



# Model DP-301

## Ethernet / Fast Ethernet Multiprotocol Print Server

# Hardware Guide

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# ***TABLE OF CONTENTS***

## **ABOUT THIS GUIDE**

<b>INTRODUCTION</b> .....	1
<i>Service Features</i> .....	2
<i>External Features</i> .....	3
Rear Panel .....	3
LED Indicators .....	4
<b>UNPACKING AND INSTALLATION</b> .....	6
<i>Unpacking and Inspecting</i> .....	6
<i>Installing the DP-301</i> .....	7
<i>Power-up and Self-Test</i> .....	8
LED Test Series .....	8
Component Test Series .....	8
Operational Test .....	9
<i>Velcro-mounting the DP-301</i> .....	10
<b>PRODUCT SPECIFICATIONS</b> .....	11
<b>PORT PINOUTS</b> .....	13
<b>INDEX</b> .....	14

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# ***ABOUT THIS GUIDE***

This manual describes the D-Link DP-301 Ethernet/Fast Ethernet Multiprotocol Print Server, including full descriptions of its features, detailed installation procedures, and troubleshooting information.

Your DP-301 package includes important software components, and additional user manuals. The software components, and procedures for installation and setup of the software, are covered in the *PS Admin User's Guide*.

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# ***INTRODUCTION***

The DP-301 Print Server is a compact print server which connects to your Ethernet or Fast Ethernet network anywhere you wish to locate printer services. It manages the flow of print files from your workstations or file servers to its connected printers, delivering print jobs to high-performance printers much faster than a file server or a PC acting as a print server can.



**DP-301 Print Server**

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## Service Features

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DP-301 print servers improve network printing services in three ways:

- ◆ The DP-301 picks up the workload of managing print file traffic to its connected printers. This provides workload relief to your file servers, and allows the file servers' full capacity to be used for file access or other direct services to network users. On peer-to-peer networks, workstations can print directly to the DP-301 without increasing the load of another workstation or server.
- ◆ The DP-301's IEEE 1284 compliant high-speed bidirectional parallel printer port can transmit to high-speed laser printers much faster than a PC's parallel printer port. A high-speed laser printer can be driven at its full capacity.
- ◆ Because the DP-301 is very portable and inexpensive compared to a PC-based print server, and because the DP-301 connects to your file servers through the network, the printer can be stationed at the location of maximum convenience to users.

The DP-301 offers extraordinary flexibility, operating with all major network operating systems and protocols:

- ◆ **IPX/SPX**

Novell NetWare 3.x, 4.x (Using either bindery emulation or native NDS)

- ◆ **TCP/IP**

UNIX lpr/lpd (HP-UX, SunOS, Solaris, SCO, UnixWare, IBM AIX)

Windows NT

- ◆ **NetBEUI**

Windows NT, Windows 95, Windows for Workgroups, Microsoft LAN Manager, IBM LAN Server

- ◆ **AppleTalk**

MacOS EtherTalk

Your D-Link DP-301 package includes *PS Admin*, a Windows-based setup and administration program, which makes configuration and management of your D-Link print servers quick and easy in a Windows environment. The DP-301 also has a Telnet interface for management communications. If Windows is not available on the station you choose for print server administration, then all configuration and management commands may be issued to the DP-301, and all console messages and management report information will be returned, via Telnet.

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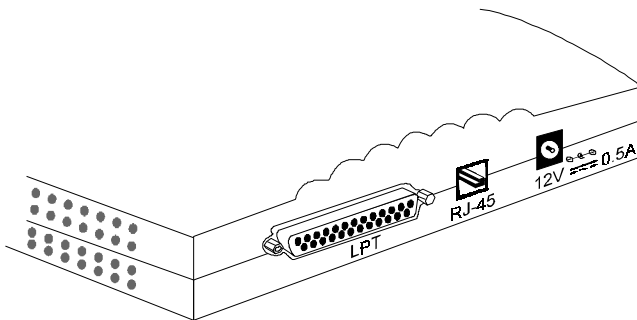
## External Features

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This section describes the external features of the DP-301 print server.

### ***Rear Panel***

The DP-301's printer port, network port, and power input socket are all located on the rear panel



**DP-301 Rear Panel**

### **Printer Port**

The printer port, labeled LPT, is configurable by commands in the *PS Admin* program, or by commands issued to the DP-301 via Telnet. See the *PS Admin User's Guide* for configuration procedures.

## Network Port

The network port (RJ-45 receptacle) provides for connection to the network through 10Base-T Ethernet cabling, or Category 5 twisted-pair cable for 100Base-TX Fast Ethernet. This port has autonegotiation (NWay) functionality, which enables the DP-301 to automatically negotiate and set its data rate to the highest rate allowed by its network.

## DC Power Input

The DC power input socket has the label: 12V ===0.5A. The power supply included in your DP-301 package is correct for the DP-301. Substitution of other equipment may void warranty.

## LED Indicators

The front panel of the DP-301 comprises three LED indicators. See "Power-up and Self-Test," Chapter 2, for LED indications upon starting up the DP-301. During operations following a normal startup, the LED indicators provide the following status signals:

### ◆ Pw/Tx

Steady or flashing green confirms power on.

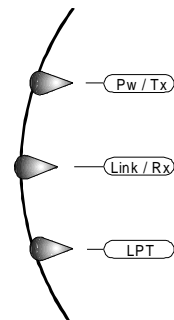
This indicator blinks (briefly dark) when the DP-301 is transmitting to the network.

### ◆ Link/Rx

Steady or flashing green confirms that the DP-301 has a good connection to the Ethernet or Fast Ethernet network.

This indicator blinks (briefly dark) when the DP-301 is receiving from the network.

### ◆ LPT



**LED Indicators**

This indicator shows steady green while the DP-301 is transferring print data through its printer port



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# ***UNPACKING AND INSTALLATION***

This chapter explains how to install your DP-301 print server and connect it to the network. It also describes the automatic power-on self test, and provides instructions for convenient Velcro mounting.

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## **Unpacking and Inspecting**

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Carefully remove all items from the package. In addition to this *Hardware Guide*, be certain that you have:

- ◆ One DP-301 print server
- ◆ One DC power adapter suitable for your electric power service
- ◆ Two *PS Admin for Windows* software diskettes
- ◆ One *PS Admin User's Guide*
- ◆ One lpr software diskette
- ◆ One lpr user's guide
- ◆ Velcro strips for optional mounting

If any item is missing, or if you find any damage or mismatch, promptly contact your dealer for assistance.

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## Installing the DP-301

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Follow these steps for a trouble-free start of print-server operations with your DP-301. Please take particular notice of the warning in step 4: the network connection should be made before supplying power to the DP-301.

1. Confirm proper operation of the printer to be connected to the DP-301.
2. When you have confirmed proper operation of the printer, switch its power off.
3. Confirm that your network is operating normally.
4. Connect the DP-301 to the network (through the RJ-45 receptacle on the print server's rear panel).

**WARNING:** *Configuration problems may result if the DP-301 is powered up without first establishing its network connection. Follow this procedure to avoid complications at the configuration stage.*

5. While the printer is power off, install a printer cable to connect its parallel port to the printer port of the DP-301.
6. Switch printer power on.
7. Plug the DC power adapter's output plug into the DC power input socket on the rear panel of the DP-301.
8. Plug the DC power adapter into an electric service outlet. This will supply power to the DP-301. (The DP-301 has no power switch.) The DP-301's self-test routines will proceed automatically.

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# Power-up and Self-Test

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Whenever the DP-301 is powered up, two kinds of testing procedures follow automatically. The first procedure is just a programmed series of LED flashes, to confirm proper operation of the three LED indicators. The second procedure comprises programmed tests of each of the DP-301's major components. If any fault is found during the component test series, testing is halted and a continuous pattern of LED flashes signals the nature of the fault.

## LED Test Series

Immediately upon power-up, all three of the LED indicators will show steady green for several seconds. Then the LPT indicator will flash three times while Pw/Tx and Link/Rx remain steady. Irregularity of any of the LEDs during this LED test series indicates that there is a problem with the LEDs themselves. Contact your dealer for correction of any LED problems before proceeding.

## Component Test Series

The actual component tests immediately follow the LED tests. A normal (no fault) result is signaled by three flashes of the LPT indicator and the start of normal print server operation.

If any error condition is found during the component test series, then the test will halt with the LPT LED continuously signaling the particular error according to the following table.

LPT Flash Pattern	Error Type
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steady long flashes	Firmware Reload Required
continuous on	DRAM Error
One long, two short flashes	Timer INT Error
One long, three short flashes	Flash Protected
One long, four short flashes	Flash ID Error
One long, five short flashes	Flash Erase / Program Error
One long, six short flashes	LAN Controller Error
One long, seven short flashes	LAN Memory Error
One long, eight short flashes	Parallel Controller Error
One long, nine short flashes	LPT Error
steady short flashes	EEPROM Error
One long, eleven short flashes	LAN I/O Base error

In the event of a Firmware Reload Required error at startup, proceed according to instructions given in the *PS Admin User's Guide* ("PS Admin Administration" section, under the heading "Upgrading the Print Server's Internal Firmware").

In the event that any of the other listed error conditions is encountered on startup, contact your dealer for correction of the fault.

## ***Operational Test***

The *PS Admin* software includes a Print Test function for confirmation of connections and functions. That operational test can be performed after you have completed installation of the *PS Admin* software, and the *PS Admin* procedures for configuring the DP-301. See instructions given in the *PS Admin User's Guide* ("Getting Started Setting up Your Print Server" section, under the heading "Testing your Print Server").

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## **Velcro-mounting the DP-301**

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The DP-301 can stand on the printer's tabletop, or may be Velcro-mounted to a side panel of the printer or another suitable surface next to the printer. To prepare for Velcro-mounting, separate the two parts of the supplied

Velcro tape (pull the "hook" tape apart from the "loop" tape -- the hook tape has stiff little plastic hooks, which give its surface a rough feel, and the loop tape has a mat of soft plastic filaments which gives it a smooth, soft feel).

The bottom housing of the DP-301 case features two corner markers which indicate the best location for applying the Velcro loop tape. Peel the white backing off of the loop tape, to expose its adhesive surface, and press it onto the bottom of the DP-301, between the corner markers.

Choose a mounting surface, and mounting attitude, which will afford convenient visual access to the DP-301's LED indicators, without cramping any of the wiring connected to the DP-301's rear panel. Peel the white backing off of the hook tape. Align the hook tape to match the alignment of the loop tape when the DP-301 is in the attitude you have chosen, and press the loop tape's adhesive back onto the mounting surface.

Mount the DP-301 by pressing its case firmly against the mounting surface to engage the hooks and loops of the Velcro tapes.



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# ***PRODUCT SPECIFICATIONS***

## **Printer Connection**

**Printer Port:** IEEE 1284 standard bidirectional parallel interface with 25-pin connector.

**Bidirectional Communication:** Hewlett-Packard PJJ (Printer Job Language) standard for bidirectional communication.

## **Network Connection**

**Network Standards:** IEEE 802.3 10Base-T Ethernet, IEEE 802.3u 100Base-TX Fast Ethernet

**Network Data Transfer Rate:** 10Mbps and 100Mbps (megabits per second), according to network environment.

**Network Connector:** RJ-45 connector for 10Base-T or 100Base-TX twisted pair connection; NWay automatic speed negotiation supported.

## **Network Protocols**

**Ethernet Frame Types:** 802.2, 802.3, Ethernet II, SNAP (auto-switching)

**Transport Protocols:** IPX/SPX, TCP/IP, NetBEUI, AppleTalk/EtherTalk

**TCP/IP Protocols Supported:** BOOTP, SNMP, Telnet, TFTP, FTP, lpd, RARP, DHCP

## Management and Diagnostics

**Standard:** SNMP

**MIBs:** MIB-II (RFC 1213)

**Diagnostic LED Indicators:** Pw/Tx, Link/Rx, LPT

## Environmental and Physical

**Power Supply:** External power supply providing 12VDC/ 500mA

**Dimensions:** 139.5mm × 114.5mm × 27.2mm

**Weight:** approx. 165g

**Operating Temperature:** 0 to 50°C

**Storage Temperature:** -10 to 50°C

**Humidity:** 10% to 90% non-condensing

**Emissions:** FCC Class A, CISPR 22 Class A, VCCI Class 1, AS/NZS 3548:1995 Class A

**Safety:** UL (UL 1950), CSA (CSA950), TUV/GS (EN60950)



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# PORT PINOUTS

The following table lists the pinouts of the DP-301's 25-pin parallel port connector (identical to the parallel port connector used on most personal computers), and the corresponding pin numbers for the 36-pin Centronics connector as used on most printers.

Signal names beginning with *n* are active-low signals.

25-pin	Centronics	Signal	Source
1	1	nStrobe	Host
2	2	Data 1	Bidirectional
3	3	Data 2	Bidirectional
4	4	Data 3	Bidirectional
5	5	Data 4	Bidirectional
6	6	Data 5	Bidirectional
7	7	Data 6	Bidirectional
8	8	Data 7	Bidirectional
9	9	Data 8	Bidirectional
10	10	nAck	Printer
11	11	Busy	Printer
12	12	PError	Printer
13	13	Select	Printer
14	14	nAutoFd	Host
15	32	nFault	Printer
16	31	nInit	Host
17	36	nSelectIn	Host
18-25	16, 17, 19-30	Ground	



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- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

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- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

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**Submitting A Claim:** The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.
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**CE Mark Warning:** This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

**FCC Statement:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.**

# Registration



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