EPSON®

C82346*
EPSON Type B Ethernet Interface Card

For:

- ❑ **Novell® NetWare® 2.x, 3.1x, and 4.x Print Server or Remote Printer**
- ❑ **EtherTalk (Apple? Printer**
- ❑ **Windows® NT Printer Using DLC Protocol or TCP/IP**
- ❑ **UNIX® lpd Printer or ftp Printer**
- ❑ **IBM® OS/2 LAN® Server Printer**

User's Guide

4005969
EH3-01

Notice for Ethernet Card Users

Using OS/2

If the Ethernet Cards firmware version is 4.00 or below, it does not support NetBIOS over TCP/IP protocol. Therefore use the NetBEUI protocol provided by OS/2 Warp or OS/2 Warp Connect.

The following programs are not supported in the NetBIOS over TCP/IP protocol:

RPRINT, RSTAT-LPT redirection

REMPRT, REMSTAT- pipe support

Using Apple EtherTalk-Renaming Your Printer

When the Card is installed in some printers and you use Epson Namer to rename the printer, the original factory name may reappear in the Select Printer list. Rename the printer again and this name will be properly saved.

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FCC Compliance Statement
For United States Users

This equipment has been tested and found to comply with the limits for a Class A 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 or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received,
including interference that may cause undesired operation.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces.

Changes or modifications not expressly approved by the manufacturer could void the user s authority to operate the equipment.

For Canadian Users

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe A respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

For European Users

This product conforms to CE marking requirements in accordance with EC Directive 89/336/EEC.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Declaration of Conformity

According to ISO/IEC Guide 22 and EN 45014

Manufacturer:	SEIKO EPSON CORPORATION
Address:	3-5, Owa 3-chome, Suwa-shi, Nagano-ken 392 Japan
Representative:	EPSON EUROPE B.V.
Address:	Prof. J. H. Bavincklaan 5 1183 AT Amstelveen The Netherlands

Declares that the Product:

Product Name:	EPSON Type B Ethernet Interface Card
Type Name:	C823462
Model:	C82346*

Conforms to the following Directive(s) and Norm(s):

Directive 89/336/EEC:

EN 55022 Class B
EN 50082-1
IEC 801-2
IEC 801-3
IEC 801-4

May 1996

M. Hamamoto
President of EPSON EUROPE B.V.

Contents

Introduction

Chapter 1 Installing the Ethernet Card

Introduction

The C82346* EPSON® Type B Ethernet Interface Card is a combination of hardware and software that lets you connect an EPSON printer equipped with an optional Type B interface slot directly to your network. Just install the Ethernet Card into your printer s optional interface slot (see your printer guide or contact your EPSON dealer for applicable models), and connect it anywhere on your network.

Use the EPSON Ethernet Card software to quickly and easily set up the interface as a print server or remote printer on a Novell® NetWare®, EtherTalk® (Apple®), Windows NT (with TCP/IP), or IBM® OS/2 LAN® Server network. Utility software is not needed for installation on a Windows NT (with DLC Transport protocol) or UNIX network.

The Ethernet Card can be directly connected to a 10BASE or 10BASE-T network. It automatically selects the connected network when powered on. In addition, it supports IEEE 802.2, IEEE 802.3, and Ethernet II network protocols.

Supported Network Protocols and Features

The Ethernet Card supports the following network protocols:

Novell NetWare

- Supports NetWare 2.x, 3.x, and 4.x (Bindery Emulation Mode).
- Allows your printer to function as a print server or remote printer. An additional mode, Auto Print Server/Remote Printer, automatically switches between print server and remote printer modes, depending on network conditions.
- Services up to 32 print queues on up to eight file servers.

- Provides the same functions as NetWare s PSERVER program in print server mode and RPRINTER in remote printer mode.

AppleTalk

- Supports EtherTalk Phase I and Phase II communication.
- Provides easy installation with EPSON Zoner and EPSON Namer utilities. Requires only the EPSON Zoner utility to set up in EtherTalk Phase II.
- Works with optionally equipped EpsonScript (PostScript™) printers.

Windows NT

- Supports Windows NT 3.5x.
- Compatible with Hewlett Packard® network printers.
- Easy to configure and change the IP address and other settings with the EPSON Net! utility when using TCP/IP.

UNIX

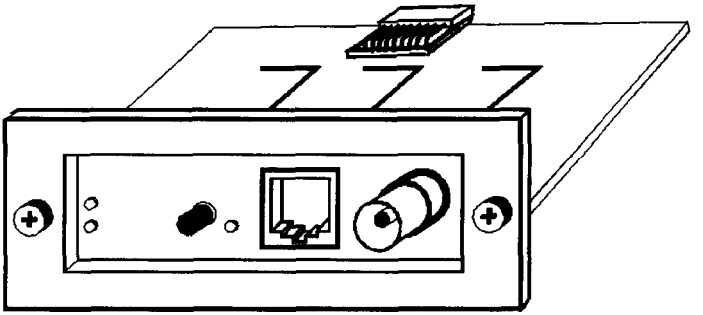
- Supports most major commands, including lpd, ftp, and ping.
- Requires no setup utility. The IP address is allocated by sending the arp and ping commands directly from the host computer.

OS/2

- Supports IBM OS/2 Warp and Warp Connect with or without an OS/2 LAN Server.
- Provides easy installation with the EPSON Net! utility.

Ethernet Card Hardware

The Ethernet Card is an interface card that plugs into an EPSON printer s optional Type B interface slot. It has connectors for either an Ethernet Thin Coaxial (10BASE2) or an Ethernet Twisted-Pair (10BASE-T) network connection.



Ethernet Card Software

The interface software consists of the following programs used to install and configure the card on any network:

- EPSON Net! for NetWare (DOS, Windows) is an easy-to-use menu-driven installation and configuration utility for installing on a Novell NetWare network.
- EPSON Zoner is a utility for installing the Ethernet Card on an EtherTalk (Apple) network.
- EPSON Namer is a utility that assigns a unique name to your printer on an EtherTalk (Apple) network.
- EPSON Net! for Windows NT is a menu-driven utility for configuring IP addresses and other settings with TCP/IP.
- EPSON Net! for OS/2 is a character based utility for installing on an OS/2 NetBIOS network.

EPSON Printers Supported by the Ethernet Card

The EPSON Ethernet Card can be installed in a variety of EPSON laser and dot-matrix printers.

Check your printer documentation for a list of optional interfaces that can be installed in your printer, or check with your local EPSON dealer. If you are using an optional LocalTalk interface, see your interface manual for information on compatibility.

Overview

This manual describes how to install, configure, and use your Ethernet Card in a variety of network environments using the following cable connections:

- Ethernet Twisted-Pair (10BASE-T)
- Ethernet Thin Coaxial (10BASE2)

Installation of the Ethernet Card in your printer is simple and is described in Chapter 1. The following steps provide an overview of the installation process.

1. Install the Ethernet Card in your EPSON printer and connect it to the network as described in Chapter 1.
2. Follow the instructions for your network environment.
   - Novell NetWare: see Chapter 2 for information on using EPSON Net! for NetWare.
   - Apple Macintosh®: see Chapter 3 for details on using an Apple EtherTalk network and the EPSON Zoner and EPSON Namer utilities.

- Windows NT: see Chapter 4 for information on using a Windows NT environment with DLC Transport protocol or TCP/IP.

- UNIX: see Chapter 5 for details about using several variations of UNIX. This chapter includes information about using UNIX with TCP/IP.

- OS/2: see Chapter 6 for details on using an OS/2 system and installing extra software.

Note:

- The default Net Ware condition of the Ethernet card is disabled. You must configure the card with EPSON Net! for NetWare to work on a Net Ware network.
- The default interface setting is Print Server mode. Zf you are setting up the card for use in a Net Ware environment, you will need to determine whether you want to set up the Ethernet Card in Print Server, Remote Printer, or Auto Print Server/Remote Printer mode.
- If you want to operate your printer in more than one network environment, install the interface for each network as described in the following chapters.

Terms and Concepts

A node address is a set of numbers that gives a unique identity to any piece of equipment connected to a network.

The file server stores data required for the Ethernet Card to operate as a print server.

A print queue is an area where a print job is stored as a file, until the print server sends the job to the assigned printer.

A print serves moves jobs from print queues to printers.

A *remote printer* is a shared printer connected elsewhere on the network, but under the control of a NetWare print server. Traditionally, a remote printer is connected to a network workstation running NetWare s RPRINTER, but the Ethernet Card can also function as a remote printer.

A *status sheet* prints each time the Status Sheet button of the Ethernet Card is pushed. If the Card is installed as a print server, the status sheet lists the configurations of the Ethernet Card on each network.

EtherTalk is AppleTalk s communication protocol governing Ethernet transmissions.

A print spooler is an application that places print jobs or requests in a queue.

TCP/IP (Transmission Control Protocol/Internet Protocol) is a layer of protocols that provides communications between nodes on a network.

ftp is a TCP/IP application protocol for file transfer.

lpd is a TCP/IP remote printing protocol application,

Resetting the Ethernet Card causes it to initialize. You can reset the Ethernet Card in the following ways:

- Switching the EPSON Ethernet Card-equipped printer off and back on again.
- Using the reset function or buffer clearing operation from the control panel of your EPSON printer.

Chapter 1

Installing the Ethernet Card

This chapter explains how to install the Ethernet Card in your printer. Subsequent chapters describe how to install the interface on your network. See the section that applies to your particular network for more information.

Hardware Installation

You must install the interface card in the printer, connect it to the network, and turn on the printer before you can set up the software.

Your interface package includes:

- ❑ The Ethernet Card
- ❑ A coaxial Y-connector
- ❑ Utility software disks for installing on Novell NetWare, EtherTalk (Apple), Windows NT (using TCP/IP), and IBM OS/2 LAN Server networks

Your interface package requires:

- ❑ A network connection for the Ethernet Card (10BASE-T or 10BASE2)
- ❑ The host EPSON printer

You need to install the Ethernet Card in the optional interface slot of your EPSON printer. See your printer guide for the location of the optional interface slot.

Installing in a printer

Before installing the Ethernet Card, see your printer manual for instructions on installing the optional interface card; these will be in the section on using printer options.

Note:
After installing the Ethernet Card, do not connect a cable to the printer s parallel port until after the card is booted and operating (green status light on, red off). Otherwise, it may not boot properly.

For your own convenience, locate the hexadecimal serial number on the component side of the card and write it here:

_____

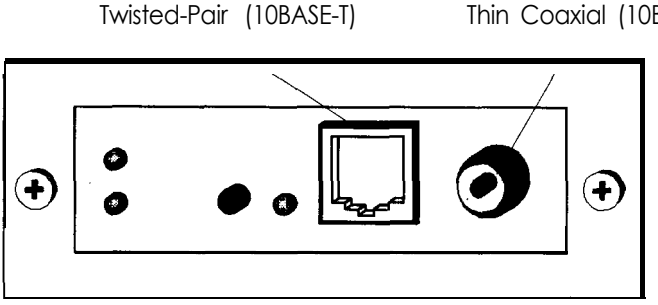
The serial number may be necessary for some software installations to identify the Ethernet Card. When installing this card on a Novell, EtherTalk, Windows NT (using TCP/IP), or OS/2 NetBIOS network using the accompanying setup utility software, this number is automatically recorded and displayed.

Connecting the network cable

Once the board is installed in your printer, you must attach the network cable to the interface. The Ethernet Card can accept either a 10BASE-T or 10BASE network cable.

The Ethernet Card is an intelligent interface that can detect which kind of cable is attached; you do not need to make any hardware or software settings to specify the cable type. However, you must not attach more than one cable at a time.

Attach the network cable to the appropriate connector on the interface, as shown in the diagram.



Setting up the printer

Some EPSON printers require you to use the printer s control panel or DIP switches to select the interface you plan to use. The method of making control panel settings on EPSON printers may be called *SelecType* or *default-setting mode. See* your printer manual for instructions on making the necessary interface settings.

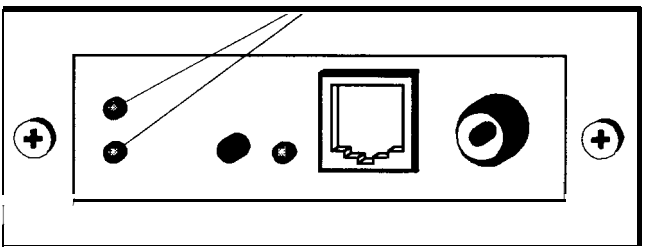
Ethernet Card Operation

The LED lights and the status sheet function can provide you with important information about the operation of the Ethernet Card.

lights

This section describes the Ethernet Card indicator light behavior, including when you first turn on the host printer, during **normal** conditions, and when errors occur. The Ethernet Card has two LEDs (red and green) that together indicate the current operating status of the Ethernet Card.

Status lights



Here is a brief explanation of indicator light activity:

Red	Green	Function
Ö	Ö	Waiting for printer initialization (lights flash simultaneously)
Ö	Ö	Recognizing the network (lights flash alternately on and off)
●	O	Normal operating mode
O	O	Error has occurred

On O Off ● Flashing Ö

Printer initialization

After Ethernet Card installation, the red and green status lights on the interface flash simultaneously during printer initialization.

Network recognition and normal operation

At start up, the Ethernet Card checks all active NetWare file servers. While the card is recognizing the network, the red and green status lights flash alternately on and off.

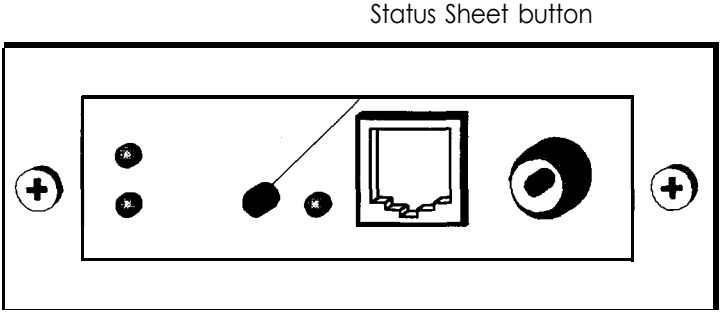
After recognizing the network, the Ethernet Card is ready to send and receive data. In this mode, only the green status light is lit.

Data Transmission light

When the Ethernet Card receives a data packet, it automatically recognizes the protocol of the packet and switches to that protocol mode. When the card sends data, the Data Transmission light (green) is lit.

Status sheet printing

When the Status Sheet button is pressed, the connected printer prints out a status sheet showing the current card configuration.



Note:
If the status sheet does not print, first make sure that the printer is on line. If it is on line but the status sheet still does not print, you will have to reset the printer by turning it off and back on.

Caution:
After turning off the power, wait at least five seconds before turning it back on; otherwise you may damage the printer.

Report printing is available after the printer is turned on and has completed its initialization routine. The Status Sheet is not available when the printer has started printing or when the printer is off line or not ready.

Under normal operating conditions, the status sheet will print in one of the following emulation modes: ESC/P*-**, ESC/Page, PCL (LJ-2P, S/P/Si, LJ-4P), GL (HP-GL, HP-GL2, EP-GL), EpsonScript (PostScript), PR-201, GQ.

Using the EPSON PostScript card

If your printer has an EpsonScript (PostScript) card installed, allow a minute for the printer to initialize before trying to install or configure the Ethernet Card on the network. The Ethernet Card may not respond if initialization has not been completed.

Network installation

See the appropriate chapter in this guide for instructions on installing the card on a specific network.

Chapter 2
Using Novell Net Ware

The Ethernet Card can function as a print server or remote printer running under Novell NetWare. It also has an Auto Print Server/Remote Printer mode that allows it to switch modes depending on network conditions. The following sections describe how to configure the interface card to operate in each of these modes.

Ethernet Card Configuration Software

The Ethernet Card comes with EPSON Net! for NetWare, EPSON s proprietary network printer management utility program. You must configure the card using EPSON Net!. The disk provided with the card includes a Windows-based version and a DOS version of this easy-to-use, menu-driven program.

Use the appropriate version to set up your card as a print server or a remote printer. You can use EPSON Net! to add or delete queues, change port configurations, rename the print server, configure the interface to service queues on other file servers, and other tasks.

Before setting up

- ❑ First decide whether you want to use the interface card as a dedicated print server or remote printer, or in Auto Print Server/Remote Printer mode.
- ❑ Install the Ethernet Card and connect it to the network following the instructions in Chapter 1. The card must be connected to the network and the host printer must be turned on before setting up.

Installing the utility software

Follow these steps to install the EPSON Net! utility software.

For Windows:

1. Make sure Windows is running and the Main window is open.
2. Insert the EPSON Net! for NetWare disk in drive A (or B).
3. Choose Run from the File menu.
4. Type a:windows/install (or b:windows/install) and click OK.
5. Follow the instructions on the screen.
6. After installation is completed, EPSON Net!(NW) appears in the EPSON Net! group.

For DOS:

At a workstation with a high-density disk drive, insert the EPSON Net! for NetWare disk in drive A (or B). Use the DOS COPY command (copy a:filename. *) to copy the following files to a network directory or to your hard drive:

EPNWDE.EXE
EPNWDE.DAT

Note:

- ❑ Before running the EPSON Net! utility, you must first log on the Net Ware network with supervisor privileges.
- ❑ This utility requires a minimum of 480 KB of conventional memory.

Print Server mode

In Print Server mode, the card performs all print server functions and can service up to 32 queues and eight file servers. No VAP (Value-Added Process) or NLM (NetWare Loadable Module®) is required. When you send a print job from your application, the file server assigns the print job to a print queue. When the corresponding printer is ready, the print server sends the print job to the printer.

The Ethernet Card operates like any Novell NetWare print server, servicing the assigned queues in a round robin fashion. In queues of the same priority, the Ethernet Card services the first job in a queue before those in a lower priority queue. The card also supports encrypted passwords.

This mode provides the highest printing speed while retaining the control, security, and convenience of a NetWare print server.

To use the card in Print Server mode, see page 2-5.

Remote Printer mode

As a remote printer, the Ethernet Card emulates a workstation running Novell s RPRINTER program, and operates under the control of a Novell NetWare print server. The print server can be either a dedicated workstation running PSERVER or a file server.

At power-up, the interface will attempt to attach to a print server (elsewhere on the network) and act as a particular printer of that print server. To do this, it needs to know which print server to attach to, and which printer of that print server to use. This is similar to the need to specify these parameters in the RPRINTER command line (or to interactively choose them from the RPRINTER program).

You can set up these parameters on the Ethernet Card with the EPSON Net! utility. Once the interface card is set up, it will store these settings, which means that you will normally only need to do this once at the time of installation. However, as with all Novell remote printers, the card s print speed is slower in Remote Printer mode than in Print Server mode.

The main advantage of Remote Printer mode is that connection to a file server is not required, making this mode desirable in installations with limited available file server connections. Each NetWare print server can support up to 16 printers and requires only one file server connection.

To use the card in Remote Printer mode, see page 2-12.

Auto Print Server/Remote Printer mode

In Auto Print Server/Remote Printer mode, the Ethernet Card provides automatic switching between print server and remote printer operation, depending on network conditions. If the Ethernet Card has the same name as the main Novell print server on your network, it detects the presence of the print server and operates as a remote printer. If your primary print server becomes unavailable, the Ethernet Card automatically switches modes to provide print server backup.

As a print server, the Ethernet Card requires a connection to a file server. For more information about operating the Ethernet Card as a print server, see the following section.

As a remote printer, the Ethernet Card emulates a workstation running Novell s RPRINTER program. For more information about this mode, see Using the Ethernet Card in Remote Printer Mode on page 2-12.

As a print server/remote printer, the Ethernet Card acts as and needs to be set up as both a print server and a remote printer. To use the card in Auto Print Server/Remote Printer mode, see page 2-16.

Using the Ethernet Card in Print Server Mode

The Ethernet Card is set to Print Server mode by default, so you don t have to make any special settings to use it in this mode. However, you must assign a print queue(s) to the card in a file server. See the following section for instructions.

The Ethernet Card can service up to 32 queues and eight file servers in print server mode. See page 2-8 for information about assigning print queues on multiple file servers.

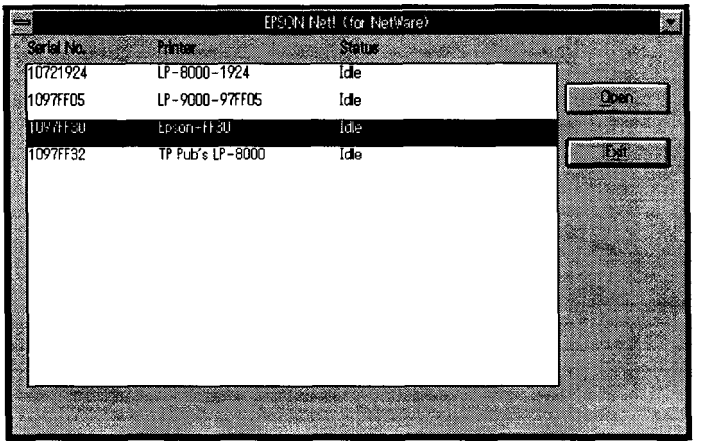
Assigning print queues on a file server

To set up queues on a file server in print server mode, follow the steps below.

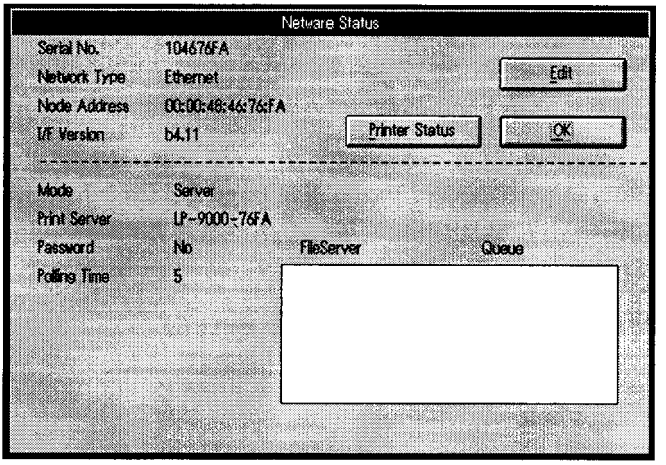
1. From any NetWare workstation, log on with supervisor privileges.

2. Run the EPSON Net! utility.

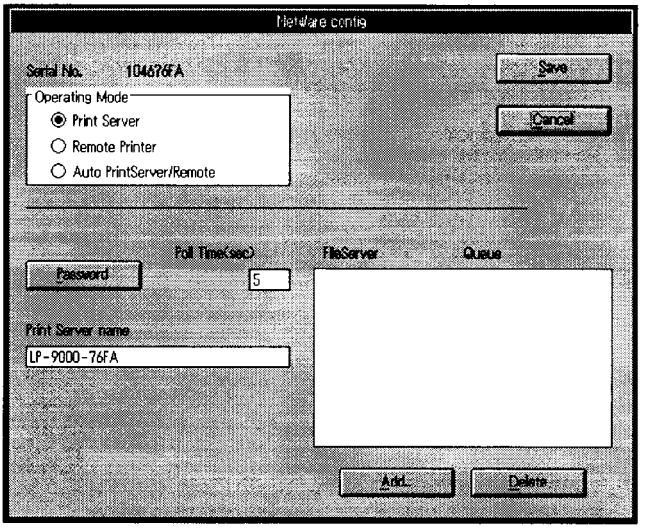
3. After searching the network, the following dialog box appears.Highlight the printer you want to configure from the list and then click Open.



4. In the NetWare Status dialog box, click Edit to configure the printer.

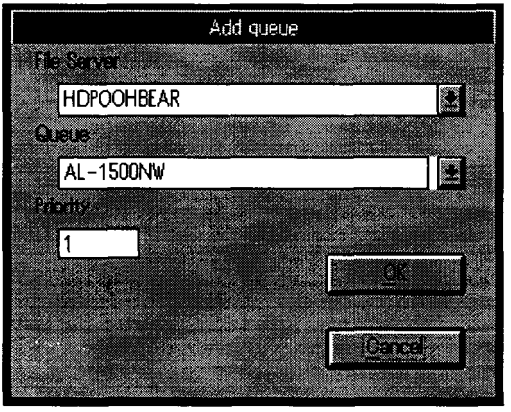


5. The NetWare config dialog box appears. Make sure the Print Server radio button is selected as shown below.



6. The default printer name appears in the Print Server name box. If you want to rename the printer, simply type the new name into the box.

7. To assign a print queue to your print server, click Add. The Add queue dialog box appears and shows the queues that are available to the file server.



Note:
If you want to set up queues on multiple file servers, see the following section.

8. Select a print queue from the Queue drop-down list, or create a new queue by typing its name in the Queue box.

9. Set the priority level from the Priority box. The available options are from 1 to 10, with 1 having the highest priority.

10. Click OK.

11. Repeat steps 7 through 10 if you want to add additional print queues to the print server.

12. To save your settings, click Save.

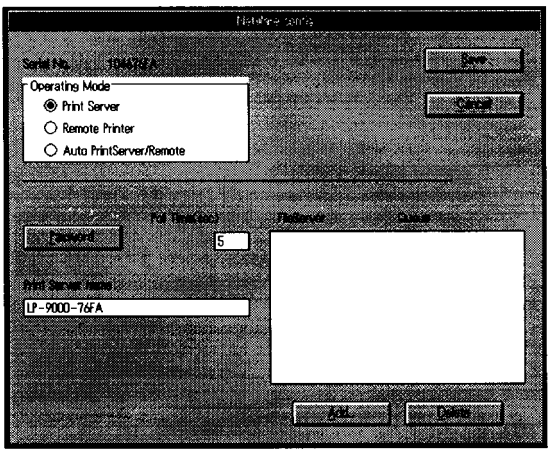
Caution:
Once you make changes to the Ethernet Curd, you must wait for at least five minutes before turning off or rebooting your printer.

Assigning print *queues on multiple file servers*

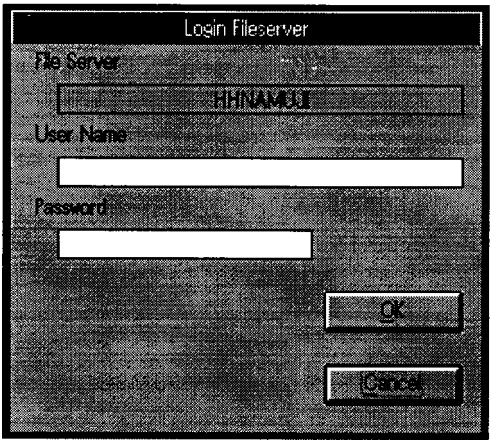
The EPSON Net! utility allows you to configure print queues on multiple file servers. However, you must have supervisor privileges and the correct password for each file server.

Follow these steps to configure multiple file servers:

1. Access the NetWare config dialog box, and click Add.



2. Select the file server you want to attach to the printer from the File Server list. If you have not already logged on to the selected file server, the Login Fileserver dialog box appears.



3. Enter a user name with supervisor privileges and the password; then click OK.

4. Select the file server you want to attach to the printer and then select a print queue from the Queue list box, or create a new queue by typing a name in the box. Next, click OK.

5. Repeat steps 1 through 4 if you wish to attach additional file servers to the printer.

6. To save your settings and exit EPSON Net!, click OK and then click Save in the NetWare config dialog box.

7. To delete a queue, highlight the queue in the NetWare config dialog box and then press Delete. At the prompt, click OK.

Changing the configuration in Print Server mode

In Print Server mode, you can use the EPSON Net! utility to do the following:

- Rename the print server
- Enter a password
- Set the queue polling time

Before editing the Ethernet Card configuration with EPSON Net!, you must first log on to the network with supervisor privileges.

Renaming the print server

Always use EPSON Net! to rename the printer on the master file server. Never use PCONSOLE to perform this operation.

1. Access the NetWare config dialog box, and type the new print server name in the Print Server name box. You can enter up to 32 characters. The following characters are not allowed: Ctrl `/\:;,* |+=[]"` and space. A period (.) is allowed if it is not the first character.

2. Click Save.

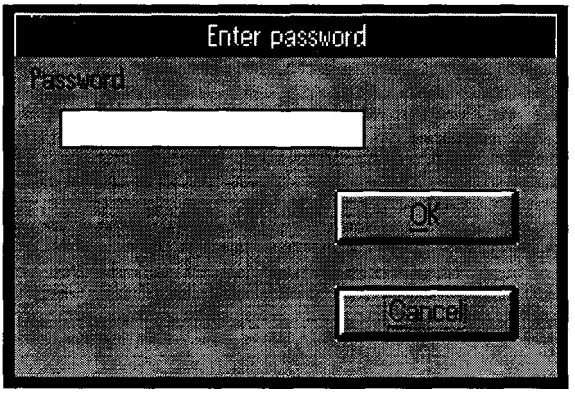
Note:
If the first part of the new printer name is the same as the product name, the last four characters of the the hexadecimal serial number will affix themselves automatically to the end of the new name.

Entering the password

A password is not required for Ethernet Card operation. However, if you wish to connect to a restricted file server, you will need to use EPSON Net! to enter the encrypted password.

To enter the password, follow these steps:

1. From the NetWare config dialog box, click Password. The following dialog box appears:



2. Type in the same password that you used to log on to the file server and click OK.

Caution:
Once you make changes to the Ethernet Card, you must wait for at least five minutes before turning off or rebooting your printer.

Setting the queue polling time interval

Use EPSON Net! to change the interval at which the parallel port(s) check queues for waiting print jobs. To reduce network traffic, you can change the polling interval from 1 second up to 90 seconds. The default setting is 5 seconds.

1. From the NetWare config dialog, enter a value, in seconds, from 1 to 90 in the Poll Time (sec) box.

2. Click Save to save your setting changes.

Caution:
Once you make changes to the Ethernet Card, you must wait for at least five minutes before turning off or rebooting your printer.

Using the Ethernet Card in Remote Printer Mode

Before using an Ethernet Card as a remote printer, you must define it using PCONSOLE on any Novell print server. When defined, the remote printer may have its printer port defined, such as LPT1 or COM2. However, to maintain compatibility, you should define a remote printer as LPT1.

Defining the Ethernet Card

Before using the EPSON Net! setup utility to install the Ethernet Card as a remote printer, you must do the following:

1. From any NetWare workstation, log on to the network with supervisor privileges.

   Note:
   If you use Net Ware 4.x, menu screens will differ slightly and Bindery Emulation has to be selected. Press F4 to switch between Directory Services and Bindery Emulation.

2. Type PCONSOLE at the DOS prompt.

3. From the Available Options screen, select Print Server Information. Next, select the print server name from the Print Servers list and press Enter.

4. From the Print Server Information list, select Print Server Configuration and press Enter.

5. Select Printer Configuration from the menu and then press Enter.

6. From the Configured Printers list, highlight a port number and press Enter.

7. From the Printer Configuration screen, enter the printer name. Next, highlight the Printer Type and select LPT1.

8. Press ESC; then press Enter to save changes.

9. Select Queues Serviced by Printer from the Print Server Configuration menu and assign a queue to the print server port from the Available Queues list.

10. Press ESC to exit.

Configuring the card us a remote printer

after changing the Operating Mode option Remote Printer mode, you can change the printer port assignment and enable or disable Hunting in Remote Printer mode using EPSON Net!

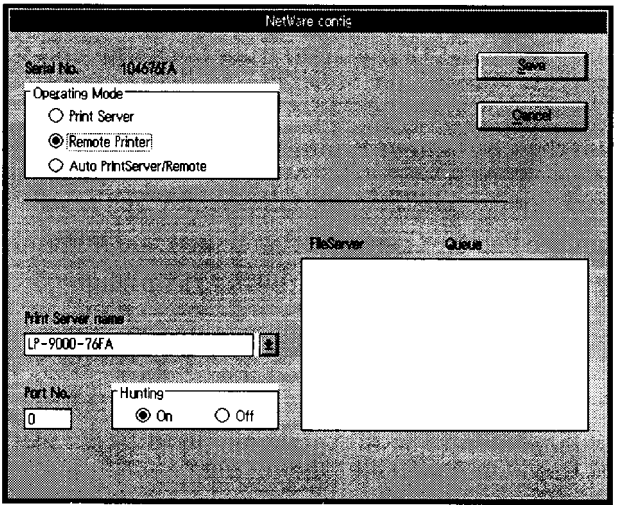
To change the Operating mode to Remote Printer and select a printer to configure, read the following:

1. Run EPSON Net!.

2. Select the printer you wish to configure, and click Open.

3. Click Edit to open the NetWare config dialog box.

4. Make sure the Operating Mode is set to Remote Printer.



5. Click on the printer you want to configure from the Print Server name drop-down list or type in a new name for the printer.

6. Click Save to save your changes.

See the next sections to change the port number and enable or disable Hunting.

Changing the port number

Use the EPSON Net! utility to change the parallel port number for the remote printer as follows:

1. In the NetWare config dialog, enter the number for any available port in the Port No. box. The available settings for Novell NetWare versions 3.x and below are from 0 to 15. For NetWare 4.x and higher, the available settings are from 0 to 254.

2. Click Save to save the port setting.

Enabling/disabling Hunting

You can use EPSON Net! to turn the Ethernet Card s Hunting feature on or off. When Hunting is on, the interface card connects to the first available unassigned active port. This feature is useful if the Novell print server has many printer ports. To change this setting, follow these steps:

1. In the NetWare config dialog, click On under Hunting to enable the function. The default setting is Off.

2. Click Save to save the setting.

Using the Ethernet Card in Auto Print Server/Remote Printer Mode

To use the Ethernet Card-equipped printer in Auto Print Server/Remote Printer mode, you must configure it for both print server and remote printer operation. For information on changing the various print server and remote printer settings, see the appropriate sections earlier in this chapter. To select the Auto Print Server/Remote Printer mode, follow these steps:

1. First make sure the host printer is turned on and the interface is connected to the network.

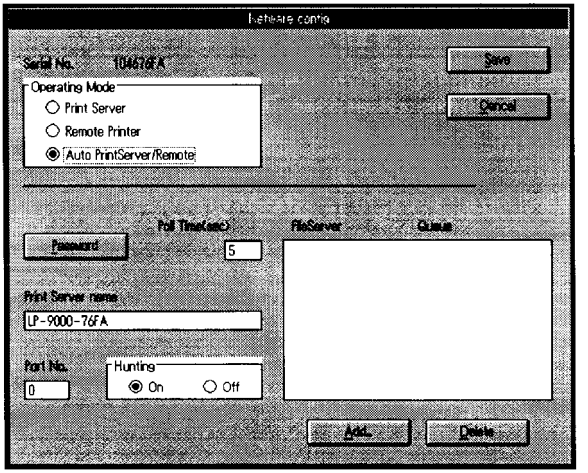
2. Log on to the selected file server with supervisor privileges.

3. Run the EPSON Net! utility.

4. Select the printer you wish to configure and click Open.

5. Click Edit to open the NetWare config dialog box.

6. Click the Auto PrintServer/Remote option button under Operating Mode to select auto switching mode.



Chapter 3

Using Apple EtherTalk

This chapter describes how to install and configure the Ethernet Card for use on an Apple EtherTalk network as well as how to use the EPSON Zoner and EPSON Namer utilities.

Before using the Ethernet Card interface on an EtherTalk network, make sure of the following:

- ❑ the Ethernet Card is installed in the printer
- ❑ the printer contains PostScript, which means that the optional EpsonScript card or module must be installed.

Installation Overview

To set up the Ethernet Card, you will need to do the following:

- ❑ Install the EPSON Zoner and EPSON Namer setup utilities.
- ❑ Rename your printer using EPSON Namer.
- ❑ Select a zone for your printer with EPSON Zoner.

Note:
EPSON Zoner works only on a Phase II EtherTalk network.

Renaming Your Printer

Because your printer has a default name, you will need to rename it to avoid having multiple printers on the same network with the same name. Choose any name you like for your printer.

The EPSON Namer utility renames a selected AppleTalk device (printer). With this program, you can rename printers located in different zones on the network, including the local zone.

Note:
If your printer is to be serviced by a print spooler, you should first rename the printer before configuring the spooler.

Using *EPSON Namer*

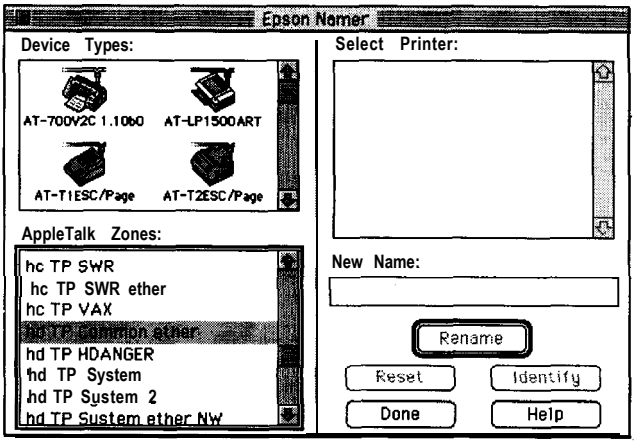
To rename your printer, first copy the EPSON Namer program from the EPSON Net! for Macintosh floppy disk to your hard drive.

Follow these steps to rename your printer:

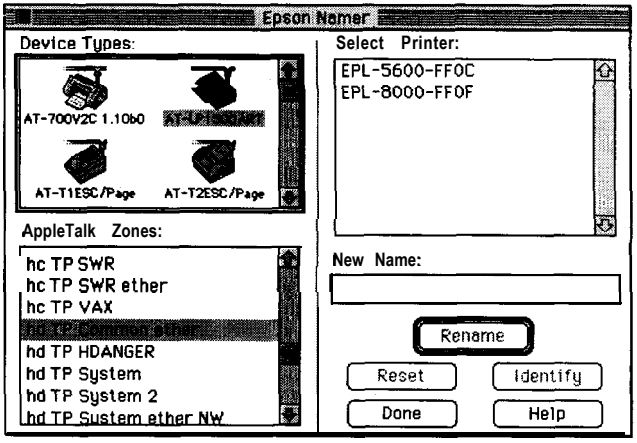
1. Make sure the Ethernet Card-equipped printer is turned on and ready. After turning on the printer, wait at least a minute to allow for PostScript initialization.

2. Insert the EPSON Net! for Macintosh disk into your computer, and double-click on the disk icon if necessary. Copy the utility to your hard disk. You can also run the program from the floppy.

3. Double-click on the Epson Namer icon to start the utility program. After EPSON Namer searches your network, the following screen appears. You may need to scroll through the list of zones to find the one that contains your printer.

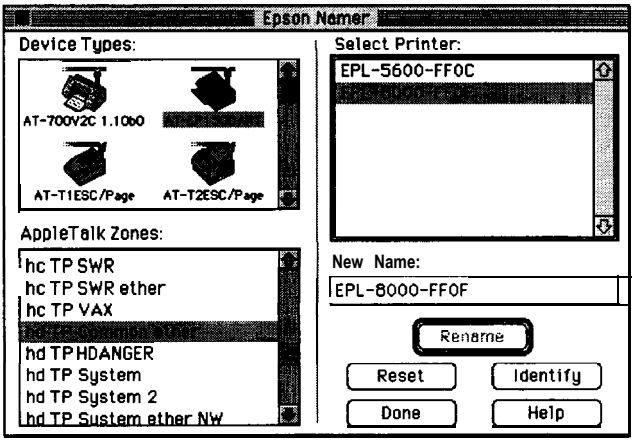


4. Select the name of your printer s installed driver from the Device Types list. For example, AT-LP1500ART.

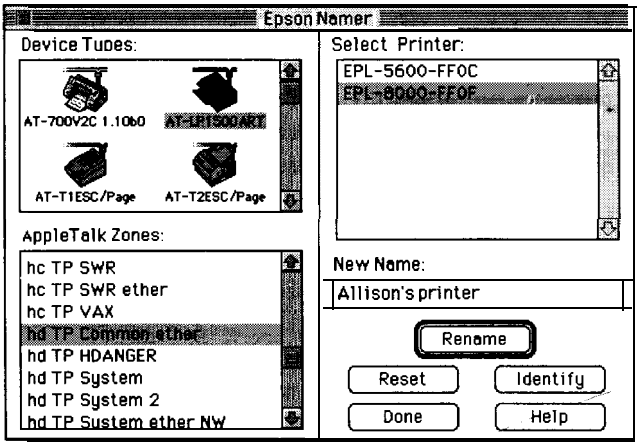


5. Choose the zone, if any, that contains the printer you want to rename from the AppleTalk Zones list.

6. Select the printer you want to rename from the Select Printer list. If the zone has only one printer of the type specified in the Device Types list, that printer will be selected automatically.

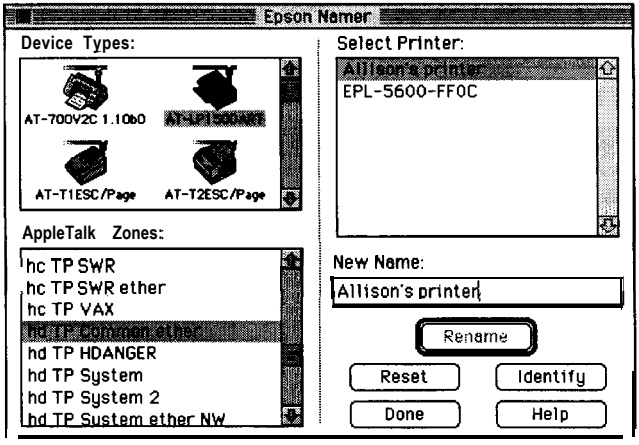


7. Enter a new name in the New Name box. The name can be up to 32 characters long.



Note:
Do not use a name that is already assigned to an existing printer.

8. Click Rename. After a few moments, the new name will appear in the Select Printer list.



Note:

- If *you have installed several printers* of *the same type on the network, they may all have the same name in the Select Printer list. To differentiate between printers, highlight a printer name and then click* Identify. *The selected printer will print a page to identify itself providing the printer name, type, and zone (if any). Rename the printer and then repeat the process, if necessary, for other printers on the network.*
- *Clicking* Reset *returns the printer to its default name. For example, EPSON.*

9. Click Done to exit EPSON Namer.

After changing printer names, you will need to notify everyone on the network of the new names. Network users will then have to reselect the renamed printer with the Chooser.

Selecting a Zone with EPSON Zoner

A zone is a group of users, computers, and devices, including printers. Zones can be grouped according to physical location, work groups, or departments. For example, Zone 1 could contain all of the printers used by a company s marketing department or publications group.

Use the EPSON Zoner utility to assign your printer to a specific zone on a Phase II EtherTalk network.

Note:
EPSON Zoner cannot be used on a Phase I network.

Using EPSON Zoner

Some EPSON PostScript printers cannot automatically switch between AppleTalk and non-AppleTalk PostScript printing environments. Therefore, you must first configure your printer for the correct printing environment with the AppleTalk PS option in the EPSON Zoner utility. EPSON Zoner automatically displays the AppleTalk PS option if your printer does not have an automatic switching feature.

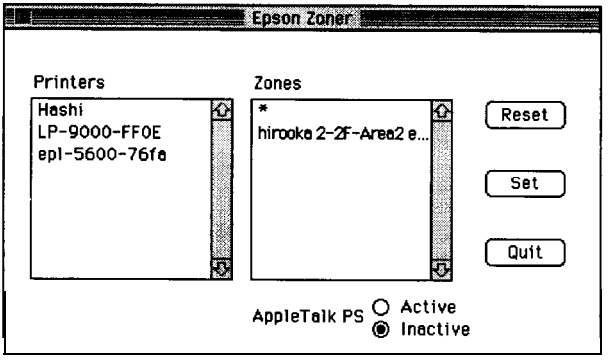
Follow these steps to configure the AppleTalk PS printing environment and select a zone for your printer:

1. Make sure the Ethernet Card-equipped printer is turned on and ready. After turning on the printer, it will take about a minute for initialization.

2. Insert the EPSON Net! for Macintosh disk into your computer. Double-click the disk icon to open it, if necessary.

3. Create a new folder for EPSON Zoner, if desired, and then copy the utility to your Macintosh.

4. Double-click on the new folder to open it. Next, double-click the Epson Zoner icon. After searching your network, EPSON Zoner displays the following screen:



5. Highlight your printer name in the Printers list. If there are many devices on the network, you may have to scroll through the list to find your printer.

6. **Select the network zone that you want** your printer to appear in from the Zones list.

   Note:
   The default zone appears as an asterisk (*) in the Zones list.

7. To use a non-AppleTalk PS printer (all EPSON printers), set the AppleTalk PS option to Inactive. For AppleTalk PS printers, make sure the AppleTalk PS option is set to Active.

8. Click Set to assign your printer to the selected zone.

   If you are assigning a zone to more than one printer, repeat steps 5-7 for each printer.

   Your printer will stay in the new zone as long as the zone is available.

   Caution:
   If *you changed the AppleTalk PS option, wait at least 30 seconds after clicking the Set button before rebooting your* printer.

9. Click Quit to exit EPSON Zoner.

Be sure to notify all network users of the new **zone** for your printer. They will have to reselect the rezoned printer in the Chooser.

Chapter 4

Using Windows NT

The Ethernet Card provides network printing support in the Windows NT environment with DLC Transport protocol and can be configured without a setup utility. The card also provides printing support for Windows NT when installed with TCP/IP using a special setup utility.

Installing on Windows NT with DLC Support

Requirements

Before you can install the Ethernet Card in the Windows NT environment, make sure that Windows NT is installed with DLC protocol.

Installation for Windows NT

1. Run Windows NT.
2. Double-click on the Control Panel icon.
3. Double-click on the Network icon.
4. Click on the Advanced box.
5. Select DLC Transport protocal from the Network Software list.
6. Install the DLC Transport protocol and Driver by choosing Install Software from the Advanced Network screen.

7. Reboot your system for the installation to take effect.

Note:
To verify that the DLC protocol is installed correctly, check the list of installed Network Software in the Networks dialog box.

Configuring the printer

Follow these steps to configure the printer:

1. Select Print Manager from the Main group.
2. Choose Create Printer from the printer menu at the top of the screen. The Create Printer dialog box appears.
3. Enter a name for the printer in the Printer Name field.
4. Select the printer driver from the Driver pull-down menu.
5. Select Other from the Print To pull-down menu. The Print Destination dialog box appears.
6. Choose (HP Network Port) from the Available Print Destinations list. The Add an HP Network Peripheral Port dialog box appears.

   Note:
   If HP Network Port does not appear as a choice in the dialog box, then the *DLC transport protocol and driver are* not *installed. Go to the Installation for Windows NT section above for detailed installation instructions.*

7. Enter a name for the port in the Name box.

   Note:
   The name must not be identical to an existing port, such as LPT1, or any other existing DOS device.

8. Select LAN Hardware Address (Node Address) from the Card Address list. This address matches the one listed under Node Number on the status sheet.

9. Click the Timer button and select the Job Oriented option. **Then** click OK.

10. Click OK to exit the Add a Network Peripheral Port dialog box.

    Note:
    You *may share the new printer if you wish. To do so, click the* Share the Printer on the Network *box. The share name defaults to the printer name and can be changed if necessary.*

11. Click OK to exit the Create Printer dialog box. A dialog box from the selected model s device driver appears.

12. Set any printer-specific options, and click OK.

You are `now ready to print.

Installing on Windows NT with TCP/IP Support

Before you can set up the software, the interface card must be installed in the printer and the printer must be connected to the network and turned on.

Requirements

To use the Ethernet Card with LPR (TCP/IP), you need to install the standard TCP/IP software in Windows NT and set the IP address for the Ethernet Card with EPSON Net!.

See the Windows *NT* User s Guide for more information on using Windows NT.

Installing LPR Software

Follow the steps below to set up Windows NT to print with the Ethernet Card using LPR, or if you have already installed the TCP/IP Network Print Service from TCP/IP Protocol and Related Components, skip to Configuring your printer on page 4-7.

1. Click the Network icon in Control Panel.

2. After the Network Configuration dialog box appears, look for Microsoft TCP/IP Print in the Installed Software list box. If the option is listed, it is already installed, and you can skip to Configuring your printer. If the TCP/IP option is not listed, click Add Software.

3. After the Add Network Software dialog appears, choose TCP/IP Protocol and Related Components from the Network Software list box; then click Continue.

4. In the Windows NT TCP/IP Option for Installation dialog box, select TCP/IP Network Print Support, and click Continue. If you cannot select this option, cancel the operation, and proceed to Configuring your printer.

5. The next dialog box will ask for the setup disk for Windows NT. Insert the appropriate disk, and follow the instructions on the screen.

6. After setup is finished, the Network Installation dialog box appears again. Make sure that Microsoft TCP/IP Print appears in the Installed Network Software list; then click OK.

7. When the TCP/IP Components dialog box appears, set the IP address and the subnet mask of the Windows NT server or workstation. If you want to use the gateway (router), set the IP address of the nearest gateway as the default gateway. If you do not use the gateway, do not set the default to gateway.

8. When the Modify the Network Setting dialog box appears, click Restart System.

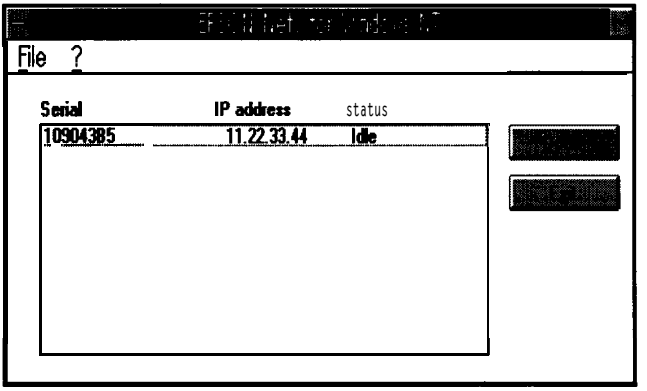
Configuring the Ethernet Card

To communicate with the Ethernet Card using TCP/IP on Windows NT, the network supervisor needs to set the IP address for the Ethernet Card using any TCP/IP capable NT system.

1. After installing the Ethernet Card in the printer as described in your printer s user s guide, connect it to the computer and turn on the printer.

2. Turn on your computer, insert the EPSON Net! for Windows NT disk, and run INSTALL.EXE from Program Manager or File Manager. The EPSON Net! group appears in Program Manager and the EPSON Net! (NT) icon is registered.

3. Double-click the EPSON Net! (NT) icon to start EPSON Net!. The following dialog box appears:

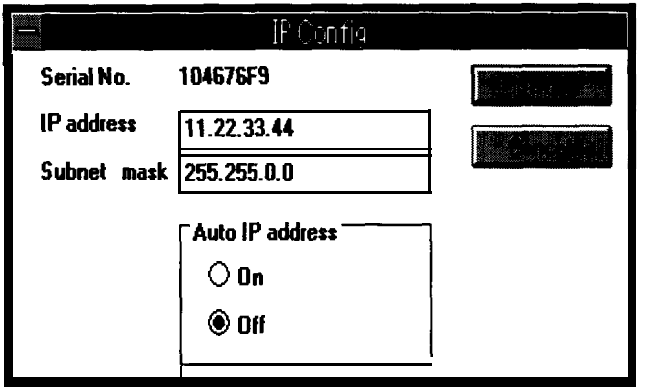


4. Select the correct serial numbers for the Ethernet Card from the list shown in the dialog box; then click Open. The IP Config dialog box appears on the screen and shows the current IP address.

5. Set the following options in the IP Config dialog box:

   - IP address: determine and assign an IP address
   - Subnet mask: assign the subnet mask
   - Auto IP address: set to Off

   Note:
   - *The Auto IP address option is a function designed specifically for UNIX users. Windows NT overrides this function, so you can leave it off.*
   - *To prevent the assigned IP address from changing unexpectedly in UNIX, UNIX users should set the Auto IP address* option off.



6. After making your settings, click the Save button. To change these settings, repeat steps 3 through 5.

Note:
It takes a few seconds to register the IP address change, so there may be a short delay before it is displayed.

Configuring your printer

Follow the steps below to configure your printer using Windows NT.

1. Click Print Manager in the Main program group.
2. Choose the Create Printer command from the Printer menu.
3. After the Create Printer dialog box appears, enter the name of your printer in the Printer Name text box.
4. Choose your printer driver from the Driver pull-down menu.
5. Choose Other from the Print To pull-down menu.
6. After the Print To dialog box appears on the screen, select LPR Port from the Available Print Monitor list, and click OK.
7. After the Add LPR-compatible Printer dialog box appears on the screen, enter the previously specified IP address of the Ethernet Card in the first text box.
8. Click the Printer Name of the Computer text box; then enter an appropriate printer name, and click OK.
9. After the Create Printer dialog box, appears, make sure that all your settings have registered and are correct. Make changes if necessary, and click OK.

You can change the printer driver settings from the Create Printer dialog box at any time.

Chapter 5

Using UNIX

The Ethernet Card supports many standard UNIX commands and can be configured from a host computer without using a special setup utility.

Installing and Printing with the Ethernet Card

See the following sections for general information concerning setting up (with TCP/IP) and printing. See page 5-9 for more information about various UNIX systems.

The Ethernet Card is able to function as a remote printer on systems using TCP/IP Ethernet transfer with Berkeley s popular lpr remote printing protocol, or standard ftp (file transfer protocol).

Setting up the Card

All devices operating with TCP/IP have to be assigned a unique IP Address node. This address must be different from that assigned to *any other* device to which your network is capable of communicating. This unique address acts like a telephone number, enabling all other devices on the network to be able to dial up and talk to the Ethernet Card, as long as they know its number.

There are conventions surrounding how to make up an IP address, which are discussed later. In the most complex case, where a network is capable of communicating with other networks worldwide, it is necessary to have some of the numbers assigned by an international body that coordinates the numbering.

Unless the network is not yet in existence, however, an address will already have been given to the network section that the Ethernet Card is to be plugged into. In this case, the interface card should be given an address that has the same first three sets of numbers as the other devices on that network section, and be given a unique last (4th set) number different from that of any other device on that network section. The network supervisor should be able to determine what addresses are in use at the site.

How to input the IP address

Use arp or ping to set the IP address for the Ethernet Card, as described below:

1. Press the Status Sheet button to print a report including the node address.

2. Enter the arp command: ARP-S (IP address) (node address). For example:

   ARP-S 133.200.3.181 00:00:48:92:DA:35

   or

   Ping the new IP address. For example:

   PING 133.200.3.181

   The Ethernet Card will be set to this IP address.

Caution:
Two different Ethernet cards should not be active on the same network until their addresses have been set, otherwise they will both have the same address (which will confuse the network).

Updating the Hosts file

Once the IP address is defined, the /etc/hosts file needs to have this IP address and host name added. For example:

```
132.147.69.4   Allison
```

Testing the connection

Use ping to test if the Ethernet Card is responding. For example, send the following command:

```
PING  Allison
```

or

```
PING   132.147.69.4
```

If the card responds, you are ready to print. If it doesn t respond, print a status sheet and check the IP address, also check the information contained in the /etc/host file.

Printing via lpr

Once the internet address has been assigned to the Ethernet Card, all the host computers that will be sending print jobs to it need to have its address added to their telephone directories. The method for achieving this differs from system to system, and so the systems administrator should be consulted.

Each Ethernet Card to be used on a particular host is given a different name, and each name is given the IP address set up on its corresponding card. It does not matter what name is given to the Ethernet Card. The name, which is easier to remember than the IP address, is used thereafter to refer to the Ethernet Card printer device.

After entering the card as a valid network device, it is necessary to set up the remote printer details. Here, the lpr protocol program is given the name of a remote printer, and a host name on which it resides. It is looking for three names to link together:

- The name of the local printer which will now be redirected to the Ethernet Card. The default printer name is often used here (for example, 'lp').
- The name of the remote printer. This may be any name, as the Ethernet Card will always honor a print request. The name given here will appear in print enquiry status returns.
- The host name to which the printing is to be sent. This must be the name assigned to the Ethernet Card IP address (above).

Printcap file

Typically, the above information is stored in the /etc/Printcap file, examples of which are shown below:

```
Printer1:\

: lp= : rm = Allison : rp = lpb : sd = /vor/spool/printer1 :
```

For UNIX systems without Printcap files, see the section on scripts at the end of the chapter.

Operation

After setting up the card, you can use the lpr command from any host to direct a print file to the Ethernet Card. The card does not have to interpret any of the incoming print data, allowing binary image files, font download files, as well as ASCII text to be printed transparently.

The interface card can handle many separate communication channels simultaneously. Unless coupled with a compatible spooling unit, the Ethernet Card will not have any disk-spooling capability, so incoming print requests from other hosts when the card is already servicing a print job are stacked, and serviced in rotation.

The Ethernet Card will respond to an lpq print query by sending back details of the current print job, as well as all stacked prints. If a connection request is received after all available connections are taken up, the card will not respond to the connection attempt.

Note:
An lpr enquiry may show missing stack entries; for *example, only jobs 2, 5, and 7 appear. The missing entries (3, 4, and 6) will be print jobs sent by a different protocol, such as Novell or EtherTalk.*

Printing a file

At the prompt, type (example):

lpr -Allison filename or lp - d Allison

Technical

For programmers information, the Ethernet Card TCP/IP mode responds only to arp packets and to TCP/IP connections made to socket number 0x0203 and the ftp socket. You must use lpr protocol to send data to socket 0x0203. Also, connection attempts to other sockets will meet with no response.

Instead of lpr, which may strip control characters, (use - 1 to avoid this), ftp may be used to print. Enter ftp, then open the Ethernet Card by entering its host name (for example, open Allison). A file may be printed simply by sending it (send filename). You can use console commands or Scripts to automate this process, and create ftp spool queues.

Filters for ftp and lpr

Both ftp and lpr have output filters which are capable of:

- translating a UNIX line-end to a normal line-end by inserting a carriage return code
- sending a form feed code at the end of a file in order to eject a page.

The means of invoking these filters differ between ftp and lpr as follows:

ftp (Line ending)

As a default, ftp runs with binary file transfer. This may be changed to ASCII file transfer by simply entering the command ASCII on the ftp command line. When in ASCII mode, the Ethernet Card will convert incoming UNIX line-ends to include a carriage return. To change back to BINARY mode, enter the command BINARY on the ftp command line.

ftp (Form feed)

The Ethernet Card will append a form feed to the end of the print job if the destination file is given the name of FEED or feed. For example, to send a text file called txtfile to the Ethernet Card in ASCII mode and append a formfeed, use the following ftp commands:

```
ascii
send txtfile feed
```

lpr filters

Filters for lpr are controlled by the name given to the remote printer. When setting up an lpr printer entry, a name is entered for:

- the local printer name to be redirected
- the host name of the station to which the print is sent
- the remote printer name (name of the printer port on the remote station).

It is this last name that the Ethernet Card uses to determine which filters to use.

Many different remote printer names may be set up, all directed to the same Ethernet Card remote host, and each is given a different local printer name to be redirected. Different types of print jobs may thus be sent to different printer names, which will then all print out on the same printer, through the same Ethernet Card interface, but using different filters.

The remote printer name options used to invoke the different filters are as follows:

lpb	Binary files (no filters)
lpa	ASCII files (carriage returns at line ends)
1pbf	Binary file with form feed at file end
1paf	ASCII file with form feed at file end

All other remote printer name options will be treated the same as lpb.

Note:
Some versions of lpr strip out all control characters and carriage return characters from a file before it is sent, making it unsuitable for bit-image files or font download files. In many cases the 4 option may be used on the lpr command line to prevent this happening (worth tying even if this option is not documented).

The following is an example of sending a text file, txtfile, via lpr with a form feed appended:

```
lpr -Plpaf txtfile
```

Setting Up Various UNIX Systems

This section shows some scripts and setup examples for different types of UNIX systems:

Setting up for SCO UNIX

Some UNIX systems, such as SCO, do not support the Berkeley lpr print function. The following script allows you to print from within some applications using ftp, which is supported on most TCP/IP systems. The two scripts have been tested for SCO UNIX, but may require modification for other systems. You can use either script.

In SCO UNIX the original printer model scripts are located in directory usr/spool/lp/model.

The process of creating a printer using the SCO administration program (SYSADMSH) copies these files to:

/usr/spool/lp/admins/lp/interfaces.

You can place the script directly into your interface directory.

Also, you can

/usr/lib/lpadmin-pPRINTER-v/dev/null-i/etc/INTERFACE-SCRIPT

where PRINTER is the printer name used in lp-dprinter and INTERPACESCRIPT is the file name containing the next ftp script.

Script 1

General interface program file:

```
NETPRINTER= basename$0
copies=$4
shift;shift;shift;shift;shift;
files= $*
i=1
while (Si -le $copies)
   do
   for file in $files
                    do
                    echo binary > /tmp/ftp.$$
                    echo put $file >> /tmp/ftp.$$
                    echo quit >>/tmp/ftp.$$
                    /usr/bin/ftp -n SNETPRINTER < /tmp/ftp.$$
                    /bin/rm/tmp/ftp.$$
                    done
   i= expr $i+1
   done
exit 0
*end of script*"
```

Script 2

The following script should have the same name as the host name you gave the printer.

```
TEMPFILE=/tmp/ftpprint.$$
printer='epsonprt'
/usr/spool/lp/model/standard "$@" >$TEMPFILE
ftp -n Sprinter <<EOF
send $TEMPFILE
quit
EOF
rm $TEMPFILE
exit
```

Script 2 intercepts the print command and runs another printer interface script, in this case the printer standard using the same options ($@) to redirect the output to a temporary file. The script then opens an ftp session with the printer, sets binary mode and sends the temporary file to the printer. The temporary file is then removed.

Note:
The name of the model and interface directories used by your UNIX system may differ from SCO.

Setting up for IBM AIX Systems (RS/6000)

AIX implements the lpr function, which is set up using the SMIT utility.

1. Set up the print server as detailed in the manual. To set the IP address you can use arp and ping.

2. Modify the **\etc\hosts** file to include the print server, and verify network operation using ftp to copy a file to the print server.

3. Invoke SMIT as the super user and follow the sub menus as shown below:

   select DEVICES

   PRINTER/PLOTTER
   MANAGE REMOTE PRINTER SUBSYSTEM
   CLIENT SERVICES
   REMOTE PRINTER QUEUES
   ADD REMOTE QUEUE

4. When you see a screen similar to the one below, fill in the data as required. For example:

Name of Queue	EPSON
Queuing discipline	first come first serve
Activate the queue	yes
Destination Host	200.200.200.99
Pathname short filter	
Pathname long filter	
Name of queue for remote printer	C82331_PRT

5. Check the entry for your queue under Remote Printer Queue devices. It will list the queue name and printer capabilities.

   You may then have to start the queue (use MANAGE LOCAL PRINTER SUBSYSTEM, AND LOCAL PRINTER QUEUES).

   The /etc./qconfig file will look like this:

```
epson:
        device =epsonprn
        up=true
        host = 200.200.200.99
        rq = C82331_PRT

epsonprn:
        backend  =/usr/lp/rembak
```

6. You may also specify a Remote Device = lpa:, lpaf:, etc. for using filters, (see the lpr-Filters section earlier in this chapter).

Setting up for HP-UX System

There are two methods of printing from HP UX, ftp and rlp (lpr). Both are set up using SAM. Enter the IP address and Host name in the /etc/hosts file before starting SAM.

RLP Setup

On the printer definition page of SAM, use the following settings:

Printer Name:	Any name
Remote System Name:	Use the host name in /etc/hosts
Remote Printer Name:	nothing or lpa , lpaf etc if using filters.
Remote Council Model:	/bin/true
Remote Status Model:	/bin/true
Make System Default:	Enter as appropriate
Printer Class:	Leave out
Restrict Council:	Leave out
Remote Printer on BSD system:	Leave out

Use lpd -d printer name or rlp to print.

FTP SCRIPT

Type:

```
lpshut
lpadmin -p{spoolername} -m{modelscript}
-v/dev/null
accept {spoolername} enable {spoolername)
lpsched
```

Then create a model script:

```
vi/usr/spool/lp/model/lan.model
```

and enter:

```
MODEL= basename  $0
REALMODEL= echo $0 /sed -e  s%$MODEL %model.lan
/$MODEL%
```

```
# This variable may be initialized when the script is installed
in the spooler.


PERIPH= if ( SPERIPH =  )
then
   PERIPH=SMODEL
fi
# Path for output of the original model
TMPPATH=/tmp/SMODEL.data

# invoke original model and write to temporary file
$REALMODEL    $@'TMPPATH

# Log in to peripheral switch to binary and send the temporary
file

( echo user xx
echo binary
echo put $TMPPATH
echo bye
1 ftp -i -n $PERIPH
ERRSTAT=$?
/bin/rm $TMPPATH
exit $ERRSTAT

. End of Script .
```

Chapter 6

Using OS/2

This chapter explains how to configure and use the Ethernet Card with an IBM OS/2 System. See Chapter 1 for information on hardware installation.

Installing on an OS/2 System

Before you set up the software, you must install the card in the printer, connect it to the network, and turn on the printer.

Requirements

OS/2 Warp and Warp Connect must be installed with NetBEUI protocol and OS/2 Warp Connect must be installed with NetBIOS over TCP/IP protocol. EPSON Net! for OS/2 provides the following programs:

NETBEUI

RPRINT3, RSTAT3-LPT redirection

REMPRT3, REMBEU, RBMSTAT3-pipe support

TCP/IP

RPRINT, RSTAT-LPT redirection

REMPRT, REMSTAT-pipe support

Installing Redirection Software

Follow these steps to install the redirection software:

1. Place the EPSON Net! for OS/2 Installation disk in drive A (or B) of your server.

2. Open an OS/2 full screen command session.

3. Open the OS2 directory on drive A (or B) and select the NETBEUI\REDIRECT directory. For example, type CD NETBEUI, press the Enter key, and then type CD REDIRECT to select the redirection software directory.

4. Copy the driver software files RPRINT3.EXE and RSTAT3.EXE to the root directory of the LAN Server file server.

   ```
   COPY A:*.* C:\
   ```

5. Edit the file STARTUP.CMD in the file server root directory and insert the following command as the last line:

   ```
   RPRINT3 <serial number> (/portname)
   ```

   Note:
   See Chapter 1 for more information about the serial number.

   The optional (/portname) designates the port that will be redirected to the remote printer specified by its serial number <serial number>. If no optional port name is defined, the program assumes LPT1 as the port.

The following are examples of commands that can be added to the STARTUP.CMD:

RPRINT3 10900416/LPT1	Causes print files directed to LPT1 to be received by an interface with the serial number 10900416.
RPRINT3 10900701/LPT2	Causes print files directed to LPT2 to be received by an interface with the serial number 10900701.
RPRINT3 1090328F/LPT3	Causes print files directed to LPT3 to be received by an interface with the serial number 1090328F.
RPRINT3 10903605	Causes print files directed to LPT1 to be received by an interface with the serial number 10903605.

6. Re-boot the LAN Server file server and make sure the driver starts successfully.

All printed output spooled to this file server will be redirected to the remote printer interface specified above.

Getting printer driver status information

To make sure the remote printers are working, type RSTAT3 at the OS/2 command prompt. RSTAT3 will return a one **line status** report for each printer driver served. For example:

ITC Remote Print Servers active for LPT1-Printer Ready

or, if the printer driver is busy, it returns the following if only one port is selected:

ITC Remote Print Servers active for LPT1-Printer Busy

If several ports are redirected, RSTAT3 returns a message similar to the following:

```
ITC Remote Print Servers active for LPT1-Printer Busy
ITC Remote Print Servers active for LPT2-Printer Ready
ITC Remote Print Servers active for LPT3-Printer Ready
```

Printing through Pipes

This section describes how to install the software necessary for printing through named pipes.

Installing the software

1. Place the EPSON Net! for OS/2 Installation disk in drive A (or B) of your server.

2. Open an OS/2 full screen command session and create a directory for Remote Print Services on your hard disk.

   ```
   MD C:\EPNET
   ```

3. Open the OS2 directory **on** drive A (or B) and select the NETBEUI directory. For example, type CD NETBEUI and then type CD PIPES to select the pipes directory.

4. Copy all files to the **new** directory from the installation disk in drive A.

   ```
   COPY A:*.* C:\EPNET
   ```

You should now have the following list of files in the C:\EPNET directory:

ADDPORT.CMD	Command to add ports on the server
DELPORT.CMD	Command to remove ports from the server
PORTCHG.EXE	Program used by the above commands
REMPRT3.EXE	Remote Print Service program
REMBEU.EXE	Remote Print Service driver
REMSTAT3.EXE	Printer status program

Configuring New Printers

This section explains how to configure new printers on a LAN Server for use with remote print service.

Note:
You *must* have supervisor *rights on the server to configure printers and queues.*

1. Open an OS/2 full screen command session from your server.
2. Change to the remote print service directory:

   ```
   CD \EPNET
   ```

3. Create ports for your new printers using the ADDPORT command. Choose names that will help to identify the printers, using up to a maximum of 7 characters for each name (for example, EPLASER or PUBSPRT). However, do not use the following characters when assigning a name to the printer:

   ```
   / \ . [ ] : ; | > < + = ? * $"
   ```

4. See your OS/2 documentation for instructions on installing printers and creating queues attached to the server.

Note:

- *To set up and use the card through a shared OS/2 print queue(s) that will receive print jobs from other workstations,* you *must* install *and select either the* IBMNULL *or* MSNULL printer *driver. For the* DEVICE *to* connect *to, choose a port name from those added in step 3 above (for example,* EPLASER).
- To connect *the card directly to a workstation(s), you must install the proprietary OS/2 printer driver.*

5. In the EPNET remote print service directory, create an initialization file called REMPRT.INI. This file is used by the remote print service at start-up and assigns the remote printer names to the device port names. The format of the file is as follows:

   <serial number> <device port>

   Example:

   ```
   10900701  EPLASER
   10900416  PUBSPRT
   ```

6. Edit your STARTUP.CMD file and add the following line at the end:

   \EPNET\REMPRT3@REMPRT.INI

   This line ensures that the remote print service is initialized each time you start the server. If you wish to start the print service manually, you can execute the REMPRT3.EXE file from the OS/2 command prompt.

7. Use the LAN Server Administration facility (NET ADMIN) to add newly created printers to the list of shared resources.

8. To obtain printer driver status information on the REMPRT3 process, type REMSTAT3. The following are examples of information returned by this command:

   ITC Remote Print Servers active for PUBSPRT-Printer Ready

   ITC Remote Print Servers active for EPLASER-Printer Busy

Sharing the Card among Multiple Workstations

If two or more OS/2 Warp Connect and/or OS/2 Warp with LAN Server workstations will be printing to the Ethernet Card, use the Pipes method instead of the Redirect method and configure a unique port name for each workstation. For example, if one Ethernet Card will be used by three OS/2 Warp Connect workstations, the Card s serial number is 10900416 and the workstations should be configured as PortA, PortB, and PortC (or any other unique port names).

First workstation:

```
ADDPORT     PORTA
REMPRT3     10900416  PORTA
```

Second workstation:

```
ADDPORT     PORTB
REMPRT3     10900416  PORTB
```

Third workstation:

```
ADDPORT     PORTC
REMPRT3     10900416  PORTC
```

See Configuring New Printers on page 6-5 for more information.

Appendix

Specifications

Environmental

Operating temp.:	5° to 35°C (41° to 95°F)
Storage temp.:	0° to 70°C (32° to 158°F)
Operating humidity:	*20% to 80%*
Storage humidity:	*5% to 95%*

Network Software

Novell NetWare 2.1x, 3.x, or 4.0 (Bindery Emulation Mode)

Ethertalk (AppleTalk)

DLC

lpr,ftp over TCP/IP protocol

NetBEUI

NetBIOS over TCP/IP protocol

Ethernet Network Hardware Connectors

IEEE 802.3 10BASE2 RG-58A/U coaxial cable via BNC connector or
IEEE 802.3 10BASE-T straight-through twisted pair modular cable via RJ45 connector

Regulatory Approvals

Safety:	UL/CSA approved
EMI:	FCC Class A

Reliability

MTBF:	10,000 hours (power on, 100% duty)

Index

A

B

C

D

E

F

H

I

L

M

N

O

P

Q

R

S

T

U

V

W

Y

Z