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Overview of the Ethernet Adapter

You can use three options to connect your Intermec printer to an Ethernet network:

- The external Ethernet adapter, Part No. 068788, which is a plug-in network adapter.
- The internal Ethernet adapters, Part Nos. 068789 and 069227, which are installed in your printer.

You can connect only the external Ethernet adapter to the following Intermec printers to print labels:

- 91* printers
- 301* printers
- 401* printers
- 501*, 501E*, 501S*, and 501XP printers
- 601XP printers
- 901* printers
- 4630* printers
- 7421 and 7422* printers

***** *These printer models require an external power supply to run the external Ethernet adapter.*

You can connect either the external or the internal Ethernet adapter Part No. 068789 to the following Intermec printers to print labels:

- 3240* printers
- 3400* and 3440* printers
- 3600* printers
- 4400* printers

***** *These printer models require an external power supply to run the external Ethernet adapter.*

Note: *For the 3240, 3400, 3440, 3600, and 4400 printers, you must have the parallel port option installed on your printer to connect the external Ethernet adapter. The Ethernet adapter is not compatible with the 4400A, but you can use the adapter with all later 4400 models.*

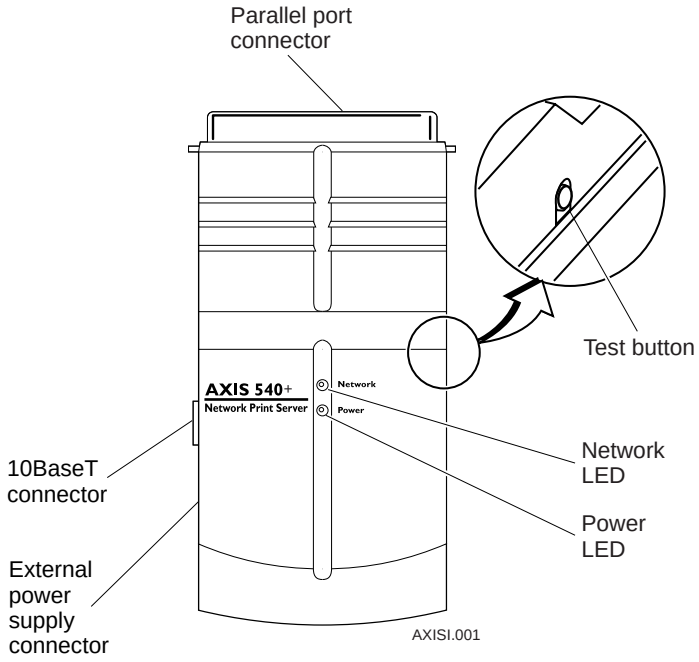
You can connect the internal Ethernet adapter Part No. 069227 to the 4420 and 4440 printers.

Note: *With the internal Ethernet adapter installed, the parallel port on the 4420 and 4440 printers is not available for use.*

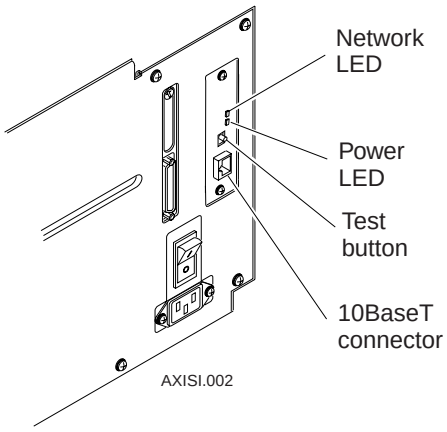
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Use the following illustrations to familiarize yourself with the external or internal Ethernet adapter.

External Ethernet Adapter



Internal Ethernet Adapter



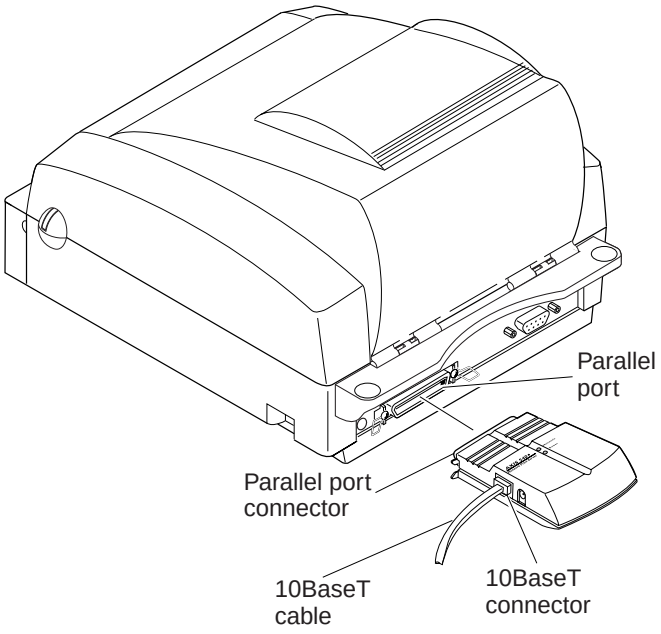
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Connecting the External Ethernet Adapter to Your Printer

Although you can connect the external Ethernet adapter to several different Intermec printers, the illustrations in the following procedure use the 7421.

To connect the Ethernet adapter

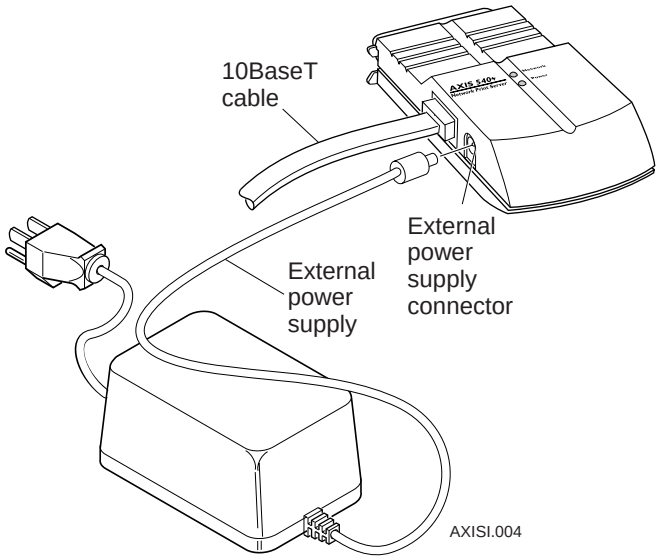
1. Note the serial number found on the underside of the Ethernet adapter. You need this number during the configuration.
2. Turn off the printer.
3. Plug the parallel port connector into the printer's parallel port.



4. Connect a 10BaseT cable into the 10BaseT connector.

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5. If necessary, plug in the external power supply.



6. Switch on the printer. The network LED flashes.

Now you can install the printer and adapter into your network.

To test the connection with firmware version 5.59 or higher

- Press the Test button. The printer prints a test label.

You can find out what firmware version you have using a standard Web browser.

1. Open the Ethernet adapter's home page.
2. Click the Management button.

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To test the connection with a firmware version lower than 5.59

Note: *Data Line Print mode is available on the following printer models: 3240, 3400, 3440, 3600, 4400, 4420, and 4440.*

1. Turn off your printer.
2. Press and hold the Feed/Pause button while you turn on the printer. The printer prints the hardware configuration test label.
3. Release the Feed/Pause button. The printer is now in Data Line Print mode.
4. Press and release the Test button on the Ethernet adapter. The printer prints each character with its hexadecimal equivalent underneath.
5. To enter normal Print mode, turn the printer power off and then on again.

Downloading the IP Address

This section explains how to use ARP (address resolution protocol) to download the IP address to the Ethernet adapter. For other methods of downloading the IP address, see the *Intermec Ethernet Adapter User's Manual* (Part No. 068749).

Note: *Do not use the example IP address when installing your Ethernet adapter. Always consult your network administrator before assigning an IP address.*

To download the IP address for Windows

1. Start a DOS® window.
2. Type the following command:

   `arp -s` *`nnn.nnn.n.nnn nn-nn-nn-nn-nn-nn`*

   `ping` *`nnn.nnn.n.nnn`*

   `arp -d` *`nnn.nnn.n.nnn`*

   where:

nnn.nnn.n.nnn	is the IP address for the Ethernet adapter
nn-nn-nn-nn-nn-nn	is the Ethernet address for the Ethernet adapter

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Example:

```
arp -s 192.168.3.191 00-40-8c-10-00-86
ping 192.168.3.191
arp -d 192.168.3.191
```

The host will return `Reply from 192.168.3.191 ...` or a similar message. This reply indicates that the address has been set and communications established.

To download the IP address in a UNIX environment

- Type the following command:

  `arp -s` *`host_name nn:nn:nn:nn:nn:nn`* `temp`

  `ping` *`host_name`*

  where:

host_name	is the name mapped to the Ethernet adapter's IP address.
nn:nn:nn:nn:nn:nn	is the Ethernet address for the adapter.

  Example:

  ```
  arp -s npsname 00:40:8c:10:00:86 temp
  ping npsname
  ```

The host will return `npsname is alive` or a similar message. This message indicates that the address has been set and communications established.

When you execute the ping command for the first time, you may experience a longer response time than is usual.

The ARP command can vary between different UNIX systems. Berkeley System Distribution (BSD) type systems expect the host name and node address in reverse order. Furthermore, IBM AIX® systems require the additional argument ether. For example:

`arp -s ether` *`host name`* `00:40:8c:10:00:86 temp`

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Installing for a Macintosh Network

Note: *You need to supply a printer driver or a network compatible application to work with the Intermec printers.*

To install for a Macintosh network

1. Open the Chooser window by selecting Chooser in the Apple menu.
2. Click on your printer driver icon.
3. If your network has more than one zone, click the name of the default zone.
4. Click the name of the printer you want. The default printer name is shown as:

   AXIS*nnnnnn_port*

   where:
   nnnnnn is the last six digits of the serial number.

   port is LPT1.

   For example: AX540B35_LPT1
5. Click the close box.

The AppleTalk Configuration is now complete. Repeat this procedure for each Macintosh that will print to the Intermec printer.

To choose a printer to print

1. Select Chooser in the Apple menu.
2. Click on your printer driver icon.
3. If your network has more than one zone, click the default zone.
4. Click the name of the printer you want.
5. Click the close box. You may now print from the application as normal.

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Installing for a NetWare Network

This section covers the following:

- Using Novell Distributed Print Services (NDPS) or AXIS NetPilot™ to install the Ethernet adapter
- Setting up print queues and advanced operating parameters

Using NDPS or AXIS NetPilot to Install the Ethernet Adapter

When installing your Ethernet adapter into a NetWare network, you have three options:

- Install your Ethernet adapter using NDPS for a public access printer.
- Install your Ethernet adapter using NDPS for a controlled access printer.
- Install your Ethernet adapter using AXIS NetPilot.

If you are using NDPS, you must install the HP Gateway together with NDPS on your file server. Otherwise you must install your Ethernet adapter with the AXIS NetPilot Installation Wizard.

To install an Ethernet adapter in a NetWare network using NDPS (public access printer)

1. Make sure that the HP Gateway is configured to automatically create a public access printer.
2. Connect the Ethernet adapter to the NetWare network, if it is not already connected.

The HP Gateway automatically creates a public access printer. Any user can access this printer.

To install an Ethernet adapter in a NetWare network using NDPS (controlled access printer)

1. Make sure that the HP Gateway is **not** configured to automatically create a public access printer.

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2. Connect the Ethernet adapter to the NetWare network, if it is not already connected.
3. Use the NetWare Administrator to create an NDPS printer as an object in the directory.

As a directory object, access to the NDPS printer is controlled. It is not available as a public access printer.

To install an Ethernet adapter in a NetWare network using AXIS NetPilot

Note: *AXIS NetPilot software requires a Windows platform that uses NetWare or NetBIOS/NetBEUI.*

1. Load the AXIS NetPilot software. For help, see the *Intermec Ethernet Adapter User's Manual*.
2. After loading the software, double-click on the AXIS NetPilot icon. AXIS NetPilot then scans the network for all connected Ethernet adapters. Ethernet adapters previously installed using the AXIS NetPilot appear as Network Print Servers and uninstalled units are listed as New Axis Units.
3. Select your Ethernet adapter from the New Axis Units sub-folder and then click the Install icon. The Installation Wizard guides you through the basic installation.

Click the Help icon if you need help during the installation procedure.

After AXIS NetPilot finishes configuring the Ethernet adapter, wait about one minute before trying to communicate with the Ethernet adapter.

Setting Up Print Queues and Advanced Operating Parameters

To set up print queues

1. Open the Network Print Servers folder and then select the network print server you want to set up.

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2. Choose Network from the Toolbar or Setup menu. A new Network environments window opens. From this window, you may create new print queues, connect to previously established queues, and select the mode of operation (Print Server or Remote Printer) for each printer.

To set up the advanced operating parameters

1. Open the Network Print Servers folder and select the Network Print Server you want to set up.
2. Choose Properties from the Toolbar or Setup menu.

A set of tabbed Property Pages opens that allows you to refine the chosen mode of operation, such as password protection, frame type selection, or the queue polling interval.

The NetWare configuration is now complete.

To verify that the Ethernet adapter is functioning correctly, you should print a label from within a Windows application, such as Microsoft Word. When you select Print from the File menu, make sure that your Intermec printer is selected as the Active Printer.

Installing for a UNIX Network

Note: *You must have UNIX root privileges for this configuration procedure.*

To install for a UNIX network

1. Acquire an unused IP address from your Network Administrator and choose a unique name for the Ethernet adapter.
2. Add your Ethernet adapter IP address and host name to your system host table by adding the following line to the `/etc/hosts` file:

   `IP_address host_name`

   Example:

   `192.36.253.96 salesdept`
3. Update your alias name databases (YP/NIS).

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4. Perform the following commands to download the IP address and verify correct Internet communication:

   ```
   arp -s host_name node_address temp
   ping host_name
   ```

   where:

host_name	is the name assigned to your Ethernet adapter.
node_address	is the serial number of the Ethernet adapter.

   Example:

   ```
   arp -s salesdept 00:40:8c:10:00:86 temp
   ping salesdept
   ```

5. Log in to the Ethernet adapter and upload the axinstall script.

   Example:

   ```
   >ftp salesdept
   Name (salesdept:thomas): root
   Password: pass     (not visible)
   ftp> get axinstall
   ftp> bye
   ```

6. Execute the script `sh axinstall`.

   The display dialog will then guide you through the installation of line printer daemon (LPD), file transfer protcol (FTP), or PROS onto your UNIX system.

The UNIX configuration is now complete.

Note: *The node address is based on the serial number of the Ethernet adapter, but you can make the node address a locally administrated address. To set the IP address, you can use the dynamic host configuration protocol (DHCP), reverse address resolution protocol (RARP), or bootstrap protocol (BOOTP) commands. For help, see the* Intermec Ethernet Adapter User's Manual *(Part No. 068749).*

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To print a label

- Choose the print instruction appropriate for your type of system:

System	Instructions
BSD	`lpr -P`*`printername filename`* where: *printername* is the name of the printer you want to use. *filename* is the name of the file you want to print.
System V	`pr -d`*`printername filename`* where: *printername* is the name of the printer you want to use. *filename* is the name of the file you want to print.
AIX	`qprt -P`*`printername filename`* where: *printername* is the name of the printer you want to use. *filename* is the name of the file you want to print.

Your network administrator will be able to supply you with the name of a printer for the file you want to print.

Installing for a Windows Network

Supplied on the CD or disks that came with your Ethernet adapter, the AXIS Print Monitor should be used for network printing within Windows 95, 98, and NT environments. The AXIS Print Monitor supports NetBIOS/NetBEUI as well as line printer (LPR) printing.

The AXIS Print Utility for Windows is also supplied on the CD or disks and is the tool for network printing within Windows for Workgroups and Windows 3.1 environments.

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Windows 95, 98, and NT

Although the AXIS Print Monitor user dialog varies slightly between Windows 95, 98, and NT, the functionality is exactly the same.

To install an Ethernet adapter for a Windows 95, 98, or NT network

Note: *The AXIS Print Monitor needs to be installed on each workstation performing peer-to-peer printing. The AXIS Print Monitor is not needed on the client platforms for client/server printing.*

1. Start the Add Printer Wizard by selecting Settings then Printers from the Start Menu and double-clicking on the Add Printer icon.
2. Select Local Printer (Windows 95 and 98) or My Computer (Windows NT).
3. Click OK.
4. Follow the rest of the Add Printer Wizard's instructions to perform the remaining steps of the installation process.

If you want to install a printer to a new LPR port, refer to the *Intermec Ethernet Adapter User's Manual* (Part No. 068749).

Windows 3.1 and Windows for Workgroups

For peer-to-peer printing, all Windows 3.1 and Windows for Workgroups users requiring access to a network printer need to install the AXIS Print Utility for Windows onto their workstations. Peer-to-peer printing does not require a file server and is recommended for smaller networks.

Client/server printing is suitable for larger networks and requires only one user to install the AXIS Print Utility for Windows software onto their workstation.

Note: *Windows 3.1 requires network support such as LAN Server or LAN Manager Workstation software to be installed in order to redirect a local printer port to a network device.*

Note: *AXIS Print Utility for Windows must be running when you print through your Ethernet adapter. We recommend that you copy the AXIS Print Utility icon into your StartUp file.*

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To install peer-to-peer printing

1. Double-click the AXIS Print Utility icon.
2. In the Port menu, click Add.
3. In the NPS Port list, select the Ethernet adapter port to be installed. The port appears as *name*.LP1, where *name* is AX followed by the last six digits of the Ethernet adapter's serial number, for example, AX540B35.LP1. You can change this name using AXIS NetPilot.
4. Accept or change the suggested Windows port name, and type any comments in the Description field. Make a note of the Windows port name as you will need it later.
5. Click OK to install the Windows port.
6. In the Port menu, click Connect to display the Windows Printers dialog.
7. Select a printer driver from the list of Installed Printers, or click Add to install a new driver. Click Connect.
8. Select the Windows port name defined in Step 4 that should now be listed at the bottom of the Ports list.
9. Click OK to close the Connect dialog and Close to close Printers.

The setup is completed and you can now print through your Ethernet adapter.

To install client/server printing

Note: *Only install client/server printing on a Windows for Workgroups workstation.*

1. Install AXIS Print Utility for Windows onto the file server.
2. Set up your Ethernet adapter from the file server as described in the peer-to-peer printing section earlier in this guide, but check the Share box for your printer.

All the Windows clients can now use your shared printers, and you do not need to install the AXIS Print Utility on the clients.

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Windows Clients Using LANtastic

From any Windows client, you can use the Ethernet adapter for network printing within LANtastic environments. Choose your utility software based on the Windows client you use. For help, see the appropriate Windows section earlier in this guide. Please ensure that your LANtastic client is running the desired printing protocol.

Printing From a Windows Network

To print from a Windows network

1. Select Print from the File menu within your application.
2. If the printer you want to use is the default printer, print from your application as normal.
3. If the required printer is not selected as the default printer, click Setup in the Print Document window and then select the name of the required printer.
4. Set up any of the parameters as needed, such as paper size and source.

   Note: *Make sure the paper size matches the size of your label stock.*

5. Click OK and then print the file as you normally would.

Installing for an OS/2 Network

Note: *AXIS Print Utility for OS/2 must be running when you print through your Ethernet adapter. We recommend that you copy the AXIS Print Utility icon into your StartUp file.*

To install an Ethernet adapter for an OS/2 network

1. Make sure that the NetBEUI protocol is active. If necessary, use MPTS/LAPS (LAN Server) or SETUP (LAN Manager) to activate it.
2. Insert the Print Utilities for OS/2 disk into your disk drive, and open an OS/2 window. Run the install.exe program.

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3. With the AXIS Print Utility running, install your Ethernet adapter by clicking Install. The port appears as *name*.LP1, where *name* is AX followed by the last six digits of the Ethernet adapter's serial number, for example AX540B35.LP1. You can change this name using AXIS NetPilot.
4. Select the ports you want to install, then click Install.
5. Repeat this procedure for each server using the Ethernet adapter.

To create a Print Queue (OS/2 version 1.X)

1. Double-click the Print Manager icon, click Setup, then select Printers.
2. Click Add to make a new printer definition, then type a name of your choice in the Name field.
3. Select \PIPE*name*.LP1 from the Device list, then select a printer driver suitable for your printer.
4. Click Add then click OK to confirm the printer definition.
5. Click Setup then select Queues.
6. Click Add to create a print queue and type a name in the Name field.
7. Click Add then click OK to confirm the queue definition.

To create a Print Queue (OS/2 version 2.X and above)

1. Double-click the Templates folder, then drag the Printer icon to the Workplace Shell (or into a folder) while pressing the mouse button down.
2. Type a name of your choice in the Name field.
3. Select \PIPE*name*.LP1 from the Port list, and select a printer driver suitable for your printer from the Standard Printer list.
4. Click OK to confirm the printer definition.

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To share print queues

- Open an OS/2 window and issue the following command:

  `NET SHARE` *`queue_name`* `/PRINT`

  where:

  `queue_name` is the name of the queue to be created.

To print from an OS/2 workstation

Note: *Ask your network administrator for the queue name of the printer you print to.*

1. Select Print from the File menu within your application.
2. In the Print Document window, select the queue name for the required printer.
3. Print the file as you normally would.

Configuring the Centronics Interface Timing

Before you can print to an Intermec printer, you must set the Centronics interface timing to standard.

To set the Centronics interface timing

1. Download the IP address. For help, see "Downloading the IP Address" earlier in this guide.
2. Open the Ethernet adapter's home page. For help, see the following section, "Web Management."
3. From the home page, click the Configuration button.
4. From the Configuration screen, click Output.
5. Click the down arrow by Centronics Interface Timing LPT1 and select STNDRD.
6. Click the Submit Output Settings button.
7. Close your Web browser.

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Web Management

After assigning an IP address and an optional host name to the Ethernet adapter, you can access your Ethernet adapter from any standard Web browser. To do this, simply enter the IP address or the host name of the Ethernet adapter as a URL in your browser, as follows:

```
http://192.36.253.96
```

or

```
http://salesdept
```

The Home Page of the Ethernet adapter will now be displayed in your browser, where links to the Ethernet adapter's Configuration, Management, Status, Account, and Help services are readily available.

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