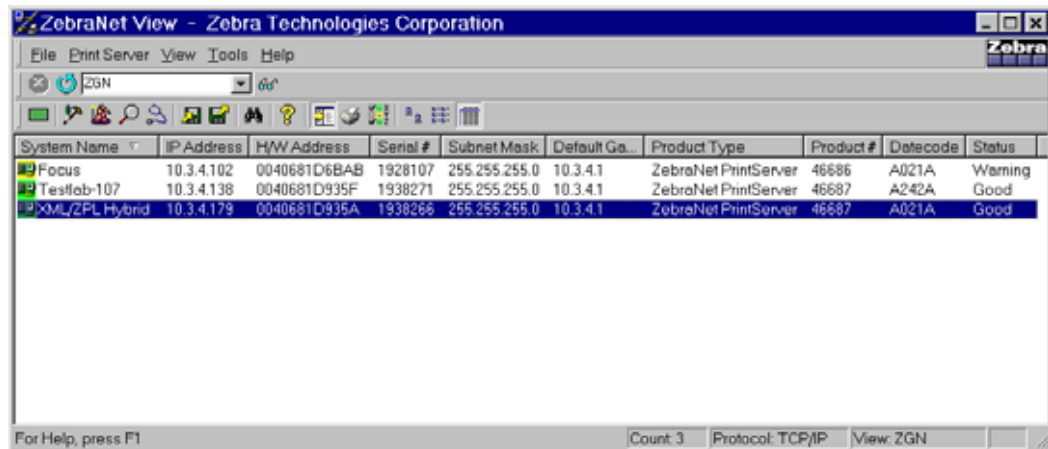
Important • During the reset cycle, the web pages are unavailable. Upon completion, check the 10/100 PS IP address as it may have changed during the reset cycle.

ZebraNet View

To default 10/100 PS to factory settings using ZebraNet View, complete these steps:

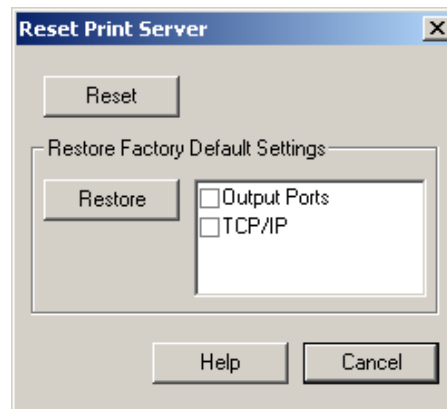
1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View.
The ZebraNet View dialog opens:

Figure 22 • ZebraNet View



2. From the menu bar, select Print Server > Reset.
The Reset Print Server dialog opens:

Figure 23 • Reset Print Server



3. Select the settings you want to reset, then click Restore.

Test Button

To default the 10/100 PS to factory settings using the Test button, complete these steps:

The Test button is accessed via a small recessed hole on the back of the external 10/100 PS device (see [Figure 24 on page 55](#)). For the internal 10/100 PS device, the Test button is located on the back of printer. To press the Test button, you need to insert something small into the hole, like a paperclip.



Note • You must have an active network cable connected to the 10/100 PS device to default the device using the Test button.

1. Turn off (O) the printer.
2. With the printer turned off (I), press and hold the Test button on the 10/100 PS device and turn on the printer.
3. The status indicator tells you when 10/100 PS has been reset to factory defaults, as follows:
 - If an active network cable is connected to the 10/100 PS, the status indicator turns solid **green**. When this happens, you can release the Test button.
 - If there is **not** an active network cable connected to the 10/100 PS, the status indicator flashes **red**. When this happens, you can release the Test button.
 - For more details on status indicators, see [10/100 PS Network Status/Activity Indicator on page 129](#).



Installation

This chapter provides information on how to install the 10/100 PS and the ZebraNet Utilities.

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External 10/100 PS

This section provides you with an illustration of the external 10/100 PS and the steps required for its installation. For a list of compatible printers, see [Hardware on page 17](#).

Before You Begin



Important • Before you install the external 10/100 PS, you might need to upgrade your printer firmware.

To upgrade you printer firmware, complete these steps:

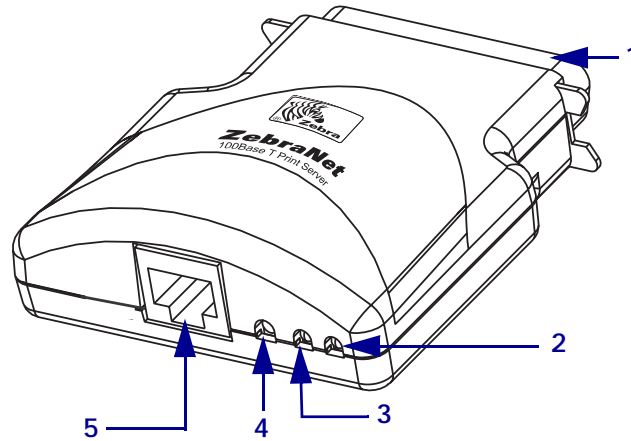
1. If your printer has firmware x.12 firmware, you **must** upgrade your printer firmware to version x.14.x or higher.
2. To upgrade your firmware, visit the Zebra Web site:
www.zebra.com/firmware
3. Confirm that the upgrade was successful:

If...	Then...
Your printer has an LCD	Look at the lower right-hand corner and confirm the version of firmware that is on your printer.
Your printer does not have an LCD	Print out a configuration label to see the version of firmware that is on your printer.

Illustration

Figure 24 shows an external 10/100 PS. When necessary, refer back to this illustration during the installation steps.

Figure 24 • External 10/100 PS



1	Parallel connector
2	Network status LED
3	10/100 PS Status LED
4	Test button
5	Ethernet connector

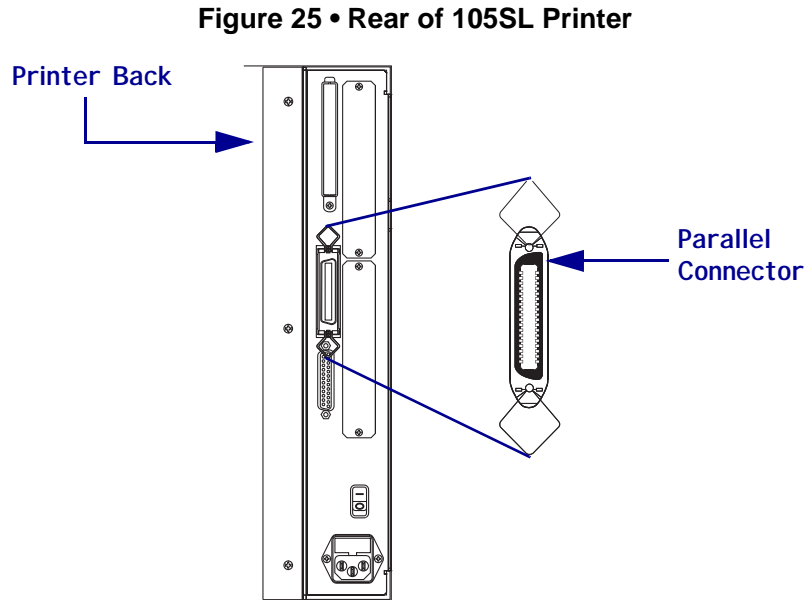
For more details on status indicators, see [10/100 PS Network Status/Activity Indicator](#) on page 129.

Installation Instructions

To install an external 10/100 PS, complete these steps:

1. Turn off (O) the printer.
2. On the back of the printer, connect the 10/100 PS device to the parallel port.

Figure 25 shows the location and provides an enlarged illustration of the parallel port:



3. Secure the wire locks.
4. On the back of the 10/100 PS, connect an active Ethernet cable to the RJ-45 connector Ethernet connector.
5. Turn on (I) the printer.

The 10/100 PS performs a Power On Self-Test (POST). This takes about 45 seconds. During the POST, the 10/100 PS Status LED (just below the TEST button) turns red and flashes on and off. Once the POST is successfully completed and the 10/100 PS is fully initialized, the 10/100 PS Status LED turns green.

For more details on status indicators, see [10/100 PS Status Indicator on page 128](#).



Note • If there is not an active Ethernet cable attached to the 10/100 PS, the LED indicator turns red and slowly flashes on and off.

6. To check the status of the 10/100 PS, press the Test button located on the back of the 10/100 PS.

This prints out a configuration label of the 10/100 PS. To see a sample label, see [Figure 26 on page 57](#).

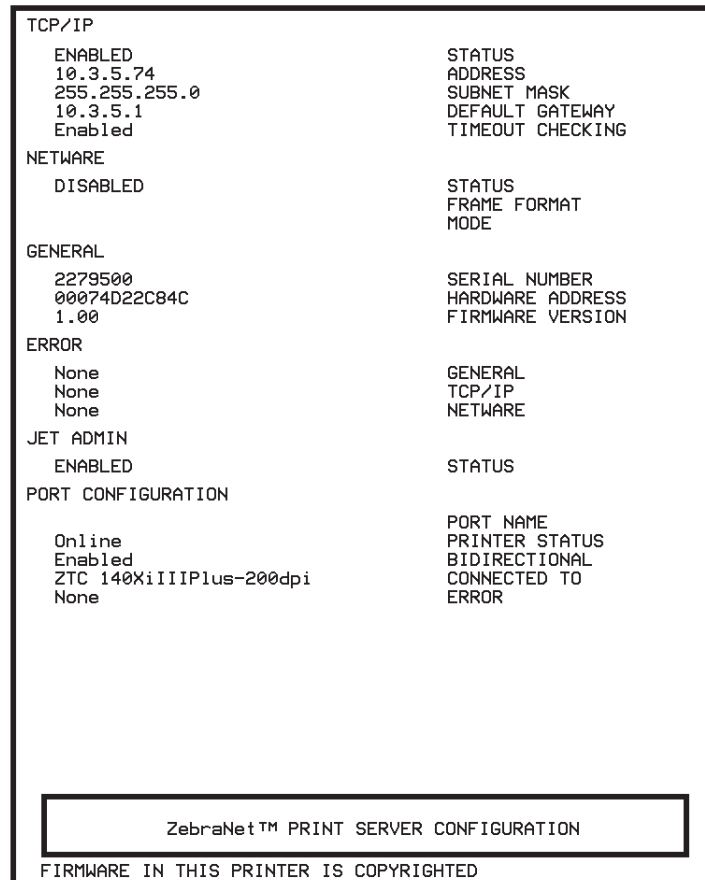
In order to print the 10/100 PS configuration label, the correct media size must be loaded in the printer. For all printers, the minimum label length is 4 in. (101.60 mm). Table 2 shows the minimum label widths needed to print a 10/100PS configuration label with different DPI printheads.

Table 2 • Label Width

DPI	Inches	mm
600	1.25	31.75
300	2.50	63.50
211	3.69	93.73
150	5.0	127.00

This is an example of a 10/100 PS configuration label.

Figure 26 • 10/100 PS Configuration Label



Internal 10/100 PS

To install an internal 10/100 PS, see the installation instructions on the Connectivity Solutions CD.

ZebraNet Utilities

The ZebraNet Utilities is a software suite consisting of tools to assist you with the configuration of the 10/100 PS device, which gives you the flexibility to make changes to settings, track errors, and more.

If you want to be certain you have the most recent version of the ZebraNet Utilities, you can visit our Web site and download the most recent version at:

www.zebra.com/utilities

For more details, see *Overview* on page 14 or *ZebraNet View* on page 114.



Note • Contact your System Administrator before installing this software. You must have Administrator rights on your network to install most of these utilities.

To install the ZebraNet Utilities, complete these steps:

The steps that follow reflect the steps and dialogs for a typical installation. If you plan to conduct a custom installation, the dialogs you encounter or see will differ from those in this procedure.

1. Insert the CD-ROM into the drive.



Important • Is AutoPlay enabled on your computer?

- **Yes.** Your computer automatically launches the installation.
- **No.** You need to navigate to:

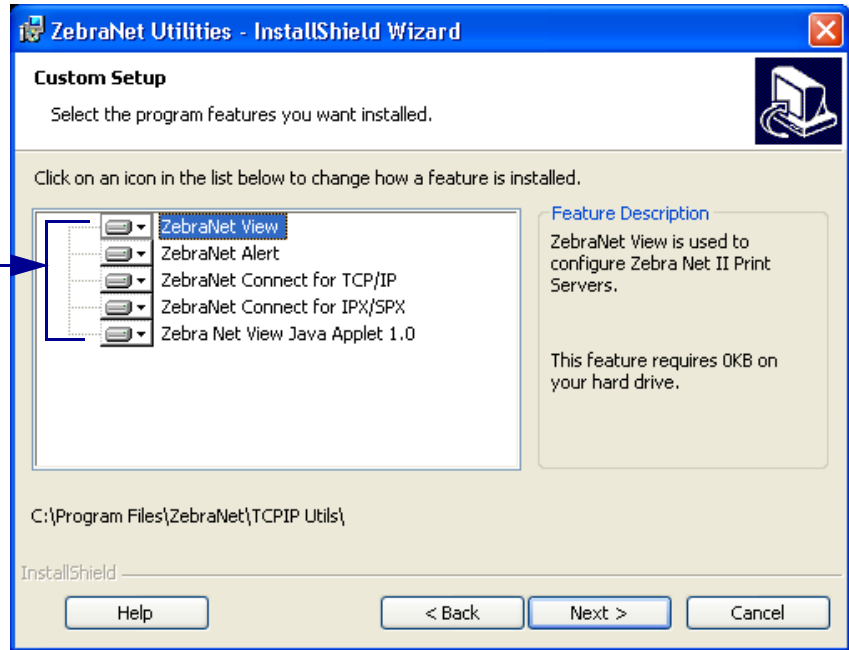
Software > ZebraNet Util > setup.exe
on the CD-ROM and manually launch the installation.

2. Click Next.

[Figure 27](#) shows the dialog box where you select the utilities that you want to install.

Figure 27 • ZebraNet Install Utilities

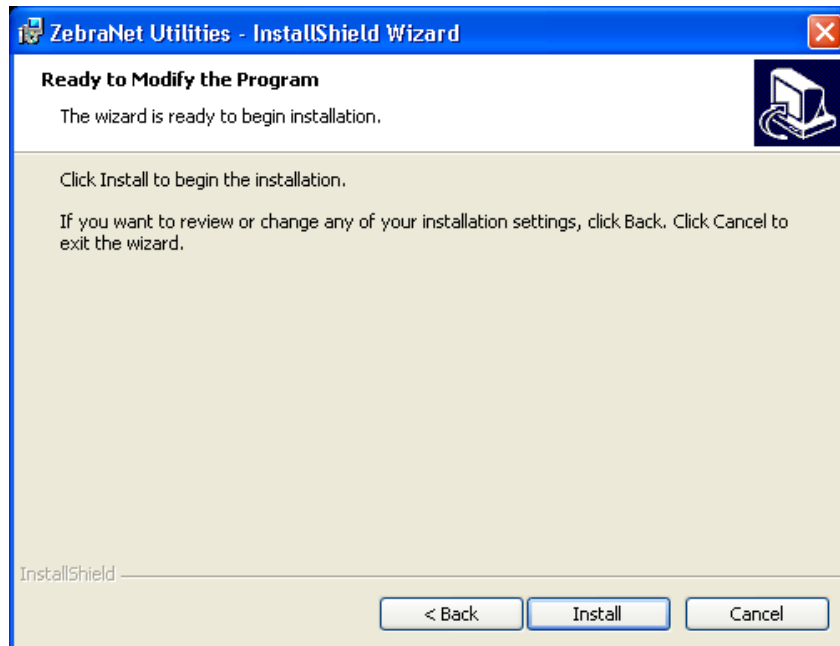
Each of these icons has drop-down menus from which to choose.



Important • If you choose to install the ZebraNet View Java Applet in [step 3](#), you must complete the installation steps for [ZebraNet View Java Applet](#) on [page 61](#).

3. In the ZebraNet Utilities dialog, select the features you want to install and click Next. [Figure 28](#) gives you the chance to reset your installation settings.

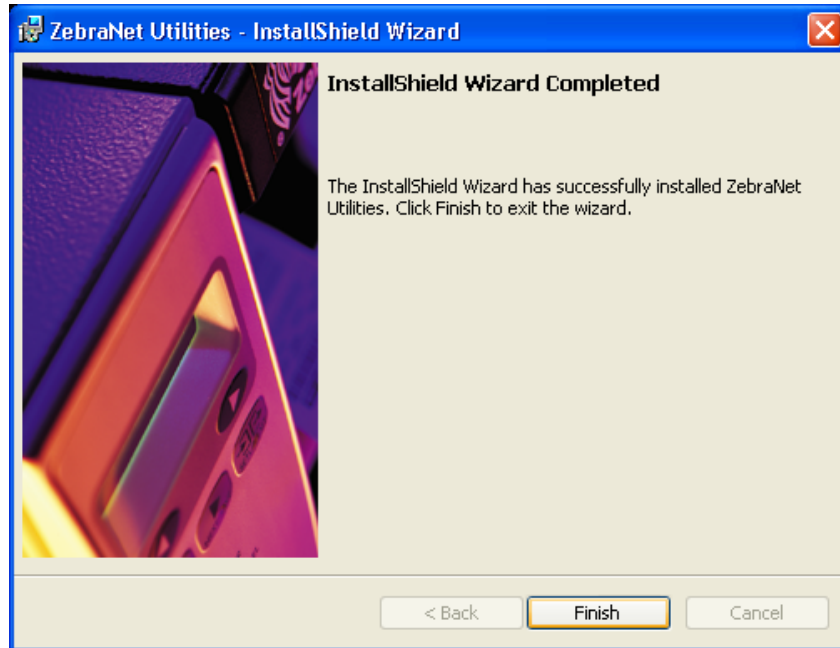
Figure 28 • ZebraNet Setup Dialog



4. In the ZebraNet Utilities dialog, you have the option to review and make any changes to your installation settings. When you are satisfied with your installation settings, click Install.

When the installation is complete, this dialog opens:

Figure 29 • ZebraNet Setup Dialog



5. Click Finish.



Important • When the installation is complete, you need to restart your system for the changes to take effect.

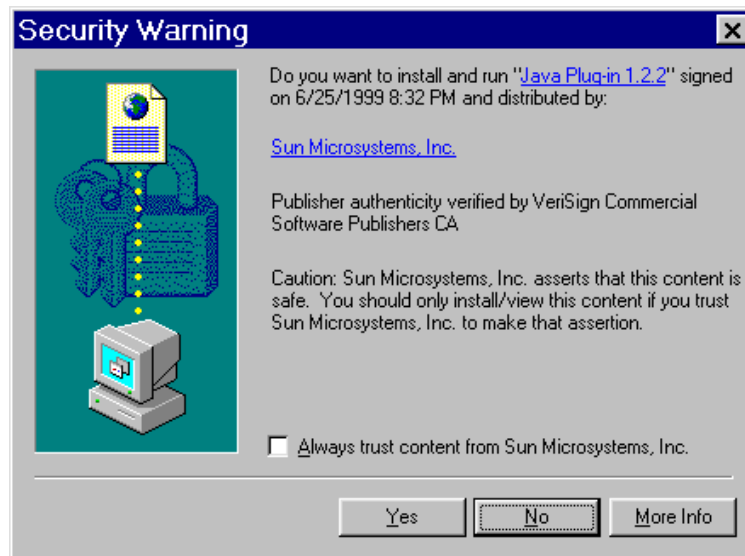
ZebraNet View Java Applet

If you selected ZebraNet View Java Applet when you were installing the ZebraNet Utilities, you need to complete a few installation steps to work with this utility.

To install ZebraNet View Java Applet, complete these steps:

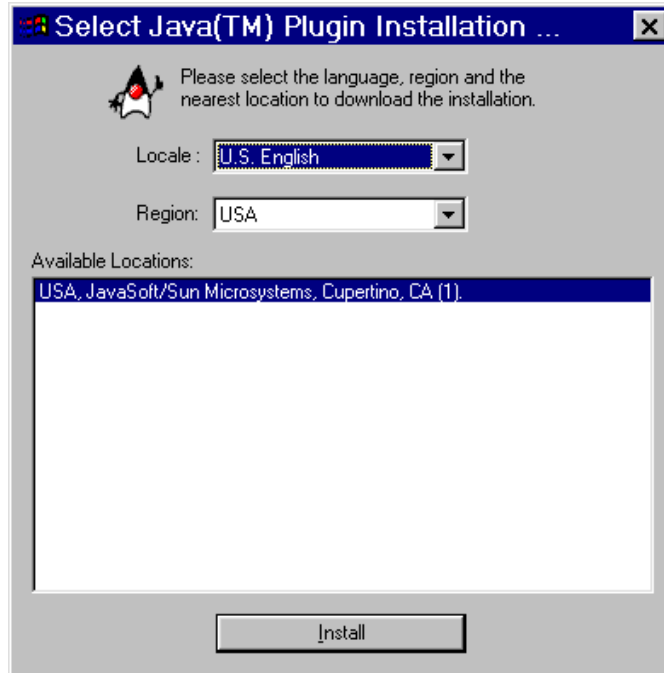
1. From the task bar, select Programs > ZebraNet Utilities > ZebraNet View Java Applet 1.0.
This Security Warning dialog opens:

Figure 30 • ZebraNet Security Warning



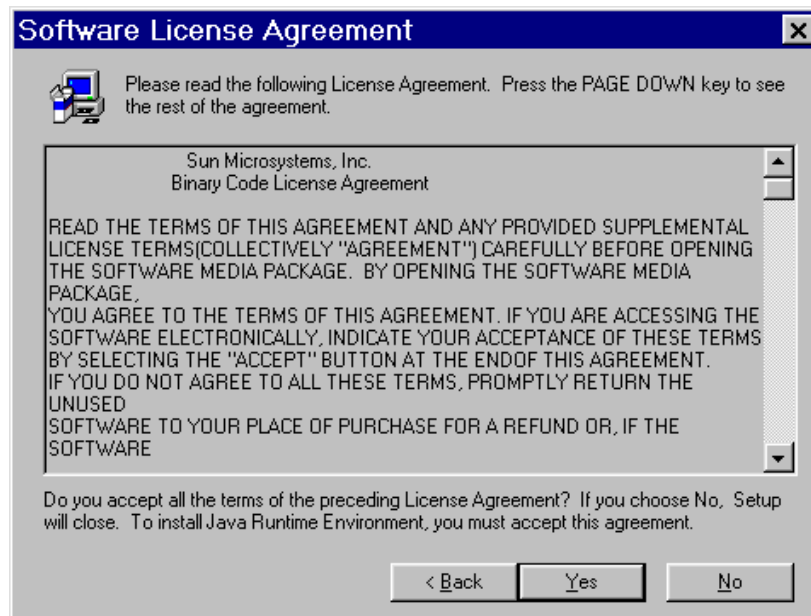
2. To begin the installation, click Yes.
The Select Java Plugin Installation dialog opens:

Figure 31 • Select Java Plugin Installation



3. Make the selections that apply to your environment, and click Install.
The Software License Agreement opens.

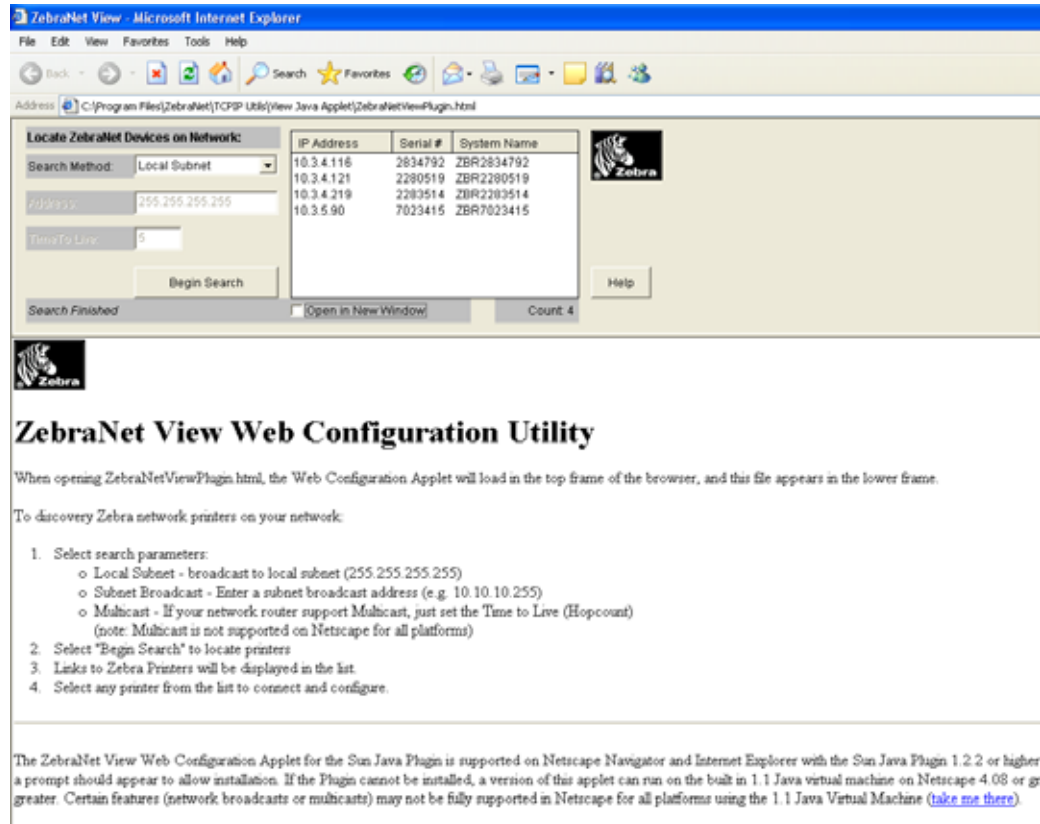
Figure 32 • Software License Agreement



4. Read the License Agreement.
5. To continue with the installation, click Yes.

6. When the installation is complete, click OK.
The Java page opens.

Figure 33 • Java Page



7. You have these options:
 - To work with this utility, see [ZebraNet View Java Applet](#) on page 124.
 - To close the utility, click the **X** box.



Notes • _____



Printing Configurations

This chapter provides information and instructions on configuring your printer.

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Berkeley Software Distribution (BSD)-Style Print Queue

BSD is a version of the UNIX OS that distributes software that includes TCP/IP.

Configuring the Print Queue

For remote BSD-style LPD printing, add the 10/100 PS as a remote printer in the `/etc/printcap` database to each host printing to the 10/100 PS. You can add printcap options as needed. If you are unfamiliar with these options, consult the printer documentation.



Important • You must be logged in as `root`.

The entry looks similar to this:

```
local_print_queue_name|[printer_model_and_manufacturer]:\  
:lp=:mx#0:rm=ZebraNet_name:\  
:rp=remote_print_queue_name:\  
:sd=path_to_spool_directory:lf=just log_file_name
```

`local_print_queue_name` — This defines the name of the printcap entry. It is used by the LPR/LPD utilities to specify which printcap entry is being referenced. Additional printcap entries can be added as needed for different queue types. Each entry must have a unique `local_print_queue_name` and a different spool directory to work properly. When you are ready to print, use the `local_print_queue_name` that matches the data type of the file to be printed.

`ZebraNet_name` — This is the name (alias) of the ZebraNet 10/100 PS. This must be the same name as entered in the `/etc/hosts` file or your NIS or DNS system. An IP address may also be used here.

`remote_print_queue_name` — This entry determines the ZebraNet port where the print job will be printed and optionally specifies ASCII printing that must end for LF1.

`path_to_spool_directory` — This is the path to a directory where the print jobs will be spooled for this queue. You must create a unique spool directory for each printcap entry.

`log_file_name` — This is the path to a file where error information from the LPD will be logged.



Example • Your printcap entries might look similar to this:

```
Ascii_files|form.feed.Queue_on_Port_1:\  
:lp=:mx#0:rm=pserver1:rp=MYQUEUELF1:\  
:sd=/usr/spool/myqueueelf1:\  
:lf=/usr/spool/myqueueelf1/queue.log
```



Important • Each printcap entry must have a different spool directory to work properly.

System V Queue Installation

Configuring Operating System V Queue for ZebraNet Printing

This section describes the configuration of the printing system on the UNIX operating system. For clarity and brevity, the following specific names are used to represent general devices or concepts.

`lj4` — The local queue name on the UNIX system to which you want 10/100 PS print jobs directed.

`ZEBRAPRINTER` — The host name or IP address of the remote system that is the 10/100 PS device. For example, to Telnet to the 10/100 PS and invoke the 10/100 PS configuration utility, you would enter:

```
Telnet ZEBRAPRINTER
```

A host name is not required for the 10/100 PS — the IP address can be used.

`yourqueuename` — This is the name of the queue on the ZebraNet and must end with `LF1`.

Prerequisites

Before you proceed, the following prerequisites must be met:

- The name `ZEBRAPRINTER` and the IP address assigned to the 10/100 PS are in the `/etc/hosts` file on the UNIX system.
- The LPD must be running on the UNIX system.

UNIX Configuration

To configure the UNIX machine so users can spool print jobs to the PCL print queue on the ZebraNet named `ZEBRAPRINTER`, complete these steps:

1. Log in to the UNIX machine as root.

2. Type:

```
lpsystem -t bsd ZEBRAPRINTER
```

3. Type:

```
lpadmin -p lj4 -s ZEBRAPRINTER!yourqueuename - I any
```

4. Type:

```
accept lj4
```

5. Type:

```
enable lj4
```

6. Try printing by typing the command:

```
lp -d lj4 [filename]
```




Using Printing Protocols

In this chapter, you are given steps to set up your 10/100 PS to support **I**nternet **P**rinting **P**rotocol (IPP). Also, an exercise is provided to experiment with **F**ile **T**ransfer **P**rotocol (FTP) support.

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IPP



Important • You must have IPP support on your system.

Internet Printing Protocol (IPP) is an application-level protocol used for distributed printing over the Internet. Using IPP from any standard IPP client, you can transfer jobs to a printer that is connected to your ZebraNet 10/100 PS device and the Internet.



Important • IPP support is not available on all 10/100 PS printers. To be certain you are running the latest version of firmware, visit <http://www.zebra.com>.

To set up your 10/100 PS to support IPP, complete these steps:

1. Open a browser.
2. Enter the 10/100 PS IPP URL as follows:
`http://xxx.xxx.xxx.xxx:631/ipp/port1`
xxx.xxx.xxx.xxx = the IP address of the 10/100 PS device
:631 = a fixed value
/ipp = a fixed string designating IPP
/port1 = a fixed value



Example • Your address might look like this:

`http:198.60.248.120:631/ipp/port1`



Note • Because IPP does not have an official standard, usage depends entirely on the quality of the IPP client and server.

FTP

Embedded within the 10/100 PS is an FTP server application that processes file transfers from a host computer to the printer.

If the printer is on a network, label formats can be generated and data can be transferred without setting up a print queue.

To send information to the printer in a Windows environment, try this exercise:

1. In a text editor, generate the following ZPL II code:

```
^XA
^FO100,100
^CF0,55^FDZebra Technologies^FS
^XZ
```

2. Save the file and name it `test.txt`.
3. Open the MS-DOS command prompt and type:

```
ftp <IP of 10/100 PS>
```



Example • If the IP address of your 10/100 PS device is 12.3.4.123, you would type:

```
ftp 12.3.4.123
```

This opens a session with the FTP server.



Note • The default user name is blank.

4. Type your user name and press Enter.
5. Type:

```
put test.txt
```

This transfers `test.txt` to the printer, and the printer generates a label.

6. To terminate the FTP session, type:

```
quit
```


A



ZebraLink

The appendix provides you with detailed information that allows you to use the enhanced functionality of your ZebraLink-enabled printer with the 10/100 PS.

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WebView

WebView provides the System Administrator or user complete, easy, one-step control over the printing environment. It provides real-time configuration, control, and monitoring capabilities with the convenient graphic interface of a Web browser.

The Web pages returned by Zebra printers are not static. They contain real-time information about the printer's present state of operation, including on-line status, error conditions, and all printing parameters.

Home Page



Note • To access the printer's Web page, you need the IP address. For instructions on getting the IP address, see [Assigning an IP Address on page 24](#).

The Home Page is the first Web page that opens. It is a page with a menu of hyperlinks. Each hyperlink allows you to make modifications to the printer, 10/100 PS, and network settings. The other changeable settings on the Home Page include:

- Network Status, Error, and Warning reports
- ZebraNet 10/100 PS configuration
- Printer settings
- Directories of objects stored in Flash memory and RAM devices
- Objects, stored fonts, images, programs, and ZPL II formats
- Zebra Technologies support and home pages

To open the WebView of your printer, complete these steps:

1. Open a Web browser.
2. In the Address text-box, type your printer's IP address, and press Enter.
The Printer Home Page opens.

Figure 34 • Printer Home Page



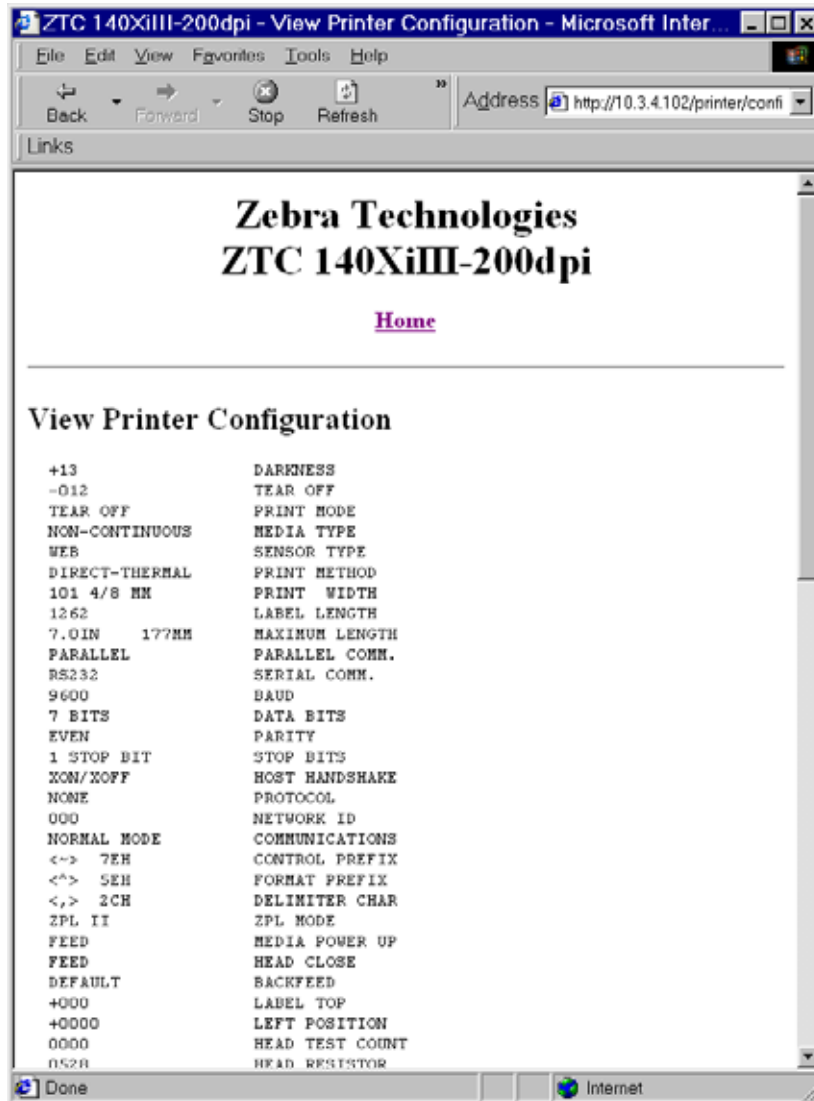
View Printer Configuration

The View Printer Configuration menu option provides accurate, up-to-the-minute information on the printer's current state. An administrator can conveniently find any information on the Virtual Configuration Label and also check on the status of printer ports.

To see the View Printer Configuration menu option, complete these steps:

1. From the Printer Home Page, click View Printer Configuration.
The WebView displays the configuration settings.

Figure 35 • Configuration Settings



2. To update the printer information from this view, click Refresh and the printer sends current information to the Web browser.
3. When you are finished reviewing:

If...	Then...
You want to return to the Home page	Click the Home link.
You want to print a label	Scroll to the bottom of this page and click Print Label.

View and Modify Printer Settings

This section provides you with steps for accessing and modifying printer settings with a ZebraLink-enabled printer. It also provides illustrations of the various pages you can access.



Important • To apply changes made in this section, you need to use the default user ID and password:

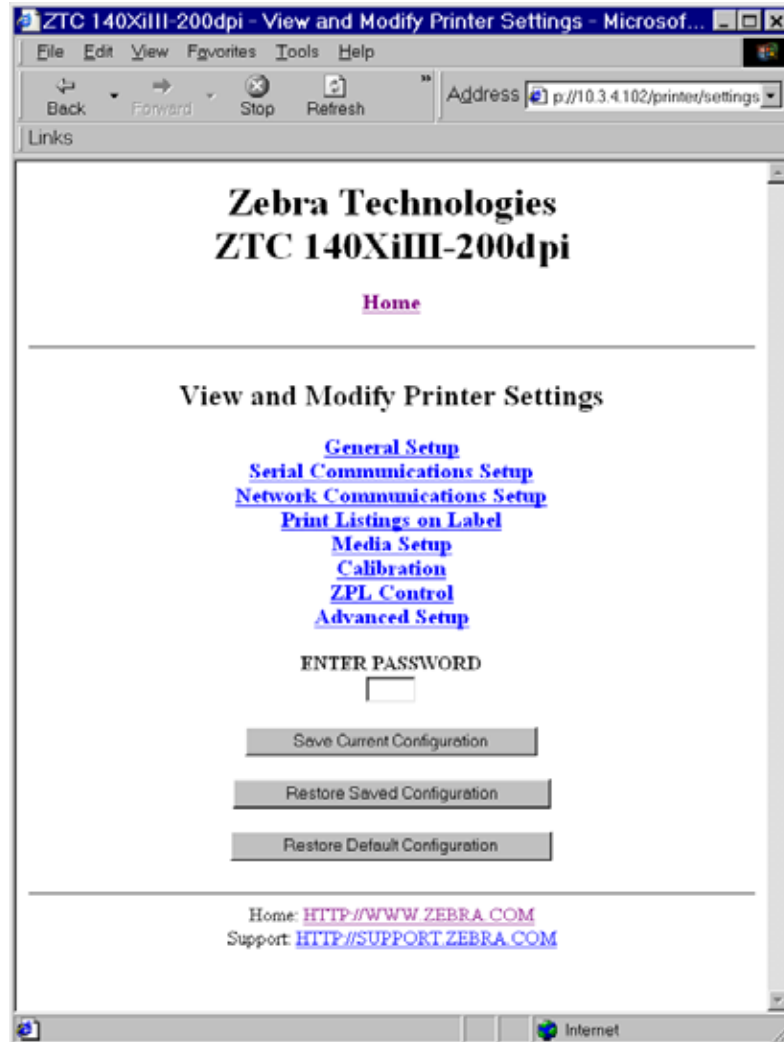
User ID: admin

Password: 1234

To view and modify printer settings, complete these steps:

1. From the Printer Home Page, click View and Modify Printer Settings.
The View and Modify Printer Settings page opens.

Figure 36 • View and Modify Printer Settings



2. On the View and Modify Printer Settings page, you have a menu to choose from. The section that follows identifies what each menu option page.

Table 3 • Menu Options

<p>General Setup</p>	
<p>Serial Communications Setup</p>	

Table 3 • Menu Options (Continued)

Network Communications Setup



Print Listings on Label



Table 3 • Menu Options (Continued)





<p>Media Setup</p>	
<p>Calibration</p>	

Table 3 • Menu Options (Continued)

<p>ZPL Control</p>	
<p>Advanced Setup</p>	

Directory Listing

The directory page provides a listing of all file system devices (B:, E:, R:, Z:). The size, name, and location of each stored object appears.

Buttons are available to perform file management operations on the objects. The file management operations include:

- Delete object — Not available for objects in read-only memory (Z:).
- Copy object to a new name and/or device — Not available for objects in read-only memory (Z:).

To view the Directory Listing, complete these steps:

1. From the Printer Home Page, click Directory Listing.

This page opens.

Figure 37 • Directory Listing

The screenshot shows a web browser window titled "ZTC 140XiIII-200dpi - Directory of: E: R:*.* - Microsoft Internet Exp...". The address bar shows "http://10.3.4.102/printer/dir". The page content includes:

- Zebra Technologies**
ZTC 140XiIII-200dpi
[Home](#)
- Memory Status**

Device	Type	Bytes Free	Bytes Total
E:	ONBOARD FLASH	1569100	1572864
R:	RAM	3094508	3145724
- Device: Type:
- Directory of: E: R:*.***

Aliases	Name	Bytes	Flags	Actions
	R.BASICmem.CO	51216		Delete Copy
	E.EMAIL.BAS	3532		Delete Copy
	E.AUTOEEXEC.ZPL	44		Delete Copy Print on Label
-
- Home: [HTTP://WWW.ZEBRA.COM](http://www.zebra.com)
Support: [HTTP://SUPPORT.ZEBRA.COM](http://support.zebra.com)

2. There are several fields to select in this view.
3. To create a script, click Create New Script.

Alert Setup

To configure the printer's interaction with ZebraNet Alert to be completely functional, SNMP settings must be established in these areas:

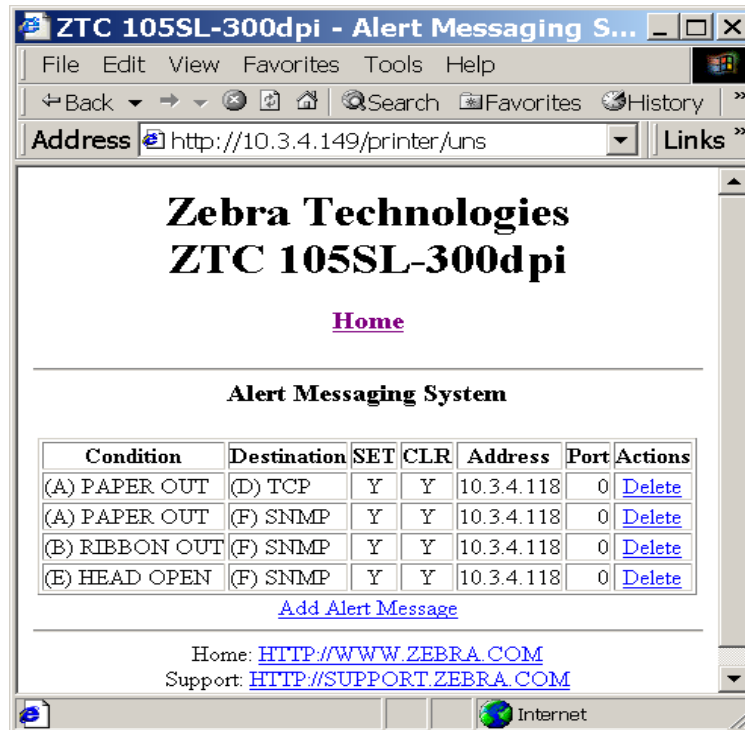
- The printer, via the WebView interface.
- The Alert Printer Management Utility for logging SNMP traps.

The ZebraLink messaging system provides for more than SNMP notification. Alerts can be routed to various destinations:

- TCP
- UDP
- email
- serial port
- parallel port destinations

To view Alert Setup, complete these steps:

1. From the Printer Home Page, click Alert Setup.
The Alert Messaging System page opens.

Figure 38 • Alert Messaging System

2. To add an alert, click Add Alert Message.
3. See *Establishing Email Alert Messaging* for more detailed information on available alert settings.

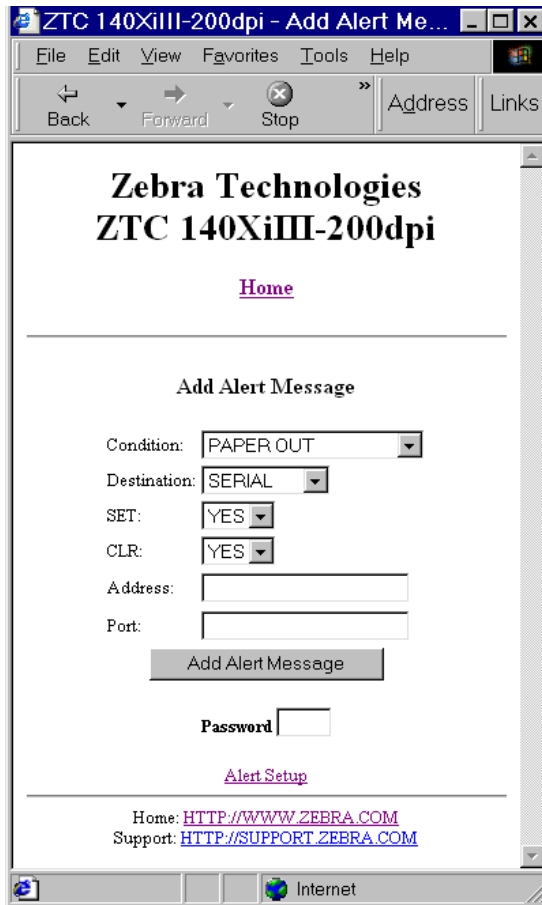
Establishing Email Alert Messaging

ZebraNet Alert supports email notification of printer errors sent directly to any valid email address. You can have multiple email addresses set up for routing different error messages, or split notifications between email and other network management tools.

To begin receiving email notification of errors, complete these steps:

1. From the browser, in the address text-box type in the printer's address.
The printer's home page opens.
2. From the *Printer Home Page*, click Alert Setup.
The Alert Setup page shows a list of message notifications and their respective destinations.
3. From the Alert Setup page, email notification can be set up. Click Add Alert Message.
The Add Alert Message page opens.

Figure 39 • Add Alert



Important • The printer accepts only the last configuration made.

4. Specify the condition to send over email, such as **HEAD ELEMENT BAD** or **PAPER OUT**.
5. Set Destination to Email.
6. In the SET drop-down box, select YES.
You will be notified via email whenever your specific condition is detected.
7. In the CLR drop-down box, select YES if you wish to be notified when the specific condition is cleared.
8. Enter a valid email address for the messages to be sent.



Example • admin@yourcompany.net (The Port field can be ignored when setting up an email address.)



Important • You must type in a password. If you forget to enter the default password, the alerts you just set will be deleted.

9. Click Add Alert Message. Here you can continue to add more settings or, if finished, save the current settings.
10. From the Printer Home Page, select PrintServer Settings > Network Communications Setup.
11. Click SMTP Email Alerts.
12. Specify your SMTP server address.
When these steps are done, you can begin receiving email notification messages.

Printer Controls

This page offers control over basic printer functions.

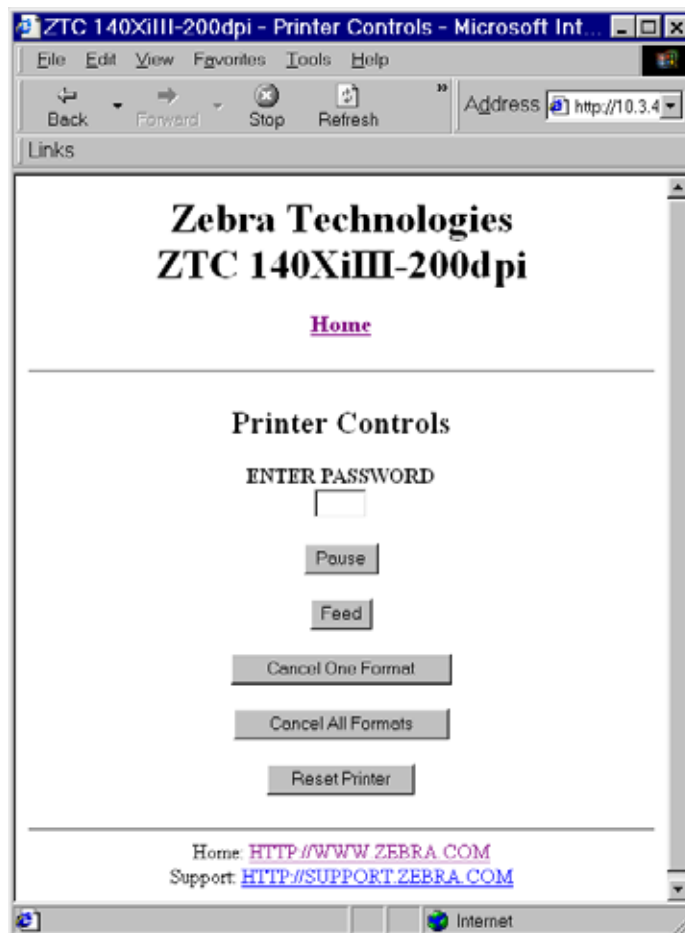
Other functions are also accessible from this page. These include:

- `Feed` — causes printer to feed one label.
- `Cancel One Format` — cancels the currently printing format.
- `Cancel All Formats` — cancels all formats.
- `Reset Printer` — causes printer to perform its standard reset without cycling power.

To view Printer Controls, complete these steps:

1. From the Printer Home Page, click Printer Controls.
This Printer Controls page opens.

Figure 40 • Printer Controls



Important • In this view, you must have administrative rights to make changes to the printer controls.

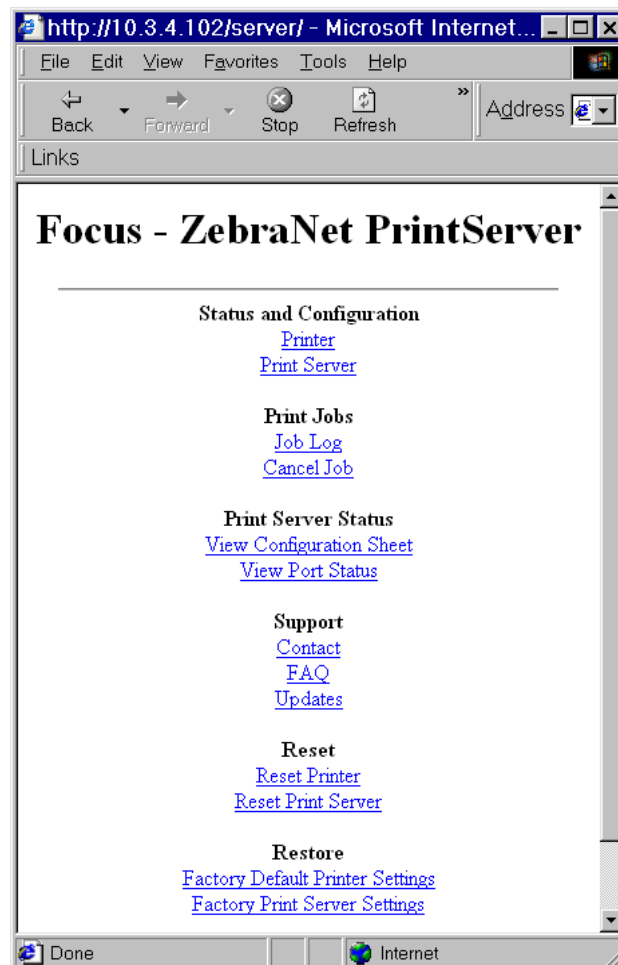
Print Server Settings

This section provides you with instructions for viewing the current printer settings.

To view the print server menu, complete these steps:

- From the Printer Home Page, click Print Server Settings.
The PrintServer page opens.

Figure 41 • PrintServer Page



B



10/100 Print Server

This appendix provides you with details on the 10/100 PS features that were not covered in the chapter *Getting Started* on page 21.

Contents

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10/100 PS Features

This section covers features available for the 10/100 PS *only*, not the printer's features. Some of the features you access in this section prompt you to enter the default user ID and password, as follows:

- **User ID:** admin
- **Password:** 1234

Status and Configuration

The steps that follow are based on the navigation of a ZPL printer using firmware X.15 or above.

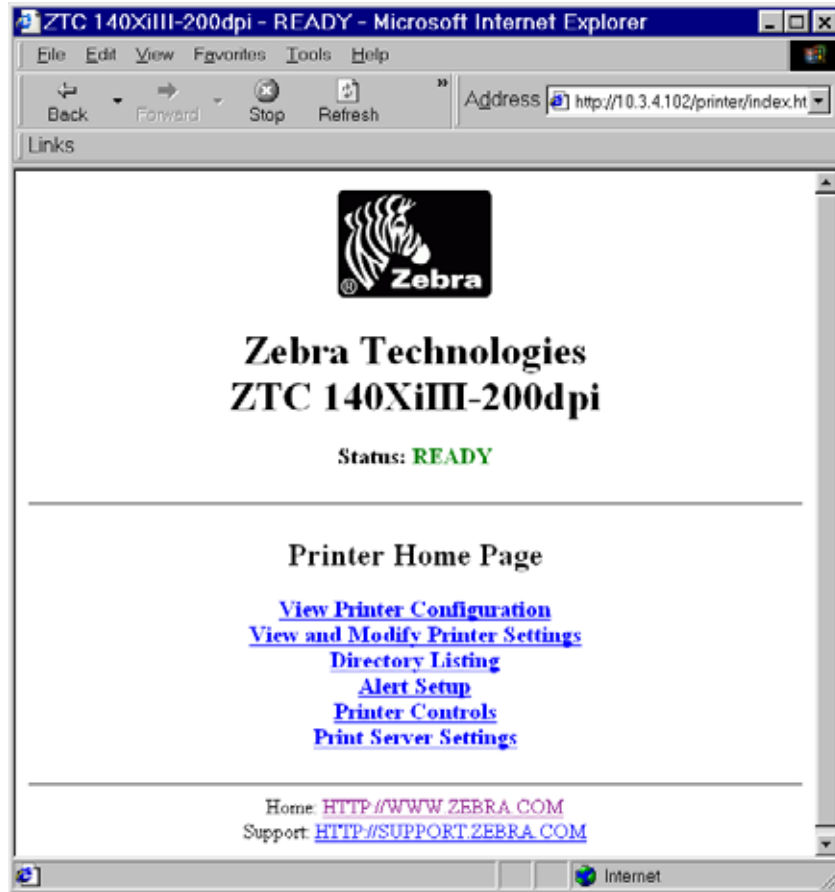


Important • You can upgrade your firmware by visiting our web site: <http://www.zebra.com>.

To access the print server settings, complete these steps:

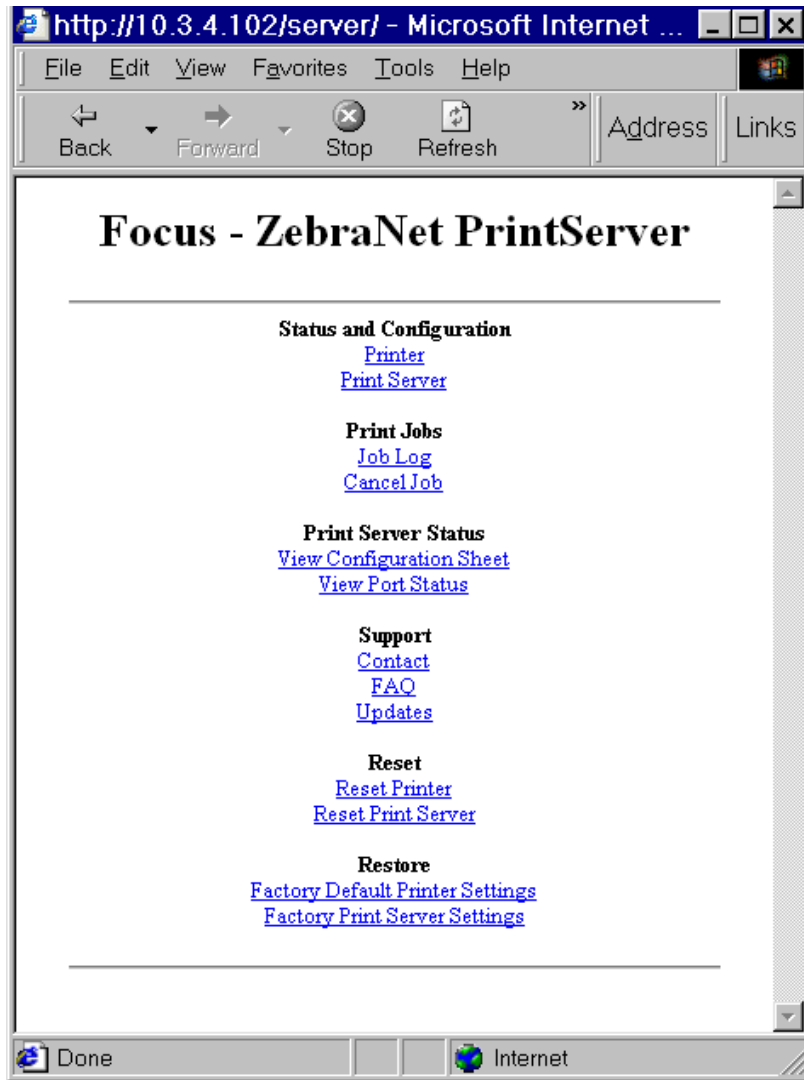
1. Open a Web browser.
2. In the Address text-box, type your printer's IP address, and press Enter.
The Printer Home Page opens.

Figure 42 • Printer Home Page



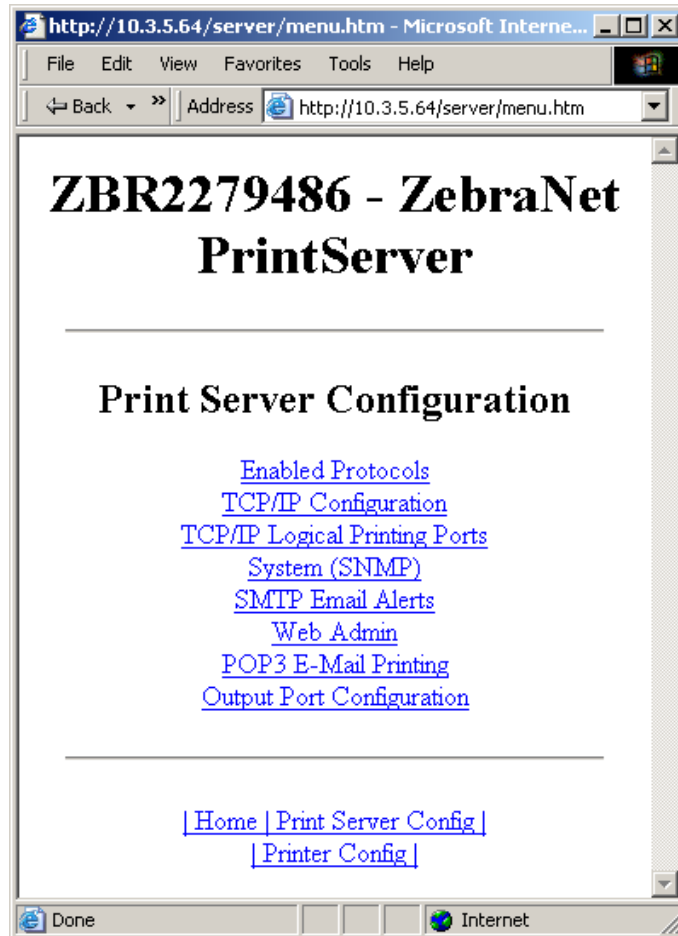
3. From the Printer Home Page, click Print Server Settings.
The Print Server Settings Page opens.

Figure 43 • Print Server Settings Page



4. From the Print Server Settings Page, click Print Server.
The Print Server Configuration page opens.

Figure 44 • Print Server Configuration



5. In the Print Server Configuration page, you have a menu from which to choose. [Table 4](#) identifies what each menu option page.

Table 4 • Menu Options

Enabled Protocols

Modifies the protocols to be used: NetWare, HP JetAdmin, or both.

Enabling Hewlett-Packard's HP JetAdmin Support allows the status from the Zebra device to display in HP JetAdmin utility.



Table 4 • Menu Options (Continued)

TCP/IP Configuration

You can change the TCP/IP configuration of the 10/100 PS.

- **IP Address:** Use this feature to set the IP address if using the Permanent addressing method.
- **IP Address Resolution:** Use this feature to select the addressing method to use (Dynamic or Permanent).
- **Dynamic Protocols:** Use this feature to select the Dynamic Addressing method to use at startup. Choices include RARP, BOOTP, DHCP, Gleaning or Default Address.
- **Subnet Mask:** Use this feature to set the subnet mask. The subnet mask must follow the format XXX.XXX.XXX.XXX, where each XXX is a number between 0 and 255.
- **Default Gateway:** Use this feature to set the default gateway. This gateway will be used whenever messages need to be sent to another network. This gateway address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number between 0 and 255.
- **WINS Server IP Address:** Use this feature to set or view the IP address of the WINS Server.
- **Connection Timeout Checking:** Use this feature to enable or disable to Connection Timeout feature. The timeout is used to close network TCP/IP connections that are idle for more than the number of seconds entered in the Timeout Value.
- **Timeout Value (secs):** Use this feature to set the Connection Timeout Value. The Valid range is 10 to 3600 seconds. The default is 300 seconds.
- **ARP Broadcast Interval (mins):** Use this feature to set interval for sending an ARP Broadcast. The valid range is 1 to 30 minutes. Address Resolution Protocol (ARP) broadcast packets allow other network devices to associate the print server's IP Address with its hardware address.
- **Base Raw Port Number:** Use this feature to set the raw TCP port that the print server will use for printing tasks. The default is port 9100.

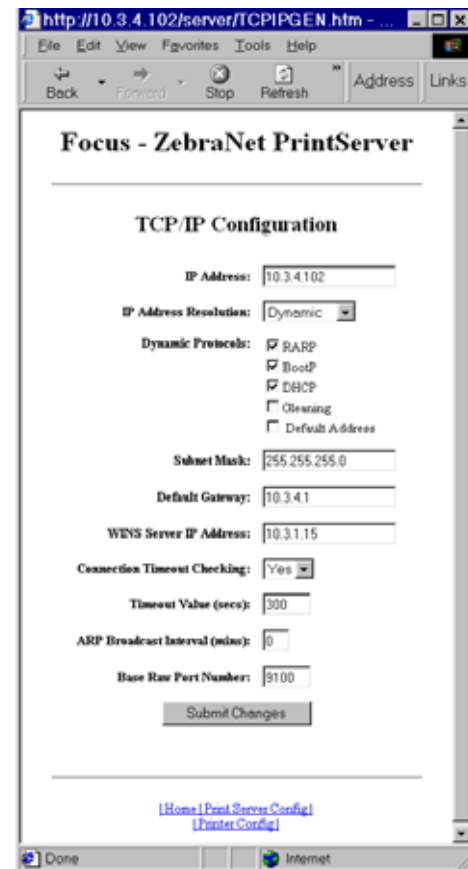
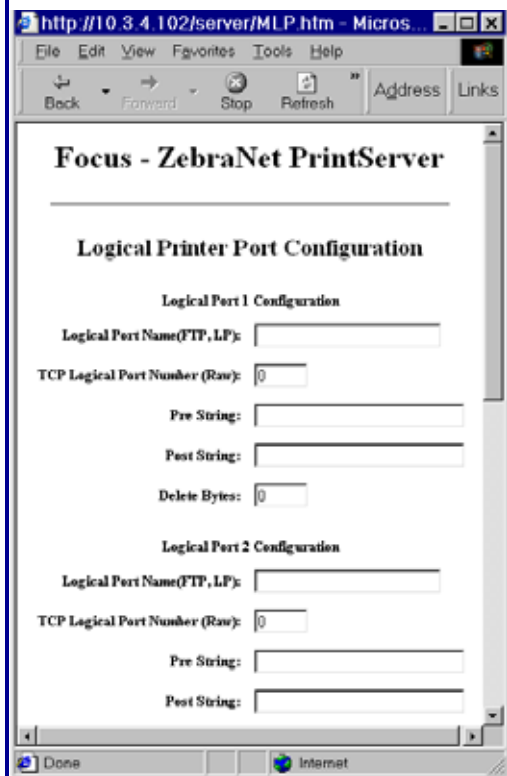


Table 4 • Menu Options (Continued)

TCP/IP Logical Printing Ports

Logical printers allow you to set up multiple pre- and post-processing configurations for each output port. Each logical port configuration can perform the following:

- Add user-configured strings before and after the print data.
- Remove unwanted characters from the beginning of the print data.
- Four logical printer configurations are supported for each output port on the printer. The configurations can be assigned to any port, and all of these configurations can be assigned to a single output port.



System (SNMP)

This feature gives you the ability to manage multiple devices on a network, be it printers, computers, or other network-attached devices. On this page, you can define the SNMP system name, system location (10/100 PS description), and other SNMP settings for your 10/100 PS.

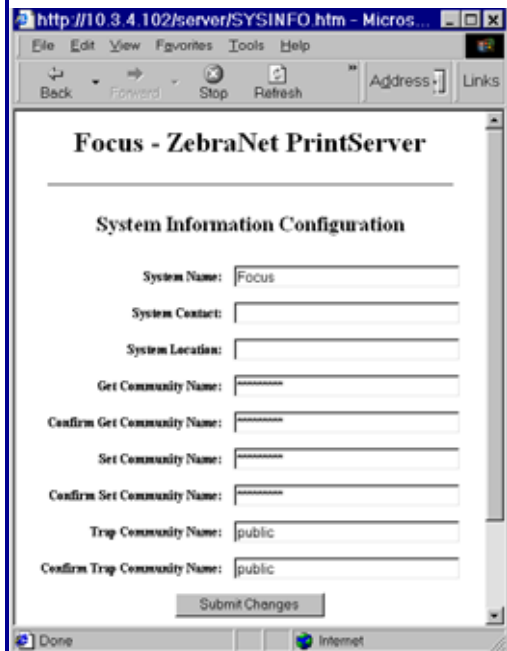


Table 4 • Menu Options (Continued)

SMTP Email Alert Configuration
 This feature allows you to enter data regarding System Information on the network that is being used. Typically, a Network Administrator would use this.



Web Admin
 This page allows you to configure the Admin name and password. Links to upgrades and support information can also be altered.
Note • The printer and print server password can be changed on ZPL printers with firmware x.10 or higher.



Table 4 • Menu Options (Continued)

POP3 Email Printing

This feature helps you set up the print server to receive email messages containing formats that can be printed. The POP3 settings must be set to retrieve emails from the email server.

Important • Zebra recommends setting the POP3 polling interval no lower than 30. Some email servers will lock accounts after repeated login attempts.



Output Port Configuration

This feature allows you to change the Parallel Port Mode setting.

Selections for Parallel Port Mode include Compatibility, Nibble, Byte, and ECP.

- Compatibility is a unidirectional forward mode used only for sending data to the printer.
- Nibble, Byte, and ECP modes are all bidirectional modes. Data can be sent to and from the printer.
 - Nibble mode sends only 4 bits of data at a time in the reverse direction from the printer to the print server. When in nibble mode, communications from the print server to the printer are accomplished via compatibility mode.
 - Byte mode sends a full byte of data at a time in the reverse direction from the printer to the print server. When in byte mode, communications from the print server to the printer are accomplished via compatibility mode.
 - ECP mode is a complete forward and reverse mode that more efficiently transfers data.



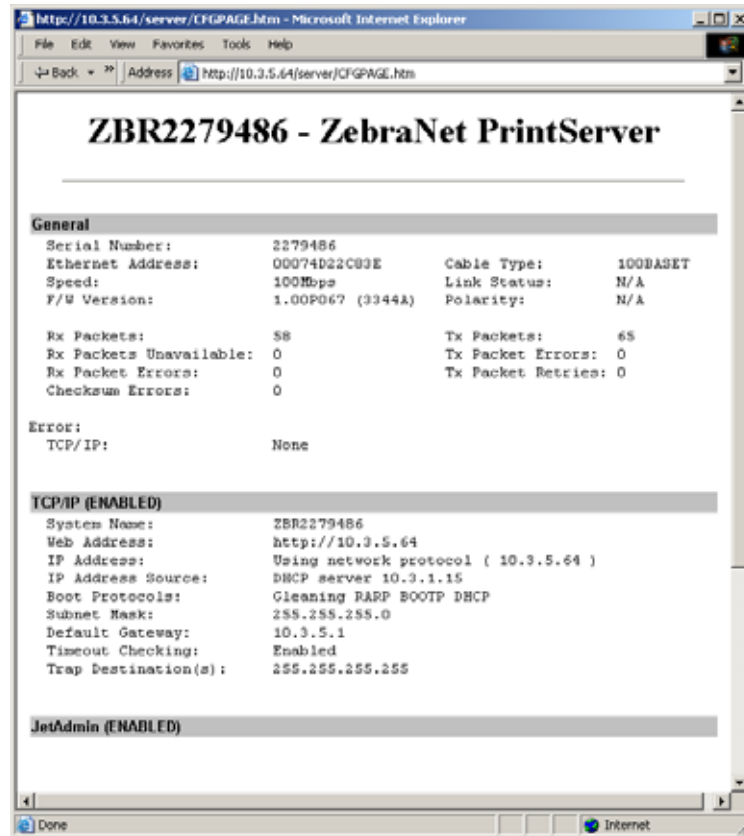
Print Server Status

From the Print Server page in the **Print Server Status** section, you can access the 10/100 PS configuration page and port status.

To open the 10/100 PS configuration page, complete this step:

1. From the PrintServer page, click View Configuration Page.
 The Configuration Page opens.

Figure 45 • Configuration Sheet



To view the port status, complete this step:



Important • The default user ID and password is required to access this page.

1. From the Print Server page, click View Port Status.
The Port Status page opens.

Figure 46 • Port Status



Reset

From the Print Server page in the **Reset** section, you can reset the 10/100 PS configuration settings to what they were before you made the most recent changes.

To reset the 10/100 PS, complete these steps:

1. From the Print Server page, click Reset Print Server.

The Reset Device page opens:

Figure 47 • Reset Print Server



2. To reset 10/100 PS, click Yes.

Restore

From the Print Server page, in the **Restore** section you can restore the 10/100 PS to the default factory settings.

To restore 10/100 PS to the default factory settings, complete these steps:

1. From the Print Server page, click Factory Print Server Settings.
The Restore To Factory Defaults page opens.

Figure 48 • Restore to Factory Settings



2. Make the selections you want, and click Submit Changes.

Setting the Primary Network Print Server

The ZM400, ZM600, and Xi4 printers support the simultaneous installation of an internal, external, and a wireless print server. Even though all three print servers may be installed, only one is connected to the network and is the active print server. Table 5 outlines priorities and identifies which device becomes the active print server when multiple print servers are installed.

Table 5 • Primary Print Server

If the Primary Network is set to:	Installed and Connected to a Live Ethernet Network			Then, the Active Print Server will be:
	Internal	External	Wireless*	
Wired	X	X	X	Internal
		X	X	External
			X	Wireless
Wireless	X	X	X	Wireless
	X	X		Internal
		X		External

*NOTE: A Wireless Option board must have an active radio that can properly associate to an access point.

This section provides you with steps for changing the primary network.

To change the primary network, complete these steps:

1. From the Printer Home Page, click View and Modify Printer Settings.
 The View and Modify Printer Settings page opens.

Figure 49 • View and Modify Printer Settings



2. When prompted, enter the printer's password.

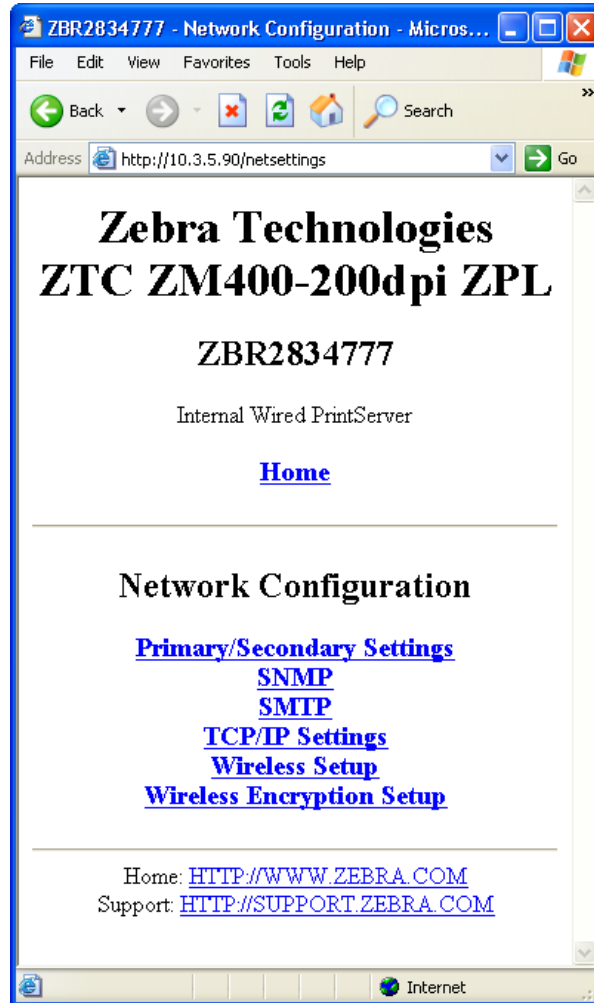


Important • To apply changes made in this section, you need to use the default password for your printer:

Password: 1234

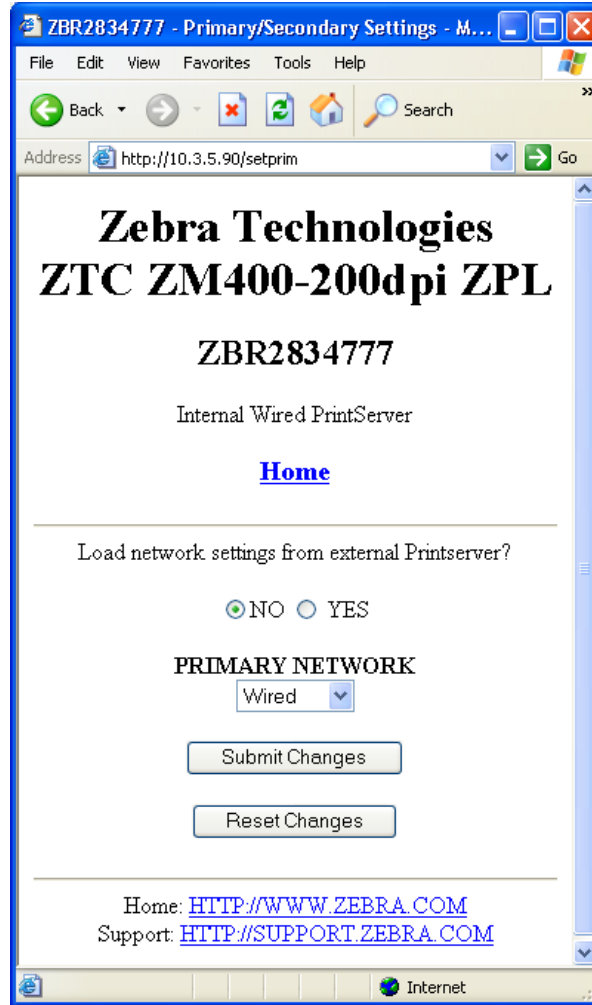
3. Click Network Configuration.
The Network Configuration page opens.

Figure 50 • Network Configuration Page



4. Click Primary/Secondary Settings.
[Figure 51](#) opens.

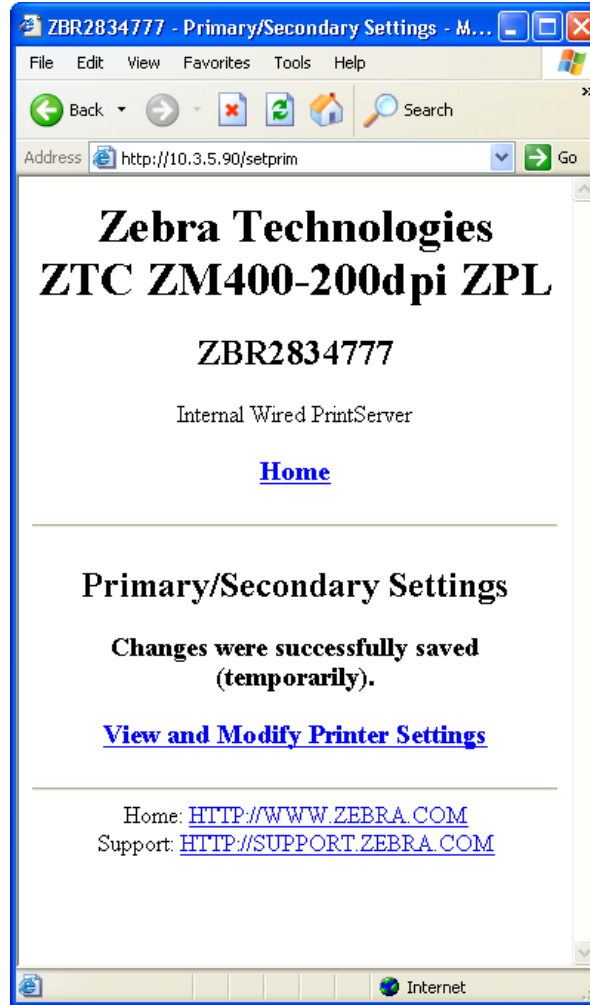
Figure 51 • Primary/Secondary Settings Page



5. If you wish to load network settings from the external print server, click YES.
6. To change the primary network, click on the Primary Network drop-down. Select either Wired or Wireless print server as your primary network.
[Table 5](#) outlines priorities and identifies which device becomes the active print server when multiple print servers are installed.
7. Click Submit Changes to apply your changes or click Reset Changes to revert back to previous settings.

[Figure 52](#) opens to confirm your settings have been temporarily saved.

Figure 52 • Primary/Secondary Settings Saved



8. Click on View and Modify Printer Settings link.
9. From the View and Modify Printer Settings page, click on Save Current Configuration.
This will permanently save your settings.

TCP/IP Settings

For the ZM400, ZM600, and Xi4 printers, the TCP/IP settings may be viewed and modified in this section. Several of these settings include:

- IP Address
- IP Protocol
- Subnet mask
- Default gateway

To change the TCP/IP settings, complete these steps:

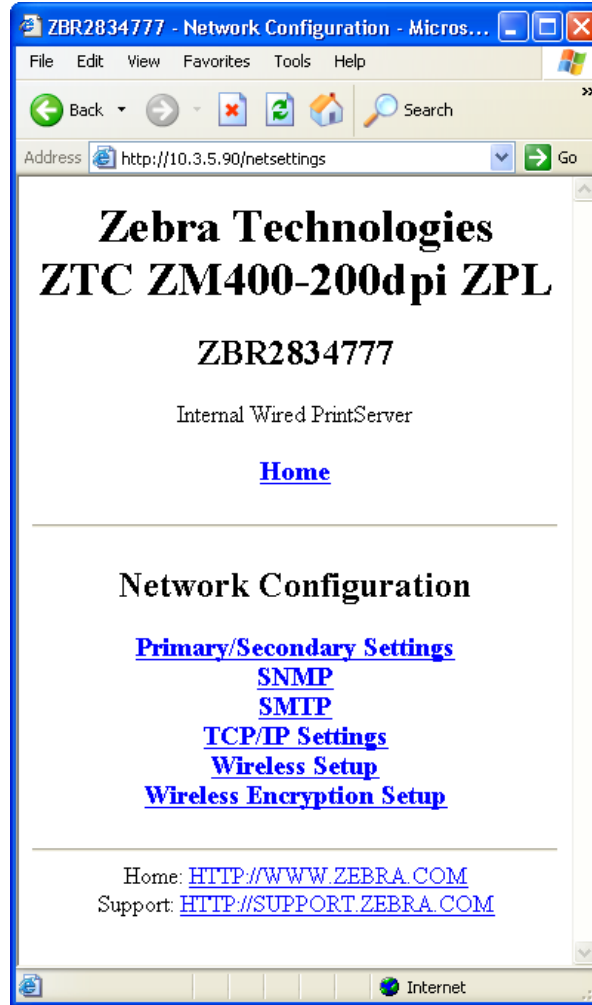
1. From the Printer Home Page, click View and Modify Printer Settings.
The View and Modify Printer Settings page opens.

Figure 53 • View and Modify Printer Settings



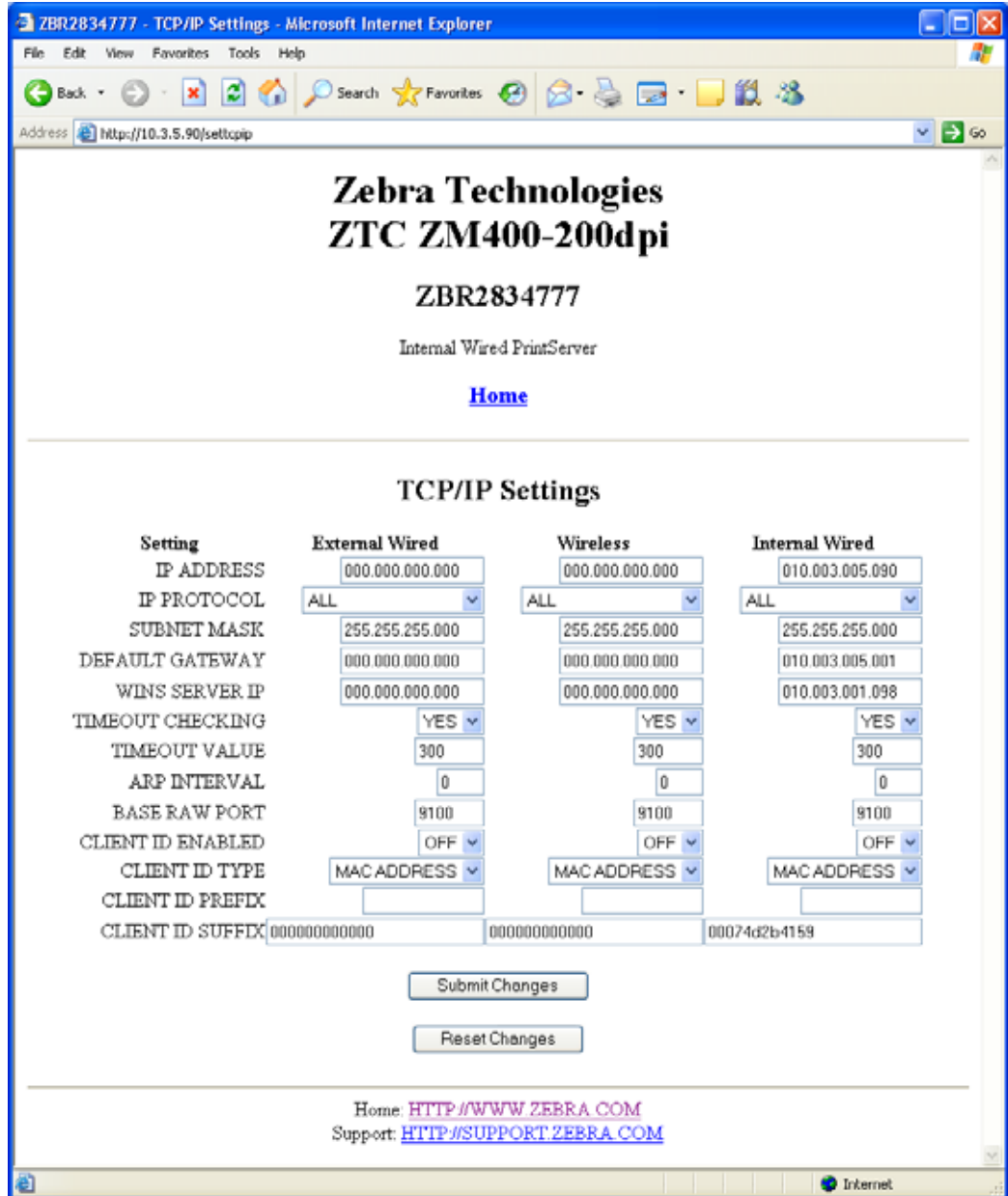
2. Click on Network Configuration.
The Network Configuration page opens.

Figure 54 • Network Configuration Page



3. Click TCP/IP Settings.
[Figure 55](#) opens.

Figure 55 • TCP/IP Settings Page



4. From the TCP/IP Settings page, you can modify settings for all installed print servers.



Note • The ZM400, ZM600, and Xi4 printers support the simultaneous installation of an internal, external, and a wireless print server. See [Table 5 on page 105](#) for more detailed information on priorities and setting the active print server when multiple print servers are present.

5. Click **Submit Changes** to accept and save your changes or click **Reset Changes** to revert to your previous settings.



ZebraNet Utilities

The appendix provides you with details on ZebraNet Utilities, the software suite of printer administration tools that complements and enhances both ZebraLink and the ZebraNet family of connectivity products.

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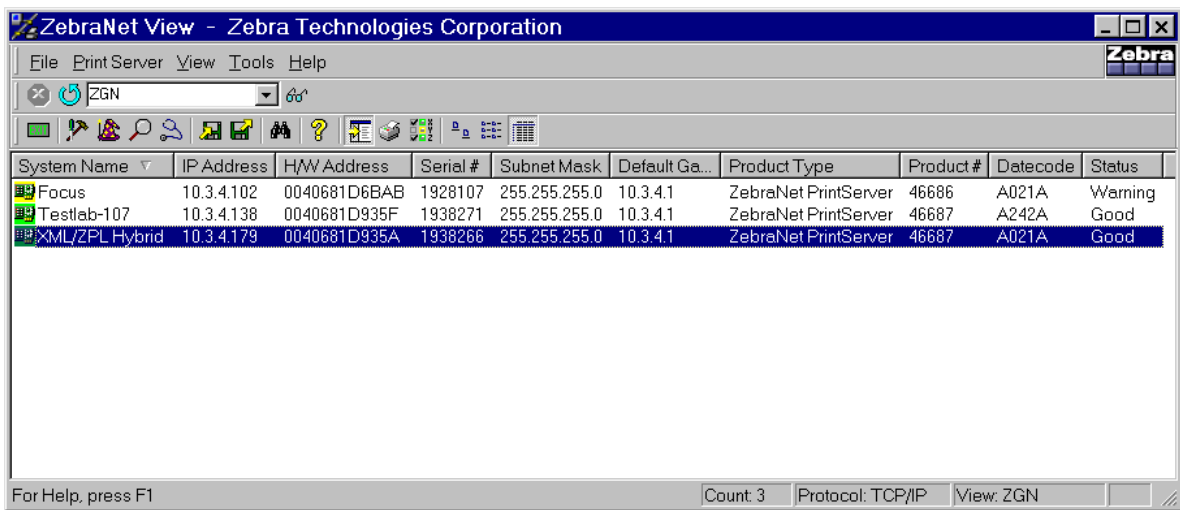
ZebraNet View

ZebraNet View allows you to locate printers automatically. It can search on parameters such as IP address, subnet, printer model, printer status, and many other user-defined characteristics. It also offers powerful device management capabilities.

To open ZebraNet View Utilities, complete these steps:

1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View.
The ZebraNet View dialog opens.

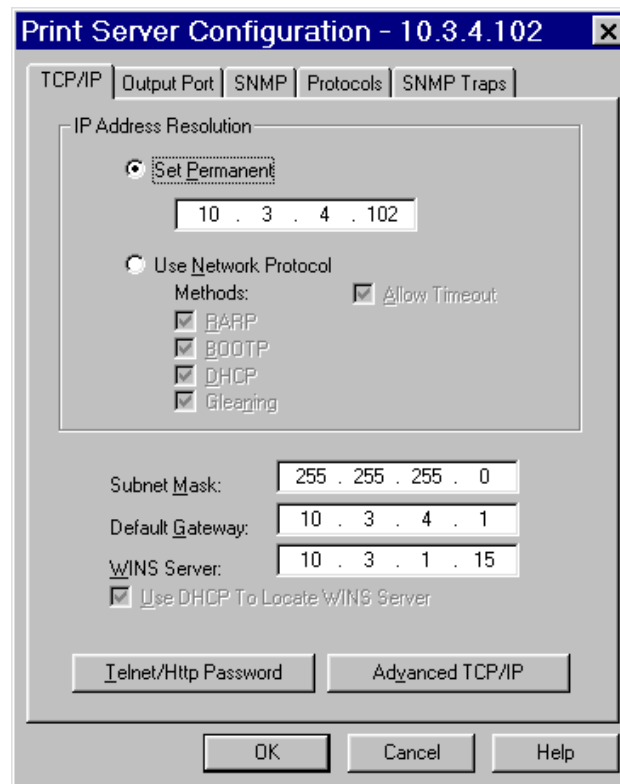
Figure 56 • ZebraNet View



2. Select your printer.

- From the menu bar, select PrintServer > Configuration.
The Print Server Configuration dialog opens.

Figure 57 • Print Server Configuration

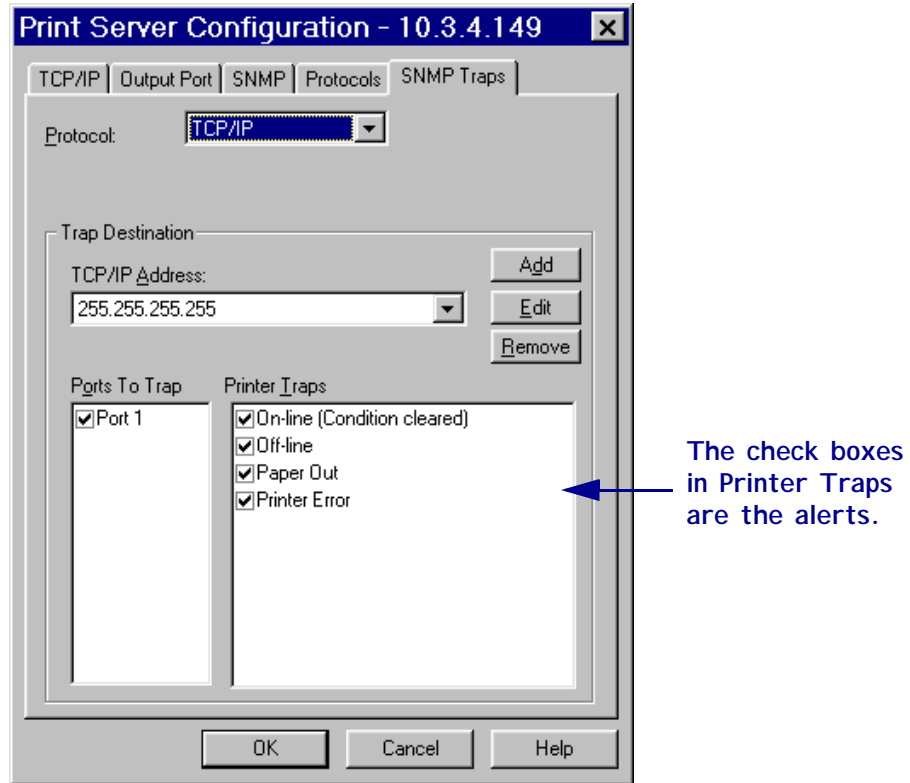


There are multiple tabs that you can access to make changes to current settings.

To set alerts in ZebraNet View, complete these steps:

1. From the Print Server Configuration dialog, click the SNMP Traps tab.
The SNMP Traps tab shows the alerts you can set.

Figure 58 • SNMP Traps



2. To monitor the set alerts (printer traps), see [ZebraNet Alert](#) on page 117.

ZebraNet Alert

ZebraNet Alert gives you the ability to manage your Zebra printers by immediately notifying System Administrators of printer error or warning conditions, which reduces printer downtime and increases application efficiency. Using Web-based configuration tools, selected errors or warning conditions can be routed to a variety of services such as email messages, wireless pagers, or the ZebraNet Alert.

Table 6 shows the conditions that can trigger alerts and the possible destinations

Table 6 • ZebraNet Alert and Destinations

Alert Type	Error Condition
10/100 PS Alerts	<ul style="list-style-type: none"> • On-line (condition clear) • Off-line • Paper out • Printer error
ZebraLink Alerts	<ul style="list-style-type: none"> • Media out • Ribbon out • Printhead over-temp warning • Printhead under-temp warning • Head open • Power supply over-temp • Ribbon warning (in direct-thermal mode) • Rewind full • Cut error • Printer paused • PQ job completed • Label taken • Head element out • Power on
ZebraNet Alert Destinations	<p>Unsolicited Alert messages can be directed to the following destinations:</p> <ul style="list-style-type: none"> • Email (10/100 PS-specific) • TCP (10/100 PS-specific) • UDP (10/100 PS-specific) • SNMP (10/100 PS-specific)

ZebraNet Alert Using SNMP

You can send notifications over SNMP only, for use with ZebraNet Alert or a similar network management utility.

To configure the 10/100 PS to send alerts across a TCP/IP Network using ZebraNet Alert, complete these steps:



Important • If you did not install ZebraNet Alert during the ZebraNet Utilities installation, see *ZebraNet Utilities* on page 58.

1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View.
2. Select the printer you want.

If...	Then...
A DHCP server is present	The 10/100 PS will already have an IP address.
No DHCP server is present	You may need to assign the printer an IP address.

3. To assign your printer an IP address, from the menu bar, select Print Server > Configuration.
4. For PrintServer SNMP Traps, select the SNMP Traps tab.
5. Enter the trap destination and options.
This tells the 10/100 PS what TCP/IP address to send the alerts to, and under what circumstances to send error and log reports. Entering 255.255.255.255 broadcasts the message to every host on the network with an SNMP program running.
6. For ZebraNet Alert to get and display the messages, you need to open ZebraNet Alert. To do this, follow these steps:
 - From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet Alert.



Important • The SNMP trap settings must be established to communicate with 10/100 PS if messages are sent to the ZebraNet Alert.

- In the ZebraNet Alert dialog, from the menu bar, select View > Filter Settings.
- From the View Filter - Devices tab, choose your settings accordingly.



Note • If you select **No device filtering**, messages from every printer are caught; **Device Address** allows you to specify which IP address data will come from.

- The **View Filter - Events** tab allows you to select individual events you want the program to be aware of.



Important • Now SNMP Alert messages for the 10/100 PS can be set up in WebView. From the printer's home page, activate the link to Alert Setup. You can add messages that are sent to the ZebraNet Alert for Windows by choosing SNMP as a destination.

Sending Email to Your Zebra Printer

To easily transfer instructions and data to your printer from a remote location, 10/100 PS allows you to send email to the printer. This is set up under the link POP3 Email Printing. You need to provide the address of the network POP3 server, a user name, and a password. With this option, you can create a text-based email containing ZPL II code and transfer it to the printer.



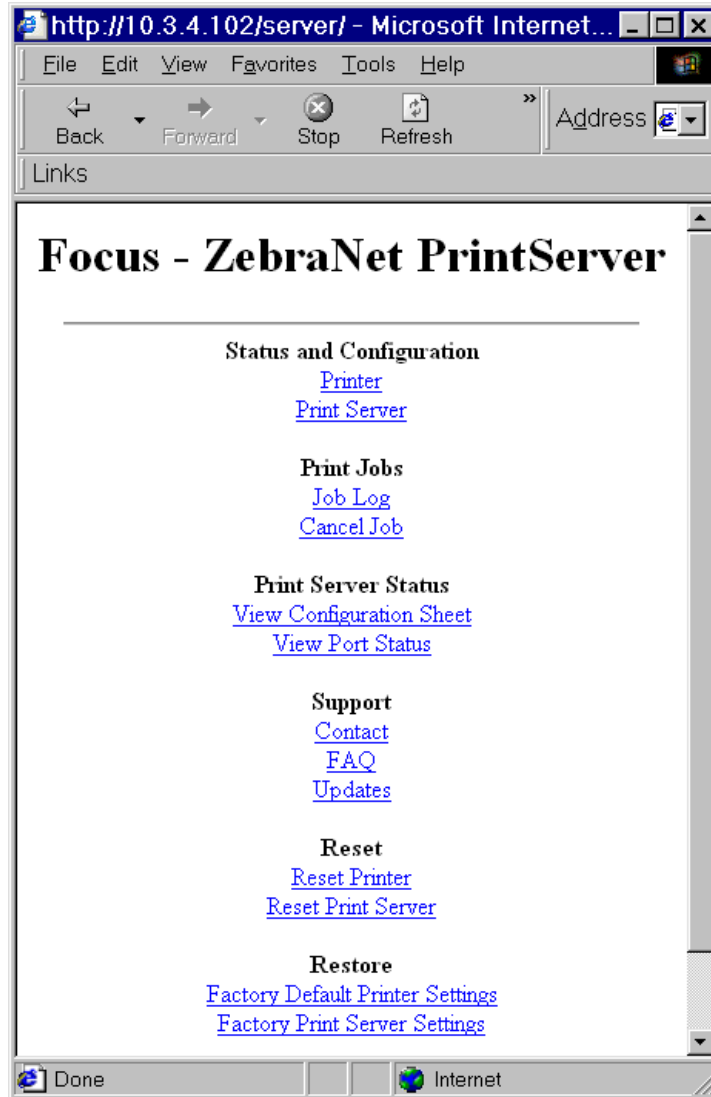
Note • Email attachments sent to the printer are not supported.

By using the proper ZPL II commands, files can be saved, loaded, printed, copied, and deleted, just as if the data was transferred from a serial or parallel port.

To access POP3, complete these steps:

1. From the Printer Home page, click Print Server Settings.
The PrintServer page opens.

Figure 59 • Print Server Settings Page



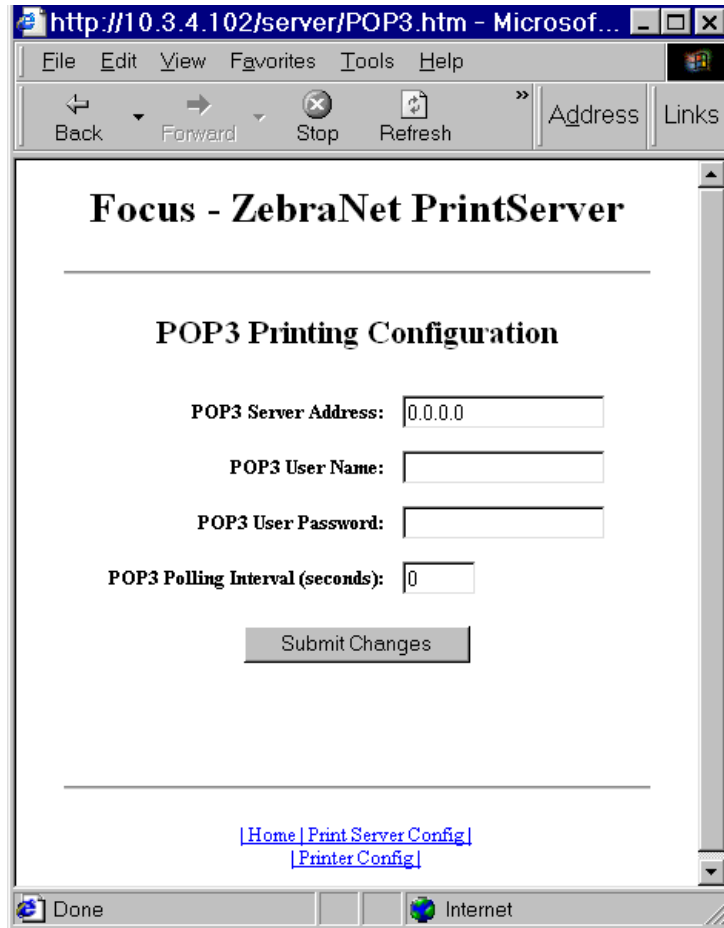
2. From the PrintServer page, click Print Server.
The Print Server Configuration page opens.

Figure 60 • Print Server Configuration



3. From the Print Server Configuration page, click POP3 E-mail Printing.
The POP3 Printing Configuration page opens.

Figure 61 • POP3 Printing Configuration



4. Make the necessary changes, and click Submit Changes.

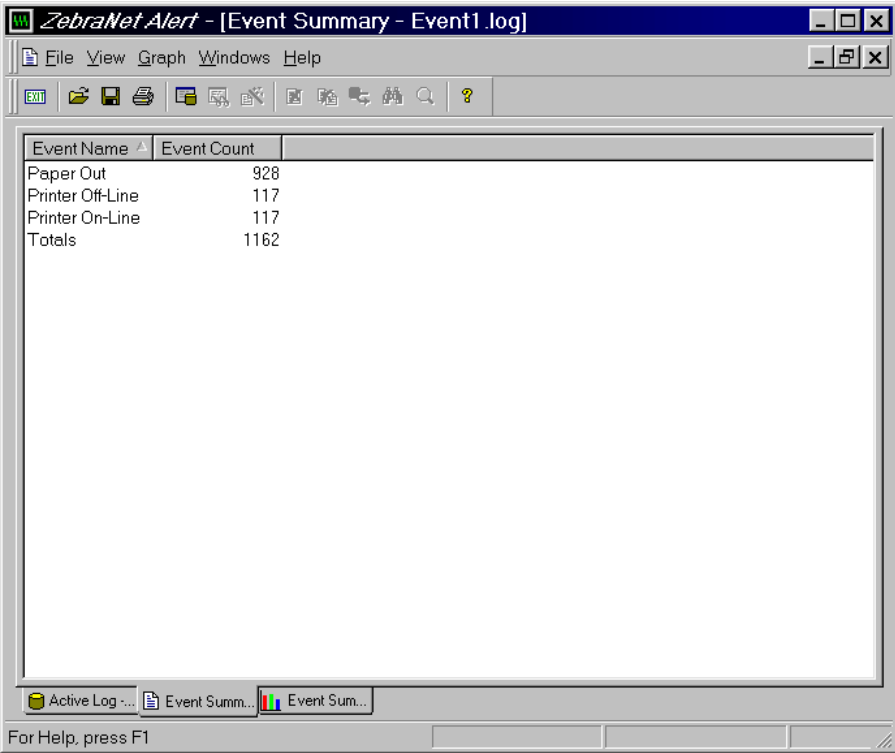
Open Alert

To open ZebraNet Alert, complete these steps:

- 1. From the task bar, select Start > ZebraNet Utilities > ZebraNet Alert.
- 2. In the ZebraNet Alert dialog, from the menu bar, select Report.
The report menu option has multiple report selections.
- 3. Select the type of report you want to generate.

Figure 62 is an example of the Event Summary report. Notice it generates a .log file.

Figure 62 • Event Summary Report



ZebraNet Connect

For details, see *Setting up a ZebraNet Connect IP* on page 43.

ZebraNet View Java Applet

ZebraNet View Java Applet is a Java-based version of ZebraNet View. This can run on any enabled platform that can run a Java virtual machine, such as Windows, UNIX, Linux, and many others.



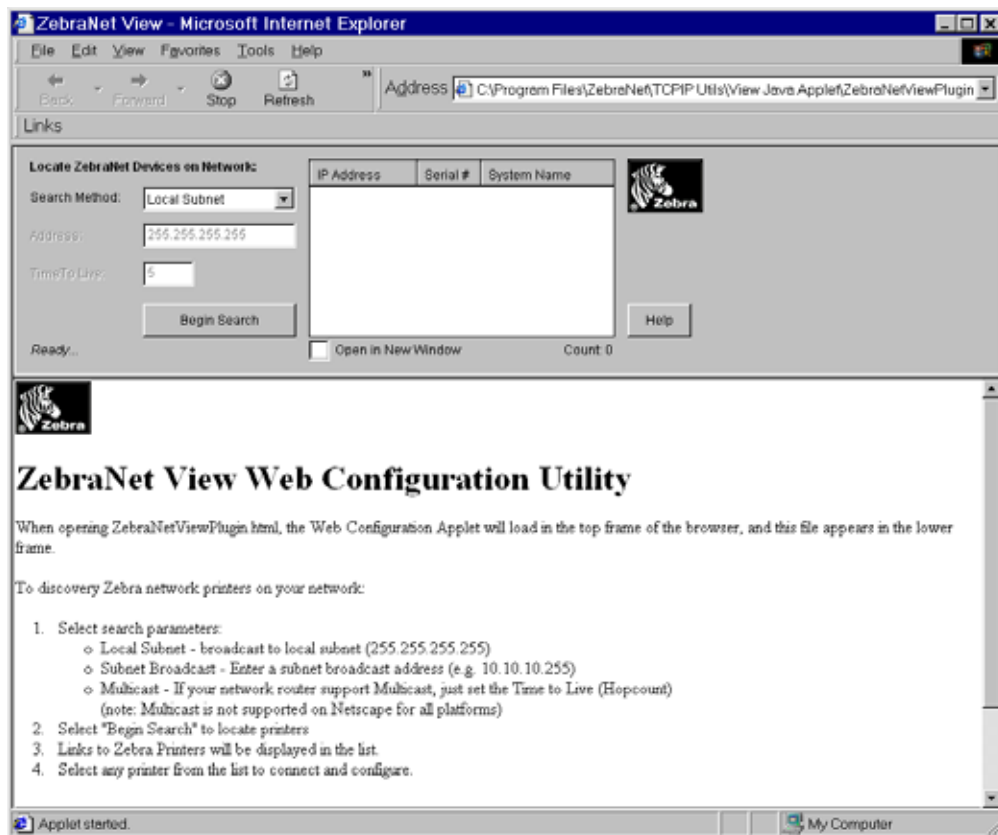
Important • To use ZebraNet View Java Applet, you must have installed ZebraNet Utilities and then installed this application. For installation instructions for ZebraNet Utilities, see *ZebraNet View Java Applet* on page 61.

To access ZebraNet View Java Applet, complete these steps:

1. From the task bar, select Start > Programs > ZebraNet Utilities > ZebraNet View Java Applet 1.0.

This view opens:

Figure 63 • ZebraNet View Java Applet 1.0



2. In the Search Method drop-down box, select the search method you want.
3. Click Begin Search.
It searches your network for all networked Zebra printers, discovers them, and lists them.
4. When you select a device from the discovery list, the selected device's Home Page appears in the lower portion of the view (it replaces the ZebraNet View Web Configuration Utility content).



Hardware Troubleshooting

This section provides you with solutions to known issues.

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Troubleshooting the 10/100 PS

Resetting to Factory Default



Note • You must have an active network cable connected to the 10/100 PS device to default the device using the Test button.

To reset the 10/100 PS configuration parameters to the factory defaults, press the Test button and hold it in while turning on the printer. Keep the test button pressed until the Status Indicator light turns green, then release the test button. After approximately 20 seconds, a configuration label prints automatically.

10/100 PS Status Indicator

A bi-color Status Indicator displays the operational status of the 10/100 PS. The following conditions might occur:

- During normal operation, the LED is solid **green** for more than 30 seconds.
This indicates all the hardware is functioning properly and 10/100 PS has detected the presence of the network. It does not mean the 10/100 PS has an IP address or is attached to a printer queue.
- If the LED is slowly flashing **red**, the 10/100 PS has not detected the presence of a network cable. To solve the problem:
 1. Turn the printer off (O).
 2. Remove the network cable from the 10/100 PS.
 3. Plug the network cable back in until you hear a click.
 4. Check the other end of the cable in the same manner.
 5. Turn the printer on (I). If the 10/100 PS still does not detect a cable, continue.



Important • Cables with a rating higher than CAT-6 have **not** been tested.

6. Verify that the network cable is appropriate for the network and has an RJ-45 connector.
 7. Connect the 10/100 PS to a network drop that is a known good network connection. If the 10/100 PS is still unable to detect the network cable, contact Technical Support for assistance.
- If the LED is slowly flashing **green** (1 time/sec), the 10/100 PS is trying to print a job. If the job does not print, check the following:
 1. Verify that the printer has media and ribbon (if in thermal transfer mode).
 2. If the printer is showing any errors, it is unlikely that the 10/100 PS can send data to the printer. The LED continues to blink until the printer malfunction is resolved or until the printer is turned off (O).

3. Flashing red indicates the Power On Self-Test (POST) is in progress.
- If an active network cable is connected and the LED is solid **red** for more than 30 seconds, the 10/100 PS has failed the POST. If the failure is not severe, the 10/100 PS attempts to print a configuration label on the printer. A failed POST may be a connection to a malfunctioning 10/100 PS device.
 1. Turn the printer off (**O**), wait 10 seconds, then turn the printer on (**I**).
 2. If the 10/100 PS still fails the POST, continue below.
 3. The 10/100 PS has a hardware problem that can be fixed only by replacing or returning the unit. Contact Repair for repair or replacement information.
 - If the LED is alternately flashing **red** and **green** for longer than 2 minutes, the 10/100 PS is in firmware-download mode. This means it is waiting for new firmware data to be sent before it continues normal functioning. Perform the following:
 1. If the 10/100 PS was purposely put into firmware-download mode, finish the download with the proper update utility. Visit the Zebra Web site at <http://www.zebra.com> to download this utility.
 2. If the 10/100PS was not purposely put into firmware-download mode or if you wish to exit this mode, default the unit. Follow the instructions in *Resetting to Factory Default* on page 128.
 3. Contact Technical Support for additional help.

10/100 PS Network Status/Activity Indicator

A bi-color Status/Activity LED indicates network speed, established link, and network activity.

- If the LED is off, no link was established.
- If the LED is solid **green**, a 100Base link is established.
- If the LED is flashing **green**, a 100Base link is established and network activity has been detected.
- If the LED is solid **orange**, a 10Base link is established.
- If the LED is flashing **orange**, a 10Base link was established and network activity has been detected.

Network activity detected by this LED does not mean the activity is data for the print server. The activity is all activity on the network seen on the 10/100 PS.

ZebraNet View Utility Discovery or Configuration Problems

If you are having problems using the ZebraNet View utility to discover or configure the unit, check the following:

- Verify there is not a router between the workstation running ZebraNet View and the 10/100 PS. Because the 10/100 PS does not have an IP address, TCP/IP communication cannot be started across a router. Run ZebraNet View on the same subnet as the 10/100 PS.
- Verify the 10/100 PS has a solid green light. If the LED shows a rapidly flashing green light, check the network cable that is attached.

Unable to Print

If you are having problems printing, verify that there is communication between the 10/100 PS and the printer. Check the following:

- Print a configuration label by pressing the test button on the 10/100 PS. If a configuration label does not print, verify the printer has media and ribbon (if used) and is not paused.
- Ping the printer to determine the ability to communicate with the printer. See [Ping the Printer](#).
- Or open a Telnet session and send a ZPL command to print a configuration label. See [Telnet on page 131](#) for more information.
- Check obvious error conditions such as head open, out of media, out of ribbon, etc.
- If problems persist, contact Technical Support.

Ping the Printer

To ping the printer, complete these steps:

1. Open a DOS window.
To open a DOS window, click on **Start > Run**.
2. In the Open text box, type: cmd
3. From the DOS prompt, type:
`ping xxx.xxx.xxx.xxx`
where xxx.xxx.xxx.xxx is the IP address of the print server

4. See [Figure 64](#). You see a reply from the print server indicating a connection.

Figure 64 • Example of a Successful Ping

```
C:\>ping 172.30.1.34

Pinging 172.30.1.34 with 32 bytes of data:

Reply from 172.30.1.34: bytes=32 time=8ms TTL=126
Reply from 172.30.1.34: bytes=32 time=25ms TTL=127
Reply from 172.30.1.34: bytes=32 time=6ms TTL=127
Reply from 172.30.1.34: bytes=32 time=23ms TTL=127

Ping statistics for 172.30.1.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 25ms, Average = 15ms
```

If the issue is a communication problem, you would have received an error message.

Telnet

Open a telnet session to send a ZPL command from a DOS prompt.



Note • You do not need to open a telnet session if you pinged the printer using the previous procedure. The purpose of these two procedures is to identify whether your PC can communicate with your printer.

To print a configuration label by sending a ZPL II command, complete these steps:

1. Open a DOS window.
To open a DOS window, click on Start > Run.
2. In the Open text box, type: cmd
3. From the DOS prompt, type:
telnet xxx.xxx.xxx.xxx 9100
where xxx.xxx.xxx.xxx is the IP address of the print server.
This will connect your PC to the 10/100 PS through the parallel port of the printer.
4. Enter ~WC.
This ZPL command will print a configuration label on your printer.
5. Click the **X** in the upper right-hand corner of the window to exit.

If the configuration label prints, the issue is not a communication problem between the printer, the print server, or the PC.

Unable to Configure Device

To assign an IP address to a ZebraNet 10/100 PS using ZebraNet View, you must be on the same subnet. If ZebraNet View has Multicast enabled, you may be able to view the ZebraNet 10/100 PS on another subnet, but you will not be able to configure the device.

HP JetAdmin or HP Web JetAdmin

The ZebraNet 10/100 PS may be set up and managed using HP JetAdmin or HP Web JetAdmin products.

E



Frequently Asked Questions

This section provides a group of frequently asked questions (FAQs) about 10/100 PS.

FAQs

Can the internal ZebraNet 10/100 PS option work on a computer network that is running both TCP/IP and IPX protocols simultaneously? Yes. The ZebraNet 10/100 PS runs all of its available protocols simultaneously. This means that the ZebraNet 10/100 PS can run on mixed networks such as a network using Microsoft, and UNIX.



Important • The ZebraNet 10/100 PS does not support IPX, but it can function on networks that use IPX protocols.

Will the ZebraNet 10/100 PS allow connectivity to anything other than a PC network? Yes. The ZebraNet 10/100 PS allows connectivity to systems such as IBM's AS400, provided that it is configured using TCP/IP. Other network protocols can be used with third-party adapters that are converted to 10BASE-T.

What if a print job makes it to the queue, but never leaves the queue? The label does not print. These are the things to check:

- Confirm that the printer is turned on and receiving power.
- Confirm that the network cable is plugged in and that you can ping the printer.
- If the above bullets do not change the outcome, it is likely that there was a misconfiguration while creating the queue. The queue must be recreated verifying the following:
 - Confirm that you use the print server's valid IP address.
 - If you are using a UNIX or AS/400 host, there is an option for the remote queue name. There is only one valid response to use: PORTLF1.
 - If Windows does not have LPR installed, the above required option should be left blank.
 - See the documentation for other operating system specific queue creation.

What are the minimum requirements to network a printer?

- Cat-5 network cable with 10BaseT connectors
- 10/100 PS
- Hub or Switch
- If a hub or switch is NOT used, you need a cross-over cable.
- Workstation running a TCP stack with print services installed.

What is the default User ID and password for the print server?

- The User ID is **admin** and the password is **1234**.

What ports are open on 10/100 PS and related software?

TCP Ports:

- 21 FTP
- 23 Telnet
- 80 HTTP Server
- 515 Printer port
- 631 IPP port
- 9100 Raw socket connection

UDP Ports:

- 161 SNMP broadcast from 10/100 PS
- 162 SNMP trap on ZebraNet Alert
- 4201 discovery destination on 10/100 PS
- (dynamic) SNMP get request from ZebraNet View
- (dynamic) discovery broadcast from ZebraNet view
- (dynamic) discovery broadcast from ZebraNet view Java

What are my network connectivity options based on when using a 10/100 PS?

It depends on your environment, but the print server accepts print jobs in any of the following ways:

- *FTP* — ZPL/EPL files can be sent to the printer via a FTP client as standard ASCII files.
- *HTTP* — (ZebraLink-enabled printers *only*) Using the script option of the print server's homepage, you can type ZPL into a specified location of the Web browser and send it to the printer.
- *IPP* — Using third-party IPP clients, print jobs can be sent via the Internet.
- *LPR/LPD* — Sometimes referred to as queue based printing. LPR/LPD is the standard in network printing. Most TCP/IP operating systems are compatible with this option.
- *Raw socket connection* — You can connect to the printer directly via the network, bypassing *everything in-between*. This option is commonly used to integrate ZPL/EPL into existing programs, such as VB scripts.
- *POP3* — With proper configuration, you can place ZPL/EPL files into the body of an email, and it will print. The print server periodically checks this email box at the specified intervals and prints the body of the message. **IMPORTANT:** Attachments and subject lines are not supported.



Notes • _____

Glossary



10BaseT A type of Ethernet that uses unshielded twisted pair cable.

100BaseT A type of Ethernet that can transmit 100Mb of data per second with a twisted-pair cable.

ARP The standard TCP/IP method for determining the actual network address of a device based on its IP address.

ASCII A standard for the binary representation of characters.

BOOTP BOOTP (Bootstrap Protocol) is a protocol that lets a network client configure automatically. It can automatically configure any of the following information: IP address, gateway, subnet, system name, name server, and more. It automatically assigns the necessary settings from a pool of pre-determined addresses for a certain duration of time. BOOTP is the basis for a more advanced network manager protocol, the DHCP (Dynamic Host Configuration Protocol).

broadcast In a network, a situation when all destinations on the network receive a given packet.

client A workstation or PC in a client/server environment.

community For SNMP, a relationship between an agent and a set of SNMP managers that defines security characteristics. The community concept is a local one, defined at the agent. Each community is given a unique community name.

current mode (parallel port) A mode that the printer and print server negotiate.

DHCP (Dynamic Host Configuration Protocol) DHCP is an alternative to another network IP management protocol, Bootstrap Protocol (BOOTP). Like BOOTP, DHCP can configure an IP address, gateway, subnet, system name, and name server. When speaking about the 10/100 PS, BOOTP, and DHCP configure the same options.

delete bytes This number is used to remove characters from the beginning of every job sent to the logical printer. The value for delete bytes can range from 0 to 255.

dynamic A dynamic configuration, as the name implies, means that it changes. BOOTP and DHCP offer time-based leases for the configurations they assign. Their changes depend on the time-based lease, and how often the printer itself is offline and online again. A dynamic configuration can include BOOTP or DHCP.

Ethernet A widely used local area network system based on the IEEE 802.3 standard.

firmware Software routines that are stored in ROM (Read Only Memory). This is typically part of a device, such as a printer or 10/100 PS.

FTP File Transfer Protocol, a TCP/IP-related protocol for transferring files between devices on a network.

Flash memory A type of memory that allows read-and-write operations, but permanently stores data when the power is turned off. Useful for storing firmware because it can be easily updated by downloading new code.

gateway A device that converts one higher-level network protocol to a different higher level protocol.

gleaning A temporary, local configuration option. Gleaning lets you add the address of the device you want to configure to your local workstation's ARP table. This configuration is not permanent and is valid only from the workstation from which you entered the ARP information. After the information is entered into the workstation's ARP table, the user follows up with a Telnet session to enter the information permanently. This configuration option is used mostly by non-Windows workstations that cannot run the ZebraNet View configuration utility.

IP Internet Protocol, one of the main protocols of the TCP/IP protocol suite.

IP address A network address used by the TCP/IP protocol.

IPP Internet Printing Protocol. Allows you to associate a printer with a URL address that is used for printing over the Internet.

IPX Internetwork Packet Exchange, one of the NetWare protocols.

JetAdmin A Hewlett-Packard printer management program available for NetWare and TCP/IP.

logical Refers to conceptual rather than physical. For example, a computer might have a single physical connection to the network (an Ethernet adapter card), but could have logical connections to several other devices on the network.

MAC Address Media Access Control. Ethernet address that corresponds to the assigned IP address.

name server A workstation on a TCP/IP network that provides a list of all workstations on the network.

node A device connected to a network, such as a computer or print server.

parallel port A port on a device that sends information in groups of bits over multiple wires, one wire for each bit in a group.

ping A TCP/IP command that determines whether a device is accessible on the network.

POP3 Post Office Protocol, the protocol used to retrieve email from the server.

port A physical connector, such as the parallel port, or a logical connection to a device.

post-string A string that is sent at the end of every job going to the logical printer. Maximum 64 characters long.

pre-string A string that is sent at the beginning of each job that goes to the logical printer. Max 64 characters long.

print server A device in a network that changes a network protocol into a printer protocol.

protocol A method of sending and receiving data between two or more workstations on a network, and ensuring that the data is received without errors.

RARP Reverse Arp, a standard TCP/IP method of determining a device's IP address based on its Ethernet address.

raw TCP port A type of TCP port in which data is passed unmodified to the receiving node.

RJ45 A type of modular jack connector similar to a telephone connector with up to eight wires. Used for 10BaseT and 100 BaseT Ethernet connections and for serial port connections.

serial port On a printer or print server, a port that transfers data one bit at a time. Serial ports usually have either a 25-pin, 9-pin "D," or RJ-45 connector setting mode (parallel port).

A mode that the print server is set to for the highest level of parallel port communications.

server A device on a local area network that provides services to client computers on the network.

SMTP Simple Mail Transfer Protocol, a protocol used to send email messages over the Internet.

SNMP Simple Network Management Protocol, a protocol for monitoring and controlling devices on a network.

spooling In printing applications, spooling is the transfer of data to a temporary storage area on disk (the print queue) prior to printing. Spooling allows many jobs to be queued to a single printer.

static Refers to a static IP address. All information is provided by the network administrator.

subnet mask A TCP/IP method of dividing a network into several smaller subnetworks.

TCP/IP Transmission Control Protocol/Internet Protocol, the de facto standard for Internet communications that is widely used on local area networks.

TCP Port A method of accessing a TCP/IP service, where a device with a single IP address can have multiple TCP ports.

Telnet A TCP/IP protocol that allows two devices to communicate over a LAN.

trap An unsolicited message sent by an SNMP agent to an SNMP management station. It notifies the management station of some unusual event.

UNIX A general-purpose computer operating system used on many different kinds of computers.

WCSO Wireless Card Socket Option. Zebra's wireless Ethernet option.

Windows 95 and Windows 98 Microsoft's PC operating systems that feature built-in peer-to-peer networking.

Windows NT Microsoft's multitasking operating system that can be used either as a client or as a server.

Windows 2000 Microsoft's multitasking operating system that replaces Windows NT; can be used as either as a client or as a server.

ZebraNet PrintServer II An Ethernet connectivity solution.

ZebraNet 10/100 Print Server An Ethernet connectivity solution.

ZebraLink Allows you to connect and control your bar code printers anywhere and anytime.

ZPL II Zebra Programming Language II is a powerful label-definition and printer-control language.

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