

# VPT Configuration and Installation

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#### NOTICE TO USER

In an effort to meet the demands of a rapidly changing technology, the manufacturer is continually developing new features and functions to meet your changing printing or printer needs. Please be sure to consult all manual updates or addenda when using this product's documentation.

# **Revision Table**

Manual Rev.	Machine Rev.	Page No.	Date
00	-	First Edition	May.2005
01	-	All Pages	Oct.2005
		Title, 1-1, 2-1: Changed Printer Name from DDP70 to DDP70e.	
		Network Interface Card.	
		1-2: Deleted Novell compatibility and AppleTalk compatibility from Features Summary. Changed network description to 10/100/1000Base-T.	
		1-3: Deleted TCP/IP and NetWare description from Virtual Printer Restrictions.	
02	-	1-4: Deleted PSAxxxxx, PSNxxxxx and LJNxxxxx from Default Virtual Printers. Removed description regarding the optional Network Inter- face Card from prt2file.	Mar.2006
		1-6: Removed description regarding the optional Network Interface Card from Spooling and Data File Capture.	
		Deleted Sample Web Pages explanation form Chapter 2.	
		Made change of all page number due to above changes.	

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#### **Overview**

A DDP 70e or DDP 92 printer that is network attached can be only handle applications that operate over TCP/IP. A set of Virtual Printers is provided that allow an administrator access to printer options that would otherwise not be accessible to some printing applications.

One unique feature of a VPT Network Printer is the capability to be accessed by one or all of the supported network protocols over a single cable and to appear on the network as many different types of printers. Each unique Network Printer configuration is referred to as a *virtual printer*.

The Network Control software handles the network protocols and network management functions. The Network Control software accepts commands and queries from and communicates printer status to the Network Administrator.

The Print Control software interfaces with the printer's Image Controller to handle commands and queries related to the configuration of the printer. The Image controller is that part of the printer that converts the incoming page description language into a printed page and controls the operations of tray selection, paper movement, etc. The Print Control software also interfaces with the Network Control software to receive print data, commands, and queries from the network.

#### **Network Terminology**

Devices on the network can communicate with the services on the VPT Network Printer. The following terms are defined here for future use in this manual.

- Server A physical VPT Network Printer is defined as a *server*.
- Virtual Printer Technology® (VPT) The enterprise Network Printer architecture that enables a printer to become an intelligent node in a network computing environment and provide printing "services" to other network nodes through a client/server type relationship.
- Virtual Printer A printer configuration that has been defined for use as a *service*. The printer comes with multiple factory-defined virtual printers to support the installed options.
- **Service** Any virtual printer configured on a Network Printer is considered to be a *service*.

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## **Features Summary**

The VPT Network Printer software contains a variety of features designed to enhance system performance and simplify configuration and maintenance. These include:

- **TCP/IP compatibility** The software supports the TCP/IP network protocol as defined by the U.S. Department of Defense.
- Host-initiated connections Host CPU's on the network may request connections to the printer port. This allows CPU's to contend for a printer.
- Nonvolatile memory All parameters on the VPT Network Printers are saved in nonvolatile memory.
- **Easy configuration** The VPT Network Printer software can be easily configured using a standard HTTP Web browser.
- **Power-up diagnostics** A complete set of internal and Ethernet cable diagnostics are run when a VPT Network Printer is powered up.
- **Complete statistics** The VPT Network Printer maintains complete statistics, including traffic and error counts that can be continuously monitored or printed.
- Virtual Printers Up to 64 Virtual Printers can be supported.
- Printer language types PostScript, PCL, PCLXL, PDF and TIFF emulations are supported.

#### **Hardware Requirements**

The VPT Network Printers are compatible with both Ethernet Version 2 and IEEE 802.3 networks using 10/100/1000 Base-T.

## **Virtual Printer Restrictions**

Up to 64 Virtual Printers can be defined in a VPT Network Printer. This number is strictly the upper limit because of some restrictions with respect to the mix of protocols that can be supported.

All VPT Network Printers ship with a set of predefined factory default Virtual Printers.

# **Default Virtual Printers**

The following default Virtual Printers are preset at the factory:

- Ip uses all the factory default settings for the Auto Select emulation with emulation sensing enabled. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 9100. It is also accessible from LPR/LPD using the queue name "lp".
- **text** uses all the factory default settings for the Auto Select emulation with emulation sensing enabled. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3100. It is also accessible from LPR/LPD using the queue name "text".
- **vp-pcl** uses all of the factory default settings for the PCL emulation. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3101. It is also accessible from LPR/LPD using the queue name "vp-pcl".
- **postscript** uses all of the factory default settings for the PostScript emulation and is preset only if the optional PostScript PDL is installed. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3102. It is also accessible from LPR/ LPD using the queue name "postscript".
- ascii\_portrait uses all of the factory default settings for the PCL emulation. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3104. It is also accessible from LPR/LPD using the queue name "ascii\_portrait".
- ascii\_landscape uses all of the factory default settings for the PCL emulation. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3105. It is also accessible from LPR/LPD using the queue name "ascii\_landscape".

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- Ip\_portrait uses all of the current default settings for the HP PCL emulation except:
  - □ Typeface is Line Printer.

This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3106. It is also accessible from LPR/LPD using the queue name "lp\_portrait".

- Ip\_landscape uses all of the current default settings for the PCL 5 emulation except:
  - □ Pitch is 15 cpi.
  - □ Typeface is Line Printer.
  - □ Orientation is Landscape.

This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3107. It is also accessible from LPR/LPD using the queue name "lp\_landscape".

- pdf is included for printing Adobe Portable Document Format (PDF) files. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3109. It is also accessible from LPR/LPD using the queue name "pdf".
- tiff is included for printing Tagged Image File Format (TIFF) encoded documents. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3110. It is also accessible from LPR/LPD using the queue name "tiff".
- pclxl is provided for printing HP Printer Control Language Extended (PCLXL or PCL6) documents. This Virtual Printer is enabled for TCP/IP, with the TCP port set to 3112. It is also accessible from LPR/LPD using the queue name "pclxl".
- prt2file is configured to store the received data on disk and will not print. This feature is included as a trouble-shooting aid and is not intended for normal customer operation. It is configured for TCP/IP, with the TCP port set to 7101. It is also accessible from LPR/LPD using the queue name "prt2file".

# **Virtual Printer Upgrades**

When a new Virtual Printer is created to the printer that is supported by default Virtual Printers, the necessary Virtual Printers are automatically added to the existing set. If a Virtual Printer already exists with the same name as the default to be added, a "-1" will be appended to the name of the added default. (e.g. If a Virtual Printer named **tiff** currently exists, the default TIFF Virtual Printer will be named **tiff-1**.) Similarly, if the port number normally assigned to the default Virtual Printer is in use, the port number for the added default will be increased by 100. (e.g. If port number 3109, normally assigned to the **pdf** Virtual Printer, is currently assigned to a user defined Virtual Printer, **pdf** will use port number 3209.)

# **Virtual Printer Defaults**

Parameter	Default Value
emulation type	PCL
number copies	1
paper size	defined by country code selection on OCP
mode	simplex (1-sided printing)
right margin	85 characters
top margin	3 lines
page length	60 lines
orientation	portrait
perf skip	enabled
vmi	8/48 inches (6 lpi)
hmi	12/120 inches (10 cpi)
columns	80
lpi	6
font pitch	10 срі
font height	12 points
typeface	Courier
font number	23
symbol set	PC- 8
bidirectional (PostScript)	disabled
binary mode (PostScript)	disabled

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## **Special Virtual Printer Features**

The following Virtual Printer selectable features are used to provide unique printer operating modes or diagnostic capabilities.

#### Spooling

The spooling feature directs the print data stream to the printer's internal disk drive. After all the data for a job is transferred, the job is submitted to the print queue for processing.

Spooling provides a significant increase in the data transfer rate for all but very short jobs, since the buffer space is not limited to the amount of memory assigned to the channel. Data transfer is no longer affected by alert conditions, such as a paper out or paper jam. This feature is very useful when the printer is operating from host systems that do not have proper error recovery and restart the job when a long pause in the data transfer is detected.

Spooling can be enabled or disabled (the default) independently for each virtual printer for LPR/LPD and or direct TCP port access.

#### **Data File Capture**

Data file capture allows a misbehaving print stream to be saved on the printer's internal disk drive but it is not printed. The file can then be copied from the printer's disk drive using FTP and then analyzed to determine the cause of the problem. See the Network Protocol Reference Manual, "Using FTP to Retrieve Captured Print Files".

This feature is to be used only as a troubleshooting aid and is not intended for normal customer operation. The resulting output file can be used by programmers or support personnel to resolve compatibility issues.

Data file capture can be enabled or disabled (the default) independently for each virtual printer. The resulting mode applies to both LPR/LPD and/or direct TCP port access for the virtual printer.

#### NOTE:

FTP needs to be set as "Enabled" from Web pages. See the Web Utilities Manual for detail.

#### **Overview**

One unique feature of a VPT Network Printer is the capability of appearing on the network as many different types of printers. These types are referred to as Virtual Printers and can be configured in many different ways. The printer can be accessed by one or all of the Ethernet protocols being used on a campus network over a single cable.

Virtual Printers are created and configured using the Web pages. As there are many variations on the actions to be done to create a Virtual Printer, only the basic set will be discussed here.

#### NOTE:

The sample web pages that are shown are from the DDP 70e; however, the same information applies to the DDP 92.

# **Using the Web Pages**

- **1.** Start your Internet browser application.
- **2.** To display the Home Page, enter the IP address or DNS name of the printer. (See your System Administrator for this information, or print a Configuration Report using the printer Operator Control Panel.) A sample Home Page is shown below.



You can make a selection from the Home Page or wait 90 seconds for the Status General page to be automatically displayed.

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The Manage Status-General page, shown below, displays the status of the print engine, the paper trays, and any options currently installed. (Shown with the High Capacity Feeder.)

**3.** From the left bar, click Manage, then System, then Virtual Printer. This part of the Web pages is password protected, so the following window is displayed.

Entermore	ana far austar		
Enter üsem	ame for system	ii at 152,166,10,100.	
User Name:			
Password:			

4. Enter the user name system, the appropriate password, and click OK.

There is no system password as factory set.

		Syster	m - Virtual Printer
Aode	œ	Default	Non-Virtual Printer Input
	с	몤	TCP Port = 9100
nage	С	text	TCP Port = 3100
	С	vp-pcl	TCP Port = 3101
/// (e	С	postscript	TCP Port = 3102
	С	ascii_portrait	TCP Port = 3104
	С	ascii_landscape	TCP Port = 3105
	С	lp_portrait	TCP Port = 3106
	С	<u>lp_landscape</u>	TCP Port = 3107
	С	pdf	TCP Port = 3109
inter	С	tiff	TCP Port = 3110
5).	с	pcixi	TCP Port = 3112
t		Configure Delete' oper New' b	Delete New ation is ignored for Default channel. utton will create a new channel.

**5.** When user name and password are accepted, the following Web page is displayed.

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