OkiLAN 6020e® Pocket Print Server User's Guide

High Performance 10/100 Base-T Ethernet Network Print Server

Every effort has been made to ensure that the information in this document is complete, accurate, and up-to-date. Oki Data assumes no responsibility for the results of errors beyond its control. Oki Data also cannot guarantee that changes in products made by other manufacturers and referred to in this handbook will not affect the applicability of the information in it. This handbook is subject to change without notification.

Organization

This manual has been divided into eight sections. Section I contains and installation instructions for the OkiLAN 6020e print server.

Section II contains information about management features, an extremely valuable set of OkiLAN 6020e management tools for network administrators.

The Network Operating System (NOS) and protocol sections are found in Sections III through VI.

Section VII contains information and instruction on Windows printing options. With the exception of the Advanced Management Features section, each section in this manual has been designed to be independent of one another.

Contents

Network Operating Systems

Overview

OkiLAN 6020e simultaneously supports several network protocols in various combinations. Below is a list of supported network protocols accompanied with NOS/OS requirements.

TCP/IP and Windows NT

TCP/IP, FTP and Remote LPD protocols. Simple Network Management Protocol (SNMP) and Windows NT are supported in this environment. HTTP and a built-in Web server are standard for the 6020e.

Novell NetWare

Novell NetWare versions 3.x, 4.1, 5.x and higher.

EtherTalk

Macintosh® System 6.x or later and LaserWriter® Driver version 8.x.

LAN Manager/LAN Server

OS/2 version 1.3 with LAN Manager version 2.x and OS/2 version 1.3 or higher with LAN Server version 2.x and higher.

Service Information

Note: This information is valid for the United States and
Canada only.

Oki Data On Line

Visit the OKI DATA Web Site at **http://www.okidata.com** for
the latest information on:

• Software drivers
• Product guides
• Customer support
• Corporate information
• Dealers
• Documentation

Your Dealer

Consult the store where you purchased your OkiLAN
6020e, or call 1-800-OKI-DATA (1-800-654-3282) for
the location of the nearest authorized Oki Data service
dealer. Have your ZIP code ready.

• Proof of purchase is required for warranty work. Be
  sure to retain your purchase documents.
• Prices and minimum charges may vary.

The Oki Data Customer Support Center

For customer support, call 1-800-OKI-DATA (800-654-
3282). The Oki Data Information System Automated
Attendant is available 24 hours a day, 7 days a week. The
system can provide immediate assistance with:

• Basic operating procedures
• Sales and service referrals
• Parts and consumable referrals
• Product information

Oki Data Customer Support Representatives

Agents are available 24 hours a day, 7 days a week at 1-800-OKI-DATA (1-800-654-3282). Please be sure that you are calling from a telephone close to your printer, so you can describe your problem accurately. Our customer service representatives are trained on all current Oki Data products They can answer your questions regarding:

• Installation
• Determination of printer issues that require service
• Consumer relations
• Interface information
• Availability and installation of printer drivers and support for the latest network operating systems. *(Customer service representatives are not trained to provide assistance with the use of commercial software packages. Please consult your software user's manual for times and availability of their support).*

Oki Data Service Centers

Oki Data has over 2,000 local Authorized Service Providers in North and South America.

For the most comprehensive, up-to-date listing of Oki Data authorized Service Centers:

- Consult our web site at **www.okidata.com**

- In the U.S. and Canada, call 1-800-654-3282 (1-800-OKI-DATA) English and French only.

- In Latin America, contact the Latin America Service Coordinator at Oki Data's Corporate Headquarters at 856-235-2600 (Spanish only).

United States

Oki Data Americas, Inc.

Tel: 1-800-OKI-DATA (800-654-3282)
Fax: 1-856-222-5247

Canada

Oki Data Americas, Inc.

Tel: 1-800-OKI-DATA (800-654-3282)
Fax: 905-238-4427

Brazil

Oki Data do Brasil, Ltda.

Tel: 0800-11-5577
Fax: 55-11-5012-0267

Mexico

Oki Data de Mexico, S.A. de C.V.

Tel: 525-263-8780
Fax: 525-250-3501

When you call Technical Support, the following information will help us answer your questions more quickly and accurately. Please be able to identify the following:

- OkiLAN model number
- Serial number
- Configuration sheet settings
- Type of network cable connected to the OkiLAN 6020e
- Printer(s) make and model numbers
- Computer and network adapter card make and model numbers
- Network Operating System and version number

Please write these numbers down in the space provided below for future reference.

```
Model #:   _____

S/N:   ___ ___ ___ ___ ___ ___ ___

Ethernet ADDR:   00:40:68: ___ : ___ : ___
```

Section I:

Hardware
Installation

In This Section

The OkiLAN 6020e Pocket Print Server enables Ethernet network users to connect to a printer with a bidirectional parallel port. The OkiLAN 6020e can be made to work with any Centronics or IEEE-1284 parallel interface printer that includes a resident emulation such as PCL versions 4 through 6, Adobe PostScript®, IBM ProPrinter® or Epson® emulations.

The OkiLAN 6020e supports 10/100-megabit networks and most popular network operating systems and printers, except for the OKIPAGE 8z and other GDI-based printers.

The OkiLAN 6020e kit includes the following:

- OkiLAN 6020e hardware
- Power adapter with line cord
- Installation User's Guide
- Utilities CD
- Product registration card

Installing the OkiLAN 6020e

1. Turn off printer power.
2. Attach the OkiLAN 6020e to the centronics connector on your printer.

Parallel
connector

3. Secure the OkiLAN 6020e with the wire clips on the printer's connector.

4. Plug the power adapter wire into the power jack on the OkiLAN 6020e. Then plug the power adapter into a 120 VAC wall outlet.
   Please note that some countries may require a different adapter for local voltages, such as 240 VAC.

5. Attach the 10/100Base-T UTP cable to the recep-
tacle on the back of the OkiLAN 6020e.
Attach the other end of the cable to the Network.

Powering On the OkiLAN 6020e

Turn printer power on. The red and green indicators on
the OkiLAN 6020e will blink during self-test. When
self-test completes successfully, the red indicator will go
off and the green indicator will stay on.

Green indicator   Red indicator
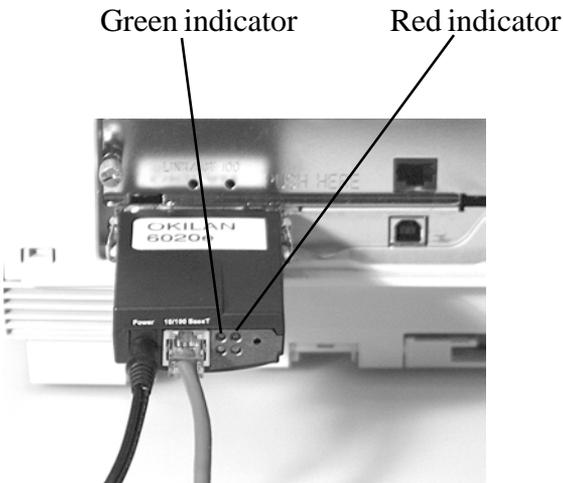
Note: If the red and green indicators do not display as indicated above, see **Hardware Troubleshooting** at the end of this section.

Printing a Configuration Sheet

To print configuration information, press the **Test** button on the front of the OkiLAN 6020e. *You can also print configuration information using the utility program provided on the CD.*

Note: By default, the configuration sheet prints in ASCII text. If you want the configuration sheet to print in PostScript or PCL, select this option (if the emulation is supported in the printer) when you run the network configuration utility program. The selected language must match the printer's configured language to print correctly.

The content of the configuration sheet will vary depending on your printer and system setup.

Installing the OkiLAN 6020e Software Utilities
Introduction

Your OkiLAN 6020e Pocket Print Server comes with two types of software utilities: OkiView 32 and OkiNet Utilities.

OkiView 32

OkiView 32 is a general purpose utility for configuring and montioring printers on NetWare and Windows NT/ 2000 servers. It includes a GUI for the Win32 (Windows) environment. For more information on using OkiView 32, see section VIII.

OkiNet Utilities

The OkiNet utilities are specialty utilities used in different operating systems such as Unix, Mac and Win32.

A custom port monitor utility is also provided for the Win32 environment which supports peer-to-peer printing, also known as serverless printing. TCP/IP, DLC and IPX-direct protocols are supported in this serverless network environment. See Section VII, Windows Printing, for details.

Installing the OkiLAN Utilities Software in Windows

1. Insert the OkiLAN CD into your CD-ROM drive.
2. The Setup screen appears automatically (if it doesn't, click Start→Run, then enter D:\setup, if "D" is your CD-ROM drive).
3. Select the utility group for the network environment you have, then click **Next**.
4. Select the specific utility you want to install and the proper location for installation, then click **Install**.

Windows Utility Groups:

NetWare Management Utilities

> OkiNet Utility for NetWare
> OkiNet Utility for NDS (Workstation and Server)
> OkiNet Utility for NDS (Workstation)

OkiNet Connect Windows Printing

> OkiNet Connect for TCP/IP (Windows 95/98)
> OkiNet Connect for TCP/IP (Windows NT)
> OkiNet Connect for IPX/SPX (Windows 95/98)
> OkiNet Connect for IPX/SPX Windows NT)
> OkiNet Connect DLC (Windows 95/98)
> OkiNet Connect DLC (Windows NT)

TCP/IP Management Utilities

> OkiNet Utilities for TCP/IP
> OkiNet Alert for TCP/IP
> Okidata MIB
> BootP Server

Apple® MacIntosh® Utility Groups:

OkiNet for the Apple® MacIntosh® Utility

Note: The OkiLAN Utilities CD is designed for more than one type of OkiLAN print server and includes features that do not apply to the OkiLAN 6020e. Specifically, Apple EtherTalk is supported by other OKI print servers but not by the OkiLAN 6020e.

Installing OkiView 32

Note: Novell's Client for Windows 95/98, NT or 2000 is required for OkiView 32. Microsoft Client is required only for configuring Novell using a Microsoft network.

Insert the OkiView 32 CD into your CD-ROM drive and run Setup.exe.

Hardware Troubleshooting

Status Indicator

The LED status indicators display the general operating state of the OkiLAN 6020e. During normal operation, the red LED is off and the green LED is on, indicating that the OkiLAN 6020e is functioning properly and the presence of the network is detected.

The following list describes LED displays that indicate problems, as well as possible solutions:

LED Display
Green indicatior flashing very rapidly
Problem
The OkiLAN 6020e has not detected the presence of a network cable.
Solution
a) Unplug the OkiLAN 6020e power adapter from the wall outlet. Remove the network cable. Plug the network cable back in until you hear a positive click. Check the other end of the cable in the same manner. Plug the OkiLAN 6020e back in. If it does not detect a cable, continue below.
b) Verify the cable is a 10/100 Base-T cable and it has an RJ-45 end. The network cable must have a cat-3 or higher rating. *Silver Satin or flat ribbon cable is not adequate.*
c) Connect to a network that a currently working PC or print server is using. If the OkiLAN 6020e is still unable to detect the network cable, contact Technical Support for assistance.

LED Display

Green indicator is flashing slowly (1 timer/sec);
the OkiLAN 6020e is trying to print a job.

Problem

The printer is malfunctioning or does not have sufficient
paper or toner.

Solution

Verify that the printer is not showing any errors and has
sufficient paper and toner.

LED Display

Red indicator is stays red for more than 30 seconds

Problem

The printer server has failed the Power On Self Test.

Solution

The OkiLAN 6020e will try to print a configuration
sheet on the printer with more information.

Failing the self test can be caused by any of the follow-
ing:

a) The printer is malfunctioning. Unplug the OkiLAN
   6020e from the printer and unplug the power adapter.
   Reconnect the OkiLAN 6020e and the power
   adapter. If the OkiLAN 6020e still fails the self test,
   continue below.

b) The OkiLAN 6020e power supply has failed or there
   is a hardware problem. Contact Okidata Customer
   Support for replacement information.

LED Display

The red and green indicators are alternately flashing for longer than two minutes.

Problem

The OkiLAN 6020e is in firmware download mode. This means it is waiting for new firmware to be sent before it will continue functioning normally.

Solution

If the OkiLAN 6020e was purposely put into firmware download mode, finish the download with the proper update utility. Contact our web site at http://www.okidata.com to download the utility.

Section II:

Advanced Management Features

In This Section

Chapter 1
Simple Network Management Protocol (SNMP)

Overview

Simple Network Management Protocol (SNMP) provides network administrators with the ability to communicate management functions between an SNMP manager and an SNMP agent. An SNMP manager is a user program the network administrator can use to manage SNMP agents. The manager can retrieve *Get* information from the agent or alter *Set* information on the agent. An agent can also send an unsolicited message *Trap* to a manager when it encounters an unusual condition.

The OkiLAN 6020e is a fully functional SNMP agent and supports any standard SNMP management platform, including:

• HP OpenView
• Novell NMS
• Sun SunNet Manager
• IBM NetView

Private MIB

OkiLAN 6020e SNMP support has been enhanced with a private MIB. It is accessible via SNMP over TCP/IP and IPX. This private MIB contains over 150 configuration and status variables for the network protocols, printer ports, network interfaceprinter settings, and the overall OkiLAN 6020e status. Printer status traps such as on-line, off-line, detached printer and printer error are also provided.

The setting of certain variables causes an immediate firmware reset. These variables are listed in the private MIB under *cmdReset*.

Note: If you attempt a reset while a job is printing, the job may not print successfully.

Certain variables are critical, that is, they change a fundamental operating parameter of the OkiLAN 6020e. These variables are saved by the OkiLAN 6020e but are not actually used until it is power cycled or is reset. When any one of these variables is changed the variable *genConfigDirty* is automatically set to *yes* by the print server. This signifies a reset is required for all configuration changes to be made active. We recommend checking the *genConfigDirty* variable after using a MIB browser to make any configuration changes to the OkiLAN 6020e. If *genConfigDirty* is set to yes, then the *cmdReset* variable should also be set to yes. This will cause the OkiLAN 6020e to reset, make all configuration changes active on the OkiLAN 6020e and set both the *cmdReset* and *genConfigDirty* variables to *no*. These critical variables are listed in the private MIB under *genConfigDirty*.

Traps

Traps are unsolicited information from the SNMP agent. The OkiLAN 6020e uses a ColdStart trap to inform the manager it has been powered on or reset. An authentication failure trap is sent when the OkiLAN 6020e receives an SNMP trap *GET* or *SET* request with an incorrect community name.

The OkiLAN 6020e sends printer traps when there is a change in the status of the printer. If the Printer goes off-line, runs out of paper or is detached, the administrator will be notified via the OkiLAN 6020e traps over both UDP and IPX. Additionally, the OkiLAN 6020e can send traps on *toner low*, *paper jam*, and *printer cover open,* depending on the printer's capabilities. The traps may be configured for specific destination addresses and can be configured for a particular printer port and/or printer trap.

In order to receive OkiNet Alert traps, the OkiLAN 6020e must have bi-directional status enabled (it is disabled by default). Extended Status can be enabled through the OkiLAN 6020e Configuration utility (telnet) from the *Configure Port* option. You can also enable OkiNet Alert through OkiNet for TCP/IP or IPX from the *Output Port* file tab.

Security

SNMP implements a simple security system known as *community names*. Each SNMP message has a community name associated with the command in the message. SNMP allows for a *Set* community name, *Get* community name and a *Trap* community name. When the SNMP Agent receives a command, it checks the community name of the message with the community name of the device. If the community names do not match, the Agent discards the message and sends an authentication failure trap.

Both the OkiNet for TCP/IP and the IPX, and the OkiLAN 6020e Configuration utility (telnet) allow you to specify the community names and a trap destination IP address.

Chapter 2
HP JetAdmin Support
Overview

This section contains instructions and information on how to configure and obtain diagnostic information from your OkiLAN 6020e using the Hewlett-Packard JetAdmin software.

Software Requirements
• JetAdmin 2.4, 2.5, or 3.02
• Windows 95/98 or Windows NT/2000

Note: For more information on installing and using HP JetAdmin, refer to the HP JetAdmin documentation.

Configuring the OkiLAN 6020e Using JetAdmin

NetWare Configuration
1. From the main JetAdmin screen, select the OkiLAN 6020e port you wish to configure.

2. Select **Modify** from the *Device* menu.

3. On the *Configuration* screen, select the **General** tab and enter the print server name and description.

4. Select the **NetWare** tab and click on the **Operating Mode** icon from the left column. Set the print server operating mode from the given options on the right.

5. If you are running a NetWare 4.x network, click the **NetWare Directory Services** icon from the left column. Select **NDS Tree Name** from the pull-down menu and enter the **Print Server Context**.

6. Click the **Queues** icon from the left column to bring up the *Queues* screen and then click the **Change** button.

7. Select the desired queues from the list of Available Queues to be added into service. Click the **Service** button to move the selection to the *Serviced Queues* column. When all queues have been added, click **OK**.

8. Click **OK** again to return to the main screen.

WARNING: Do not use both OkiNet and JetAdmin to change NetWare configuration settings as unexpected results may occur.

Advanced Management

TCP/IP Configuration

1. From the main JetAdmin screen, select the OkiLAN 6020e port you wish to configure.

2. Select **Modify** from the *Device* menu.

3. On the *Configuration* screen, select the **General** tab and enter the print server name and description.

4. Select the **TCP/IP** tab and set the print server IP configuration.

AppleTalk Configuration

1. From the main JetAdmin screen, select the OkiLAN 6020e port you wish to configure.

2. Select **Modify** from the *Device* menu.

3. Under the **Optional** tab, select **Mac**.

4. Enter the Apple Talk name and click **OK**.

Obtaining Diagnostic Information Using JetAdmin

1. From the main JetAdmin screen, select the OkiLAN 6020e port on which you wish to view diagnostic information.

2. Select **Properties** from the *Device* menu.

3. From the *Properties* screen, select the appropriate tab to view the desired diagnostic information.

Note: For JetAdmin to function correctly with the OkiLAN 6020e, the SNMP *Get community name* in JetAdmin must be set to *public*.

Chapter 3
HP Web JetAdmin Support

Overview

This section contains instructions and information on how to configure, install, and obtain diagnostic information from your OkiLAN 6020e using the Hewlett-Packard Web JetAdmin software.

Software Requirements
- Web JetAdmin 1.x, 2.x, 3.x, or 4.x

Note: For more information on installing and using HP Web JetAdmin, refer to the HP Web JetAdmin documentation.

Configuring the OkiLAN 6020e Using Web JetAdmin

1. From the main Web JetAdmin page, select the OkiLAN 6020e port you wish to configure.

2. On the *Properties* page, click the **Config** button.

3. Make any necessary changes to the options listed and click the corresponding **Apply** button.

Installing a Windows NT Printer for the OkiLAN 6020e

1. From the main Web JetAdmin page, select the OkiLAN 6020e port you wish to install.

2. On the *Properties* page, click the **Install Printer** button.

3. In the *Specify the device address...* field, enter the print server IP address, followed by a comma and then the output port number. For example, to install a printer for output port 2 of an OkiLAN 6020e with an IP address of 10.10.10.2, enter "10.10.10.2,2".

4. On the *Install Printer Page 1* page, select an NT domain from the pull-down menu. Enter the user name and password of a domain user with sufficient rights to create a printer and click the **Continue** button.

5. On the *Install Printer Page 2* page, select the Windows NT machine from the pull-down menu on which you want to create the shared printer and click the **Continue** button.

6. On the *Install Printer Page 3* page, select a printer driver from the pull-down menu and click the **Continue** button.

7. On the *Install Printer Page 4* page, enter a name for the printer in the Select Printer Name field and click the **Install Printer** button.

8. Users in the domain can now print to the new printer.

Obtaining Diagnostic Information from the OkiLAN 6020e

1. From the main Web JetAdmin page, select the OkiLAN 6020e port on which you wish to view diagnostic information.

2. Click the **Diagnose** button.

3. From the *Properties* page, select the appropriate diagnostic category name to view information.

Chapter 4
OkiLAN 6020e Web Configuration

Overview

This section contains instructions and information on how to configure and manage your OkiLAN 6020e using a standard Web browser.

Software Requirements

TCP/IP Protocol

Netscape Navigator 2.0 or greater and Microsoft Explorer 3.0 or greater (Other browsers may work).

Note: If you experience difficulties connecting to the server, refer to *Appendix A, Troubleshooting*.

Connecting to the OkiLAN 6020e

1. Enter **http://<HTTP Address>** in the browser address prompt.
   The HTTP address can be the IP address, the System Name if the print server has been configured to use WINS, or the DNS name if registered with a DNS server.

Note: It is not currently possible to discover all OkiLAN 6020e products from a Web browser. If you need to create a list of all available OkiLAN 6020e products and their addresses, refer to the *OkiLAN 6020e Product Discovery* section for instruction.

Note: As a layer of security, the TCP port number
that the device uses to communicate with
browsers, called the *HTTP port*, can be
modified from a default of 80. If the port is
modified, the HTTP address put in the browser
must include the port number, for example,
http://vpn.company.com:99/ would be entered
for port 99. Refer to the *Web Admin
Configuration* section for details.

2. A successful connection will display the print server
   home page.
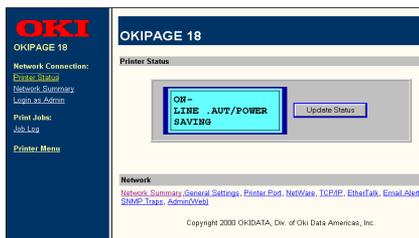
Note: By default, only *Status* and *Support*
information can be viewed. To configure the
print server, see the *Configuration* section.

The print server pages are normally displayed in a
frame with two panes. The left pane shows all the top
level menus along with links to the pages under each
menu. The right pane displays the currently selected
page. If your browser does not support frames, or you
select the *No Frames* link at the bottom of the left pane,
a single page will be displayed. In this case, the menu
items normally shown in the left pane can be accessed
by using the menu links that appear at the bottom of the
page.

Configuration

1. Select the **Login as Admin** link under the *Configuration* menu.

2. On the *Enter Network Password* screen, enter the *User name* and *Password*.

   The default administrator User name is *admin*. The default administrator Password is *OkiLAN*—note that the password is *case sensitive*. We suggest that the print server administrator change the default administrator User name and Password. New User name and Password entries can contain up to 24 characters.

3. Select the appropriate link under the *Configuration* menu and modify the desired values on the page that appears.
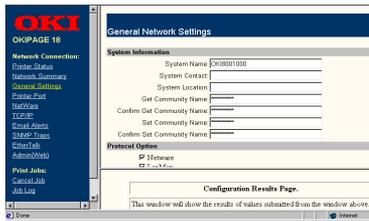
Note: All values (except as noted on the following pages*) are configured exactly the same as in the OkiNet utility. Please refer to the OkiLAN 6020e User's Guide *Section IV - TCP/IP, Chapter 4 - OkiNet for TCP/IP* for instructions on configuration.

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4. Select the **Submit Changes** button at the bottom of the page to send the new values to the print server.

WARNING: Changes will not be saved if the *Submit Changes* button is not selected before continuing to another page.

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5. A *Request Results* page will appear indicating one of the following:

- **Configuration Successfully Set**: The values have been successfully saved to the print server. Go to another page to continue configuration or exit the browser.

- **Invalid Input**: Some or all input fields contain invalid information. None of the values have been saved to the print server. The *Request Results* page will list all fields that contain errors along with a description of the problem. Selecting the **Back** button on your browser will generally redisplay the page you just submitted and allow the values to be edited. Selecting the **Reload** link on the *Request Results* page will produce a new entry page from the server so you can start over.

- **Configuration Successfully Set**. **Reset Required:** The values have been successfully saved, but the print server must be reset for the desired values to take effect. Reset the server immediately or wait until all configuration is complete before resetting. If you do not reset immediately, a link will appear at the top of all subsequent configuration pages reminding you to reset the server.

Advanced Management

**** The following values are currently only
configurable through the Web browser
interface:***

Web Admin Configuration

Under the *Configuration* menu, select the **Admin(Web)**
link.

- **Admin Name** - The name used to access full
  configuration privileges. The default Admin
  Name is *admin*.
- **Admin Password** - This field is used to specify
  the Admin Password used to access full
  configuration privileges. This field will
  accommodate up to 24 characters. The default
  Admin Password is *OkiLAN*-note that the
  password is *case sensitive*.

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*Note***:** The *Admin Password* is also used as the Telnet
password.

- **Confirm Admin Password** - This field is used to
  confirm the Admin Password entry by entering a
  second time.
- **HTTP Port** - This field is used to specify the TCP
  port that the HTTP protocol will listen on. The
  default HTTP port is 80, but can be changed to
  provide added security.
- **FAQ URL** - By default points to the FAQ page on
  the OKI Web Server. Maximum URL length is 63
  characters.
- **Updates URL** - By default points to the firmware
  update site on the OKI FTP Server. Maximum
  URL length is 63 characters.
- **Custom Link Title** - This field is useful for
  setting up a link to an internal help desk. If
  configured, it will appear under the Support
  menu. Will accommodate up to 24 characters.
- **Custom Link URL** - This field is useful for
  setting up a link to an internal help desk. Can
  contain any URL up to 63 characters.

Status

The home page for the print server shows general status information including the status of all printers currently attached. For more detailed status information, select the **View Cnfg Sheet** link under the *Status* menu. This will show information similar to what is printed on the print servers configuration sheet.

Print Job Log

The Print Job Log page provides information on print jobs, system up time and total jobs printed.

Support

There are up to four links listed under the *Support* menu.

Contact
This page provides the necessary addresses and phone numbers for contacting Oki Data Customer Support.

FAQ
By default this link will connect you to the FAQ page on the OKI Web Server. This link can be configured to point to other locations by selecting the **Admin(Web)** link under the *Configuration* menu.

Updates
By default this link will connect you to the firmware update location on the OKI FTP Server. This link can be configured to point to other locations by selecting the **Admin(Web)** link under the *Configuration* menu.

Custom Link
This link will only appear if it has been configured by selecting the **Admin(Web)** link under the *Configuration* menu. This link can be used to access internal help desk sites.

Advanced Management

Reset

Reset

Reset the print server by selecting the **Reset** link under the *Reset* menu. A message will appear asking you to confirm the reset.

Restore

Select **Restore Defaults** under the *Reset* menu to restore selected protocols to factory defaults. Select the individual protocols to be restored and then select the **Restore Selected Protocols** button. All protocols can be restored simultaneously by selecting the **Restore All Protocols** button.

OkiLAN 6020e Server Discovery

An HTML file containing links to all OkiLAN 6020e print servers on the network can be created using the OkiNet utility for TCP/IP. Complete the following steps to create the HTML file:

1. Install and run the OkiNet for TCP/IP utility. The utility will discover and display all OkiLAN 6020e printservers on the local network.

2. Create a custom view, if desired, to control which devices are displayed. See *Creating Customized Views* in the OkiLAN 6020e Users Guide, Section IV.

3. Select **Save View to HTML** under the *File* menu.

4. Enter a name and save the file.

5. From the Web browser, select **Open** under the *File* menu and enter the path and name of the file saved in step 4.

6. You can now create a bookmark or add the file to your list of favorites.

Note: This file does not update automatically. The OkiNet utility must be run again to obtain current information.

Troubleshooting

Server Connection

- The print server only supports two simultaneous HTTP connections. If your browser fails to connect to the print server, the browser may be trying to open more than two connections. Please refer to your browser's Help files for information on changing the connection settings. Both Netscape Navigator and Microsoft Explorer for the Macintosh and Power PC will sometimes display a failure to connect message after being configured for only two connections. Should this occur, select **OK** to bypass the error message. The menu page will still be displayed and configuration can be completed.

- Quickly refreshing a page within some browsers can cause the browser to leave active connections open with the server called a *hung connection*. This will use up one of the HTTP connections, can cause problems connecting to the server and will slow down Web response time. If TCP timeout checking is enabled under TCP/IP configuration, the *hung connection* will timeout after the timeout period has expired.

Login

- If you forget the administrator password, restoring the TCP/IP protocol to factory defaults from any other configuration utility restores the Web admin name and password to default values.

Configuration

- Web browsers will generally cache previously viewed Web pages on the local machine. To view the most current print server information, it is a good idea to select the **Reload** or **Refresh** button on your browser instead of using the **Back** button.

Advanced Management

Chapter 5
Additional Management Features

OkiNet Alert

OKI OkiNet Alert enterprise management utility allows administrators to proactively manage printers by being immediately alerted to printing problems before they are encountered by users. This remote management utility can be configured to monitor all SNMP traps from a list of printers chosen by the administrator, without requiring HP OpenView. It runs in the background on any Windows-based PC and alerts the user with a sound or a screen flash when an error has occurred, and OkiNet Alert can be configured to respond only to the specific error conditions that are of concern to you. You can also launch batch files on given error conditions. OKI OkiNet Alert can be used in IPX and IP environments. Additionally, multiple traps can be sent to multiple destinations on the network.

Enhanced Printer Status

The OkiLAN 6020e communicates with the printer to monitor the current condition on the printer. This information can be observed in real time via the utilities or can be interpreted by the OkiLAN 6020e to generate traps to your SNMP management utility of choice: HP OpenView or the OKI OkiNet Alert utility.

For bi-directional capable printer the OkiLAN 6020e can retrieve the printer information, such as front panel message, and display it through the OkiNet utilities.

OkiNet for NDS

OkiNet for NDS allows administrators to create and manage OKI print server objects in the NDS tree. OkiNet for NDS integrates into Novell's NetWare Administrator, NetWareAdmin. For more information, see *OkiNet for NDS* under *NetWare* in this manual.

OkiNet for TCP/IP (Creating Custom Views)

OkiNet for TCP/IP allows discovery on a pure TCP/IP Windows environment. To assign a TCP/IP address assignment, simply select *Discover Unconfigured Device* and double-click. To create multiple views and customize the viewing environment, specify devices and define *Filters*, *Sorts*, *Columns*, *Search Information* and *Refresh* rates. For more information about OkiNet for TCP/IP, see *Creating Custom Views* under the TCP/IP section of this manual.

NetWare Load Balancing

Using this feature, administrators can distribute the print load among several print servers. Simply assign the queue to the desired print ports on the selected print servers.

Windows Printing

From a Windows operating system, using TCP/IP or DLC protocols, the OkiNet Connect utility routes the print job to the appropriate printer without passing through a file server or print queue. This cuts down on network printing traffic. For more information, see the *Windows Printing* section of this manual.

Printer Security for TCP/IP Printing

The OkiLAN 6020e print server has a *Printer Security for TCP/IP Printing* feature which allows the printers to only be accessed from a specified list of IP addresses. This feature is accessed via TELNET option #9, *TCP Connection Configuration*.

Advanced Management

Section III:

NetWare

In This Section

NetWare

Chapter 1: Introduction

Overview

This section contains instructions and information on how to configure your OkiLAN 6020e in the NetWare environment.

There are three environments in which to configure the OkiLAN 6020e:

- Bindery (NetWare 3.x)
- NetWare Directory Services (NDS)-for NetWare versions 4.1 and later
- NDPS for NetWare 4.x and 5.x.

Before You Start

- You should be familiar with network administration as well as the physical setup and operation of your network.
- Write down the serial number and the Ethernet or Token-Ring address of your OkiLAN 6020e. You will find these numbers on the OkiLAN 6020e enclosure.
- Install the OkiLAN 6020e hardware and connect the cabling-see Section I. Instructions for hardware installation are found in Section I of this manual.
- Install the OkiNet Utility for NetWare--see Section I.

Selecting PServer or RPrinter/NPrinter Mode

Your OkiLAN 6020e supports both PServer and NPrinter mode. There are several factors to consider when choosing which mode to use.

In PServer mode, the OkiLAN 6020e operates as the print server. It services specified queues on the network. In RPrinter mode, the NetWare Print Server NLM or EXE is in control.

Feature	PServer Mode	RPrinter/NPrinter Mode
User Connection	Requires one NetWare user connection per OkiLAN 6020e.	Requires no user connection.
Performance	High performance.	Good performance.
Installation	Easier to set up. Requires fewer steps.	More steps to set up, but works well with existing utilities.
Print Server	Separate print server node, print server functions, and NetWare print server software not required.	Requires NetWare print server software. Integrates with NetWare print utilities.
Status Reporting	Printer status is reported via messages sent to client nodes. Job status is available via job notification. Printer status available via OkiNet utilities.	Printer status is reported via PCONSOLE, PSC, and print server screen. Job status is reported via the print server screen, PSC, job notification.
Security	Without supervisor intervention, other printers cannot access data sent to the queues. Data can be password protected from the file server to the printer.	Data can be password protected from the file server to the printer.

NetWare

Chapter 2
OkiNet for NetWare

Overview

This chapter contains information about how to configure the OkiLAN 6020e in Bindery and NDS environments using the OkiNet for NetWare utility.

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*Note***:** OkiNet for NetWare contains minimal NDS configuration support. For more extensive configuration options, use the OkiNet for NDS utility described in Chapter 3.

OkiNet for NetWare allows you to:

• Configure the OkiLAN 6020e for all Supported Protocols
• Display OkiLAN 6020e Diagnostic Information
• Print a Configuration Sheet
• Reset the OkiLAN 6020e
• Restore Factory Default Settings
• Create Customized Views
• Modify View Settings
• Permanently Define SNMP Access Information

Running OkiNet for NetWare

To run the utility, double-click on the **OkiNet** icon. The main *OkiNet for NetWare* screen will display.
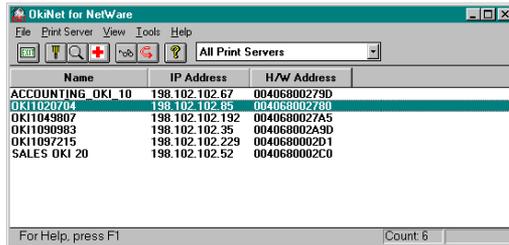
By default, the *All Print Servers* view is selected and all print servers attached to the network from which the OkiNet utility is running are listed.

Configuring the OkiLAN 6020e Using OkiNet for NetWare

The following steps outline how to configure an OkiLAN 6020e.

1. Select the OkiLAN 6020e you wish to configure.

2. Select **Configuration** from the *Print Server* menu or select the **Configuration** icon on the toolbar.

3. Set the appropriate configuration by choosing the applicable file folder tabs.

The following settings are configurable based on the capabilities of the OkiLAN 6020e:

- NetWare
- NetWare Queues
- NetWare Port
- TCP/IP
- Protocols

- Output Port
- SNMP
- VINES *
- EtherTalk
- SNMP Traps

* *May apply to other OkiLAN print server models.*

NetWare Configuration Options

To configure options specific to the NetWare protocol, select the **NetWare** file tab. The following screen will display:
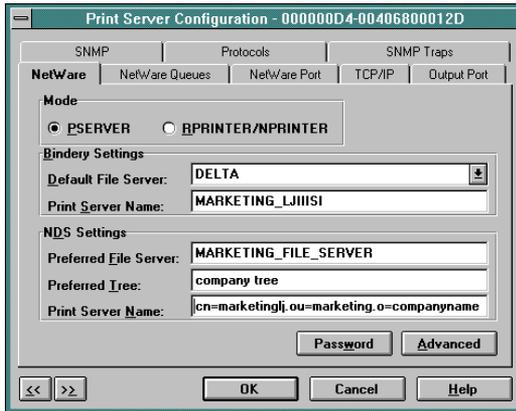
PServer or RPrinter Mode
Several factors should be considered when choosing between PServer or RPrinter mode. For more detailed information regarding these modes, see page III-5.

Bindery Settings
• *Default File Server* - The default file server can be selected from any file server listed in the *Default File Server* scroll menu. The default file server must be active at power up for the OkiLAN 6020e to recognize other servers.
• *Print Server Name* - Enter the print server name of your choice.

NDS Settings

NDS settings need to first be created and setup using the NWAdmin or PConsole utility. Create an NDS print server object. Then, create one NDS printer object per output port. For example, Printer 1 goes to Port 1, Printer 2 goes to port 2. Attach NDS print queues to the NDS printer objects. Once you have created NDS objects and queues, use the OkiNet for NetWare utility to configure the following fields:

• *Preferred File Server* - This is the file server on which the print server object was created.

• *Preferred Tree* - This is the NDS tree on which the NDS print server object was created.

• *Print Server Name* - The fully qualified (canonical) name of the NDS print server object that was created. The Print Server Name is case sensitive.

Example:

cn=marketinglj.ou=marketing.o=companyname

where *cn* is the Common Name of the leaf object, *ou* is the Organizational Unit name, and *o* is the Organizational name.

---

*Note***:** After any change to the servicing of queues for the OkiLAN 6020e from NWAdmin or PConsole, the OkiLAN 6020e must be reset via OkiNet for NetWare.

NetWare Queues Configuration Options

The NetWare Queues option allows you to add bindery print queues to be serviced by first selecting each desired queue and then selecting the →button.

To have a queue print to an output port other than the currently selected port, select the Output Port button and then select the desired port.

NetWare

NetWare Queue Load Balancing

Print jobs can be distributed to multiple printers on selected queues by selecting the same queue multiple times and selecting a different output port for each queue entry.

NetWare Port Configuration Options

To modify the NetWare port settings to fit your NetWare printing environment, select the **NetWare Port** file tab.

TCP/IP Configuration Options

To modify configuration settings specific to the TCP/IP protocol such as IP address, subnet mask and default gateway. For specific information on TCP/IP configuration options, see Section IV, *TCP/IP*, or select the **HELP** button on the bottom right of the screen.

EtherTalk Configuration Options

To modify configuration settings specific to the EtherTalk protocol such as the name and zone. For specific information on other EtherTalk options, see Section VII, *EtherTalk*, or select the **HELP** button on the bottom right of the screen.

Output Port Configuration Options

To configure the OkiLAN 6020e output port, select the **Output Port** file tab. The following screen will display:
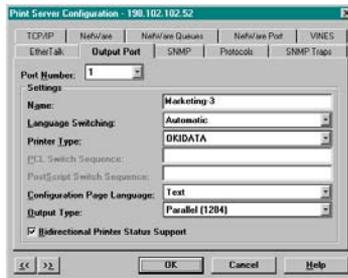
Port Number
Select the port you wish to configure.

Name Field
Enter a descriptive name to identify the port.

Language Switching
Each output port can be configured to perform the following language switching options: OFF, PCL, PostScript or Automatic. Unless *OFF* is selected, a language switching character string will be inserted before each print job. The *Printer Type* selection is used to determine the actual characters required to switch the language of the printer.

- *OFF* - Print data stream will be sent directly to the output port without alteration.
- *PCL* - Inserts the appropriate character string in front of each print job to switch the printer to the PCL print language.

- *PostScript* - Inserts the appropriate character string in front of each print job to switch the printer to the PostScript printer language.
- *Automatic* - Enables the auto language sensing function. This function examines the print job data stream and determines the required print language and inserts the appropriate character string in front of each print job to switch the printer to the appropriate printer language.

Note: If you are not switching languages or the printer can switch languages automatically, this option should be set to *OFF*.

Printer Type
The Printer Type selection is used to determine the actual character string required for your printer. If your printer type is not listed, select **Other** and enter the character string for switching the printer to PCL or PostScript mode.

To enter nonprintable characters, enclose the ASCII value of the character in angle brackets. For example, to enter the ESC character type: **<27>**.

PCL Switch Sequence
Enter the character string to switch the printer to the PCL print language.

PostScript Switch Sequence
Enter the character string to switch the printer to the PostScript print language.

Configuration Page Language
Select the appropriate printer language for printing configuration pages on your printer.

Note: Do not set the Configuration Page Language to *OFF* for all ports of your OkiLAN 6020e. If a configuration sheet cannot be printed, troubleshooting abilities are limited.

Bidirectional Printer Status Support

Enable this option for enhanced status from bi-directional printers that support PJL.

Output Type

Select the desired level of support for 1284 communications. The following settings are available:

- **Compatibility (no bidi)**
- **1284 (Std Nibble Mode)** (default)
- **1284 (ECP or Fast Nibble Mode)**

SNMP Configuration Options

SNMP options specify which information is necessary for an SNMP manager to access the OkiLAN 6020e. The system variables are for user convenience and are optional.

SNMP community names are used as passwords to *GET* and *SET* information on the OkiLAN 6020e. The values should be changed for enhanced security.

To configure SNMP specific information, select the **SNMP** file tab. The following screen will display:
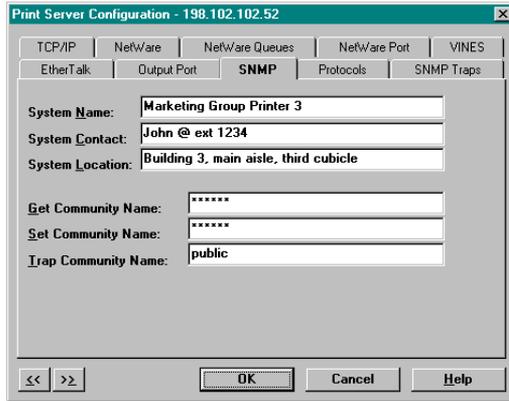
Note: SNMP options need to be configured only if you are managing OkiLAN 6020e products or getting system information using SNMP.

Fill in the following information:

System Name

Enter the name of your choice. This name will identify the OkiLAN 6020e in your SNMP-based management program.

System Contact

Enter any information useful to a user if problems with the OkiLAN 6020e arise.

System Location

Enter a description of the OkiLAN 6020e location.

Get Community Name

This field is used to set the community name required to Get information from the print server. The default community name is *public*.

---

*Note***:** To use the JetAdmin utility with the OkiLAN 6020e, the Get and Set Community Names must be set to public.

Set Community Name

This field sets the community name required to Set information on the OkiLAN 6020e. The default community name is public.

Note: The OkiLAN 6020e cannot be configured without the correct Set community name. To secure the configuration of the OkiLAN 6020e, change the community name from the default setting.

Trap Community Name

Enter the community name which will be used when traps are sent from the OkiLAN 6020e. This setting allows trap utilities to only accept traps from devices with appropriate community names.

The *Trap* community name field is used by the OKI OkiNet Alert and other monitoring utilities for grouping or filtering OkiLAN 6020e devices. OkiNet Alert assists in managing network printers by immediately alerting you of printer problems.

SNMP Traps Configuration

The SNMP Trap option allows configuration of traps. Traps are unsolicited information concerning the OkiLAN 6020e. Traps can be sent to an SNMP manager or be broadcast to all hosts on the local segment.

To configure SNMP traps, select the **SNMP Traps** file tab. The following screen will display:
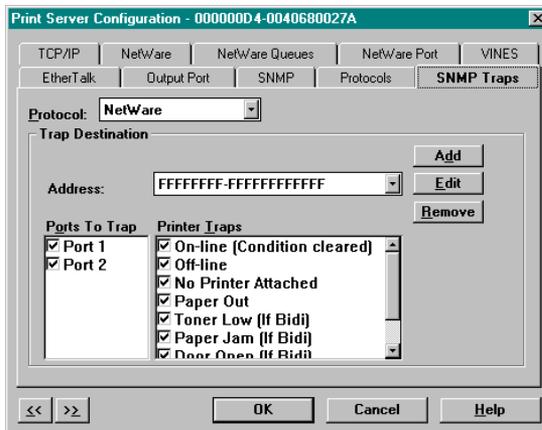
NetWare

Fill in the following information:

Protocol

Select the protocol for which you wish to configure trap information.

Trap Destination
- *NetWare Protocol* - Enter the network number and hardware address, respectively, to which traps will be sent. To broadcast traps to all addresses on all networks, enter FFFFFFFF (8 characters) in the first field and FFFFFFFFFFFF (12 characters) in the second field. To broadcast traps to all addresses on a specific network, enter the network number in the first field and then FFFFFFFFFFFF (12 characters) in the second field.
- *TCP/IP Protocol* - Enter the IP address to which traps will be sent. The IP address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number from 0 to 255. To broadcast traps to all hosts on the local subnet, enter 255.255.255.255.

Ports to Trap
Select the output ports on which you wish traps to be active.

Printer Traps
Select the printer traps to be activated. The following printer conditions may cause a printer trap to occur if the OKI printer model supports the features:
- On-line
- Off-line
- No Printer Attached
- Paper Out
- Toner Low
- Paper Jam
- Door Open
- Printer Error

> **Note:** *Toner Low*, *Paper Jam* and *Door Open* require the printer to be set in PCL or Auto mode.

Saving the Configuration

Once all settings have been defined, select **OK**. The settings will be saved and you will be returned to the main *OkiNet for NetWare* screen.

Enabling/Disabling Protocols

To enable or disable protocols on the OkiLAN 6020e, select the **Protocols** file tab. Select each protocol you wish to enable. If you disable a protocol, the OkiLAN 6020e will no longer communicate using that protocol.

To reduce unnecessary network traffic, disable unused protocols.

Displaying OkiLAN 6020e Diagnostic Information

To view OkiLAN 6020e diagnostic information, select **Diagnostics** from the *Print Server* pull-down menu on the main *NetWare Print Manager* screen. Diagnostic information is available for the following topics:

- Printer
- Print Server
- Protocols
- Network
- Statistics
- Technical Support
- System

Printing a Configuration Sheet

The configuration sheet provides current network, print server and printer information. To print a configuration sheet, select the OkiLAN 6020e from the list of available print servers. Select **Print Configuration Sheet** from the *Print Server* menu bar.

Resetting the OkiLAN 6020e

To reset the OkiLAN 6020e, select the OkiLAN 6020e from the list of available print servers. From the *Print Server* menu bar, select **Reset**.

NetWare

> ***CAUTION: Make sure there are no print jobs active when you reset the OkiLAN 6020e. All protocols will be restarted. If you attempt a reset while a job is printing, the job may not print successfully.***

Restoring Factory Default Settings

To restore the OkiLAN 6020e to factory default settings, select the OkiLAN 6020e from the list of available print servers. From the *Print Server* menu bar, select the **Reset** option. Choose one or more of the following options:

Output Ports
Restores settings related to output ports such as port name and output type.

TCP/IP
Restores settings specific to the TCP/IP protocol configuration such as the IP address and subnet mask.

NetWare
Restores settings specific to the NetWare protocol configuration such as the mode and default file server.

EtherTalk
Restores settings specific to the EtherTalk protocol configuration such as the name and zone.

Once you have chosen the desired options, select **Restore**. To completely restore the print server to factory default settings, select all items in the list.

CAUTION: Make sure there are no active print jobs when you select Restore Factory Defaults. If you reset the OkiLAN 6020e while a job is printing, the job may not print successfully.

Creating Customized Views

OkiNet for NetWare allows users to create multiple customized views for the list of OkiLAN 6020e products. By creating different views, the user can narrow the information displayed to that which is of highest priority. These views can be saved and selected as needed.

OkiNet has two predefined views. The *All Print Servers* view displays all the print servers available on your local network. The *Unconfigured Print Servers View* displays only the print servers on the local network that have not been configured.

Creating a New Customized View

To create a new view, select the **New** option from the *View* menu. Enter a name for the new customized view. Define *Filters*, *Sorts*, *Column*, *Search* information and *Refresh* rates (see the *Modifying View Settings* sections for more detail). Select **OK** to save this view.

Selecting an Existing View

To select an existing view, choose **Select** from the *View* menu. Highlight the view you wish to open and select **OK**. The OkiLAN 6020e list in the utility will be displayed as described by the view selected.

Searching for a Specific OkiLAN 6020e

To search for a specific OkiLAN 6020e, select **Search** from the tools menu. Choose the **Search List** option to search for OkiLAN 6020e products already listed. For OkiLAN 6020e products which cannot be found in the list, select the **Search Network by Address** option. For more information about this option, select **HELP**.

NetWare

Modifying View Settings

Before modifying the settings, select the name of the view you wish to edit from the *Name* field.

Display Filter

The filter option displays only those print servers matching specific criteria. The print server list can be filtered by any of the following:

Filter By	Enter for the Filter Value
<No Filter>	No value
DateCode	Four digits followed by a letter (e.g. 9502B)
H/W Address	12 hexadecimal digits for the hardware address
Name	NetWare print server name
Product #	Select from the list of product number(s)
Product Type	Select from the list of product types
Status	Select from the list of status conditions
Default File Server	The default NetWare file server
Mode running	The NetWare mode the print server is
Network #	The IPX network number

Search Filter

The Search option defines the criteria for locating OkiLAN 6020e products on the network.

- *Search Local Network* - This method searches the bindery to locate all OkiLAN 6020e products on the network. All OkiLAN 6020e print servers that respond are placed in the list. If you have a large number of OkiLAN 6020e print servers on your network and do not wish to view all of them, do not select this option.

- *Specify Devices/Networks* - This method adds specific print servers (or groups of print servers) to the list. This can be useful when only a subset of the list of OkiLAN 6020e products is desired.

To select all desired print servers, select **Add**.

Sort

The Sort option displays the OkiLAN 6020e list in a specific order. The list can also be sorted by clicking on the column by which you wish to sort. A sort order can only be defined on columns displayed on the main *OkiNet for NetWare* screen.

Columns

Column information for each print server can be modified. To define the location of a new column, select the location in the *Columns Displayed* field where you wish the new column to be inserted, then select **Add**. If no location is selected, the new column will be added to the end of the list and the column will be displayed to the right of the last column on the screen. For example, if you currently have three columns displayed and you wish to add a fourth column to the far left of the screen, follow these steps:

1. Select the first column in the *Columns Displayed* field.
2. Select the column to be added from the *Columns Available* field.
3. Select **Add**.

Columns may also be removed by selecting **Remove** from the *Columns Available* field.

NetWare

Refresh

The refresh rate defines how often the OkiNet for NetWare utility updates the main print server list. To define a refresh rate, select the **Automatic Refresh** box and then enter the refresh rate in the field provided. Decide how frequently to refresh the screen based on factors such as network traffic and desire for most recent information. For example, if traffic is not an issue on your network and the most current information is desired, set the refresh rate to 1 so the screen is updated every minute. If network traffic is an issue, you may wish to set the refresh rate to 10. This would update the screen every ten minutes and minimize network traffic.

Permanently Defining SNMP Access Information

Access to OkiLAN 6020e configuration and diagnostic information is determined by using community names. The *Special Options* window is used to permanently define access information so it does not need to be entered each time the OkiLAN 6020e is accessed. To *Get* and/or *Set* information on the OkiLAN 6020e through OkiNet for NetWare, community names used by the utility must match the community names assigned to the OkiLAN 6020e.

To configure the OkiNet for NetWare utility to use the correct community names, select **Special Options** from the *File* menu.

Serial/Network Numbers

This field displays the serial number of each OkiLAN 6020e or the network number for a network of OkiLAN 6020e products for which the OkiNet utility has defined access. To add a new serial number or network number to this list, select the **Add** button.

Get Community Name

Enter the *Get* Community Name necessary to access the OkiLAN 6020e or group of OkiLAN 6020e products selected.

Set Community Name

Enter the *Set* Community Name necessary to access the OkiLAN 6020e or group of OkiLAN 6020e products selected.

Add

Select the **Add** button to define access to a new OkiLAN 6020e or a group of OkiLAN 6020e products. Enter a serial number or a network number followed by a dash (-). Use an asterisk (*) as a wildcard to match multiple devices. As examples, to add a single OkiLAN 6020e, enter 1500001, or to add a whole network, enter D4-.

Delete

The **Delete** button deletes an OkiLAN 6020e access entry in the *Serial/Network Number* list.

NetWare

Chapter 3
OkiNet for NDS

Overview

OkiNet for NDS is a Dynamic Link Library (DLL) which allows users to create and manage OKI print server objects in the NDS tree. OkiNet for NDS integrates into Novell's NetWare Administrator, a Windows-based utility that allows users to view and manage their NetWare 4.x NDS tree. Once OkiNet for NDS is integrated into NetWare Administrator, users can manage OKI devices with the same utility used to manage other network objects such as printers and queues.

The OkiLAN 6020e supports NetWare NDS using Novell Embedded Systems Technology, also known as NEST.

OkiNet for NDS can be installed to support Novell NetWare version 4.1 or 4.11 and for operating systems running Windows 3.x, Windows 95/98, and Windows NT/2000. If you have multiple versions of Windows operating systems to service, you can install OkiNet for NDS for each.

OkiNet for NDS supports four different versions of NWAdmin.

• OkiNet for NDS installation for NetWare version 4.1 (one version of NWAdmin) requires a single installation which will work for all platforms including Windows 3.x. Windows 95/98, and Windows NT/2000.

• The OkiNet for NDS installation for NetWare version 4.11 requires a separate installation for each of the three platforms: Windows 3.x, Windows 95/98, and Windows NT/2000 (three separate versions of NWAdmin).

Refer to the following table to determine which method to use to install OkiNet for NDS:

NetWare Version	Client Operating System	
	Windows 3.x	Windows 95/98 Windows NT/2000
NetWare 4.1	See Installing OkiNet for NDS for Novell NetWare 4.1	
NetWare 4.11 and NetWare 5	See Installing OkiNet for NDS for Novell NetWare 4.11 and Windows 3.x	See Installing OkiNet for NDS for Novell NetWare 4.11 and Windows 95/98 and Windows NT/2000

Installing OkiNet for NDS for Novell NetWare 4.1

A single installation is required to service Windows 3.x and Windows 95/98 operating systems with OkiNet for NDS for Novell NetWare 4.1. OkiNet for NDS must be installed in the same location you have installed NetWare Administrator. This may be located on the file server or on an independent workstation. In most cases NetWare Administrator can be found in the SYS:\PUBLIC directory. To install OkiNet for NDS for Novell NetWare 4.1 and Windows 3.x and/or Windows 95/98:

1. Login to the directory tree as a user with Admin rights at the root of the directory tree.

2. Run the installation program provided. Select the option to install OkiNet for NDS. Follow the instructions on the screen.

> **Tip for Advanced Administrators**
>
> When installing OkiNet for NDS, the install utility copies the OkiNet for NDS files to the destination directory, adds the OKI print server class to the NDS schema and modifies the user's *NWADMIN.INI* file.

NetWare

Installing OkiNet for NDS for Novell NetWare 4.x, NetWare 5.x, and Windows 3.x

OkiNet for NDS must be installed in the same location you have installed NetWare Administrator. This may be located on the file server or on an independent workstation. In most cases NetWare Administrator can be found in the SYS:\PUBLIC directory. To install OkiNet for NDS for Novell NetWare version 4.11 and Windows 3.x:

1. Login to the directory tree as a user with Admin rights at the root of the directory tree.

2. Install OkiNet for NDS.-see Section I.

> **Tip for Advanced Administrators**
>
> When installing OkiNet for NDS, the install utility copies the OkiNet for NDS files to the destination directory, adds the OKI print server class to the NDS schema and modifies the user's *NWADMIN3X.INI* file.

Installing OkiNet for NDS for Novell NetWare 4.x, NetWare 5.x, Windows 95/98 and Windows NT/2000

OkiNet for NDS must be installed in the same location you have installed NetWare Administrator. This may be located on the file server or on an independent workstation. In most cases NetWare Administrator can be found in the *SYS:\PUBLIC\Win95* or *SYS:\PUBLIC\WinNT* directory. To install OkiNet for NDS for Novell NetWare version 4.11 and Windows 95/98 and Windows NT/2000:

1. Login to the directory tree as a user with Admin rights at the root of the directory tree.

2. Install--see Section I.

> **Tip for Advanced Administrators**
>
> When installing OkiNet for NDS, the install utility copies the OkiNet for NDS files to the destination directory, adds the OKI print server class to the NDS schema and modifies the user's registry.

NetWare

Creating a New OkiLAN 6020e Object

To create a new OkiLAN 6020e object from Novell's NetWare Administrator, perform the following steps:

1. Select the container (also known as organizational unit) in which you want the object created. For example, to create an object that is within the sales organizational unit, select **SALES**.

2. From the *Object* menu, select **Create**. If the *Create* option is grayed, you do not have sufficient rights or you have selected a leaf object.

3. From the *Class of New Object* list box, select **OKI Print Server**. If the *OKI Print Server* is not listed, check the following:

   • The OkiNet for NDS utility has been installed.
   • The OKI Printing Device has not been removed from the schema. See *Adding or Removing the OKI Print Server* section for more information.

4. Click **OK**.

5. Define filter and sort criteria for displaying a list of Extended Systems devices from which to choose.

6. Click **OK**. The following screen will display:
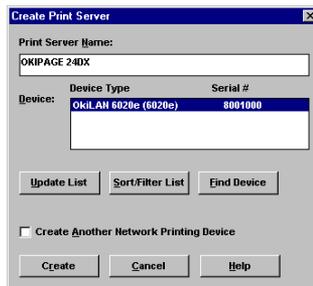
> ***Note***: If the *Device* list box is still empty, select **Find Device**. This will allow you to locate the specific device you are trying to define. You will be prompted for the Ethernet address and network number of the device. A mismatch in the OKI device frame format may cause the device not to show up in the Device list box.

7. From the list of OKI devices, select a device to assign to the object.

8. Enter a name for the new OKI Print Server object.

9. Select **Create**.

The new OKI Print Server object should now appear in the directory tree.

Printing with an OkiLAN 6020e Print Server

To configure the NetWare environment for printing to an OkiLAN 6020e print server, follow these steps:

1. Install the OkiLAN 6020e hardware and connect the cabling. Instructions for hardware installation are found in Section I of this manual.

2. Create an **OKI Print Server** object. If you are unfamiliar with how to do this, see the previous section.

3. Open the **OKI Print Server** object's *Details* dialog. This may be done by double-clicking on the OKI print server icon in the NDS tree or by selecting *Details* from the **File** menu.

4. If your OkiLAN 6020e supports both PServer and NPrinter mode, there are several factors to consider when choosing which mode to use. See page III-5 for more information. From the **Identification** page, select either *PServer* or *NPrinter* mode. If you select *NPrinter* mode, skip to Step 11.

5. From the *Assignments* page, choose the **Port #** associated with the printer to which the queue will print.

NetWare

6. Select **Assign**.

7. Select or create a NetWare **Printer** object from the *Printer/Queue Assignments* dialog.

8. Select or create a NetWare **Print Queue** object from the *Printer/Queue Assignments* dialog.

9. Select **OK** to save your printer and queue selections.

> *Note***:** To load balance print queue jobs, repeat steps 5 through 9 for another port. Create a new printer object for the OkiLAN 6020e port and then select the same print queue object. This will allow multiple printers to service a single print queue.

---

10. From the *Assignments* page, select **OK** to save changes. If you have selected *PServer* mode, you have completed all necessary steps. Continue to *Configuring the OkiLAN 6020e Using OkiNet for NDS*.

11. Select or create a NetWare **Print Server** object from the *Assignments* page.

12. Select a port to configure from the *Assignments* page, then select **Assign**.

13. Select or create a NetWare **Printer** object from the *Printer/Queue Assignments* dialog.

14. Select or create a NetWare **Print Queue** object from the *Printer/Queue Assignments* dialog.

15. Select **OK** to save your printer and queue selections.

16. From the *Assignments* page, select **OK** to save changes.

17. From the file server, restart the PSERVER.nlm.

Configuring the OkiLAN 6020e Using OkiNet for NDS

The following steps outline how to configure an OkiLAN 6020e.

1. From the *NWAdmin* screen, select (double-click) the OkiLAN 6020e you wish to configure.

2. Set the appropriate configuration by choosing the applicable detail pages.

The following settings are configurable:

* Identification
* Assignments
* Network Configuration
* Network Protocols
* Port Configuration
* Status

For specific information about these detail pages, select the **HELP** button.

Adding or Removing the OKI Print Server Class

The OKI print server class is added to Novell's NetWare Administrator by the installation utility. This class must exist in order to create an OKI Print Server object for use in printing to the device.

Removing the OKI Print Server Class

1. Run Novell's NetWare Administrator.

2. Verify all OKI print server objects have been removed from the directory tree.

3. From the *Tools* menu, choose **Remove OKI Printing Device Class**. The OKI print server class will no longer show up in the *Create New Object* dialog. If the *Remove OKI Printing Device Class* option is grayed, the class has already been removed. If the option does not exist, OkiNet for NDS is not installed.

NetWare

The install utility on the installation diskette can also be used to remove the OKI print server class. This utility removes the class from Novell's NetWare Administrator and removes all the associated files that were copied during the installation process.

Note: Be sure to remove all OKI Print Server objects from the directory tree before uninstalling OkiNet for NDS.

Adding the OKI Print Server Class

The OKI print server class is initially added to Novell's NetWare Administrator when the Install utility is run from the diskette. If the OKI print server class has been removed through Novell's NetWare Administrator's *Tools* menu, you will need to add the class again.

From the *Tools* menu in Novell's NetWare Administrator, choose **Define OKI Printing Device Class**. If this option is grayed, the class has already been added. If the option does not exist, you will need to run the install utility from the diskette to install OkiNet for NDS.

The OKI print server class will now appear in the *Create New Object* dialog.

Chapter 4
Using the OkiLAN 6020e in NDPS
(NetWare 4.x and 5.1)

Introduction

Novell® Distributed Print Services™ (NDPS®) is Novell's new printing architecture for use with NetWare versions 4.x and 5.1. To use the OkiLAN 6020e in NDPS, you must add the OKI printer driver(s) to the NDPS Broker.

Requirements:

- IP Address on the file server
- IP address on the print server (NetWare-only print servers will not work)
- The client must also run the most current version of the NetWare client to get the NDPS objects.

Note: The client printing to the printer *does not* need an IP address.

Adding the OKI Printer Driver Using the NDPS Broker

Printer drivers cannot be installed to the Resource Management Service from multiple floppy disks. If a printer driver is shipped on more than one disk, copy the files to a directory on a hard drive or network drive and install the driver from there. Any problems in adding the driver should be addressed to the OKI Customer Service Center.

1. In NetWare Administrator, double-click the Broker object.

2. Click the **Resource Management Service (RMS)** tab.

3. Make sure the Resource Management Service is enabled.

4. Click **Add Resources** to display the Manage Resources dialog box.

5. Select the icon for the type of printer driver that you want to add under the Resource Types window.
    A complete list of currently loaded printer drivers of that type appears in the Current Resources window.

6. To add a driver to the list, click **Add** to display the Add Resources dialog box.

7. Click **Browse** to display the Select Printer Driver dialog box. Locate the appropriate printer driver .INF file.
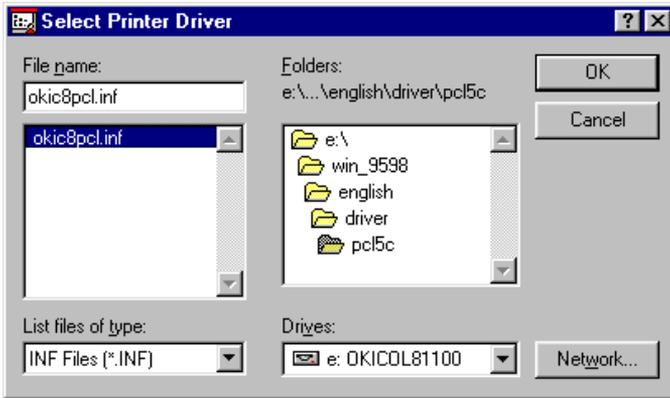
8. Select the .INF file and click **OK**. The .INF file and path is selected in the Resource location box. The printer drivers are in the Resources To Be Added box.

9. Click **OK** on the Add Resources Window.

10. Click **OK** on the Manage Resources window.

11. **Note:** When the Manage Resources window re-appears, the printer driver(s) have been added to the NDPS Broker.

12. Click **Cancel** on the NDPS Broker window to EXIT the NDPS Broker.

Setting Up the OkiLAN 6020e Through NWAdmin32

There are two types of printers available with NDPS. One is Public Access, which anyone on the tree can get to. The other is Private Access, which requires rights to the object. For Public Access printers, the NDPS Printer can be created at the file server console or through Novell's NetWare Administrator (NWAdmin32). The File Server Console approach offers less flexibility in configuration. Both approaches are described in this and the following subsection.

Setting Up the OkiLAN 6020e for Public Access Printers

1.   Create NDPS Manager.

2.   Double click **NDPS Manager**.

3.   Go to Printer Agent List

4.   Click **New.** Enter a name for the Agent.

5.   Select **NDPS Manager Name**.

6.   Select **Novell Printer Gateway** as the Gateway type and click **OK**.

7.   Select **NONE** as your Printer Type, select **Novell Port Handler** as the Port Handler Type and click **OK**.

8.   Select **Remote (LPR on IP)** and click **Next**.

9.   From the OkiLAN 6020e Configuration Sheet, get the print server's IP address and use it for the Host Address Box of the Novell Gateway Utility. Then, enter the print server's IP address. Also from the Configuration sheet, get the output port of the print server. Then, enter the output port as the Printer Name. Click **Finish**.

10.   If the "Loading Printer Agent" screen stays on for more than 60 seconds, click "**Stop Waiting**."

11.   Ignore the error message, "The Printer Agent Just Created Needs Attention."

12.   Choose the printer drivers and click **Continue**.

13.   The Status should show Idle.

NetWare

Private Access Printers: these can only be created through NWAdmin32

1.   Create NDPS Manager in NWAdmin32.

2.   Go to the Context in which the Private Printer is to reside.

3.   Select **Create.** The New Object screen appears.

4.   Click **NDPS Printer,** then click **OK.** Click the **Define Additional Properties** box, and click **Create**.

5.   Give the Agent a name, assign it to a NDPS Manager (use the gray browse button marked "…"), then choose **Novell Printer Gateway**.

6.   Select **NONE** as your Printer Type, select **Novell Port Handler** as the Port Handler Type and click **OK**.

7.   Select **Remote (LPR on IP)** and click **Next**.

8.   From the OkiLAN 6020e Configuration Sheet, get the print server's IP address and use it for the Host Address Box of the Novell Gateway Utility. Then, enter the print server's IP address. Also from the Configuration sheet, get the output port of the print server. Then, enter the output port as the Printer Name. Click **Finish**.

9.   If the "Loading Printer Agent" screen stays on for more than a minute, click "**Stop Waiting**."

10.   Ignore the error message, "The Printer Agent Just Created Needs Attention."

11.   Choose the printer drivers and click **Continue**.

Setting Up the OkiLAN 6020e for Public Access Printers At the File Server Console

1.   Create NDPS Manager in NWAdmin32.

2.   Load the NDPS Manager on the file server.

3.   Select **Insert New Printer Agent**.

4.   Give the Agent a Name.

5.   Go to **Configuration Utilities**.

6.   Select **Novell Printer Gateway**.

7.   Select **Appropriate Printer**.

8.   Select **Novell Port Handler**.

9.   Select **Remote Printer: LPR/TCPIP**.

10.   From the OkiLAN 6020e Configuration Sheet, get the print server's IP address. Click **<Enter>** at IP Host, then enter IP address of print server.

11.   The LPR Printer Name is the output port of the print server.

12.   Click **Accept** and **Exit**, then use Escape key to save.

NetWare

Section IV:

TCP/IP

In This Section

TCP/IP

Chapter 1
Introduction

Overview

This section contains instructions and information on how to configure your OkiLAN 6020e. You will also be instructed on how to set up your host computers to print to the OkiLAN 6020e using the TCP/IP protocol.

OkiLAN 6020e supports TCP/IP methods for printing:

• Remote Line Printer Daemon (LPD)
• File Transfer Protocol (FTP)
• Printing directly through a TCP port (Raw Port Printing)

Additionally, if the DHCP protocol is enabled as a default, the print server may be accessed through an ordinary Internet Web browser, such as Netscape Navigator, or by using TELNET. See Chapters 5 and 6 in this section.

Software Requirements

The OkiLAN 6020e may be configured for TCP/IP using the OkiNet for TCP/IP utility, or from a computer supporting the OkiNet for NetWare utility, Banyan VINES OkiNet for VINES utility (may apply to other OkiLAN print server models), OR telnet and one of the following:

• Manual *arp* table entry and *ping*
• Static route entry using *route add* command
• DHCP
• RARP
• BOOTP

Network Preparation

- You should be familiar with network administration as well as the physical setup and operation of your network.
- Advise users of possible disruption during installation.
- Make sure the serial number and Ethernet address of your OkiLAN 6020e are available.
- Assign an IP address and a hostname (alias) to the OkiLAN 6020e.
  Use the network name service or the "/etc/hosts" file to add the OkiLAN 6020e to the network.

Before You Start

Before running OkiNet for TCP/IP, you must do the following:

- Install the OkiLAN 6020e hardware and connect the cabling. Instructions for hardware installation are found in Section I of this manual.
- Write down the serial number and Ethernet address of your OkiLAN 6020e. (These numbers are located on the OkiLAN 6020e unit.)
- Install OkiNet for TCP/IP-see Section I.

Overview of TCP/IP Configuration

- Assign an IP address for the OkiLAN 6020e
- Configure the OkiLAN 6020e network information
- Configure hosts for printing to the OkiLAN 6020e
- Test print (optional)

Chapter 2
Configuring the OkiLAN 6020e

Choosing an IP Address

Every TCP/IP network device is required to have a unique IP address. The IP address can be **permanently** stored using one of the following:

• OKI OkiNet management utilities for TCP/IP, Novell NetWare or Banyan VINES (may apply to other OkiLAN print server models)

• OkiLAN 6020e Configuration utility via telnet.

Note: The OkiNet utilities are the easiest way to assign an IP address.

Using factory default settings, the OkiLAN 6020e first attempts to determine its IP address (flashing rapid green) using DHCP, RARP, BOOTP or Gleaning. If the OkiLAN 6020e has not resolved its IP address after 2 minutes, it defaults to 198.102.102.254. (This IP address should be used only temporarily for configuration purposes.)

To choose an IP address:

1. Select an IP address and hostname for the OkiLAN 6020e.

   Example: 192.168.42.50 OkiLAN 6020e_name

2. Add the name and IP address to the "/etc/hosts" file of each host that will access the OkiLAN 6020e. Or, if your network uses a name service, add the host name and IP address to the name server.

Most TCP/IP networks use the Network Information Service (NIS), Domain Name Service (DNS) or the "/etc/hosts" database. See your network documentation for instructions.

TCP/IP

Configuring the OkiLAN 6020e

There are four utilities available to configure the OkiLAN 6020e for TCP/IP printing. You may use whichever utility is best suited for your needs.

- *OkiNet for TCP/IP* - Windows TCP/IP print manager utility. See Chapter 3 of this section for more information.
- *OkiLAN 6020e Configuration Utility* - This utility is accessed via *telnet*. See Chapter 6 of this section for more information.

  In order to configure the OkiLAN 6020e via *telnet*, you must first assign an IP address to the OkiLAN 6020e **and** verify communication by *pinging* the device.

- *OkiNet for NetWare* - This windows utility must be run from a Novell NetWare client. See Section III of this manual for specific information.
- *OkiNet for VINES (VPMAN) Utility* - This Windows utility must be run from a Banyan VINES client (may apply to other OkiLAN print server models).

Assigning the IP Address

There are eight different methods for assigning an IP address to the OkiLAN 6020e: Gleaning, Static Route Entry, DHCP, RARP, BOOTP and using the OkiNet or OkiNet for VINES utilities. Gleaning, Static Route Entry and RARP require the OkiLAN 6020e and the host to be on the same subnet. DHCP and BOOTP also have this restriction unless the network routers are configured to pass these requests. The OkiNet and OkiNet for VINES utilities (may apply to other OkiLAN print server models) do not have this restriction.

Gleaning

If an IP address has not been permanently assigned when the OkiLAN 6020e is powered on or reset, it will look for a *ping* packet on the network. If the OkiLAN 6020e receives a *ping* packet within two minutes, it will accept the IP address in the *ping* packet as its own address.

To use Gleaning, you must have Windows 95/98, Windows NT/2000, or super-user privileges on a UNIX system.

1. Add an entry in the ARP table that assigns an IP address to the hardware address of the OkiLAN 6020e. To do this, use the *arp* command.

   arp -s <ip_address><hardware_address> temp

   UNIX Example:
   arp -s 192.168.42.24 00:02:16:00:00:01 temp

   Windows 95/98, Windows NT/2000 Example:
   arp -s 192.168.42.24 00-02-16-00-00-01

2. Start a continuous ping to the OkiLAN 6020e.

   ping <*ip_address*>

   Example: ping 192.168.42.24

   On some systems, this may require an additional parameter. Some implementations of *ping* only send out one *ping* packet which could get lost in transit. Check your system documentation for more information.

3. Connect power to the OkiLAN 6020e.

   The OkiLAN 6020e will glean its IP address from the ping packet. This IP address will remain in effect until the OkiLAN 6020e is powered off or reset. Therefore, a permanent IP address should be assigned by running the OkiNet for TCP/IP utility or via *telnet*.

Note: Gleaning does not work with Windows NT Workstation 3.5.

TCP/IP

DHCP

The Dynamic Host Configuration Protocol (DHCP) provides a framework for passing configuration information to hosts on a TCP/IP network in a client/server fashion. DHCP is based on the Bootstrap Protocol (BOOTP), adding the capability of automatic allocation of reusable network addresses and additional configuration options. DHCP uses the same packet structure as BOOTP so current BOOTP relay agents will also interact with DHCP messages.

DHCP offers dynamic IP address allocation. When a client receives an IP address, it also receives a *lease* (an amount of time the host may use the address). The lease times vary from 1 hour to 100 years, or may be infinite. When the lease expires, the host must stop using the address. DHCP may also be used like BOOTP, with a certain IP address always assigned to a certain device. Depending on the server, both methods may be used at the same time.

If the OkiLAN 6020e does not find a DHCP server after two minutes, it will timeout and assume a default address of 198.102.102.254. This follows current BOOTP and RARP behavior.

If the OkiLAN 6020e receives multiple responses, it will choose the first one.

When the OkiLAN 6020e receives an address, it sends an ARP message once every second for five seconds on the offered address to determine if another device is using it. If the OkiLAN 6020e finds another device is using the address, it will refuse the address and start looking for a new address.

Static Route Entry

When the OkiLAN 6020e is powered on or reset and no permanent IP address has been assigned, it will attempt to obtain an IP address through Gleaning, RARP, BOOTP or DHCP. If the OkiLAN 6020e has not determined its IP address after two minutes, the IP address will default to 198.102.102.254. This IP address should only be used temporarily to configure a new, permanent IP address. To change to a permanent IP address, the *route add* command is used to place the OkiLAN 6020e product's default IP address into the workstation's network routing table. To use the *route* command, you must have Windows 95/98, Windows NT/2000 or super-user privileges under UNIX. The syntax for this command is:

> **route add 198.102.102.254 "IP address of the workstation" 0**

Note: The zero (0) placed at the end of the *route add* command shown above is optional.

The Static Route method only works if the host from which you are telneting is on the same subnet as the OkiLAN 6020e. Once the *route add* command has been issued, *telnet* will allow you to change and/or make the IP address permanent. After changing the IP address to its permanent address, the routing table entry should be deleted using *route delete*.

For more information, consult your system documentation for the *route* command.

RARP or BOOTP

If an IP address has not been permanently assigned, the OkiLAN 6020e will use Reverse Address Resolution Protocol (RARP) or Bootstrap Protocol (BOOTP). The OkiLAN 6020e will broadcast requests for its IP address to both RARP and BOOTP servers. A RARP or BOOTP server will respond by searching a configuration file that maps the Ethernet hardware addresses of devices on the network to their respective IP addresses. If a match is found, the server's response will include the IP address of the device.

TCP/IP

Most UNIX operating systems support either the RARP or BOOTP protocol. To find out which protocol your operating system supports, request the manual page for the protocol's daemon (e.g. *man bootpd* or *man rarpd*), or see your network manuals. Both protocols require that you add the product's network hardware address and IP address to a configuration file. See your network documentation for instructions or refer to *Appendix B, Application Considerations*.

Note: An IP address received from a RARP or BOOTP server is not permanently programmed into the OkiLAN 6020e. Therefore, if you choose this method of assigning the IP address, the RARP or BOOTP server must be available every time the OkiLAN 6020e is powered on or reset. The IP address can be stored permanently using *telnet*, OkiNet for TCP/IP, OkiNet for NetWare or the OkiNet for VINES utility (may apply to other OkiLAN print server models).

A Winsock compliant BOOTP server is located on the OkiNet for TCP/IP diskette. This has been provided for users who do not have UNIX machines.

Other Utilities

The IP address can also be set from Novell NetWare using the OkiNet for NetWare utility or through the Banyan VINES OkiNet for VINES utility (may apply to other OkiLAN print server models).

Note: The OkiNet for NetWare and OkiNet for VINES utilities can only be used if Novell NetWare or Banyan VINES are installed on your network respectively (may apply to other OkiLAN print server models).

Verifying Access to the OkiLAN 6020e

Use the *ping* utility to verify access to the OkiLAN 6020e.

> ping *<IP address of OkiLAN 6020e>*

If the OkiLAN 6020e does not respond, your network or the device is not configured correctly.

• Verify the IP address, default gateway and subnet mask are set to the proper values on the OkiLAN 6020e by printing a configuration sheet. This can be done using either the print configuration sheet button, through the OkiNet or OkiNet for VINES utilities (may apply to other OkiLAN print server models) or via *telnet*.

• If the settings appear to be correct, try repeating the installation steps. If problems persist, call Oki Data Customer Support at 1-800-OKI-DATA (1-800-654-3282).

TCP/IP

Chapter 3
TCP/IP Configuration and Printing

Overview

The OkiLAN 6020e supports printing from computers using TCP/IP and any of the following printing protocols:

• Line Printer Redirect/Line Printer Daemon (lpr/lpd)
• File Transfer Protocol (FTP)
• Printing directly through a TCP port (Raw Port Printing)

This chapter presents basic instructions on how to configure your computer to print using Remote LPD and FTP. Specific instructions for several popular computer systems have been documented in Appendix B, *Application Considerations*. If your specific system is not addressed in this appendix, follow the instructions outlined below. You should also refer to your operating system or computer manual for information about configuring remote network printing. If you are still unable to configure your computer system to print to the OkiLAN 6020e, contact Oki Data Customer Support at 1-800-OKI-DATA (1-800-654-3282).

Configuring for TCP/IP Network Printing

Most computers that support TCP/IP network printing use the Remote Line Printer Daemon (LPD) protocol. This protocol was originally part of the Berkeley Software Distribution (BSD) version of the UNIX operating system. Remote LPD was quickly adopted as a de facto standard. As a result, Remote LPD is now supported by most versions of the UNIX operating system and by many TCP/IP packages available for other operating systems. Configuration of Remote LPD printing varies among vendors who supply TCP/IP.

You may also use the File Transfer Protocol (FTP) for printing. Typically FTP is used to transfer files between computers on a TCP/IP network. The OkiLAN 6020e simply prints the files it receives from FTP.

Remote Print Queue Name

The Remote Print Queue Name determines which printer port will service the print job. The Remote Print Queue Name may also be used to specify ASCII print jobs. Both Remote LPD and FTP have provisions for specifying a Remote Print Queue Name.

The OkiLAN 6020e looks at the last character of the Remote Print Queue Name to determine which printer port will service the print job. All Remote Print Queue Names should end with the number 1, 2, 3 or 4. If a number is not specified, the OkiLAN 6020e will use printer port 1.

The OkiLAN 6020e is designed to handle many different types of printers and print data. Typically you will select the printer type for your printer in telnet under the *Configure Port* option. However, if you are connecting to an ASCII printer, you may wish to use the OkiLAN 6020e to format the print data for your printer.

TCP/IP

The OkiLAN 6020e will parse the remote queue name and search for certain characters at the end which tell how to convert an ASCII print job. The print server uses FF, LF and NF as ASCII conversion specifiers and uses the last number as an output port. The FF, LF and NF specifiers must be the last letters in the queue name.

Example: LaserWriterFF, SalesColorLaserNF, ChemDeptLF2

FF   Use the FF suffix at the end of the Remote Print Queue Name, before the port number.

  Example: queueFF2

  If the last character in the print job is not a form feed, the OkiLAN 6020e appends a form feed. This form feed prompts the printer to print any partial page at the end of the job.

LF   Use the LF suffix at the end of the Remote Print Queue Name, before the port number.

  Example: queueLF2

  In addition to the form feed described above, the OkiLAN 6020e inserts a carriage-return character into the print job immediately before each line-feed character. This feature is useful for printing UNIX text files.

NF   Use the NF suffix at the end of the Remote Print Queue Name, before the port number.

  Example: queueNF2

  The OkiLAN 6020e inserts a carriage-return character into the print job immediately before each line-feed character. This feature is useful for printing UNIX text files.

  This option differs from LF in that form feed is not added to the end of jobs.

Configuring a BSD-Style Print Queue

For remote BSD-Style LPD printing, add the OkiLAN 6020e as a remote printer in the "/etc/printcap" database to each host printing to the OkiLAN 6020e.

You can add PRINTCAP options as needed. If you are unfamiliar with PRINTCAP, consult your local documentation.

The entry should be similar to the following:

local_print_queue_name|[printer_model_and_ manufacturer]:\:lp=:mx#0:rm=OkiLAN 6020e_name:\:rp=remote_print_queue_name:\ :sd=path_to_spool_directory:lf=just log_file_name

local_print_queue_name
The local_print_queue_name defines the name of the printcap entry. It is used by the lpr/lpd utilities to specify which printcap entry is being referenced. Additional printcap entries can be added as needed for different queue types. Each entry must have a unique local_print_queue_name and a different spool directory to work properly. When you are ready to print, use the local_print_queue_name that matches the data type of the file to be printed.

OkiLAN 6020e_name
This is the name (alias) of the OkiLAN 6020e. This must be the same name as entered in the */etc/hosts* file or your NIS or DNS system. An IP address may also be used here.

remote_print_queue_name
The remote_print_queue_name entry determines the OkiLAN 6020e port where the print job will be printed and optionally specifies ASCII printing.

path_to_spool_directory
This is the path to a directory where the print jobs will be spooled for this queue. You must create a unique spool directory for each printcap entry.

TCP/IP

log_file_name

This is the path to a file where error information from the lpd will be logged.

Example: If you are printing to an ASCII printer that requires a carriage return/line feed, you may need two separate printcap entries: one entry for print jobs which terminate lines with a carriage return/line feed, and another entry for print jobs which terminate lines with a line feed only. Your printcap entries might look like the following:

> *ascii_files|form.feed.Queue_on_Port_2:*
> *   :lp=:mx#0:rm=pserver1:rp=MYQUEUEFF2:*
> *   :sd=/usr/spool/myqueueff2:*
> *   :lf=/usr/spool/myqueueff2/queue.log*

> *asciilf_files|line.feed.Queue_on_Port_2:*
> *   :lp=:mx#0:rm=pserver1:rp=MYQUEUELF2:*
> *   :sd=/usr/spool/myqueuelf2:*
> *   :lf=/usr/spool/myqueuelf2/queue.log*

> *Note:* Each printcap entry must have a different spool directory to work properly.

Remote LPD Printing

The way print jobs are queued to a Remote LPD system varies among the vendors that support TCP/IP. UNIX systems that are BSD-based typically use the *lpr* program to submit print jobs. Other UNIX systems may use the *lp* program to submit print jobs. PC-based TCP/IP packages often provide a command line *lpr* program and a utility to redirect the output of an LPT port to a Remote LPD system.

Consult your system administrator or software vendor for assistance troubleshooting LPD.

> *Note:* The Remote LPD implementation of the
> OkiLAN 6020e does not support any UNIX
> LPD input or output filters or the direct
> printing of banner pages. It is possible to
> configure some UNIX systems so that banner
> pages and input and output filters will be
> generated at the UNIX host and then sent to the
> OkiLAN 6020e. (Refer to Appendix B,
> *Application Considerations*.)

FTP Printing

FTP is a command line program used to transfer files
between computers. FTP provides commands for
opening a connection to another computer, specifying
the data type of any transfers, and sending and
receiving files. The OkiLAN 6020e supports a subset
of the FTP command set. This subset allows the FTP
user to open a connection to the OkiLAN 6020e,
specify a file transfer data type and send print files to a
Remote Print Queue Name on the OkiLAN 6020e.

The OkiLAN 6020e recognizes the following FTP
commands:

PUT   Print a single file

The *PUT* command sends the file to
the OkiLAN 6020e. The first
parameter of the *PUT* command is the
name of the local file to *PUT*. The
second parameter of the *PUT*
command is the name of the file for the
remote PC. In order to print the file,
this second parameter must be a
Remote Print Queue Name. If you do
not specify the second parameter, FTP
sets the remote file name to the local
file name. This may produce
undesirable printing results.

SEND   Treated the same as *PUT*.

MPUT   Print multiple files.

TCP/IP

TYPE	Changes the representation type used for data transfer. Image (or binary) and ASCII are the only types supported.
ASCII	Equivalent to "TYPE ASCII."
BINARY	Equivalent to "TYPE BINARY."
IMAGE	Equivalent to "TYPE IMAGE."
STRU	Specifies file structure. File is the only structure supported.
MODE	Specifies transfer mode. Stream is the only transfer mode supported.
OPEN	Opens connection to remote host.
CLOSE	Terminates FTP session.
QUIT	Terminates FTP session and exits FTP.
BYE	Equivalent to *QUIT*.

With the exception of the OkiLAN 6020e 100 series, OkiLAN 6020e print servers will allow one FTP connection. If more FTP connections are attempted, the OkiLAN 6020e will reject the connection until one of the other FTP connections is closed. When an FTP connection is rejected, the FTP program will typically display a message like the following:

```
$ ftp<CR>
ftp> open OkiLAN 6020e_name<CR>
connection refused
ftp>
```

Note: Specifying binary mode is important for all jobs. Most FTP implementations default to ASCII mode. This may cause unexpected or undesired printing results.

Example: The following example prints a PostScript file called chart.ps to the OkiLAN 6020e printer Port 1 using FTP.

    $ ftp OkiLAN 6020e_name<Enter>
    Connected to OkiLAN 6020e_name.
    220 ESI-2810 Version 3.0 ready.
    Name (OkiLAN 6020e_name:anyone):<Enter>
    230 User logged in.
    ftp> binary<Enter>
    200 Type set to I.
    ftp> put chart.ps MPX1<Enter>
    local: chart.ps remote: MPX1
    200 PORT command successful.
    150 Opening BINARY mode data connection for
    MPX1.
    226 Transfer complete.
    4549 bytes sent in 0 seconds (4.4 Kbytes/s)
    ftp> bye<Enter>
    221 Goodbye.<Enter>
    $

Timeout Checking

If timeout checking is enabled on the OkiLAN 6020e, the OkiLAN 6020e will close any connection that stays idle for more than five minutes. For example, if you open an FTP connection to the OkiLAN 6020e and walk away from your computer for more than five minutes, the FTP connection will be closed. You can reestablish a connection to the OkiLAN 6020e with the OPEN command.

TCP/IP

Raw Port Printing

Host computer software can use a *raw* TCP/IP port connection to send data to the OkiLAN 6020e. A TCP/IP port has been assigned to the output port of the OkiLAN 6020e as follows:

TCP/IP Port: 9100

Output Port: 1

Consult your system documentation for information on how to submit print jobs to a raw port.

Chapter 4
OkiNet for TCP/IP

Overview

This section contains information about OkiNet for TCP/IP. OkiNet for TCP/IP provides SNMP-based support for the entire OkiLAN 6020e family of print servers.

OkiNet for TCP/IP allows you to:

- Easily assign an IP address
- Configure an OkiLAN 6020e for all Supported Protocols
- Display OkiLAN 6020e Diagnostic Information
- Print a Configuration Sheet
- Reset the OkiLAN 6020e
- Restore Factory Default Settings
- Creating Customized Views
- Modify View Settings
- Permanently Define SNMP Access Information

System Requirements

OkiNet for TCP/IP is a Windows-based program which is compatible with Windows 3.x, Windows NT/2000 and Windows 95/98.

OkiNet for TCP/IP requires that the TCP/IP protocol is running using a Winsock (Windows Sockets) TCP/IP stack, version 1.1 or greater. A Winsock TCP/IP protocol stack is available from many vendors including the following:
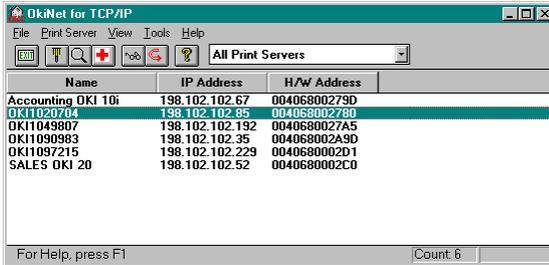
- Microsoft
- FTP Software
- Trumpet
- NetManage
- Distinct

For more information on the Winsock TCP/IP stack and setting up a host name, see the README file.

TCP/IP

Running OkiNet for TCP/IP

To run the utility, double-click on the OkiNet icon. The main *OkiNet for TCP/IP* screen will display.

By default, the *All Print Servers* view is selected and all print servers attached to the subnet of the network from which the OkiNet utility is running are listed.

```
OkiNet for TCP/IP                                    [_][□][X]
File  Print Server  View  Tools  Help
[EXIT][▼][Q][+][∿][G][?]  All Print Servers            [▼]
  Name              IP Address        H/W Address
Accounting OKI 10i   198.102.102.67    00406800279D
OKI1020704           198.102.102.85    004068002780
OKI1049807           198.102.102.192   0040680027A5
OKI1090983           198.102.102.35    004068002A9D
OKI1097215           198.102.102.229   0040680002D1
SALES OKI 20         198.102.102.52    0040680002C0




For Help, press F1                              Count: 6
```

Configuring the OkiLAN 6020e Using OkiNet for TCP/IP

The following steps outline how to configure an OkiLAN 6020e. To change settings of a previously configured OkiLAN 6020e, follow the same procedure but skip Step 3, as no prompt will appear.

1. Select the OkiLAN 6020e you wish to configure.

2. Select **Configuration** from the *Print Server* menu or select the **Configuration** icon on the toolbar.

3. When prompted, enter the IP Address of the OkiLAN 6020e.

4. Set the appropriate configuration by choosing the applicable file folder tabs.

The following settings are configurable:

- TCP/IP
- NetWare
- NetWare Port
- NetWare Queues
- VINES*

- EtherTalk
- Output Port
- SNMP
- Protocols
- SNMP Traps

* May apply to other OkiLAN print server models.

Configuring TCP/IP Options

To configure options specific to the TCP/IP protocol, select the TCP/IP tab. The following screen will display:
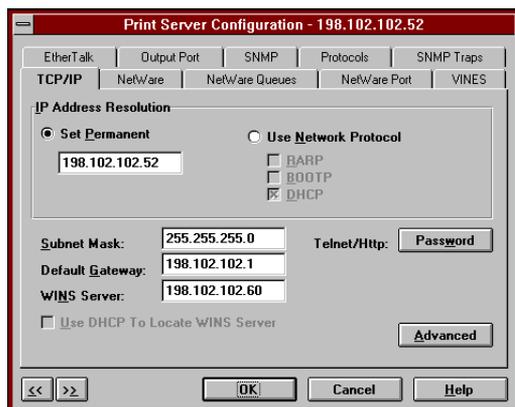
Fill in the following information:

IP Address Resolution

• *Set Permanent* - Select this option to make the IP address permanent. If the OkiLAN 6020e has been configured to remember its IP address, it does not need to determine its address each time it is powered on.

Enter the IP address for the OkiLAN 6020e. The IP address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number from 0 to 255.

CAUTION: If you select an invalid IP address, you may not be able to access the OkiLAN 6020e.

• *Use Network Protocol* - Select this option to use RARP, BOOTP or DHCP to determine the IP address at power up. Specify which protocol(s) to use.

TCP/IP

Subnet Mask

If your network environment includes subnets, you will want to set the subnet mask. The subnet mask must follow the format XXX.XXX.XXX.XXX, where each XXX is a number from 0 to 255.

The default subnet mask is 0.0.0.0. The OkiLAN 6020e interprets a subnet mask of 0.0.0.0 or 255.255.255.255 as no subnet mask specified.

CAUTION: If you select an invalid subnet mask, you may not be able to access the OkiLAN 6020e.

Default Gateway

If your local network is attached to other networks, you can specify the address of your default gateway. This gateway will be selected whenever messages need to be sent to another network.

The gateway address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number from 0 to 255.

CAUTION: If you select an invalid default gateway or the default gateway becomes unavailable, the OkiLAN 6020e may not be able to communicate with non-local networks.

WINS Server

If you are using WINS name resolution, set the address of the WINS Server where the System Name of the OkiLAN 6020e will be registered.

Use DHCP to Locate WINS Server

If you are using DHCP for IP address resolution, select this option to obtain the address of the WINS Server from the DHCP Server.

Telnet/HTTP Password:

Allows you to modify the current password required for *Telnet* or HTTP access The default password is the serial number of the OkiLAN 6020e.

NetWare and NetWare Port Configuration Options

For specific information on NetWare or NetWare Port options, see Section III, *Novell NetWare*, or select the **HELP** button on the bottom right of the screen.

NetWare Queues Configuration Options

The NetWare Queues option allows you to add bindery print queues to be serviced by first selecting each desired queue and then selecting the **->** button.

To have a queue print to a specific output port, select the **Output Port** button and then select the desired port.

NetWare Queue Load Balancing

Print jobs can be distributed to multiple printers on selected queues by selecting the same queue multiple times and selecting a different output port for each queue entry.

EtherTalk Configuration Options

To modify the configuration settings specific to the EtherTalk protocol such as the name and zone. For specific information on EtherTalk options, see Section VI, *EtherTalk*, or select the **HELP** button on the bottom right of the screen.

Output Port Configuration Options

To configure the OkiLAN 6020e output port, select the **Output Port** file tab. The following screen will display:

Port Number
Select the port number you wish to configure.

Name Field
Enter a descriptive name to identify the port.

Language Switching
Each output port can be configured to perform the following language switching options: OFF, PCL, PostScript or Automatic. Unless OFF is selected, a language switching character string will be inserted before each print job. The Printer Type selection is used to determine the actual characters required to switch your printer's language.

- *OFF* - Print data stream will be sent directly to the output port without alteration.
- *PCL* - Inserts the appropriate character string in front of each print job to switch the printer to the PCL print language.
- *PostScript* - Inserts the appropriate character string in front of each print job to switch the printer to the PostScript printer language.
- *Automatic* - Enables the auto language sensing function. This function examines the print job data stream and determines the required print language and inserts the appropriate character string in front of each print job to switch the printer to the appropriate printer language.

Note: If you are not switching languages or the printer can switch automatically, this option should be set to OFF.

Printer Type
The Printer Type selection is used to determine the actual character string required for your printer. If your printer type is not listed, select **Other** and enter the character string for switching the printer to PCL or PostScript mode.

To enter nonprintable characters, enclose the ASCII value of the character in angle brackets. For example, to enter the ESC character type: **<27>**.

PCL Switch Sequence
Enter the character string to switch the printer to the PCL print language.

PostScript Switch Sequence
Enter the character string to switch the printer to the PostScripti print language.

Configuration Page Language
Select the appropriate printer language for printing configuration pages on your printer.

TCP/IP

Output Type
Select the appropriate baud rate.

Bidirectional Printer Status Support
Enable this option for enhanced status from the bidirectional printer.

SNMP Configuration Options

SNMP options specify which information is necessary for an SNMP manger to access the OkiLAN 6020e. The system variables are for user convenience and are optional.

To configure SNMP specific information, select the SNMP tab. The following screen will display:

Note: SNMP options need to be configured only if you are managing an OkiLAN 6020e or getting system information using SNMP.

Fill in the following information:

System Name
Enter the name of your choice. This name will identify the OkiLAN 6020e in your SNMP-based management program.

System Contact
Enter any information useful to a user if problems with the OkiLAN 6020e arise.

System Location
Enter a description of the OkiLAN 6020e location.

Get Community Name
This field is used to set the community name required to *Get* information from the print server. The default community name is *public*.

Note: For JetAdmin to function correctly with the OkiLAN 6020e, the SNMP Get and Set community name must be set to *public*.

Set Community Name
This field sets the community name required to Set information on the OkiLAN 6020e. The default community name is *public*.

Note: The OkiLAN 6020e cannot be configured without the correct *Set* community name. To secure the configuration of the OkiLAN 6020e, change the community name from the default setting.

Trap Community Name
Enter the community name which will be used when traps are sent from the OkiLAN 6020e. This setting allows trap utilities to only accept traps from devices with appropriate community names.

The trap community name field is used by the OkiNet Alert and other network monitoring utilities for grouping or filtering OkiLAN 6020e devices. OkiNet Alert assists in managing network printers by immediately alerting you of printer problems.
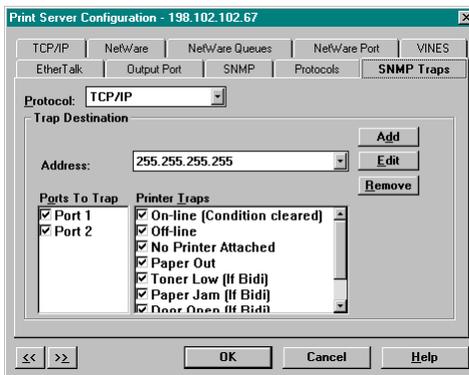
TCP/IP

Enabling/Disabling Protocols

To enable or disable protocols on the OkiLAN 6020e, select the **Protocols** tab. Select each protocol you wish to enable. If you disable a protocol, the OkiLAN 6020e will no longer communicate using that protocol.

SNMP Trap Configuration

The SNMP Trap option allows configuration of traps. Traps are unsolicited information concerning the OkiLAN 6020e. Traps can be sent to an SNMP manager or be broadcast to all hosts on the local segment.

To configure SNMP traps, select the **SNMP Traps** tab.

Note: SNMP options need to be configured only if you are managing an OkiLAN 6020e or getting system information using SNMP.

Protocol
Select the protocol for which you wish to configure trap information.

Trap Destination

- *TCP/IP Protocol* - Enter the IP address to which traps will be sent. The IP address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number from 0 to 255. To broadcast traps to all hosts on the local subnet, enter 255.255.255.255.

- *NetWare Protocol* - Enter the network number and hardware address, respectively, to which traps will be sent. To broadcast traps to all addresses on all networks, enter FFFFFFFF (8 characters) in the first field and FFFFFFFFFFFF (12 characters) in the second field. To broadcast traps to all addresses on a specific network, enter the network number in the first field and then FFFFFFFFFFFF (12 characters) in the second field.

Ports to Trap

Select the output ports on which you wish traps to be active.

Printer Traps

Select the printer traps to be activated. The following printer error conditions may cause a printer trap to occur:

- On-line
- Off-line
- No Printer Attached
- Paper Out
- Paper Jam
- Door Open
- Toner Low
- Printer Error

The toner low, door open and paper jam traps require that your printer be set to automatic emulation switching (the default) or PCL emulation.

TCP/IP

Saving the Configuration

Once all settings have been defined, select **OK**. The settings will be saved and you will be returned to the main *OkiNet for TCP/IP* screen.

Displaying OkiLAN 6020e Diagnostic Information

To view OkiLAN 6020e diagnostic information, double click on **Diagnostics** from the *Print Server* pull-down menu on the main *OkiNet TCP/IP* screen. Diagnostic information is available on the following topics:

- Printer
- Print Server
- Protocols
- Network
- Statistics
- Technical Support
- System

Printing a Configuration Sheet

The configuration sheet provides current network, print server and printer information. To print a configuration sheet, select the OkiLAN 6020e from the list of available print servers. Select **Print Configuration Sheet** from the *Print Server* menu bar.

Resetting the OkiLAN 6020e

To reset the OkiLAN 6020e, select the OkiLAN 6020e from the list of available print servers. From the *Print Server* menu bar, select **Reset**.

CAUTION: Make sure there are no print jobs active when you reset the OkiLAN 6020e. All protocols will be restarted. If you attempt a reset while a job is printing, the job may not print successfully.

Restoring Factory Default Settings

To restore the OkiLAN 6020e to factory default settings, select the OkiLAN 6020e from the list of available print servers. From the *Print Server* menu bar, select **Reset**.

From the *Reset Print Server* screen, choose one or more of the following options:

Output Ports
Restores settings related to output ports such as port name and output type.

TCP/IP
Restores settings specific to the TCP/IP protocol configuration such as the IP address and subnet mask.

NetWare
Restores settings specific to the NetWare protocol configuration such as the mode and default file server.

Banyan VINES
Restores settings specific to the VINES protocol configuration such as user name and print service names (may apply to other OkiLAN print server models).

EtherTalk
Restores settings specific to the EtherTalk protocol configuration such as the name and zone.

Once you have chosen the desired options, select **Restore**. To completely restore the print server to factory default settings, select all items in the list.
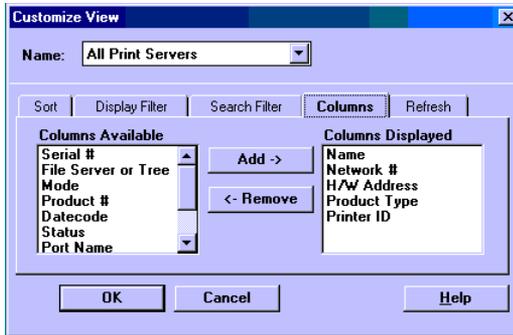
CAUTION: Make sure there are no active print jobs when you select Restore Factory Defaults. If you reset the OkiLAN 6020e while a job is printing, the job may not print successfully.

TCP/IP

Creating Customized Views

OkiNet for TCP/IP allows users to create multiple customized views for the list of OkiLAN 6020e products. By creating different views, the user can narrow the information displayed to that which is of highest priority. These views can be saved and selected as needed.

OkiNet has two predefined views. The *All Print Servers* view displays all the print servers available on your local network. The *Unconfigured Print Servers* view displays only the print servers on the local network that have not been configured.

Creating a New Customized View

To create a new view, select **New** from the *View* menu. Enter a name for the new customized view. Define **Filters**, **Sorts**, **Column**, **Search** information and **Refresh** rates. Select **OK** to save this view.

Selecting an Existing View

To select an existing view, choose **Select** from the *View* menu. Highlight the view you wish to open and select **OK**. The OkiLAN 6020e list will be displayed as described by the view selected.

Modifying View Settings

Before modifying the settings, select the name of the view you wish to edit from the *Name* field.

Sort

The Sort option displays the OkiLAN 6020e list in a specific order. The list can also be sorted by clicking on the column by which you wish to sort the list. A sort order can be defined on columns displayed on the main OkiNet for TCP/IP screen.

Display Filter

The filter option displays only those print servers matching specific criteria. The print server list can be filtered by any of the following:

Filter By	Enter for the Filter Value
<No Filter>	No value
DateCode	Four digits followed by a letter (e.g. 9502B)
Default Gateway	XXX.XXX.XXX.XXX; use "*" for groups / subnets
H/W Address	12 hexadecimal digits for the Ethernet address
IP Address	XXX.XXX.XXX.XXX; use "*" for groups / subnets
Name	SNMP System Name (sys name) for the print server
Product #	Select from the list of product number(s)
Product Type	Select from the list of product types
Status	Select from the list of status conditions
Subnet Mask	XXX.XXX.XXX.XXX; use "*" for groups / subnets

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Search Filter

The Search option defines the criteria for identifying OkiLAN 6020e products on the network.

- *Search Local Network* - This method broadcasts a discovery request to locate all OkiLAN 6020e print servers on the local network. All OkiLAN 6020e print servers that respond are placed in the list. If you have a large number of OkiLAN 6020e print servers on your local network and wish to minimize network traffic, do not select this option.

- *Specify Devices/Networks* - This method adds specific print servers (or groups of print servers) to the list. If you have OkiLAN 6020e print servers that are not on the local network (i.e. across routers), the address of each OkiLAN 6020e must be entered in order to locate and insert it into the list.

> *Example:* 192.168.42.24

When specifying a subnet, enter a * for the last (fourth) part of the IP address. OkiNet for TCP/IP will search every address on the subnet.

> *Example:* 192.168.42.*

Select **Add** to enter these addresses.

Columns

Column information for each print server can be modified.

To define the location of a new column, select the location in the *Columns Displayed* field where you wish the new column to be inserted, then select **Add**. If no location is selected, the new column will be added to the end of the list and the column will be displayed to the right of the last column on the screen.

For example, if you currently have three columns displayed and you wish to add a fourth column to the far left of the screen, follow these steps:

1. Select the first column in the *Columns Displayed* field.

2. Select the column to be added from the *Columns Available* field.

3. Select **Add**.

Columns may also be removed by selecting Remove from the *Columns Available* field.

Refresh

The refresh rate defines how often the OkiNet for TCP/IP utility updates the main print server list. To define a refresh rate, select **Automatic Refresh** and enter the refresh rate in the field provided. Decide how frequently to refresh the screen based on factors such as network traffic and desire for most recent information.

For example, if traffic on your network is not an issue and the most current information is desired, set the refresh rate to 1 so that the screen is updated every minute.

If network traffic is an issue, you may wish to set the refresh rate to 10. This would update the screen every ten minutes and minimize network traffic.

Permanently Defining SNMP Access Information

Access to OkiLAN 6020e configuration and diagnostic information is determined by using community names. The *Special Options* window is used to permanently define access information so that it does not need to be entered each time the OkiLAN 6020e is accessed. To *Get* and/or *Set* information on the OkiLAN 6020e through OkiNet for TCP/IP, community names must match the community names assigned to the OkiLAN 6020e.

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To configure OkiNet for TCP/IP to use the correct community names, select **Special Options** from the *File* menu.

IP Address

This field displays the address of each OkiLAN 6020e for which OkiNet for TCP/IP has defined access. To add a new IP address to this list, select the **Add** button.

Get Community Name

Enter the *Get* Community Name necessary to access the OkiLAN 6020e or group of OkiLAN 6020e products selected.

Set Community Name

Enter the *Set* Community Name necessary to access the OkiLAN 6020e or group of OkiLAN 6020e print servers selected.

Add

Select the **Add** button to define access to a new OkiLAN 6020e or a group of OkiLAN 6020e print servers. The IP address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number from 0 to 255. Use * to specify groups/subnets.

For example: To add a single OkiLAN 6020e, enter 198.168.42.24. To add a group of OkiLAN 6020e print servers, enter 198.168.42.*.

Delete

The **Delete** button deletes an OkiLAN 6020e access entry in the IP address.

Configuring the Discovery UDP Port Number

In order to discover OkiLAN 6020e print servers on the network, OkiNet for TCP/IP communicates with the OkiLAN 6020e print servers on a UDP port number. Normally, using this port number should not interfere with other devices on the network. If there are problems using the given port number, select a new number.

Note: Windows NT will not permit the use of Port 9 for discovery. Select one of the other available ports.

Starting a Telnet Session

A simple telnet interface has been provided to communicate with devices supporting telnet. A *telnet session* can be started by selecting the OkiLAN 6020e from the print server list and choosing the **Telnet Session** option from the *Tools* menu. For more information about how to configure an OkiLAN 6020e using telnet, see Chapter 6.

Starting the BOOTP Server

OKI has provided a stand-alone BOOTP server to help assign IP addresses to the OkiLAN 6020e.

To access the stand-alone BOOTP server, select **BOOTP Server** from the *Tools* menu or run the program **bootpsrv.exe** from Windows. The BOOTP server displays all BOOTP activity on the local network. It responds to BOOTP requests for which the hardware address has been entered into the BOOTP file. For more information, view the on-line help for the BOOTP server.

TCP/IP

Chapter 5
Web Configuration

If the DHCP protocol is enabled as a default, the print server may be accessed through an ordinary Internet Web browser, such as Netscape Navigator or Microsoft Internet Explorer. See Section II, Chapter 4, *OkiLAN 6020e Web Configuration,* for more information.

Chapter 6
Telnet Configuration

Overview

The OkiLAN 6020e Configuration utility (*telnet*) provides system, network and printer status information and allows you to change the configuration of your OkiLAN 6020e.

> *Note:* The configuration of your OkiLAN 6020e is password protected. Only authorized users can alter the configuration.

Running a Telnet Session

1. To run the configuration utility, type the following:

   telnet *<OkiLAN 6020e_name>*

2. Replace *OkiLAN 6020e_name* with the IP address or the host name assigned to the OkiLAN 6020e you want to configure.

   A screen will appear displaying an introductory message. When prompted for a password, enter **OkiLAN**. The password will not be echoed.

3. When you are finished typing your password, press **Enter**. For password verification, you will then be asked to enter your password again.

   Each time you use the utility, you will be asked to enter your password. If you fail to enter the password correctly in three attempts, your connection with the OkiLAN 6020e will be closed.

4. Once your password is entered and accepted, a list of options will display. An explanation of each option follows.

TCP/IP

```
******************************************
```
           OkiLAN 6020e Configuration Utility

        1. Show Network/Printer Information
        2. Change Password
        3. Specify Print Server IP Address
        4. Specify Subnet Mask For Your Network
        5. Identify Default Gateway IP Address
        6. Configure Port
        7. TCP Connection Configuration
        8. Download New Firmware
        9. Restore to Factory Defaults

   To select an option above, type its number and press
   Enter.

   To quit, press **Enter**.

```
******************************************
```

Showing Network/Printer Information (Option 1)
This option displays current network and printer
information.

Changing the Password (Option 2)
This option allows you to change the password required
for access to this utility. We recommend that you
change your password periodically, especially if
security may have been compromised. Type a password
(5-24 characters long). The characters you type will not
appear on the screen. When you are done typing, press
Enter. You will be asked to enter your password again.
This allows you to verify your password was typed
correctly.

You must save your changes when you exit the utility
for the new password to take effect.

Specify Print Server IP Address (Option 3)

This option allows you to select the method the OkiLAN 6020e uses to obtain its IP address or to set a permanent IP address. If the OkiLAN 6020e has been configured to use a permanent IP address, a DHCP, RARP or BOOTP server does not need to be available when the OkiLAN 6020e is powered on.

If you change the IP address, the change will remain undetected until the OkiLAN 6020e is reset or is powered off and on.

Remember, when choosing a permanent IP address:

• The IP address must follow the format XXX.XXX.XXX.XXX, where each XXX is a number between 0 and 255.
• If you select an invalid IP address you may not be able to access the OkiLAN 6020e.
• You can also use OkiNet for TCP/IP, OkiNet for NetWare or the Banyan VINES OkiNet for VINES utilities (may apply to other OkiLAN print server models) to set a permanent IP address.

Note: If you select an invalid IP address you may not be able to access the OkiLAN 6020e. Use this option with care!

Specify the Subnet Mask for Your Network (Option 4)

If your network environment includes subnets, you will want to set the subnet mask.

The subnet mask must follow the format XXX.XXX.XXX.XXX, where each XXX is a number between 0 and 255.

The default subnet mask is 0.0.0.0. The OkiLAN 6020e interprets a subnet mask of 0.0.0.0 or 255.255.255.255 as no subnet mask specified.

If you change the subnet mask, the change will remain undetected until the OkiLAN 6020e is reset or is power cycled.

TCP/IP

> *Note:* If you select an invalid subnet mask you may
> not be able to access the OkiLAN 6020e. Use
> this option with care!

Identify Default Gateway IP Address (Option 5)

If your local network is attached to other networks, you
must specify the address of your default gateway.
Whenever packets need to be sent to another network,
the default gateway is used.

The gateway address must follow the format
XXX.XXX.XXX.XXX, where each XXX is a number
between 0 and 255.

When the default gateway is changed, it will remain
undetected until the OkiLAN 6020e is reset or is power
cycled.

> *Note:* If you select an invalid default gateway or the
> default gateway goes down, the OkiLAN
> 6020e may not be able to communicate with
> non-local networks.

Configure Port (Option 6)

After the Configure menu appears, you can access the
following configuration option screens.

Specify Configuration Page Language
This option enables you to select how the OkiLAN
6020e configuration pages should be printed: Text
(default), PCL, PostScript, or OFF.

Configure Language Switching
This option asks you to select the language of your
printer. For a description of language switching
options, see pages IV-28 and IV-29.

Configure Printer Type
This option enables you to indicate the printer type to which the OkiLAN 6020e is connected. Printer choices are:

1. Oki Data printer.

2. Custom printer.

• *Language Switching Sequence* - If you select **Custom Printer** from the *Configure Printer Type* screen, you must indicate the switching sequence to be used for both PCL and PostScript. This is only necessary if language switching is set to something other than OFF.

TCP Connection Configuration (Option 7)

TCP Connection Timeout
This is used to sever network TCP/IP Connections that are idle for more than a specified period of time (between 1 and 3600 seconds). You can also disable timeout checking. Under most conditions you will want to leave this function enabled.

Raw Port Number
Set the port number where the raw port connections will be accepted.

Download New Firmware (Option 8)
This option is provided for future product modifications and enhancements. It requires an update file from OKI.

CAUTION: Do NOT use this option without having the upgrade files on hand. The OkiLAN 6020e will be locked in download mode. This is indicated by a flashing orange-green Status LED.

The latest firmware and utilities are available through:

• *World Wide Web:* **http://www.okidata.com**

Firmware update instructions are available with the download file.

TCP/IP

Restore to Factory Default Configuration (Option 9)

This option automatically restores the OkiLAN 6020e to its original factory defaults. Be aware that when you restore the OkiLAN 6020e to the original factory default settings, only the TCP/IP protocol and output port information is restored and your TCP/IP password and IP address are erased.

CAUTION: Make sure that no print jobs are active when you select Restore to Factory Defaults. Performing this operation will restore parameters for the TCP/IP protocol to factory defaults. If you reset the OkiLAN 6020e while a job is printing, the job may not print successfully.

Appendix A
Troubleshooting

Main Status Indicator

Upon power-up, the main status indicator flashes orange. It changes to green when the OkiLAN 6020e passes self-test. The indicator stays orange if the OkiLAN 6020e fails self-test. If the indicator turns solid orange due to an error, a configuration sheet will be printed automatically. Check the error message reported on the configuration sheet.

Restoring the OkiLAN 6020e to Factory Defaults

In most cases, the best way to restore the OkiLAN 6020e to factory defaults is via *telnet*. However, if you are unable to connect to the device because of a configuration error, use the following method which does not require a network connection.

To restore the OkiLAN 6020e to factory defaults, complete the following steps:

1. Power down the OkiLAN 6020e.

2. While holding in the **Print Configuration Sheet Test** button, power up the OkiLAN 6020e. Hold the button until the status indicator turns solid green.

3. Power cycle the OkiLAN 6020e. It will have restored itself to defaults.

TCP/IP

Unable to Assign IP Address

Gleaning

If you *ping* the device and are not getting a response, the glean is not working. Check the following possible problems:

- Verify the ARP table contains the correct hardware and IP address by running the '*arp -a*' command.
- If you are getting a response, but the OkiLAN 6020e LED is still blinking green, power down the print server and try the ping again. There might be a different device answering to the ping.
- Verify the OkiLAN 6020e is on the same subnet as the computer running the ping.
- The *glean* will not work if the OkiLAN 6020e has already defaulted to an IP address two minutes after power up. The LED will turn solid green and the device will print a configuration page. Power cycle the device and try the glean again.

RARP or BOOTP

If you are using a BOOTP or RARP server and the OkiLAN 6020e is not getting an IP address, check the following:

- Verify the BOOTP/RARP configuration files are correctly set up ("/etc/ethers" and "/etc/hosts" for RARP and "/etc/bootptab" for BOOTP). Verify the files have the correct hardware address of the OkiLAN 6020e. If using RARP, check that the hostnames are the same between the "/etc/ethers" and "/etc/hosts" files.

UNIX BOOTP

If you are running UNIX, try the following methods with the BOOTP server (check the documentation for your particular UNIX flavor).

• Verify the BOOTP server has reread the "/etc/bootptab" file when the new entry was added. If the BOOTP server was running when you added the new entries, the server might not have reread the new bootptab file. Try sending the SIGHUP signal to the running BOOTP server. For example, *kill -HUP <process id of bootpd>* tells it to reread "/etc/bootptab". Most BOOTP servers support this option. Check your local BOOTP documentation. If this does not work, restart the BOOTP server (kill and restart the process).

• Some BOOTP servers will write their internal bootptab tables to a file when they receive a SIGUSR1 signal. You can check this file to verify the hardware and IP address are correct. You can use the kill command to send signals. For example, *kill -USR1 <process id of bootpd>*. Check your documentation for more information.

• Check the system's syslog file. Some BOOTP servers will write error messages into the syslog file.

> *Example:*
> Sep 6 14:38:43 bootpd[17565]: hardware address not found: 004068175042

This message appears when the BOOTP server received a request from a device not in its internal bootptab tables.

TCP/IP

Static Route Entry

If the OkiLAN 6020e has printed a configuration page showing the default address, but it cannot be reached through *telnet*, check the following:

• Display the host's routing tables with the 'netstat - r' command. Verify the route has been set correctly.

• If the route is set correctly, try *pinging* the device.

• Verify the OkiLAN 6020e is on the same subnet as the host from which you are *telneting*. As a drastic measure, try creating an isolated subnet with your host and the OkiLAN 6020e. If you are using 10BASE2, run the cable directly from the host to the OkiLAN 6020e. If using 10/100BASE-T cabling, connect the host to the OkiLAN 6020e through a hub not connected to any other host.

• If the static route has been set up and can *telnet* to the OkiLAN 6020e, but your changes do not seem to be saved, check the host's routing tables. You might have telneted to a different OkiLAN 6020e than the one you intended. While in *telnet*, select the second menu option, **Show Network/Printer Information**. The hardware address and serial number are displayed. Verify they are the same as the unit you are configuring.

• Turn off the OkiLAN 6020e you want to configure. Run *telnet* again. If you reach a different device, there is an IP address conflict.

• If you are able to *ping* to the OkiLAN 6020e, but are unable to *telnet*, the IP address is probably being shared with another device that does not support *telnet*.

OkiNet for TCP/IP - Winsock Errors

• If you see an error before OkiNet for TCP/IP appears on the screen, try setting a host name in the host's file in the Windows directory (check the documentation for your Windows TCP/IP stack).

• If you have difficulty seeing a particular OkiLAN 6020e, try moving the device onto the same subnet as the computer running the utility.

• If OkiNet for TCP/IP gives you the Winsock error: Could not bind to socket, use the Special Options dialog under the File menu to change the Discovery UDP Port to a different port number.

Hardware Error Messages

ST: Cable not connected

Self-test has determined that the network cable is not connected.

   • Check the cable connection to the OkiLAN 6020e.
   • Move the OkiLAN 6020e to another known working node.

If you find the cable is connected and you are still receiving this message or any other "ST:" error message, power cycle the OkiLAN 6020e. If the error continues, call Oki Data Customer Support at 1-800-OKI-DATA (1-800-654-3282).

System CRC Failed

The OkiLAN 6020e has failed.

   • Power cycle the OkiLAN 6020e once. If the error continues, call Oki Data Customer Support at 1-800-OKI-DATA (1-800-654-3282).

TCP/IP

Printing a Configuration Page

If the status indicator turns solid orange due to an error and no configuration page is printed, your printer may be configured for PostScript operation. If so, you must re-configure your printer for standard ASCII mode so that the configuration page can be printed.

If you do not know the configuration of the OkiLAN 6020e or you think the configuration has been changed, use the following method for printing a configuration page:

- With the network cable detached, attach the OkiLAN 6020e to a printer and power cycle the print server. When the OkiLAN 6020e powers up, it will detect the detached network cable and print a configuration sheet. If no configuration sheet is printed and the indicator has turned green, check the printer and verify it is ready to print. If you are using boot protocols (RARP or BOOTP) to assign the IP address, the IP address will be listed as *Using network protocol (0.0.0.0)* on the configuration page.

Unable to Print

LPR/LP

- If the indicator blinks green, the OkiLAN 6020e is receiving data. If nothing is actually printing, check the printer settings. For example, if you are using a PostScript printer, verify the OkiLAN 6020e is also set to PostScript.
- Try *pinging* the OkiLAN 6020e by its IP address (not the hostname). This will verify the unit is functioning on the network.
- If the *ping* succeeds, try *ftping* a test file to the print server. If the ping fails, you might have a configuration problem with the OkiLAN 6020e (the IP address or gateway address might be incorrect, etc.).

- If the *ftp* succeeds, there is a problem with the *lpr/lp* setup. Verify the hostname or IP address is correctly set for the queue. Try doing an *lpstat* (System V) or *lpq* (BSD) to query the status of the OkiLAN 6020e.

FTP

- If the indicator blinks green, the printer is receiving data. If nothing is actually printing, check the printer settings. For example, if you are using a PostScript printer, verify the OkiLAN 6020e is set to PostScript also.
- Try *pinging* the device by its IP address (not the hostname). This will verify the OkiLAN 6020e is functioning on the network.
- If you cannot connect over ftp but the *ping* succeeds, try *telneting* to the OkiLAN 6020e and print a configuration page to verify settings. If that fails, you might have a TCP/IP configuration problem with the OkiLAN 6020e.

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Appendix B
Application Considerations

Overview

This appendix provides application notes for the following:

- Assigning the OkiLAN 6020e IP Address with BOOTP
- Assigning the OkiLAN 6020e IP Address with RARP
- Using the Windows NT v3.5 LPR Print Monitor
- Configuring HP-UX v8.07 for Printing
- Configuring HP-UX v9.xx for Printing
- Configuring HP-UX v10.xx for Printing
- Configuring SCO UNIX for Printing
- Configuring IBM's AIX ver. 3.x for Printing
- Configuring the OkiLAN 6020e for Solaris Printing
- Configuring Sun-OS v4.1.x or Ultrix v4.2 for Printing

Assigning the OkiLAN 6020e IP Address with BOOTP

BOOTP is an acronym for **BOOT**Strap **P**rotocol. Every TCP/IP network device is required to have a unique 32-bit IP address assigned to it. TCP/IP network devices will have both an IP address and a 48 bit Ethernet/Token-Ring (network hardware) address. Ethernet addresses usually cannot be configured and are *hard coded* by the manufacturer of the device. BOOTP is a protocol used by devices that *know* their network hardware address, but do not *know* their IP address. When powering up on a network, a device that uses BOOTP will broadcast its network hardware address in a BOOT request packet. A BOOTP server (which may be a UNIX workstation) will respond with an IP address. The device will then *know* its IP address and use this address to perform subsequent TCP/IP transactions.

Note: Once the OkiLAN 6020e has been assigned an IP address, the OkiLAN 6020e configuration utility (which is run by accessing the OkiLAN 6020e using *telnet*) or OkiNet for TCP/IP will allow you to change and/or make the IP address permanent. This means that a BOOTP server needs to be available only during installation of the OkiLAN 6020e.

Address Formats

Network hardware addresses are 48-bits and are expressed in 6 bytes (hexadecimal format) usually separated by colons. Each hexadecimal byte has a range from 00 to FF.

TCP/IP

A name can be arbitrarily assigned to any device on a network. The following examples use the name OKIPRINTER. Remember that this name is arbitrary; a customer can assign any name they wish.

/etc/bootptab:	The "/etc/bootptab" file has entries where each entry maps a network hardware address to an IP address.
Example:	OKIPRINTER:\ ht=ether:\ ha=0040681750A4:\ ip=192.168.42.55

The *ht* signifies hardware type. For the OkiLAN 6020e, it will always be *ether* for an Ethernet device and *token* for a Token-Ring device. The *ha* signifies the network hardware address. For BOOTP, the network hardware address must be represented without the colons between each byte. The *ip* part of the entry is where the IP address is specified. There are several other parameters that can be specified in a bootptab entry. However, the three parameters shown here are the only ones required for OkiLAN 6020e installation.

The following sequence of events occurs during the power up of the OkiLAN 6020e using BOOTP.

1. An OkiLAN 6020e powers up but does not know its IP address. (It does know its network hardware address.)

2. The OkiLAN 6020e sends out a BOOTP request packet with its network hardware address. For this example, the network hardware address is 00:40:68:17:50:A4.

3. The bootpd daemon running on a BOOTP server (which in this example is a UNIX workstation) sees the BOOTP request along with the network hardware address. It looks up the network hardware address in the "/etc/bootptab" file. The bootpd daemon finds the associated IP address of the device in the bootptab file.

4. The bootpd daemon transmits a response to the OkiLAN 6020e with the IP address 192.168.42.55. The OkiLAN 6020e will use this IP address for all subsequent transmissions.

For these steps to work properly, at least one BOOTP daemon (bootpd) must be running on the BOOTP server. To test whether a BOOTP daemon is running on the BOOTP server, use the *ps* command with the *show all process* option within fifteen minutes of an attempted BOOTP request. Unfortunately, the *ps* options differ from one UNIX workstation to another. Perform a *man ps* at the UNIX prompt to consult a manual page on the *ps* command for a particular workstation. If bootpd is not running on a workstation, type *man bootpd* at the UNIX prompt to consult a manual page on the BOOTP daemon and how to start it.

Limitations

Often TCP/IP networks are divided into *subnets*. BOOTP does not work across subnets. When installing an OkiLAN 6020e, make sure the following criteria are met for BOOTP to work properly.

- Both the BOOTP server and the OkiLAN 6020e are physically attached to the same subnet.
- The IP address assigned to the OkiLAN 6020e and the IP address of the BOOTP server belong to the same subnet.
   OR
- Your router(s) are configured to forward BOOTP packets between the OkiLAN 6020e's subnet and the subnet of the host running the BOOTP server.

TCP/IP

Configuring the OkiLAN 6020e IP Address with RARP

RARP is an acronym for **R**everse **A**ddress **R**esolution **P**rotocol. Every TCP/IP network device must have a unique 32-bit IP address. TCP/IP network devices will have both an IP address and a 48-bit Ethernet (network hardware) address. Ethernet addresses usually cannot be configured and are *hard coded* by the manufacturer of the device. RARP is a protocol used by devices that *know* their network hardware address, but do not *know* their IP address. When powering up on a network, a device that uses RARP will broadcast its network hardware address in a RARP request message. A RARP server (which may be a UNIX workstation) will respond with an IP address. The device will then *know* its IP address and use this address to perform subsequent TCP/IP transactions.

Note: Once the OkiLAN 6020e has been assigned an IP address, the OkiLAN 6020e configuration utility (which is accessed by *telneting* to the OkiLAN 6020e) or OkiNet for TCP/IP will allow you to change and/or make the IP address permanent. This means that a RARP server needs to be available only during installation of the OkiLAN 6020e.

Address Formats

Network hardware addresses are 48-bits and are expressed in 6 bytes in hexadecimal format usually separated by colons. Each hexadecimal byte has a range from 00 to FF.

Example: 00:02:16:17:50:A4

IP addresses are 32-bits and are expressed in 4 bytes in decimal format usually separated by periods. Each decimal byte has a range from 0 to 255.

Example: 192:168:42:55

Configuration Files

The purpose of RARP is to look up a 32-bit IP address given a 48-bit network hardware address. The RARP server (which is usually a UNIX workstation running a rarpd daemon) performs this function using two configuration files and one or more daemons. The configuration files are "/etc/hosts" and "/etc/ethers" and the daemon is called *rarpd*. A name can be assigned to any device on a network and is arbitrary. For the following examples the name used for the OkiLAN 6020e is OKIPRINTER. Remember that this name is arbitrary; a customer can assign any name.

/etc/hosts: The "/etc/hosts" file is where each entry maps a host name to an IP address. An example entry is shown below.

<div align="center">192.168.42.55 OKIPRINTER</div>

/etc/ethers: The "/etc/ethers" file is where each entry maps a host name to a network hardware address. An example entry is shown below.

<div align="center">00:02:16:17:50:A4 OKIPRINTER</div>

The following sequence of events occurs during the power up of the OkiLAN 6020e using RARP:

1. The OkiLAN 6020e powers up but does not know its IP address. However, it does know its network hardware address.

2. It sends out a RARP request message with its network hardware address. For this example, the OkiLAN 6020e address is 00:02:16:17:50:A4.

3. The rarpd daemon running on a RARP server (in this example the RARP server is a UNIX workstation) sees the RARP request along with the network hardware address in the "/etc/ethers" file. The rarpd daemon finds the host name, OKIPRINTER, listed as the name associated with the network hardware address.

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4. The rarpd then consults the "/etc/hosts" file and looks up the name OKIPRINTER. It finds an IP address (in this case 192.168.42.55) associated with the name OKIPRINTER.

5. The rarpd daemon transmits a response to the OkiLAN 6020e with the IP address 192.168.42.55. The OkiLAN 6020e will then use this IP address for all subsequent transmissions.

For all these steps to work properly, at least one RARP daemon (rarpd) must be running on the RARP server. On most UNIX systems, this can be tested by using the *ps* command with the *show all processes* option. Unfortunately, the *ps* options differ from one UNIX workstation to another. Perform a *man ps* at the UNIX prompt to consult a manual page on the *ps* command for a particular workstation. If rarpd is not running on a workstation, type *man rarpd* at the UNIX prompt to consult a manual page on the RARP daemon and how to start it.

Limitations

Often TCP/IP networks are divided into subnets. RARP does not work across *subnets*. When installing an OkiLAN 6020e, make sure the following two criteria are met for RARP to work properly.

1. Both the RARP server and the OkiLAN 6020e are physically attached to the same subnet.

2. The IP address assigned to the OkiLAN 6020e and the IP address of the RARP server belong to the same subnet.

Configuring HP-UX v8.07 for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on the HP-UX ver. 8.07 of the UNIX operating system. For clarity and brevity, the following specific names will be used to represent general devices or concepts.

- *lj4* - The local queue name on the HP-UX system to which print jobs that are destined for a printer attached to the OkiLAN 6020e will be directed.

- **OKIPRINTER** - The host name of the *remote system* which is the OkiLAN 6020e. For example, to *telnet* to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP Address may be used.

- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.

  If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See pages IV-15 and IV-16 for more information on remote queue names.

Prerequisites

Before you proceed, the following prerequisites must be met. Most of the time, steps 2 through 5 are already configured since the HP-UX system is on a TCP/IP network. Do not perform steps 2 through 5 unless the installation procedure fails!

1. The name OKIPRINTER and the IP address assigned to the OkiLAN 6020e are in the "/etc/hosts" file on the HP-UX system.

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2. Make sure the rlp process is not running by typing at the UNIX prompt:

   ps -e | grep rlp

   If rlp is not running, you will not see any output after executing this command.

   If rlp is running (that is, if you see output after executing this command), kill the process with the command:

   kill -15 process_number

3. Make sure the following entry is in the "etc/inetd.conf" file:

   printer stream tcp nowait root /usr/lib/ rlpdaemon rlpdaemon -I

   If the rlp daemon is not running when a print request is made, this entry in "/etc/inetd.conf" tells inetd to auto-start the rlp daemon to service the pending print request. This is helpful if the daemon was terminated for some reason. For more information on inetd or "/ etc/inetd.conf", type **man inetd** or **man inetd.conf**.

4. Make sure the following entry is in the "/etc/services" file

   printer 515/tcp spooler

5. Start inetd by typing the following at the UNIX prompt:

   /etc/inetd -c

Procedure

HP-UX uses an interactive utility called SAM (System Administration Manager) to configure printing. To configure printing using SAM, do the following:

1. Login to the HP-UX system as root.

2. Invoke the SAM utility by typing **sam** at the UNIX prompt. (We suggest you do this at the system console. SAM uses a screen oriented interface that works best at the console.)

3. Select the following options, in order, from the *SAM* menu:

> Peripheral Devices ->
> Printers and Plotters ->
> Actions -> Add a Remote Printer
> (Do **NOT** select Add a Network Printer)

A form appears asking you to define a remote printer.

4. Enter information into the following fields as described.

   a) *Printer name* - **lj4**

   This is the name of the printer as referenced by the local HP machine. Print jobs sent to this printer are passed to the OkiLAN 6020e.

   b) *Remote system name* - **OKIPRINTER**

   This is the name of the OkiLAN 6020e on the network. The name must also be in the "/etc/hosts" file.

   c) *Remote printer name* - **yourqueuename**

   This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3, or 4, depending on the port selected to service the print jobs.

   d) *Remote cancel model* - **rcmodel**

   Used for remote printer job removal.

   e) *Remote status model* - **rsmodel**

   Used for remote printer queue status.

   f) *Make this the system default printer? (y or n)* - **n**

   g) *Printer class* - (**optional**)

   h) *Restrict cancel* - (**optional**)

   i) *Remote printer on a BSD system? (y or n)* - **y**

   Tells the HP-UX system that it is communicating with a Berkeley style remote printer (such as LPD).

5. Select **Perform Task** from the *SAM* menu.

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6. Enable the printer you just created using SAM.

> Peripheral Devices ->
> Printers and Plotters ->
> Enable a Printer ...

7. *Printer name:* — **lj4**

8. Start the LP request scheduler by typing:
   /usr/lib/lpsched

9. Run a test print job to the OkiLAN 6020e with the following command:
   lp -d lj4 filename

Configuring HP-UX v9.xx for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on the HP-UX ver. 9.xx of the UNIX operating system. For clarity and brevity, the following specific names will be used to represent general devices or concepts.

- *lj4* - The local queue name on the HP-UX system to which print jobs will be directed. The print jobs are destined for a printer attached to the OkiLAN 6020e.

- *OKIPRINTER* - The host name of the *remote system* which is the OkiLAN 6020e. For example, to *telnet* to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP Address may be used.

- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.
  If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See pages IV-15 and IV-16 for more information on *Remote Queue Names*.

Prerequisites

Before you proceed, the following prerequisites must be met. Most of the time steps 2 through 5 are already configured since the HP-UX system is on a TCP/IP network. **Do not perform steps 2 through 5 unless the installation procedure fails!**

1. The name **OKIPRINTER** and the IP address assigned to the OkiLAN 6020e are in the "/etc/hosts" file on the HP-UX system.

2. Make sure the rlp process is not running by typing at the UNIX prompt:

   > **ps -e | grep rlp**

   If rlp is not running, you will not see any output after executing this command.

   If rlp is running (that is, if you see output after executing this command), kill the process with the command:

   > **kill -15 process_number**.

3. Make sure the following entry is in the "/etc/inetd.conf" file:

   > **printer stream tcp nowait root "/usr/lib/ rlpdaemon" rlpdaemon -i**

   If the rlp daemon is not running when a print request is made, this entry in "/etc/inetd.conf" will tell inetd to auto-start the rlp daemon and service the pending print request. This is helpful if the daemon died or was terminated for some reason. For more information on inetd or "/etc/inetd.conf", type **man inetd** or **man inetd.conf**.

4. Make sure the following entry is in the "/etc/services" file:

   > **printer 515/tcp spooler**

5. Start inetd by typing the following at the UNIX prompt:

   > **/etc/inetd -c**

TCP/IP

Procedure

HP-UX uses an interactive utility called SAM (System Administration Manager) to configure printing.

1. Login to the HP-UX system as root.

2. Invoke the SAM utility by typing **sam** at the UNIX prompt. (We suggest you do this at the system console. SAM uses a screen oriented interface that works best at the console.)

3. Select the following options from the SAM menu:

     Printers and Plotters ->
     Printers/Plotters ->
     Actions -> Add a Remote Printer
     (Do **NOT** add a Network Printer)

   A form appears asking you to define a remote printer.

4. Enter information into the following fields as described.

   a) *Printer name* - **lj4**

      The name of the printer as referenced by the local HP machine. Print jobs sent to this printer are passed to the OkiLAN 6020e.

   b) *Remote system name* - **OKIPRINTER**

      The name of the OkiLAN 6020e on the network. The name must also be in the /etc/hosts file.

   c) *Remote printer name* - **yourqueuename**

      This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.

   d) *Remote cancel model* - **rcmodel**

      Used for remote printer job removal.

   e) *Remote status model* - **rsmodel**

      Used for remote printer queue status.

   f) *Printer class* - (**optional**)

   g) *Make this the system default printer.* Leave the box unchecked.

h) *Allow anyone to cancel requests.* Check if desired.

i) *Remote printer is on a BSD system.* Check this box.

Tells the HP-UX system that it is communicating with a Berkeley style remote printer (such as LPD).

5. Select the **OK** button. A status window will outline the tasks performed to install the queue. When you see the message *task completed*, select **OK**.

6. Pull down the *Lists* menu and select **Exit**.

7. Select the **Exit SAM** button.

8. Test printing to the OkiLAN 6020e with the following command:

> **lp -d lj4 filename**

Configuring HP-UX v10.xx for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on the HP-UX ver. 10.xx of the UNIX operating system. For clarity and brevity, the following specific names will be used to represent general devices or concepts.

- *lj4* - The local queue name on the HP-UX system to which print jobs will be directed. The print jobs are destined for a printer attached to the OkiLAN 6020e.

- *OKIPRINTER* - The host name of the *remote system* which is the OkiLAN 6020e. For example, to *telnet* to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP Address may be used.

TCP/IP

- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.

  If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See the section on *Remote Queue Names*.

Prerequisites

Before you proceed, the following prerequisites must be met. Most of the time steps 2 through 5 are already configured since the HP-UX system is on a TCP/IP network. **Do not perform steps 2 through 5 unless the installation procedure fails!**

1. The name **OKIPRINTER** and the IP address assigned to the OkiLAN 6020e are in the "/etc/hosts" file on the HP-UX system.

2. Make sure the rlp process is not running by typing at the UNIX prompt:

    ps -e | grep rlp

    If rlp is not running, you will not see any output after executing this command.

    If rlp is running (that is, if you see output after executing this command), kill the process with the command:

    kill -15 process_number.

3. Make sure the following entry is in the "/etc/inetd.conf" file:

    printer stream tcp nowait root "/usr/lib/ rlpdaemon" rlpdaemon -i

    If the rlp daemon is not running when a print request is made, this entry in "/etc/inetd.conf" will tell inetd to auto-start the rlp daemon and service the pending print request. This is helpful if the daemon died or was terminated for some reason. For more information on inetd or "/etc/inetd.conf", type **man inetd** or **man inetd.conf**.

4. Make sure the following entry is in the "/etc/services" file:

> **printer 515/tcp spooler**

5. Start inetd by typing the following at the UNIX prompt:

> **/etc/inetd -c**

Procedure

HP-UX uses an interactive utility called SAM (System Administration Manager) to configure printing.

1. Login to the HP-UX system as root.

2. Invoke the SAM utility by typing **sam** at the UNIX prompt. (We suggest you do this at the system console. SAM uses a screen oriented interface that works best at the console.)

3. Select the following options from the *SAM* menu:

> Printers and Plotters ->
> LP Spooler ->
> Printers/Plotters ->
> Actions -> Add a Remote Printer
> (Do **NOT** add a Network Printer)

A form appears asking you to define a remote printer.

4. Enter information into the following fields as described.

a) *Printer name* - **lj4**

The name of the printer as referenced by the local HP machine. Print jobs sent to this printer are passed to the OkiLAN 6020e.

b) *Remote system name* - **OKIPRINTER**

The name of the OkiLAN 6020e on the network. The name must also be in the /etc/hosts file.

TCP/IP

c) *Remote printer name* - **yourqueuename**

This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.

d) *Remote cancel model* - **rcmodel**

Used for remote printer job removal.

e) *Remote status model* - **rsmodel**

Used for remote printer queue status.

f) *Printer class* - (**optional**)

g) *Make this the system default printer.* Leave box unchecked.

h) *Allow anyone to cancel requests.* Check if desired.

i) *Remote printer is on a BSD system.* Check this box.

Tells the HP-UX system that it is communicating with a Berkeley style remote printer (such as LPD).

5. Select the **OK** button. A status window will outline the tasks performed to install the queue. When you see the message *task completed*, select **OK**.

6. Pull down the *Lists* menu and select **Exit**.

7. Select the **Exit SAM** button.

8. Test printing to the OkiLAN 6020e with the following command:

lp -d lj4 filename

Configuring SCO UNIX for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on the Santa Cruz Operation's (SCO) version of the UNIX operating system. For clarity and brevity, the following specific names will be used to represent general devices or concepts.

- *lj4* - The local queue name of the SCO system to which print jobs that are destined for a printer attached to the OkiLAN 6020e will be directed.

- **OKIPRINTER** - The host name of the *remote system* which is the OkiLAN 6020e. For example, to *telnet* to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP address may be used.

- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4 depending on the port selected to service the print jobs.

  If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See pages IV-15 and IV-16 for more information on remote queue names.

Prerequisites

Before you proceed, verify that the following prerequisites are met:

1. SCO TCP/IP version 1.2 or later must be installed.

2. The name of the OkiLAN 6020e (OKIPRINTER) and the IP address you wish to assign are in the "/etc/hosts" file of the SCO machine.

3. The IP address of the OkiLAN 6020e has been assigned and you are able to *telnet* to OKIPRINTER successfully.

TCP/IP

Procedure

1. Login to the SCO machine as root.

2. Install Remote Line Printing or verify that it is running by typing **mkdev rlp** at the UNIX prompt. It will respond by asking if you want to install or remove remote line printing. Choose **Install** even if remote line printing may already be installed.

3. If remote line printing is already installed, **mkdev rlp** will respond with the message *Remote line printing working directory already exists. Do you wish to continue installing the remote line printing system?* Answer **no** to this prompt and skip to Step 6.

   If remote line printing was not installed, **mkdev rlp** will respond with messages detailing files and directories that it is creating.

4. The command *mkdev rlp* will ask if you wish to change the printer description file "/etc/printcap". Choose **no** for this prompt. It will respond saying *Run '/etc/rlpconf' to change the remote printer description file.* Do **NOT** run "/etc/rlpconf". We will be performing the functions of "/etc/rlpconf" manually.

5. The next prompt is *Do you want to start remote daemon now?* Answer **yes** to this prompt. This should bring you back to the UNIX prompt.

6. Using a text editor (such as vi), add the following entry to the "/etc/printcap" file"

   > lj4:\
   > :lp=:rm=OKIPRINTER:rp=pcl2:\
   > :sd=/usr/spool/lpd/lj4:\
   > :lf=/usr/spool/lpd/lj4/lj4.log:

7. At the UNIX prompt, type:
   > **mkdir /usr/spool/lpd/lj4**.

8. Type:
   > **touch/usr/spool/lpd/lj4/lj4.log**

9. Try printing to the OkiLAN 6020e by issuing the following command:
   > **lp -d lj4 filename**

IBM's AIX ver. 3.x for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on IBM's AIX version 3.x of the UNIX operating system. The following specific names will be used to represent general devices or concepts.

- * lj4* - The local queue name on the AIX system to which print jobs that are destined for a printer attached to the OkiLAN 6020e will be directed.
- *OKIPRINTER* - The host name of the *remote system* which is the OkiLAN 6020e. For example, to *telnet* to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP Address may be used.
- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1 or 2, depending on the port selected to service the print jobs.

    If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See pages IV-15 and IV-16 for more information on remote queue names.

Prerequisites

Before you proceed, the name OKIPRINTER and the IP address assigned to the OkiLAN 6020e should be in the "/etc/hosts" file on the AIX system.

Procedure

To configure the AIX machine so that users can spool print jobs to the pcl2 print queue on the OkiLAN 6020e named OKIPRINTER, do the following:

1. Login to the AIX machine as root.

2. Invoke the **SMIT** utility by typing:

    AIX> smit <enter>

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3. To add a remote queue, select the following options from the *SMIT* menu:

> Spooler (Print Jobs and Printers)
>
> Manage Remote Printer Subsystem
>
> Client Services
>
> Remote Printer Queues
>
> Add a Remote Queue

A form appears asking you to define a remote print queue.

4. Enter information into the following fields as described. All other fields should use the default value.

a) *NAME of queue to add* - **lj4**

This is the name of the local print queue.

b) *DESIGNATION HOST for remote jobs* - **OKIPRINTER**

This is the name of the OkiLAN 6020e. This host name must also be contained in the "/etc/hosts" file.

c) *Name of QUEUE on remote printer* - **yourqueuename**

d) *NAME of device to add* - "**any arbitrary name**"

This is a device name required by AIX, but this name has no effect on the print service for the OkiLAN 6020e. Enter any name of seven characters or less. The name does not need to be an existing device, nor does it need to be unique.

5. Start the **lpd** subsystem with SMIT:

> Spooler (Print Jobs and Printers)
>
> Manage Remote Printer Subsystem
>
> Server Services
>
> **lpd** Remote Printer Subsystem
>
> Start Using the **lpd** Subsystem
>
> Start BOTH Now and at System Restart

6. Start the qdaemon by typing:

AIX> startsrc -s qdaemon

7. Try printing to the printer attached to the OkiLAN 6020e by issuing the following command:

AIX> lpr -Plj4 filename

Configuring Solaris 2.x for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on the Solaris ver. 2.x UNIX operating system. For clarity and brevity, the following specific names will be used to represent general devices or concepts.

- *lj4* - The local queue name on the Solaris system to which print jobs that are destined for a printer attached to the OkiLAN 6020e will be directed.

- *OKIPRINTER* - The host name of the *remote system* which is the OkiLAN 6020e. For example, to telnet to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP Address may be used.

- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.

  If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See pages IV-15 and IV-16 for more information on remote queue names.

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Prerequisites

Before you proceed, the following prerequisites must be met:

1. The name OKIPRINTER and the IP address assigned to the OkiLAN 6020e are in the "/etc/hosts" file on the Solaris system.

2. Make sure the LPD daemon is running on the Solaris system.

Procedure

To configure the Solaris machine so users can spool print jobs to the *pcl* print queue on the OkiLAN 6020e named OKIPRINTER, do the following:

1. Login to the Solaris machine as root.

2. Type: **lpsystem -t bsd OKIPRINTER**.

3. Type: **lpadmin -p lj4 -s OKIPRINTER!yourqueuename - I any**.

4. Type: **accept lj4**.

5. Type: **enable lj4**.

6. Try printing by issuing the following command:

> **lp -d lj4 filename**

Configuring Sun-OS v4.1.x or Ultrix v4.2 for Printing with the OkiLAN 6020e

This application note describes the configuration of the printing system on the Sun-OS ver 4.1.x and Ultrix ver. 4.2 of the UNIX operating system. For clarity and brevity, the following specific names will be used to represent general devices or concepts.

- *lj4* - The local queue name on the Sun-OS or Ultrix system to which print jobs that are destined for a printer attached to the OkiLAN 6020e will be directed.
- **OKIPRINTER** - The host name of the *remote system* which is the OkiLAN 6020e. For example, to telnet to the OkiLAN 6020e and invoke the OkiLAN 6020e Configuration utility, you would type **telnet OKIPRINTER**. A host name is not required for the OkiLAN 6020e, the IP Address may be used.
- *yourqueuename* - This is the name of the queue on the OkiLAN 6020e and must end with 1, 2, 3 or 4, depending on the port selected to service the print jobs.
  If FF, LF or NF are the last two letters of the queue name, the job will be converted accordingly. See pages IV-15 and IV-16 for more information on remote queue names.

Prerequisites

Before you proceed, the following prerequisites must be met:

1. The name OKIPRINTER and the IP address assigned to the OkiLAN 6020e are in the "/etc/hosts" file on the Sun-OS or Ultrix system.

2. Make sure the LPD daemon is running on the Sun-OS or Ultrix system by issuing the following command at the UNIX prompt:

   ps aux | grep lpd

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If the LPD daemon is running, you should see output similar to:

root 135 0.0 0.0   52   0 ? IW May 24 0:01
/usr/lib/lpd

If the LPD daemon is not running, start the daemon by logging into the Sun-OS or Ultrix machine as root and issuing the following command at the UNIX prompt:

/usr/lib/lpd

Verify that the daemon is running by using the *ps* command described previously.

To start the LPD daemon automatically when the system boots, make sure that lines similar to the following exist in the "/etc/rc" file:

if [-f /usr/lib/lpd] ; then

rm -f /dev/printer/var/spool/lpd.lock

/usr/lib/lpd; echo -n ' printer'

fi

Procedure

To configure the Sun-OS or Ultrix machine so that users can spool print jobs to the pcl print queue on the OkiLAN 6020e named **OKIPRINTER**, do the following:

1. Login to the Sun-OS or Ultrix machine as root.

2. Using a text editor (such as vi), add this entry to the "/etc/printcap" file:

   lj4:

   :lp=:rm=OKIPRINTER:rp=yourqueuename:

   :sd=/usr/spool/lj4:

   :lf=/usr/spool/lj4/lj4.log

3. At the UNIX prompt, type: **mkdir /usr/spool/lj4**.

4. Type: **touch /usr/spool/lj4/lj4.log**.

5. Try printing by issuing the following command:

   lpr -Plj4 filename

Appendix C
Internet Printing Protocol (IPP)

Internet Printing Protocol (IPP) is an application level protocol that can be used for distributed printing over the Internet. Using the new IPP protocol from any standard IPP client, you can print to any printer that is connected both to your OkiLAN 6020e and to the Internet.

With the OkiLAN 6020e, there is no configuration required. Enter the print server IPP URL as **http://xxx.xxx.xxx.xxx:631/ipp/portn**, where xxx.xxx.xxx.xxx is the IP address of the print server and portn is the output port number.

Example: http://198.60.248.120:631/ipp/port2.

Since IPP is a new industry standard, users are advised to check with the vendors of their operating systems for IPP client and IPP server software. Examples are Novell, Microsoft and EASYSOFTWARE for a generic version of a UNIX® CUPS® driver that supports the IPP protocol.

TCP/IP

Section V:

LAN Manager/LAN Server

In This Section

Chapter 1
Introduction

Overview

This section contains information about the OkiNet for OS/2 utility. This utility allows you to install and configure the OkiLAN 6020e for your specific environment. The utility provides configuration information and allows you to print a configuration sheet.

System Requirements

Please note the following system requirements:

Supported Environments
The OkiLAN 6020e is supported in the following operating environments:

• OS/2 version 1.3 with LAN Manager version 2.X
• OS/2 version 1.3 through 2.X with LAN Server version 2.X and 3.X
• OS/2 Warp 3.0 with LAN Server version 4.X

CSD Levels
IBM provides maintenance upgrades to OS/2 in the form of Corrective Service Diskettes (CSDs). We strongly recommend that you use the most recent CSDs available, because the CSDs include fixes to the OS/2 print subsystem. Contact IBM at 800-342-6672 for information about recent CSDs.

Client Nodes
A printer connected to the network can be accessed from DOS and other network nodes properly configured as LAN Manager/LAN Server client nodes.

You should be familiar with the OS/2 Print Management utilities. See your OS/2 manuals for more information.

LAN Manager/ Server

DLC/802.2 Protocol Stack

The DLC/802.2 protocol stack must be loaded and running on the file server from which the OKI Network Printer Redirector will run. With LAN Manager, this means you must enable the remote boot facility. With LAN Server, you must select the 802.2 protocol when you run the installation utility. See your LAN Manager/ LAN Server documentation for more information.

Routers

The 802.2 Type I network protocol used by the OKI Network Printer Redirector cannot be routed by routers which operate on specific protocols at the network layer. See your router documentation for more information.

Chapter 2

Installation

Overview

To install the OkiLAN 6020e:

1. Install the OkiNet for OS/2 utilities software.

2. Run the OkiNet for OS/2 utility to add a local printer port.

3. Associate a print queue with the new local printer port.

Once the installation is complete, you can verify communication by printing a configuration sheet.

Network Preparation

- You must have network administrator privileges to install the OkiLAN 6020e.
- You must have physical access to an OS/2 file server to host the OKI software utilities.
- Write down the serial number and the Ethernet address of your OkiLAN 6020e.
- OS/2 and LAN Manager/LAN Server must be configured with the following protocol:

    DLC/802.2 protocol stack

- LAN Manager users must enable the remote boot facility.
- LAN Server 2.X users must run the LAN Server installation utility and select the 802.2 protocol.
- LAN Server 3.0 users must run the LAPS utility and select the 802.2 protocol.
- OS/2 Warp Users must run the MPTS utility and select the 80w.w protocol. See your network administrator or the LAN Manager/LAN Server manuals for instructions.

• The initial installation requires the file server to be brought down and then back up again. This may be a consideration when you are planning your install.

Depending on your current configuration, the following software may also be needed:

• Printer driver installation diskettes. These diskettes are provided with the OS/2 operating system or are available from the printer manufacturer.

• LAN Manager or LAN Server installation diskettes.

Note: It is strongly recommended that you make backup copies of the OS2.INI and OS2SYS.INI files before you install the OkiLAN 6020e. Follow the directions in your OS/2 documentation to back up these files.

Installing the Utilities Software

Two software utilities are provided with the OkiLAN 6020e: INSTALL and OkiNet for OS/2.

Install

The INSTALL utility copies both software utilities to your OS/2 server and registers the OKI application with the OS2.INI file. You will need to run INSTALL one time only.

OkiNet for OS/2

The OkiNet for OS/2 utility completes the initial installation of the OkiLAN 6020e. In addition, you can run the utility as needed to modify the configuration of the OkiLAN 6020e or to view port information.

Note: The directory where OKI DLL files install, c:\OS2\DLL, must be the first entry in the LIBPATH command located in the CONFIG.SYS file. When you reboot the system, the OS/2 spooler will load the OKI Network Printer Redirector.

Running INSTALL

1. Login to the server with administrator privileges.

   If you are reinstalling the utility, disable the spooler before running install. If this is the first time you have installed the utility, disabling the spooler is optional.

2. From the OS/2 command line, change to the OS/2 directory.

3. Check the README file for current installation notes.

4. Type **INSTALL** and press **Enter**.

5. Verify the install directories are correct.

6. Select **INSTALL** to proceed. When the utilities are installed, you will see a message indicating that the installation was successful.

   If the install was not successful read through the comments in the *Install Progress* window for errors and recommended action.

7. Select **Exit**.

Completing the Installation
After the OKI software has been installed, you must do the following:

1. Verify the OS/2 spooler is enabled.

2. Verify /OS2/DLL is first in the LIBPATH statement in the CONFIG.SYS file.

3. Shut down and restart the OS/2 file server.

4. Run the OkiNet for OS/2 utility to add local ports.

Running OkiNet for OS/2

Before you can print via the OkiLAN 6020e, you must first add a local printer port to your OS/2 server.

1. Select the **Network Printing Tools** folder on the OS/2 desktop or in the Desktop Manager.

2. Select the **OkiNet for OS/2** utility icon.

LAN Manager/ Server

3. Select **OK**. The ESI Print Server Status Screen will display. From the *Configure* menu, select **Add Local Port**.

4. Select a print server and port.

   Print servers are identified by serial number. (You will find the serial number for your OkiLAN 6020e on the enclosure.) The port is indicated by P1, P2, P3, or P4. Use the arrow buttons to scroll through the available print servers on the network.

5. Enter a local port name. Highlight the entry field labeled *Local Port Name*, and enter a name that will help you identify the local printer port.

   The name must begin with "\PIPE\", which is provided by default. It can be up to eight characters long (excluding "\PIPE\") and must follow OS/2 file naming conventions.

6. Select **Add**. Selecting **Cancel** exits without adding a local printer port.

7. Repeat these steps for all print server ports you are configuring.

8. Exit OkiNet for OS/2.

Creating an OS/2 Printer

To print to the local port created by OkiNet for OS/2, you must create an OS/2 printer.

OS/2 1.3

1. Open the *Print Manager* from the desktop.

2. Select **SETUP** from the menu.

3. Select **Printers**. This will display a list of printers currently configured on this server.

4. Select **Add**. A dialog box will display, defining the configuration for a new printer.

5. Configure the printer as you would configure a directly-attached printer. Set the device field to the local port name you created in OkiNet for OS/2.

   Use the *Print Manager* to attach queues to the printer you just created. Refer to your OS/2 documentation for more information on these operations.

OS/2 2.X and OS/2 Warp

1. Drag a printer object from the templates folder to the desktop on the server. This action will display a configuration window.

2. Enter the name of the printer, the default printer driver and the output port. For the Output Port, select the icon for the local port name you created in OkiNet for OS/2.

   For more information on these operations, refer to your OS/2 documentation.

Printing a Configuration Sheet

You can verify communication by printing a configuration sheet using OkiNet for OS/2.

1. Select **Configure** from the main Print Server window.

2. Select **Configure Print Server**.

3. Select the OkiLAN 6020e you would like to test.

4. From the options, select **Print Configuration Sheet**.

5. Click the **Configure** button.

Note: In order for the configuration sheet to print correctly, the OkiLAN 6020e must determine if the connected printer is a text, PCL, or PostScript printer. The default is text. If the connected printer is a PostScript-only printer, you will have to reconfigure the OkiLAN 6020e to print the configuration sheet in PostScript. The configuration sheet will print to all connected printers.

A configuration sheet will print automatically if the OkiLAN 6020e fails due to a network protocol error.

Chapter 3
Printing in the OS/2 Environment

Overview

OS/2 provides several methods for selecting a printer from within an application. The best method to use depends on the specific application. The following methods are provided as simple examples for different environments within OS/2.

Note: The following examples will work on any OS/2 machine on the network, provided that the proper network privileges and protocols have been observed.

OS/2 1.3

To specify a queue as the default for your system, do the following:

1. Select **Print Manager**.
2. Select **SETUP**.
3. Select **Application Defaults**.
4. Change the default print queue to the print queue associated with the OkiLAN 6020e.

OS/2 Presentation Manager applications which use the default printer will now print to the OkiLAN 6020e printer.

OS/2 2.X and OS/2 Warp

To specify the printer attached to the OkiLAN 6020e as the OS/2 default printer, do the following:

1. From the desktop, right-click on any printer icon.
2. Select the right arrow next to *Set Default*. A list of print queues defined for your system will display.

LAN Manager/ Server

3. Select the print queue associated with the OkiLAN 6020e.

   OS/2 applications that use the default printer will now print to the printer attached to the OkiLAN 6020e.

   The OS/2 print screen function uses the OS/2 default printer. This function is invoked when you press the **Print Screen** key while on the desktop, in an OS/2 window, or when you are running an OS/2 application.

4. Press **Print Screen** on your keyboard. A copy of your screen will appear on the appropriate printer.

DOS and WIN-OS/2

DOS and WIN-OS/2 do not observe the OS/2 Presentation Manager default printer setting. Both DOS and WIN-OS/2 applications typically use LPT1 as the default printer. To use the newly defined print queue as a DOS or WIN-OS/2 printer, you must assign a DOS or WIN-OS/2 device name to the desired queue.

> *Example:*
>
> If the OkiLAN 6020e is installed on a server named SERVER 1 and assigned the queue name MPXLPT, the following command issued from an OS/2 command prompt would reassign LPT1:
>
> > C>NET USE LPT1 \\Server1\MPXLPT
>
> If OS/2 does not recognize the network name, enter the following command from an OS/2 prompt on the server where the software utilities were installed:
>
> > C>NET SHARE MPXLPT /PRINT
>
> Any applications using LPT1 will now print to the OkiLAN 6020e.

Chapter 4
Additional Utility Features

Overview

You can run the OkiNet for OS/2 utility at any time to access the following optional features:

• Deleting a Local Port
• Configuring a Print Server

Deleting a Local Port

The delete command allows you to delete a local port that has been previously added.

1. Verify the local port is not attached to an OS/2 printer queue. The local port cannot be deleted if it is attached to an OS/2 printer queue.

2. Login to the server with administrator privileges and run OkiNet for OS/2.

3. Click **OK**.

4. From the Configure menu, select **Delete Local Port**.

5. From the *Delete Local Port* screen, use the scroll arrows to select and highlight the local port you wish to delete.

6. Select **Delete**. The Cancel button exits the screen without deleting the port.

To add additional local ports, follow the *Running OkiNet for OS/2* instructions on page VI-8.

Configuring a Print Server

OkiNet for OS/2 allows you to change the default configuration of the OkiLAN 6020e. These configuration settings are retained when the OkiLAN 6020e is powered off.

1. Login to the server with administrator privileges and run OkiNet for OS/2.

2. Click **OK**.

LAN Manager/ Server

3. From the *Configure* menu, select **Configure Print Serve**r. The following screen will display:

Configure Print Server

Print Server	Configuration Item
OKI1090141	Parallel Port - P1
OKI1090141	Enable/Disable Protocols
OKI1340130	Restore Factory Defaults
OKI1404134	Print Configuration Sheet
OKI1410909	Reset Print Server

Configure   Done   Help
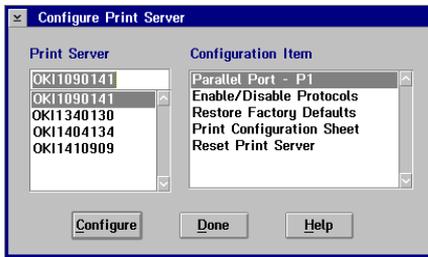
The OkiLAN 6020e will reset by selecting **OK** to save any of the options, except the *Print Configuration Sheet* option.

Configuring Parallel Port P1

Ports P1 must be configured based on the printer you intend to use.

1. From the *Configure Print Server* window, choose a print server from the list at left.

2. Select **Parallel Port-P1** from the list at right and then click the **Configure** button.

3. Click **OK** when you have selected the appropriate settings. The configuration settings will be stored in the OkiLAN 6020e and will be retained even when the OkiLAN 6020e is powered off.

CAUTION: If you change the configuration while a job is printing, the job may not print successfully.

Configuration option for parallel Port P1 and P2:

• *Configuration page print language* - The factory default is TEXT. If your OkiLAN 6020e is attached to a PostScript or PCL printer, enable the appropriate selection. The OkiLAN 6020e configuration sheet will be printed in the language you select. This setting only affects the configuration sheet, not other print jobs.

Restoring Factory Defaults

The Restore Defaults option restores the factory default settings for the LAN Manager/LAN Server protocol and output ports. To restore factory defaults, select an OkiLAN 6020e from the list on the left. Then select **Restore Factory Defaults** from the list on the right. Click the **Configure** button.

CAUTION: If you restore the factory default settings while a job is printing, the job may not print successfully.

Printing a Configuration Sheet

To print a configuration sheet, select an OkiLAN 6020e from the print server list on the left. Then select **Print Configuration Sheet** from the list on the right. Click the **Configure** button. A configuration sheet will print to each printer.

Note: In order for the configuration sheet to print correctly, the OkiLAN 6020e must determine if the connected printer is a text, PCL, or PostScript printer. The default is TEXT. If the connected printer is a PostScript-only printer, you must configure the OkiLAN 6020e to print the configuration sheet in PostScript.

The configuration sheet will print automatically if the OkiLAN 6020e fails due to a network protocol error.

Chapter 5
Using Help

Overview

The OkiNet for OS/2 utility provides both general and context-specific help.

General Help

To access help information about installation and configuration, select **Help** from the main menu, then select **General Help**.

To access help information about a specific topic, select **Help** from the main menu, then select **Help Index**.

See your OS/2 manual form information on using on-line help.

Context-Sensitive Help

Context-sensitive help is available from many areas of OkiNet for OS/2.

Several of the configuration windows have help buttons which, when selected, provide information about that specific window.

Appendix A
Troubleshooting

No Configuration Sheet

If the LED turns solid orange due to a network protocol error and no configuration sheet is printed, your printer may be configured for PostScript operation. If so, you must re-configure your printer for standard ASCII text mode so that the configuration sheet can be printed. See you printer manuals for more information.

Unable to Print

If the OkiLAN 6020e passes self-test, but you are unable to send data to the printer via the OkiLAN 6020e, you may want to check the following:

• Printer configuration
• Printer hardware
• Computer network adapter cards
• Cabling and/or connectors application software configuration
• Cable adapters
• OkiLAN 6020e port configuration

Section VI:

EtherTalk Support for Apple® MacIntosh®

In This Section

Chapter 1
Introduction

Overview

This section describes the steps necessary to configure the EtherTalk protocol. The following topics are covered in this section:

• Setting the Printer Name
• Selecting a Zone
• Selecting the Printer from the Macintosh Chooser
• Print Configuration and Status Information
• Advanced Configuration

System Requirements

Please note the following system requirements:

• PostScript Level 2 must be available on your printer
• The network must be a Phase 2 EtherTalk network
• Your printer must have a bidirectional parallel port (IEEE-1284 standard)
  Ethertalk is only available on the parallel port..

Before You Start

1. Install the OkiLAN 6020e hardware and connect the cabling. Instructions for hardware installation are found in Section I of this manual.

2. Write down the serial number and Ethernet address of the OkiLAN 6020e.

3. Copy the files from the *CD-ROM* to a utilities folder on the Macintosh hard drive.

4. Consult your network administrator before using the OkiLAN 6020e utility. Changing the OkiLAN 6020e Name or Zone may require users to reselect the OkiLAN 6020e in the Chooser. Print servers and spoolers may also need to be reconfigured after the OkiLAN 6020e product's configuration has been changed.

Chapter 2
The OkiLAN 6020e Utility

Overview

The OkiLAN 6020e utility allows the user to:

- Change the OkiLAN 6020e product's AppleTalk Name
- Move the OkiLAN 6020e from the Default Zone to a Preferred Zone
- Print Configuration Page and view Status Information
- Use Advanced Configuration Options

Running the OkiLAN 6020e Utility

1. Turn on your printer and check that it is on-line. Verify the parallel cables are directly connected between the OkiLAN 6020e and the printer.

2. Turn on the OkiLAN 6020e. The status LED should turn solid green.

3. Copy the files from the diskette labeled *OKI EtherTalk Utilities* to a utilities folder on the Macintosh hard drive.

4. Run the OkiLAN 6020e utility by double-clicking the **OkiLAN 6020e** utility icon.

Finding the OkiLAN 6020e

The *Zone Selection* window (shown on the previous page) will contain a list of zones available on the network. If no router is found, an asterisk "*" will display. To locate OkiLAN 6020e devices on the network:

1. Select a zone to search for OkiLAN 6020e printers. Shift-click to select multiple zones or click **Select All** to select all available zones.

2. Select **Search** to search the network for OkiLAN 6020e printers in the selected zones or select **Quit** to exit the utility.

Renaming the OkiLAN 6020e Printer

The *OkiLAN 6020e Printer Selection* window contains a list of all OkiLAN 6020e printers found in the selected zones. OkiLAN 6020e printers are listed alphabetically by name. Each port of a multiport OkiLAN 6020e will appear separately in the list. Unless otherwise stated, changing a configuration option will affect only the selected port.

1. Choose the OkiLAN 6020e printer you wish to rename.

2. Select **Name** from the *Configure* pull-down menu.

3. Enter a name for the OkiLAN 6020e. If you choose a name that is already being used, the OkiLAN 6020e will append a number to the end of the name. Names can be a maximum of 32 characters long.

4. Click **Rename**. You will then be returned to the Printer Selection window.

Note: The options listed on the following pages can all be accessed from the *Printer Selection* window.

Selecting a Zone

1. Choose the OkiLAN 6020e printer you wish to rezone.

2. Select **Zone** from the *Configure* pull-down menu.

3. Choose the zone in which you want the printer to appear.

Note: If no Phase 2 router was found, this option will be unavailable.

4. Click **OK**.

Print Configuration

The *Print Configuration* option is accessed by selecting **Print Config** from the *File* pull-down menu. Choose this option to print an OkiLAN 6020e configuration sheet. A configuration sheet will print to all output ports.

Status

The *Status* option is accessed by selecting **Status** from the *File* pull-down menu. This option displays the status and EtherTalk configuration of the selected OkiLAN 6020e printer.

Advanced Configuration Options

The following configuration options are advanced features of the OkiLAN 6020e utility. Most users will not need to access these features. Read the folloiwng descriptions carefully before utilizing these options.

Set Type

The *Set Type* option is accessed by selecting **Type** from the *Configure* pull-down menu. This option allows you to configure the AppleTalk Type. For some print spoolers to work properly, the AppleTalk Type must be changed. Refer to Appendix C of this section for more information.

The default AppleTalk Type is LaserWriter. For most printer drivers, this setting should not be changed. This includes the LaserWriter Drivers, HP LaserJet Drivers and other drivers.

Each EtherTalk printer port supports two AppleTalk Types:

- *Type1 (mandatory)* - The Type 1 default is LaserWriter. This option should not be changed unless the user wishes to use a print spooler without bypass or the user does not want the printer to respond to any of the LaserWriter drivers.
- *Type 2 (optional)* - Select this option when configuring for a spooler.

Enable Port

This option allows you to enable or disable a port. If a port is disabled, it will appear in the OkiLAN 6020e utility but will not appear in the *Chooser*. A disabled port cannot be configured. The only valid options for a disabled port are Status, Enable Port, Print Config, and Restore Defaults. A port should be disabled when no printer is attached.

> *Note:* It is possible to disable all ports but this is not recommended. The EtherTalk protocol will still be active on the network. To disable the EtherTalk protocol, use a utility from one of the other protocols.

Reset Board

This option will reset the print server.

Restore Defaults

This option will automatically return the EtherTalk interface to its factory defaults. All ports will be restored to factory defaults.

The following OkiLAN 6020e variables will restore to default:

Name: OKI <*serial number*> Port <*port number*>

> (for single port products, the port number will not be shown)

Type 1 = LaserWriter

Type 2 = (None)

Zone = Default - (The default zone for the network segment will be used)

Port Enabled = Yes

Appendix A Troubleshooting

Before You Call

This appendix allows you to troubleshoot problems you may have installing or using the EtherTalk protocol. After trying these suggestions, if you are still having difficulty, call Oki Data Customer Support at 1-800-OKI-DATA (1-800-654-3282).

If you have trouble sending data to the printer through your OkiLAN 6020e, check the following:

• Verify that the OkiLAN 6020e printer appears in the Chooser
• Printer configuration
• Printer hardware
• OkiLAN 6020e configuration
• OkiLAN 6020e hardware
• Cabling and/or connectors
• Macintosh System version
• LaserWriter driver version
• Application software configuration

OkiLAN 6020e Does Not Appear in the Macintosh Chooser

If the OkiLAN 6020e does not appear in the Chooser as a LaserWriter device, check the following:

• Print a configuration sheet. Verify that the EtherTalk protocol and port are enabled.
• Verify that the AppleTalk type is LaserWriter.
• Verify that the OkiLAN 6020e has passed self-test. The status indicator should be solid green.
• Check the connections between the OkiLAN 6020e and the Macintosh. When the OkiLAN 6020e does not appear in the Chooser, it is often caused by a cabling problem.
• Verify EtherTalk Phase 2 is selected in the Control Panel.

Unable to Print from a Macintosh

If you are unable to print from a Macintosh via the OkiLAN 6020e, try the following:

• Verify the OkiLAN 6020e appears in the Chooser as a LaserWriter device. If the OkiLAN 6020e does appear in the Chooser, make certain it is selected.

• Make sure you are using System and Finder version 6.02 or later and LaserWriter driver version 8.0 or later.

• Verify the printer supports PostScript Level 2 via the printer test/ configuration sheet.

• If the status message *Printer Error: Bi-Di communication on printer's parallel port is not enabled* appears, verify your printer's parallel port is a bidirectional port and is enabled.

• Print an OkiLAN 6020e configuration sheet to verify language switch settings. Verify the setting is **NOT** PCL.

• Verify the printer's language setting is **NOT** PCL.

Unable to Print a Document

If a document will not print, first check your printer. Look for paper jams, an empty paper tray, low toner error or other error conditions. Try to print the document again. If it still does not print, exit the application and try a Desktop Print from the *File* menu.

If the directory prints correctly, re-enter the application and try to print a different document. If the second document prints successfully, your problem may be document-specific. Check for problems in the document. If your printer has error handling capability, activate the error handler and try to print the first document again to obtain an error report.

If the directory does not print, send the directory again, and watch the OkiLAN 6020e activity indicator. If the status indicator flashes to indicate activity, data is reaching the OkiLAN 6020e. Send the document again and watch the printer for activity. If you see activity but no output, data is reaching the printer, but the printer is aborting the job. A PostScript printer will flush its memory buffer whenever it encounters an error condition, thereby aborting the entire job.

Try the following:

• Power the printer and the OkiLAN 6020e off and on. Allow the OkiLAN 6020e and the printer to warm up before you send a print job.

• Verify the printer is on-line and ready.

• Verify the OkiLAN 6020e is configured correctly.

• If you suspect any of the cables are bad, swap them with cables you know are working.

Network Error Messages

Network range exceeded during router power up—There are too many nodes on the network segment. The OkiLAN 6020e cannot find a free node number. Remove some of the other nodes on the network or expand the network range for this segment of the network.

OkiLAN 6020e Utility

OkiLAN 6020e does not show up in utility—If the OkiLAN 6020e does not appear in the utility, try the following:

• Print a configuration sheet for name and zone information. Run the *Chooser* and select the correct zone.

• Verify the OkiLAN 6020e is powered on and appears in the *Chooser*. If not, refer to general EtherTalk troubleshooting.

• Verify the Macintosh you are using is running Phase 2 EtherTalk.

• Compare the zone in which the OkiLAN 6020e appears in the Chooser to the zones searched. Search the same zone where the OkiLAN 6020e appears in the *Chooser*.

OkiLAN 6020e Utility Errors

Message: *AppleTalk network is inaccessible.*

Recommended Action: Examine network connections and verify AppleTalk is active in the Chooser.

Message: *Device limit exceeded. First 100 devices will be shown.*

Recommended Action: There are a maximum of 100 devices. Reduce the number of zones you are searching and try again.

Message: *Device returned invalid local zone list.*

Recommended Action: Verify proper router operation.

Message: *Incompatible version of OkiLAN 6020e utility.*

Recommended Action: Call 1-800-OKI-DATA (1-800-654-3282).

Message: *NBP Lookup Error.*

Recommended Action: Try again.

Message: *"Name" @ "Zone" is busy.*

Recommended Action: Unable to change the configuration at this time. Try again.

Message: *"Name" @ "Zone" is not responding. Verify the OkiLAN 6020e is powered on. To reconnect with the device, return the zone selection window and search again.*

Recommended Action: The device did not respond. If a reset has just taken place, the OkiLAN 6020e may not be registered on the network yet. Verify the OkiLAN 6020e is powered on. Search the network again to find the device.

Message: *No OkiLAN 6020e device(s) found. Verify the OkiLAN 6020e is powered on.*

Recommended Action: Confirm the device is powered on and the LED is green. Verify correct zone to search by printing a configuration sheet.

Message: *Option is not available with this product.*

Recommended Action: This configuration option is not available with this product.

Message: *Only the first 1024 zones found will be displayed.*

Recommended Action: Reduce the number of zones on your network.

Message: *Router zone requested failed.*

Recommended Action: The OkiLAN 6020e utility is unable to communicate with the router and to locate the zones. Confirm proper router operation.

Message: *The change could not be verified.*

Recommended Action: The change will take place when the OkiLAN 6020e is idle. If it is power cycled or reset before it becomes idle, changes will be lost. Return to the zone selection window and search the network again to display the new information.

Message: *There is not enough memory to perform the requested action.*

Recommended Action: Closing windows or quitting application programs on the Macintosh can make more memory available.

Message: *This option is not valid while the port is disabled. Enable the port before using this option.*

Recommended Action: Cannot reconfigure the device while the port is disabled.

Message: *Unexpected AppleTalk error.*

Recommended Action: Check the network connection. Try again.

EtherTalk

Appendix B
Selecting Your Printer

To Select Your Printer

1. Click on the **Apple** in the menu bar and select **Chooser**.

2. Click on the **Print Driver** icon. If a caution box appears, click **OK**.

If the Print Driver icon doesn't appear in the left side of the box, the Printer Resource files are not installed, or you may have installed the Printer Resource files in a different System Folder.

If AppleTalk is inactive, a caution dialog box will appear on your screen. Click **OK**. The Active button will be selected.

Zones

If your AppleTalk network is linked to other networks, zones will appear in the *Chooser*. Zones are a grouping of different networks. They can be grouped by physical location. For example, Zone 1 may contain all the printers on the network Group 1, but may also be grouped by logical zones. Printers can be connected to the same physical cable but can service other zones.

The highlighted zone is the zone where your computer resides on your network. The printer selection box lists the names of the devices that reside in your computer's zone.

1. Click on the zone in the *AppleTalk Zones* box where your printer is located. (You may also need to scroll through the zones to locate the one you want.) If you do not know the zone in which your printer is located, contact your network administrator.

2. Click on the printer name you want to use.

Note: If your printer is the only name listed in the box, it still must be selected. Your printer will remain selected until you choose a different printer with your *Chooser*.

---

3. Click on the **Close** box to exit the *Chooser*.

4. Print a directory from your Macintosh by selecting **Print Directory**, **Print Window** or **Print Desktop** from the *File* pull-down menu. If your printer prints a directory, you have connected your printer to your network correctly.

Appendix C
Capturing With a Spooler

Overview

To use the OkiLAN 6020e with the AppleShare Print Server, follow these steps to capture the OkiLAN 6020e.

Capturing without Bypass

Capturing

1. Use the OkiLAN 6020e utility and do the following:

   a) Change Type 1 to LaserShared

   b) Change Type 2 to LaserWriter

2. Capture with print spooler.

3. Use the OkiLAN 6020e utility to remove Type 2. The two device types should be:

   • Type 1 : LaserShared
   • Type 2 : (none)

Releasing

1. Use the OkiLAN 6020e utility to:

   a) Change Type 1 to LaserWriter

   b) Change Type 2 to LaserShared

2. Release the OkiLAN 6020e from the print spooler application.

3. Use the OkiLAN 6020e utility to remove Type 2. The two device types should be:

   • Type 1 : LaserWriter
   • Type 2 : (none)

Capturing with Bypass

Capture or release without using the OkiLAN 6020e utility.

Section VII:

Windows Printing

In This Section

Chapter 1
OkiLAN 6020e Set Up for
Windows NT 4.0/2000

Overview

This section contains instruction and information on how to set up your OkiLAN 6020e for a Windows NT 4.0/2000 environment. Print options for Windows NT 4.0/2000 include:

• OkiLAN 6020e Connect for IP
• OkiLAN 6020e Connect for DLC
• LPR

OkiLAN 6020e Connect for IP

OkiLAN 6020e Connect for TCP/IP is a full featured utility that allows simple, direct, TCP/IP printing from your computer to a printer attached to an OKI TCP/IP enabled print server. OkiLAN 6020e Connect has advantages over other TCP/IP printing options. It allows you to print to print servers that are using Dynamic IP addresses (DHCP). It will also notify you immediately in the event of a printer error (e.g. Paper out). Print jobs printed through OkiLAN 6020e Connect are sent directly to the OkiLAN 6020e print server and not routed through a network server, resulting in a reduction of network traffic.

System Requirements

To use OkiLAN 6020e Connect for TCP/IP for your Windows NT 4.0/2000 operating system, your computer must be configured to run TCP/IP. The OkiLAN 6020e print server must also be configured to run TCP/IP.

Windows Printing

Installation

To install OkiLAN 6020e Connect for TCP/IP, follow the instructions below:

1. Install the OkiLAN 6020e Connect for TCP/IP files - see Section I.

2. When installation is complete, click on **Start**, **Settings** and then **Printers**.

3. Select the Windows printer from which you would like to print with the OkiLAN 6020e Connect, then select **Properties** from the menu.

4. Add an OkiLAN 6020e Connect port. This may be done by selecting **Add Port** under the *Ports* tab.
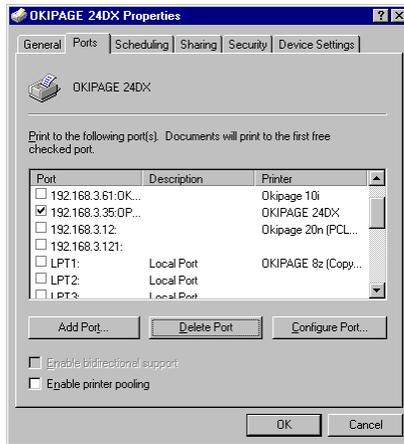
5. From the list of *Available Printer Ports*, select **OKI OkiLAN 6020e Connect IP Monitor** as the type of port to add and click **New Port**.
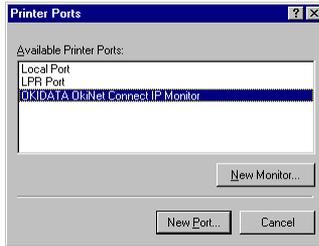
You will enter into the *Add OkiLAN 6020e Connect Port* screen where there will be a list of all OkiLAN 6020e print servers available on the local subnet.

6. If the port you wish to add is listed in the *Ports available on local subnet:* window, select the port name and click **Add**.

   If the port you wish to use is not listed, click the **Locate non-local device** button and enter the *Static IP Address* used for the print server. Click the **Add** button.

Note: The OkiLAN 6020e Connect DHCP discovery feature will relocate a print server on the local subnet by its port name, even if the IP address changes. This feature is enabled on the local subnet only. A non-local print server will not be re-discovered if the IP address changes.

---

7. Click **OK**.

You will now be able to use OkiLAN 6020e Connect for TCP/IP. Whenever you print to the printer configured with OkiLAN 6020e Connect, your print job will go directly to the OkiLAN 6020e print server port.

Windows Printing

Notify When Printed

This feature will provide an alert when your job is active on the printer. This may be useful if the printer is especially busy.

Description

An optional field where you may list the location or other useful information about the printer port.

OkiLAN 6020e Connect for DLC

OkiLAN 6020e Connect for Data-Link Control (DLC) provides a direct printing solution for users in Microsoft Windows NT serverless environments with the DLC/LLC protocol. Print jobs printed through OkiLAN 6020e Connect are sent directly to the OkiLAN 6020e print server and not routed through the network server, resulting in a reduction of network traffic. OkiLAN 6020e Connect for DLC can be used to configure the print server, obtain status from the print server and printer, and send jobs to the printer.

Note: To obtain a version of OkiLAN 6020e Connect for DLC that supports Windows NT, visit our FTP site (ftp://ftp.extendsys.com/pub/printserver/utilities/) or contact Technical Support.

Configure Port

If you have printing problems while using the OkiLAN 6020e Connect printing port, you may check the status of the port by selecting **Configure Port** under the *Ports* tab in the *Properties* screen.

Notify On Printer Error

This feature will check the printer status prior to printing the job. If a printer error is detected (e.g. printer off-line or out of paper) the error description will be given.

Notify When Printed

This feature will provide an alert when your job is active on the printer. This may be useful if the printer is especially busy.

Description

An optional field where you may list the location or other useful information about the printer port.

Using the Windows NT 4.0 LPR Print Monitor

A Microsoft LPR print monitor is shipped with Windows NT 4.0. This print monitor is not included in the default Windows NT installation; therefore, it will need to be installed. In order to set up an LPR printer in Windows NT 4.0, the system must have an IP address, the print server must have an IP address, and Microsoft TCP/IP printing must be installed.

System Requirements
* Administrator privileges
* Windows NT installation disks or CD

Install TCP/IP on NT Server
If Microsoft TCP/IP has not been installed on the Windows NT print server, follow the steps below:

1. Open the Windows NT **Control Panel**.

2. Double-click the **Network** icon.

3. Select the *Protocols* tab.

4. Select **TCP/IP Protocol** and click the **Properties** button.

5. Assign the server an IP address (for LANs without Internet access, it is suggested to use 10.10.10.1). Click **OK**.

Windows Printing

Install LPR Print Monitor
1. Open the Windows NT **Control Panel**.

2. Select the *Services* tab.

3. Select **Add**, then **Microsoft TCP/IP printing**.

4. Click the **Close** button.

5. Restart the system.

Assign Print Server IP Address
1. Using *OkiNet for IP*, assign the print server an IP address; for example, 10.10.10.2.

Note: For more information on using OkiLAN 6020e TCP/IP, see OkiNet for TCP/IP.

Add LPR Printer
1. Open the **Control Panel**, Printers and then select **Add Printer**.

2. Select **My Computer** and click **Next**.

3. Click the **Add Port** button.

4. On the *Printer Ports* screen, select **LPR Port** from the list of *Available Printer Ports* and click the **New Port** button.
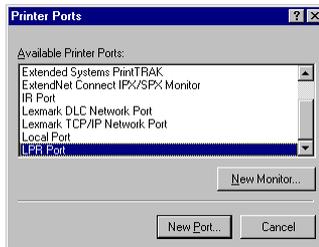
5. In the *Name or address of server providing lpd:* field, enter the IP address you assigned to the printer.

6. In the *Name of printer or print queue on that server:* field, enter the print server **output port** being used. For example, for port 1 enter **P1**, for port 2 enter **P2**, etc. Click **OK**.

7. Click **OK**.

8. Verify the port just added is selected and then click **Next**.
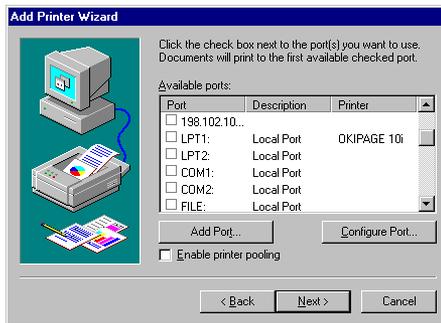
9. Select a printer driver and click **Next**.

10. Enter a name for the printer and click **Next**.

11. To share the printers with others on the network, select **Shared** and enter a share name for the printer.

Windows Printing

Chapter 2
OkiLAN 6020e Set Up for
Windows 95/98

Overview

This section contains instruction and information on how to set up your OkiLAN 6020e for a Windows 95/98 environment. Print options for Windows 95/98 include:

- OkiLAN 6020e Connect for TCP/IP
- OkiLAN 6020e Connect for DLC
- OkiLAN 6020e Connect for IPX/SPX

OkiLAN 6020e Connect for TCP/IP

OkiLAN 6020e Connect for TCP/IP is a full featured utility that allows simple, direct, TCP/IP printing from your computer to a printer attached to an OKI TCP/IP enabled print server. With OkiLAN 6020e Connect, you can even print to print servers using Dynamic IP addresses (DHCP). Print jobs printed through OkiLAN 6020e Connect are sent directly to the OkiLAN 6020e print server and not routed through the network server, resulting in a reduction of network traffic.

System Requirements

To use OkiLAN 6020e Connect for TCP/IP, your operating system must be Windows 95/98 and your computer must be configured to run TCP/IP. The OkiLAN 6020e print server must also be configured to run TCP/IP.

Installation

To install OkiLAN 6020e Connect for TCP/IP:

1. Install the OkiLAN 6020e Connect for TCP/IP-see Section I.

2. When installation is complete, click on **Start**, **Settings** and then **Printers**.

3. Select the Windows printer from which you would like to print with OkiLAN 6020e Connect, then select **Properties** from the *File* menu.

4. Add an OkiLAN 6020e Connect port. This may be done by selecting **Add Port** under the *Details* tab.

5. In the *Add Port* window, select the radio button labeled **Other** and then select **OKI OkiLAN 6020e Connect IP Monitor** as the type of port to add.
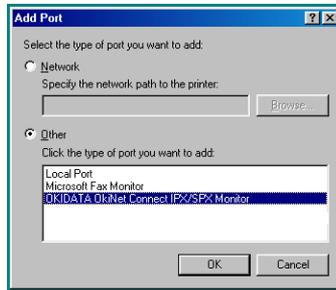
6. Click **OK**.

   You will enter into the *Add OkiLAN 6020e Connect Port* screen where there will be a list of all OkiLAN 6020e print servers available on the local subnet.

7. If the port you wish to add is listed in the *Ports available on local subnet* window, select the port name and click the **Add** button.

   If the port you wish to use is not listed, click the **Locate non-local device** button and enter the *Static IP Address* used for the print server. Click the **Add** button.

Note: The OkiLAN 6020e Connect discovery feature will relocate a print server by the port name, even if the IP address changes. This feature is enabled on the local subnet only. Non-local print servers will not be re-discovered if the IP address changes.

---

8. Click **OK**.

You will now be able to use OkiLAN 6020e Connect for TCP/IP. Whenever you print to the printer configured with OkiLAN 6020e Connect, your print job will go directly to the OkiLAN 6020e print server port.

Port Settings

If you have printing problems while using the OkiLAN 6020e Connect printing port, you may check the status of the port by selecting **Port Settings** under the *Details* tab in the *Properties* screen.

OkiLAN 6020e Connect for DLC

OkiLAN 6020e Connect for Data-Link Control (DLC) provides a direct printing solution for users in Microsoft Windows 95/98 serverless environments with the DLC/LLC protocol. Print jobs printed through OkiLAN 6020e Connect are sent directly to the OkiLAN 6020e print server and not routed through the network server, resulting in a reduction of network traffic. OkiLAN 6020e Connect for DLC can be used to configure the print server, obtain status from the print server and printer, and send jobs to the printer.

System Requirements

To use OkiLAN 6020e Connect for DLC, your operating system must be Windows 95/98 and the Microsoft 32-bit DLC protocol must be installed.

Installation

To install OkiLAN 6020e Connect for DLC, follow the instructions below:

1. Install OkiNet for DLC — see Section I.

2. When the installation is complete, click on **Start**, **Settings** and then **Printers**.

3. Select the printer driver from which you would like to print with OkiLAN 6020e Connect, then select **Properties** from the *File* menu.

4. Add an OkiLAN 6020e Connect port. This may be done by selecting **Add Port** under the *Details* tab.

5. In the *Add Port* window, select the radio button labeled **Other** and select **OKI OkiLAN 6020e Connect DLC Monitor** as the type of port to add.
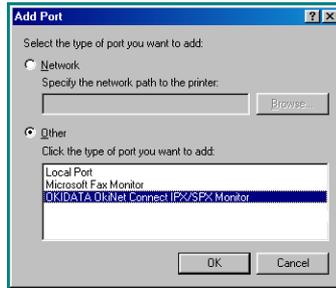
6. Click **OK**.

You will enter into the *Add OkiLAN 6020e Connect Port* screen where there will be a list of all OkiLAN 6020e print servers available on the local subnet.

7. Select the OkiLAN 6020e print server port name and click the **Add** button.

8. Click **OK**.

You will now be able to use OkiLAN 6020e Connect for DLC. Whenever you print to the printer configured with OkiLAN 6020e Connect, your print job will go directly to the OkiLAN 6020e print server port.

Port Settings

If you have printing problems while using the OkiLAN 6020e Connect printing port, you may check the status of the port. Select the **Details** tab on the *Properties* screen and then click the **Port Settings** button.

For more configuration options, click the **Configure** button.

Output Port Configuration Options

To configure the OkiLAN 6020e output port, select the *Output Port* tab.

Port Number
Select the port number you wish to configure.

Configuration Page Language
Select the appropriate printer language for printing and configuration pages on your printer.

Enabling/Disabling

To enable or disable protocols on the OkiLAN 6020e, select the *Protocols* tab. Select each protocol you wish to enable. If you disable a protocol, the OkiLAN 6020e will no longer communicate using that protocol.

Section VIII:

OkiView 32

In This Section

Chapter 1
Introduction

The OkiView 32 Utility provides a simple, quick way of viewing the status of all brands of network printers on Microsoft/Novell networks, as well as configuring and maintaining Oki network printers on those networks. The main screen contains the OkiView Printer List of network printers, and provides the starting point to select and manage print devices from Windows 95, 98, NT and 2000 workstations on the network.

This section gives a summary of OkiView 32's features. For more details, see the OkiView on-line Help.

Please note that not all OkiView 32 features may be supported by the particular OKI printer or OkiLAN print server model which you are using. For example, the OkiLAN 6020e does not support the NetBEUI protocol.

OkiView 32 Installation Requirements

Note: Novell's Client for Windows 95/98, NT or 2000 is required for OkiView 32. Microsoft Client is required only for configuring Novell using a Microsoft network.

Insert the OkiView 32 CD into your CD-ROM drive and run Setup.exe.

OkiView 32

Chapter 2
OkiView 32 Printer Panel
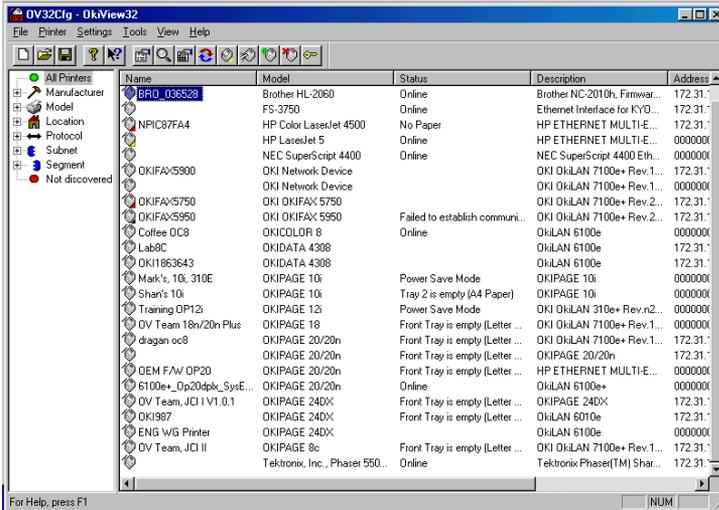
The Printer Panel is the OkiView 32 main display. The display is divided into two smaller panels: the Printer Filters Panel and the Printer Information Panel. The Printer Information Panel, on the right hand side of the main display, shows a list of all the printers currently available for status and configuration. Printer name and status information is detailed to the right of the printer icon.

OkiView 32 Printer Properties Menu

The Printer Properties menu allows you to get detailed status information and to configure printers. To enter the Printer Properties menu:

1 Select a printer on the Printer Information Panel.

2 From the Printer menu, click **Printer Properties**, or click the **Printer Properties** icon, or double-click on the selected printer.

Note: Modification of printer options (print quality, page setup, paper source, etc.) is not available for Internet FAX and non-Oki printers.

Status

The Status screen is reached from the Printer Properties menu. This screen displays descriptive information about the printer, as well as its online/offline status and the status text displayed on the printer's front panel.

Network Property Page

The Network Property Page is reached from the Printer Properties menu. This screen allows you to configure the network protocol, network frames, and SNMP traps events and destination addresses. Information includes:

- Protocols
    - TCP/IP
    - NetWare
    - AppleTalk
    - NetBEUI
    - Lan Manager
    - Banyan VINES
- Frame Types
- SNMP Traps

Novell Configuration

Note: This screen is only available when Novell's Client for Windows 95/98, NT or 2000 is installed.

The Novell Configuration screen is reached from the Printer Properties menu. This screen allows you to configure Novell NetWare without accessing standard DOS-based NetWare utilities such as Pconsole.

The Novell Configuration screen is separated into two panels:

Novell List Panel

This panel displays the following information:

- QueueServer/PServer in bindery mode
- QueueServer/PServer in NDS mode
- Remote Printer/NPrinter mode

Novell Information Panel

This panel allows you to change the settings displayed in the Novell List Panel.

OkiView 32

Changing the Printer's Name and Location

1 Select a printer on the Printer Information Panel.

2 From the Printer menu, click Printer Properties.

3 Change the text in the name and/or location fields.

4 Click OK.

OkiView 32 Discovery Preferences

This screen allows the user to customize these settings:

- Network Protocols—sets which protocol (TCP/IP or NetWare) is used to discover a network printer.
- TCP/IP Subnets—allows you to search one or more subnets to discover a network printer.
- IPX/SPX Segments—allows you to search one or more NetWare segments to discover a network printer.
- Printer Refresh Polling Interval—sets the rate at which OkiView 32 polls the network for new print jobs.

Section IX:

Regulatory Information

Federal Communications Commission Radio Frequency Interference Statement

This equipment generates and uses radio frequency energy. If not installed and used according to the manufacturer's instructions, this equipment may cause interference with radio/TV reception.

The Federal Communications Commission has established technical standards regarding radio frequency energy emitted by computing devices.

This equipment complies with Part 15 of the FCC Rules, subject to the following conditions: This device may not cause harmful interference; and it must accept any interference received, including interference that may cause undesired operation.

There is no guaranteed that interference will not occur in a particular installation. If you suspect that this equipment is interfering with radio/TV reception try the following:

• While observing the interference, turn the suspect equipment off and back on. If the inteference stops when you turn the equipment off , and starts again when you turn the equipment on, the equipment is probably the source of your problem.

• Connect the equipment and the receiver to different electrical outlets.

• Increase the distance between the equipment and the receiver.

• Reorient or relocate the receiving antenna.

• Consult your dealer or an experienced radio/TV technician for additional advice.

OKI is not responsible for radio/TV interference caused b using unauthorized cables or by making unauthorized changes to this equipment.

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