

## HP JetDirect Card Operation in Multiple Network Environments

As illustrated in table 1, HP JetDirect cards automatically operate in one of two modes depending on the printer in which the card is installed. When installed in a printer that is capable of supporting multiple network protocols concurrently (a “multi-protocol printer”), an HP JetDirect card operates in Multi-Protocol Mode. However, when installed in a printer that can only support a single protocol (a “single-protocol printer”), an HP JetDirect card can only operate in Single-Protocol Mode.

For more information on Multi-Protocol Mode and Single Protocol Mode, read the sections that follow.

**Table 1. HP JetDirect Card Operating Modes**

Operating Mode	Printer Operation with HP JetDirect Card Installed	Supported Printers <sup>Note 1</sup>
<b>Multi-Protocol</b>	Automatic network switching between network protocols is provided. Print jobs can be accepted from all network operating systems for which the printer is configured.	HP LaserJet 4Si HP LaserJet 4Si MX
<b>Single-Protocol</b>	Automatic network switching between network protocols is <i>not</i> provided. Print jobs are accepted from only one network protocol, and other protocols on the card are automatically disabled. In most cases, you should configure the printer into only one network.	HP LaserJet 4 HP LaserJet 4M HP LaserJet IIISi HP PaintJet XL300 HP DesignJet HP DesignJet 600
<p><b>Note 1</b> If your printer is not listed here, contact your HP authorized dealer to determine support. To determine whether your printer supports multi-protocol or single-protocol operation, inspect the “NETWORK MODE:” parameter on your printer self-test page (generated while the HP JetDirect card is installed).</p>		



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## Multi-Protocol Mode

To operate in Multi-Protocol Mode, an HP JetDirect card must be installed in a multi-protocol printer. During Multi-Protocol Mode operation, all supported network protocols on the card can be active. This allows your printer to service print jobs from different network operating systems that are running on the same physical network. To receive print jobs, the HP JetDirect card automatically switches between the different network protocols (see table 2 for the network operating systems supported by the HP JetDirect cards). If "NETWORK MODE: MULTI-PROTOCOL" appears on the printer's self-test page, the card and printer are operating in Multi-Protocol Mode.

In the card's default state, all supported network protocols on the card are enabled. However, you can manually disable one or more protocols (for example, to control the use of the printer or to eliminate broadcast transmissions produced by some protocols). If a protocol is disabled, it will remain disabled even when the printer is turned off and then on again. A protocol can be enabled or disabled from the printer's control panel (if it has one) or from an HP supplied Novell NetWare utility. To enable or disable a protocol, refer to your HP JetDirect card installation guide.

**Table 2. Supported Networks**

<b>HP JetDirect Card Product Number</b>	<b>Network Type</b>	<b>Supported Network Operating Systems <sup>Note 1</sup></b>
HP J2371A HP J2372A	Ethernet/802.3 networks	Novell NetWare IBM LAN Server Microsoft LAN Manager Microsoft Windows for Workgroups Microsoft Windows NT Apple EtherTalk UNIX (HP-UX/Sun UNIX/SCO UNIX)
HP J2373A	Token Ring/802.5 networks	Novell NetWare IBM LAN Server Microsoft LAN Manager Microsoft Windows for Workgroups Microsoft Windows NT
<b>Note 1</b> For the most recent list of network operating systems that are supported, contact your HP authorized dealer.		

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## Single-Protocol Mode

In Single Protocol Mode, an HP JetDirect card can operate with only one of the supported network protocols (table 2 lists the supported network operating systems). When installed in a single-protocol printer, the card cannot automatically switch between different networks.

In most cases, you should configure the HP JetDirect card to operate with only one network protocol when it is installed in a single protocol printer. For instructions, refer to your *HP JetDirect Network Interface Configuration Guide*.

### Single Protocol Selection Process

When installed in a single-protocol printer, the HP JetDirect card will automatically enable a single protocol and disable all others. The protocol that is enabled depends on the network operating system to which the card was configured. The card will select the protocol using the following sequence:

1. If the card has been preconfigured (for example, from the printer's control panel) to operate with a particular protocol, then the preconfigured protocol will be enabled when the printer is turned on.
2. If the card has not been preconfigured, then all network protocols are initially active when the printer is turned on. The following rules will determine protocol selection:
  - a. If the card is able to connect to a Novell server, then the Novell Netware protocols will be enabled, and all other protocols will be disabled.
  - b. If the card is *not* able to connect to a Novell server, then the protocol that is enabled will be determined by the first print job received. Once a protocol is enabled, the remaining protocols will be disabled.

### Identifying the Selected Protocol

To identify the network protocol configured on the card, refer to the "NETWORK MODE:" entry on the printer's self-test page. Refer to table 3 for a list of possible "NETWORK MODE:" entries.

**Table 3. Identifying the Network Protocol Configuration**

"NETWORK MODE:" (See Self-Test Page)	Definition
UNKNOWN	The card has not yet initialized its operating mode.
MULTI - PROTOCOL	The card is operating in a multi-protocol printer.
AUTO - SELECT	The card is installed in a single protocol printer and is waiting to automatically select a protocol.
AUTO - NOVELL	The card is installed in a single protocol printer and has automatically selected the Novell NetWare protocols.
AUTO - DLC/LLC	The card is installed in a single protocol printer and has automatically selected Microsoft/IBM protocols.
AUTO - TCP/ IP	The card is installed in a single protocol printer and has automatically selected UNIX TCP/IP Ethernet protocols.
AUTO - ETHERTALK	The card is installed in a single protocol printer and has automatically selected Apple EtherTalk protocols.
NOVELL	The card is installed in a single protocol printer and set for Novell NetWare operation from the control panel.
DLC/LLC	The card is installed in a single protocol printer and set for Microsoft/IBM protocols from the control panel.
TCP/ IP	The card is installed in a single protocol printer and set for UNIX TCP/IP operation (Ethernet only) from the control panel.
ETHERTALK	The card is installed in a single protocol printer and set for Apple EtherTalk operation from the control panel.

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