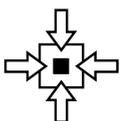




Network Guide



COLOR/MONO



CONNECTIVITY



INFORMATION

PREFACE

Every effort has been made to ensure that the information in this document is complete, accurate, and up-to-date. The manufacturer assumes no responsibility for the results of errors beyond its control. The manufacturer also cannot guarantee that changes in software and equipment made by other manufacturers and referred to in this guide will not affect the applicability of the information in it. Mention of software products manufactured by other companies does not necessarily constitute endorsement by the manufacturer.

While all reasonable efforts have been made to make this document as accurate and helpful as possible, we make no warranty of any kind, expressed or implied, as to the accuracy or completeness of the information contained herein.

The most up-to-date drivers and manuals are available from:
<http://www.okiprintingsolutions.com>

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NOTES, CAUTIONS AND WARNINGS

NOTE

A note provides additional information to supplement the main text.

CAUTION!

A caution provides additional information which, if ignored, may result in equipment malfunction or damage.

WARNING!

A warning provides additional information which, if ignored, may result in a risk of personal injury.

NETWORK CONFIGURATION

INTRODUCTION

Your machine incorporates a fast 100BASE-TX/10BASE-T network interface. This guide explains the functionality of the built in network interface. Access for interconnection and producing self-diagnostic test and configuration printouts is provided via an interface panel at the rear of the machine.

This network interface supports IEEE802.2, IEEE802.3, Ethernet-II and SNAP, and can detect those frame types automatically.

Also, the interface supports major protocols such as TCP/IP, IPX/SPX (NetWare) and NetBEUI.

This guide details the network interface specification and several software utilities.

You should set the emulation in the Print Setup menu to Auto or PS before printing the self-diagnostic test and settings.

NOTE

Not all utilities, features or protocols are supported by every operating system. Please check with your User's Guide and support website for latest information.

SPECIFICATION

NOTE

Not all utilities, features or protocols are supported by every operating system. Please check with your User's Guide and support website for latest information.

ITEM	SPECIFICATION
Frame Types	IEEE 802.2 IEEE 802.3 Ethernet-II, SNAP, AUTO
Network Interface	100BASE-TX 10BASE-T
Network Protocols	TCP/IP V4, V6 IEEE 802.1x Network layer: ARP, IP, ICMP Session layer: TCP, UDP Application layer: LPR, FTP, TELNET, HTTP, IPP, BOOTP, DHCP, SNMP, DNS, SMTP, POP3, SLP, Bonjour IPX/SPX (NetWare) Remote printer mode (up to eight file servers and 32 queues) Print server mode over IPX/SPX (up to eight print servers) Encrypted password supported in print server mode EtherTalk NetBEUI NetBIOS, WINS LDAP Kerberos Windows Rally SSL/TLS IPSec
Functions	Self-diagnostic test printing Monitoring and configuration by Web browser Printer status notification by E-Mail

SELF-DIAGNOSTIC TEST

With the machine power switched on, press the push-button located on the network interface panel (at the rear of the machine) for more than three seconds and release. The self-diagnostic test results and configuration settings are printed.

On the first page of the Network Information that is printed out, under the heading "General Information" the MAC or Ethernet address is given. For example:

MAC ADDRESS 00808784E3F1

The Ethernet address is therefore: 00:80:87:84:E3:F1

CONFIGURATION UTILITIES

You can configure the network interface (NIC) by using one of the following methods:

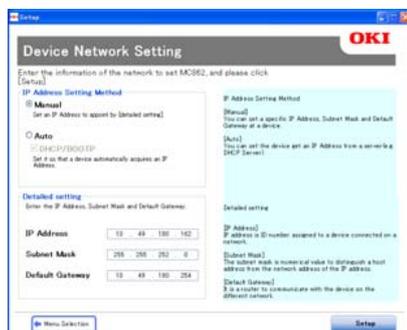
UTILITY	FEATURES	SYSTEM REQUIREMENTS
Network Card Setup	Configure the NIC.	Mac OS X 10.3.9 - 10.7
Web Browser	Configure the NIC and printer by using a Web browser such as Microsoft Internet Explorer or Mozilla Firefox.	Microsoft Internet Explorer or similar.
Telnet	Configure the NIC using TELNET.	Third-party vendor developed TELNET client package. A TELNET Application is standard in Windows/UNIX/Linux.
SNMP	The printer and network card can be controlled using third-party vendor developed SNMP application.	Third-party vendor developed SNMP application.

DEVICE NETWORK SETTING

NOTE

Not all utilities, features or protocols are supported by every operating system. Please check with your User's Guide and support website for latest information.

You can use Software DVD to configure the network.



In order to use Software DVD, TCP/IP needs to be activated.

NOTE

Administrator privileges are required.

MEMO

To check the printer MAC address, press the <ENTER> button, and then select **View Information > Network** on the printer operator panel.

CONFIGURING NETWORK SETTINGS

1. Turn on the printer.
2. Turn on your computer, and insert the Software DVD-ROM.
3. Click **Run Setup.exe**.
If the User Account Control dialog box appears, click **Yes**.
4. Select the language and read the user license agreement and click on **Agree**.
5. Read the recommendation on the environment and click **Next**.
6. Select the target device and click **Next**.
7. Select the **Network Connection** and click **Next**.
8. Select **Device Network Setting**.
9. Select the device from a list and click **Next**.
10. Change the items required and click on **Setup**.
If setup requires you to enter your password, enter Password and click on OK.
 - > The default password is the last 6 alphanumerical digits of the Ethernet address.
 - > The password is case sensitive.
11. Click Exit and close Software DVD.
The new settings are enabled when the printer restarts.

CONFIGURING WEB SETTINGS

You can launch the web page to configure the printer's network setting.

ENABLING WEB SETTINGS

1. Launch Configuration Tool.
2. Select **Network Setting** from **Plug-in** menu.
3. Click **Discover Devices**.
4. Select the printer from the list.
5. Click **Device Settings** icon.
6. Check **Device Settings(Web) - Enable** and click on **OK**.
7. Enter your password into **Password** and click on **OK**.
 - > The default password is the last 6 alphanumerical digits of the ethernet address.
 - > The password is case sensitive.
8. Click **OK** on the confirmation window.

The new settings are enabled when the printer restarts. During the restart, the printer status icon changes to red. The printer network card will restart, the new settings will be active, and the status icon will turn green.

OPENING THE WEB PAGE

1. Launch Configuration Tool.
2. Select **Network Setting** from **Plug-in** menu.
3. Click **Discover Devices**.
4. Select your printer from the list.
5. Click **Display Web Page** icon.

The web page will start, and the printer status page will be displayed.

CHANGING THE PASSWORD

1. Launch Configuration Tool.
2. Select **Network Setting** from **Plug-in** menu.
3. Click **Discover Devices**.
4. Select your printer from the list.
5. Click **Change Password** icon.
6. Enter the current password.
 - > The default password is the last 6 alphanumerical digits of the ethernet address.
 - > The password is case sensitive.
7. Enter the new password, and reenter it for confirmation.
The password is case sensitive.
8. Click **OK** on the confirmation window.

CHANGING THE ENVIRONMENT

You can configure the printer search conditions and time-out value for each setting.

1. Launch Configuration Tool.
2. Select **Network Setting** from **Plug-in** menu.
3. Click **Environment Settings**.
4. Configure the settings required and click **OK**.

USING A WEB BROWSER

If you do not wish to launch or install the Network Card Setup utility, you can access the printer's Web Page directly through a web browser.

If the printer is connected to the network using TCP/IP, its settings and the printer menu settings can be configured using a Web browser. Refer ["Adjusting printer settings" on page 12](#) and the relevant manuals for details of how to launch and use the browser. Refer also to ["Web browser" on page 34](#) for instructions on how to prevent your browser caching the printer's web pages.

DEFAULT USER NAME AND PASSWORD

To apply configuration changes using a Web browser, you will be prompted for a username and password. The username is **root** and the default password is **aaaaaa**.

NOTE

*To apply configuration changes using AdminManager, the username is **root** and the default password is the last six characters of the Ethernet (MAC) address (any alpha characters must be in upper case).*

The root password can be changed to allow you to configure the printer by using a Web browser/TELNET/AdminManager. To change password from the Web browser, select **Admin Setup > Management > Admin Password** and follow on-screen instructions.

ADJUSTING PRINTER SETTINGS

The network addresses used in this manual are shown as examples only. Network addresses used in your installation must be generated from your own network.

1. Launch the Web browser and enter the IP Address of the network interface card in Address (Location/Position) and press the Enter key.
The Web Page is displayed.

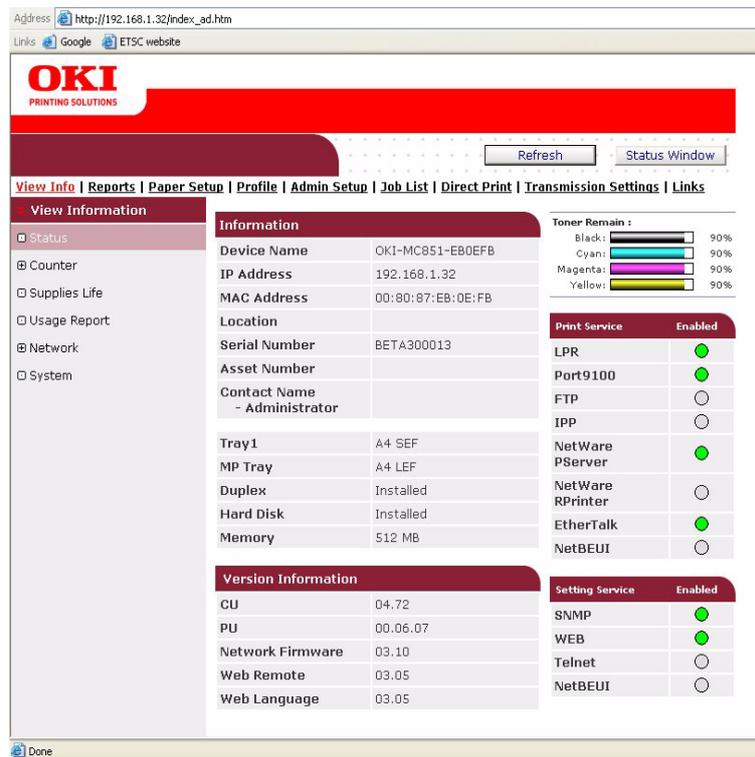
You can find the IP Address on the Self-Diagnostic Test printout, refer to ["Self-diagnostic test" on page 7](#).

NOTE

On the web page you can view printer status, job lists and links. You can also configure the IP Address, Subnet Mask and Gateway for the network card. However, to configure printer settings, you need to log in as "root" and enter the correct password to be able to configure all items.

2. To access and adjust control settings, such as printer, scanner, fax network, security and maintenance, click the **Administrator Login** button in the left-hand pane.
3. Enter the username, **"root"** and password as **aaaaaa**.
4. As this is the first time logging into the printer Web Page, the Printer Identification (basic setup) page is launched. You have two options:
 - > You can enter the printer location, asset number, administrator name and select **"Do not show this page again"**. Click **OK** to save these details. Allow a few seconds for the settings to save and the printer to restart automatically.
 - > If you do not wish to enter any details, click **SKIP**.

5. The printer's Web Page with full menu options opens up. Browse the menu and update information as appropriate.



The following table outlines the menu options for the printer Web Page.

MENU OPTION		DESCRIPTION
View Info		
	Status	View information relating to your printer status, consumables and network settings.
	Counter	
	Supplies Life	
	Usage Report	
	Network	
	System	

MENU OPTION		DESCRIPTION	
Reports			
	Configuration	View and print information and reports.	
	Information		File List
			Demo Page
			Error Log
			Scan to Log
			MFP Usage Report
			Network Information
			Print
	PSE Font List		
	PPR Font List		
	FX Font List		
	Color Tuning Pattern		
	Color Profile List		
	Paper Setup		
	Tray Configuration	View and adjust tray settings	
	Select Tray		
	Duplex Last Page		
Profile			
	Profile	Create, edit or delete Profile(s).	
Admin Setup			
	PIN ID	Change your password and change any admin settings relating to your machine.	

MENU OPTION		DESCRIPTION
Admin Setup Cont...		
Network	General Network Settings	View and change Network settings and apply access restrictions for your printer network.
	TCP/IP	
	Netware	
	Ethertalk	
	NBT/NetBEUI	
	Email	
	SNMP	
	IPP	
	Windows Rally	
	IEEE802.1X	
	Secure Protocol Server	
	LDAP	
	Mail Server	
	Security	
	Maintenance	
Copy Setup	Default Settings	View and adjust copy settings.
Fax Setup	Default Settings	View and adjust Fax settings.
	Security Function	
	Other Settings	
Scanner Setup	Default Settings	View and adjust scanner settings.
	E-mail Setup	
	USB Memory Setup	
Print Setup	Print Menu	View and adjust Print settings.
	Color Menu	
	Sys Config Menu	
	Emulation	
Management	Local Interface	Reset your printer and restore default settings for your printer and Network Interface Card.
	System Setup	
	Power Save	
	Memory Setup	
	Admin Password	
	Reset Settings	
User Install	User Install	View and adjust settings.
	Time Setup	

MENU OPTION		DESCRIPTION	
Job Setup			
	Job List	Allows you to manage pending jobs for your printer.	
Direct Print			
	Web Printing	View and adjust settings.	
	Email Printing		Email Printing
			Receive Settings
			Send Settings
Transmission Settings			
	Automated Delivery Setup	View and change Transmission settings.	
	Transmission Settings		
	Automated Delivery Log		
	Transmission Log		
Links			
	Links	Add links for easy access to customer support and on-line information.	
	Edit Links		

USING TELNET

CAUTION!

Please ensure a valid IP address for your network environment is used. Use of an incorrect IP address can cause serious problems on your network.

EXAMPLE TELNET CONFIGURATION

TELNET requires the print server to have a valid IP address configured. If the NIC already has an IP address configured, skip steps 1 to 3 below.

NOTE

The method of configuring commands may differ between workstations. Refer to the workstation's manual.

1. Use the PING command to confirm the connection with the network card.

Example

For IP address 172.168.20.127:

```
ping 172.168.20.127
```

If there is no reply, there is a problem with the configuration of the IP address (the IP address has been already set manually or by the DHCP/RARP server), or with the network. Reset the network interface card settings to the default and try to set a temporary IP address. If you still have the problem after resetting the network interface card, consult the network manager.

2. Login to the network card using TELNET.

Example

For IP address 172.168.20.127

```
telnet 172.168.20.127
```

You should see a sequence similar to the following example:

```
Trying 172.168.20.127
Connected to 172.168.20.127
Escape character is '^]'.
myprn TELNET Server (Ver 01.05).
login: root
'root' user needs password to login.
password:
User 'root' logged in.
No. MENU (level.1)
-----
 1:Status / Information
 2:Device Config
 3:Network Config
 4:Security Config
 5:Maintenance
99:Exit setup
Please select (1-99)?
```

3. Enter the number of the item to be changed.

The details window for that item displays.

4. When the configuration is complete, select **Exit Setup** to save your change. To exit without saving your modification, select **Quit**.
5. Turn the printer off and on again.

NOTE

The network card continues to use pre-transmission settings until the printer is turned off and back on again.

USING SNMP

NOTE

Not all utilities, features or protocols are supported by every product. Please check with your User's Guide and support website for latest information.

The machine and network card can be managed via a standard SNMP management station. The network card supports SNMPv1, MIB-II, Oki Data Private MIB and SNMP V3. In order for the machine to be managed correctly from an SNMP management station, the Oki Data Private MIB needs to be added to that management station. Please refer to the SNMP manager documentation for information on how to do this.

NOTE

The Oki Data Private MIB file can be found in the MIB folder on the DVD-ROM or support website. Please refer to the readme file for further information.

The printer's trap address can be set in five places using TCP/IP and in one place with IPX. Printer trap settings can be made with TELNET and a Web browser.

MANAGEMENT UTILITY – PRINTSUPERVISION

NOTE

Not all utilities, features or protocols are supported by every product. Please check with your User's Guide and support website for latest information.

PrintSuperVision is a Windows server application designed for managing and monitoring printing devices connected to a network. The core application is server-based and is accessible from any browser enabled device connected to the network.

For full details of how to install and use PrintSuperVision, please refer to the PrintSuperVision Configuration Guide which is available on the support website.

PRINTING UTILITY – LPR (WINDOWS ONLY)

NOTE

Not all utilities, features or protocols are supported by every product. Please check with your User's Guide and support website for latest information.

The LPR Utility is a utility that allows printing data to printers connected to the network via TCP/IP. It is an alternative method of connecting printers instead of using the Microsoft TCP/IP port; however, the LPR utility offers some additional and very useful features:

- > **Displays printer status** - print job status can be viewed, paused or cancelled.
- > **Download files directly to the printer** - send PRN or PostScript files directly to the printer.
- > **Redirect print jobs** - send print jobs to other printers if the original printer is busy or has an error.
- > **Multicast printing** - send the same print job to many printers simultaneously¹.

1.The printers all have to be of the same model.

SYSTEM REQUIREMENT

Operating Systems with TCP/IP support and Oki printer that support TCP/IP.

To INSTALL THE LPR UTILITY

NOTE

Some Operating Systems require administrator privileges in order to make changes.

1. Set up the printer driver by designating the output destination to Local Printer (LPT1:). For information on setting up your printer driver, see the printer user guide.
2. Insert the DVD-ROM into the DVD-ROM drive. The Setup Utility starts automatically. If it does not start, double-click setup.exe on the DVD-ROM.
3. Select the appropriate language.
4. Select your printer model.
5. Select **Software Utilities**.
6. Select **Install LPR**.
7. Follow the on-screen instructions.
8. Click **Next** when the **Welcome** screen is displayed.
9. Verify **Destination Folder** and **Spool Folder** and click **Next**.
10. Check **Register in Startup** if you want automatic startup as Windows boots up. Check **Launch as minimized** if you want to startup in the Icon state and click **Next**.
11. Verify the program folder name and click **Next**. The installation starts.
12. When the installation ends, the **Setup complete** screen is displayed. Check **Yes, I want to launch OKI LPR Utility now** and click **Finish**. Check **Yes, I want to view the ReadMe File** if you want to read **Readme**. The LPR utility will start.
13. You may be asked whether it is OK to change write permissions for the spool directory. Click **Yes** to allow the utility to be correctly installed.
14. Select **Add Printer** on the **Remote Print** menu.
15. Click **Discover...** to search for the IP address of a suitable printer on your network.
16. Highlight the printer you will use and click **OK**.
17. If your printer is not discovered, click **Cancel** and you can type the IP address directly at **IP Address:**.
18. Enter an IP address at **IP Address** and click **OK**. A printer is added to the main window.

Refer to the On-line Help for information on how to use the utility.

UNINSTALLATION

1. Stop the LPR Utility.
2. Select **Start > Programs > Okidata > OKI LPR Utility > Uninstall OKI LPR Utility**.
You may find this under **Start > All Programs** in Windows XP.
3. Click **Yes** when the Confirm File Deletion dialogue is displayed. Deletion of the LPR utility starts.
4. When the deletion has finished, the Uninstall Complete screen is displayed. Click **OK**.

If a file that has been added after installation exists in the folder to install the LPR utility or the folder to spool, you cannot delete the folder. Delete any unwanted files before running Uninstall LPR Utility.

MICROSOFT WINDOWS

OVERVIEW

This chapter provides guidelines on how to print over the network from various Microsoft Windows platforms. There are numerous ways of printing from Windows and the exact set-up will vary depending upon your environment. There are also numerous versions of Windows, which can be configured as either a client, server or both.

Although there are many variants of Windows, the principles of network printing are the same. Microsoft provides on-line help with all of their operating systems and this is a good reference point for the exact details of each configuration option within Windows.

The network printer supports TCP/IP protocols that can be used in conjunction with the Windows operating system,

NOTE

Not all utilities, features or protocols are supported by every operating system. Please check with your User's Guide and support website for latest information.

INSTALLING A NETWORK PRINTER

There are two ways to set up a Network Printer:

- > Install automatically, using the *Oki Driver Installer*
- > Install it yourself using the *Add Printer Wizard*

USING THE OKI DRIVER INSTALLER

The Oki Driver Installer program searches for compatible printers on the Network, then installs and configures the printer drivers with the correct port settings automatically.

Using the Oki Driver Installer program, you can install to the following connected printer types:

1. Locally connected printers
 - > USB port
 - > Parallel port
2. Networked printers
 - > Directly connected (peer-to-peer) printers via TCP/IP. The Microsoft standard TCP/IP is installed and configured to use Port 9100 with the printer's IP address.
 - > Printers not directly connected, but shared via a PC (Client Server)

Why use the Driver Installer?

- > Automatically discovers printers on the Network (TCP/IP)
- > Installs driver and correctly assigns the appropriate port and IP address
- > Allows easy configuration and sharing of the printer with other Network users
- > Automatically configures the printer driver with the appropriate hardware device options such as hard disc drive, duplex unit, etc. (via the Oki Network Extension software)

USING THE ADD PRINTER WIZARD

Method summary:

The following table shows the different ways to connect to the printer (port types).

	WINDOWS XP	WINDOWS VISTA/ SERVER 2003/ SERVER 2008/7
Windows Rally	NO	YES
Windows standard TCP/IP	YES	YES
Oki LPR	YES	YES
IPP	YES	YES
NetBEUI	YES	NO

About the different methods

Windows Rally

Windows Rally is an automated "Plug-n-Play" type utility that allows users to discover and configure network devices effortlessly.

Windows standard TCP/IP port

The standard TCP/IP port simplifies connecting to remote printers using the TCP/IP protocol. A computer that acts as a print server must run the TCP/IP protocol in order to print.

Can be configured to use either LPR or RAW (e.g. Port9100).

OKiLPR

Used to connect your printer over TCP/IP using an LPR port.

OKiLPR also includes useful tools enabling you to download PS and PRN files directly to your printer and automatically redirect jobs to other printers on the network.

IPP

The IPP (Internet Printing Protocol) defines a standard protocol for printing as well as managing print jobs, media, resolution, etc.

NetBEUI

NetBEUI (NetBios Extended User Interface) is a protocol that was designed for use in small workgroups or LANs. Within Windows NetBEUI is used for file and printer sharing between computers. It provides a simple method of printing, but it does have limitations, and is not as robust as TCP/IP or IPX. Typically it is employed in small business or home networks.

CONFIGURING THE NETWORK PRINTER IP ADDRESS

Reference:

For how to configure the network printer IP Address, please refer to "[Device Network Setting](#)" on page 9.

MAC OS X

OVERVIEW

This section is for administrators and it should be used in conjunction with the relevant Mac OS X manual. Please ensure your Mac has the latest Mac OS X updates installed.

To get the best results from your printer, install the Postscript Printer Description (PPD) file supplied with your printer and use this to customise the Apple PostScript driver that is built-in to the OS X. Features provided by the PPD file include:

- > Supported paper types
- > Paper trays
- > Printer resolution
- > Printer colour matching

NOTE

The PPD file must be installed using the Oki Driver Installer to ensure that all essential files are copied.

PRINTING THE CONFIGURATION PAGE

The printer's configuration page reports information that is required for Macintosh configuration. To print a configuration page, while the printer is switched on, depress the NIC's push-button for more than three seconds and then release.

The first six characters of the Ethernet address are the same for all network cards. The last six characters of the Ethernet address are unique to each card.

SETTING UP A NETWORK PRINTER

1. If the printer does not already have an IP address, use the Network Card Setup to assign an IP address. See ["Installing utilities" on page 25](#).
To do this, you will need to know the printer's MAC address. This can be found on the print server's network summary printout. See ["Self-diagnostic test" on page 7](#).
2. Install the printer driver software. This copies the printer driver files to the correct location on your Mac OS X system.
3. Make a connection to the printer by USB, TCP/IP, Rendezvous or AppleTalk. See ["Connecting to your printer" on page 26](#).
4. If required, enable hardware device options such as additional paper trays or printer hard disk. See ["Configuring printer hardware options" on page 27](#).

MACOS NETWORK CARD SETUP

You can use the Network Card Setup to:

- > Assign IP addresses and modify TCP/IP settings

INSTALLING UTILITIES

You can copy it by dragging and dropping to the place you want. You can also run this directly from the Software DVD-ROM.

FOR MAC OS X

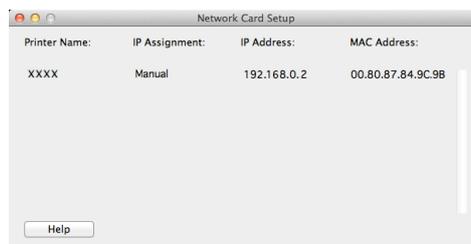
1. Insert the Software DVD-ROM into the computer.
2. Double click on the **OKI > Utilities** folder.
3. Copy the folder you want to install by dragging and dropping to your Applications folder.

Memo:

To start up, double click on the utility icon within the folder.

NETWORK CARD SETUP

You can use the Network Card Setup to configure the network.



In order to use Network Card Setup, TCP/IP needs to be activated.

NOTE

- Configure the TCP/IP settings.
 - Even when connected using a wireless LAN, the displayed MAC address becomes the MAC address of the wired LAN.
-

CONFIGURE THE IP ADDRESS

1. Launch Network Card Setup.

Reference:

["Installing Utilities" on page 25](#)

2. Select the machine.
3. Select **IP Address...** from the **Printer** menu.
4. Configure the settings as required and click **Save**.
5. Enter the password and click on **OK**.
 - > The default password is the last 6 alphanumerical digits of the Mac address.
 - > The password is case sensitive.
6. Click on **OK** to activate the new settings.
Restart the machine network card.

CONNECTING TO YOUR PRINTER

NOTE

The steps below are for Lion (10.7), Snow Leopard (10.6) and Leopard (10.5) Operating Systems. The principle of connecting to your printer is the same, though the steps may vary for different Operating Systems. Please refer to the ReadMe file on the driver DVD.

LION (10.7), SNOW LEOPARD (10.6) AND LEOPARD (10.5)

USB

1. Choose **Apple Menu > System Preferences > Print & Scan** (Lion) , or **Print & Fax** (Snow Leopard and Leopard).
 2. If the printer is already in the list of printers, click "-" to remove it.
-

NOTE

This is necessary as Leopard may not be using the correct printer driver files.

3. Click "+" to add a new printer.
 4. Ensure the Default tab is selected and select your printer from the list.
 - > Your printer is displayed as type **USB** in the list of available printers.
 - > Ensure that the Print Using: selection matches your printer. If **Generic PostScript Printer** is displayed, select a driver that matches.
 5. Click **Add**.
 6. Click **Configure...** and ensure the hardware options displayed match your printer.
-

NOTE

Hardware options are not configured automatically.

The printer is added to the list of printers.

7. Restart your computer.

Bonjour

1. Choose **Apple Menu > System Preferences > Print & Fax**.
2. Click "+".
3. Select your printer model from the Default Browser.
4. Click **Add...**
5. Depending on the connection type, you may be prompted to configure any additional printer hardware options. If your printer has options such as a storage device or second tray, switch on the relevant options.

AppleTalk (Leopard only)

NOTE

AppleTalk is not supported in Snow Leopard.

1. Choose **Apple Menu > System Preferences > Print & Fax.**
2. Click "+".
3. Select your printer model from the Default Browser.
4. Click **Add...**
5. Depending on the connection type, you may be prompted to configure any additional printer hardware options. If your printer has options such as a storage device or second tray, switch on the relevant options.

TCP/IP Connection

1. Choose **Apple Menu > System Preferences > Print & Fax.**
2. Click "+".
3. Click the **IP Printer** button.
4. From the Protocol menu, choose **Line Printer Daemon – LPD.**
5. Enter the printer's IP address in **Address.**
To find the printer's IP address, you can print a configuration page from the printer's operator panel. Refer to ["Printing the configuration page" on page 24.](#)
6. Check the correct PPD file for your printer is selected in the Print Using menu.
7. Click Add.
8. You will be prompted to configure any additional printer hardware options. If your printer has options such as a storage device or second tray, switch on the relevant options. Refer to ["Configuring printer hardware options" on page 27.](#)

CONFIGURING PRINTER HARDWARE OPTIONS

NOTE

Applies to IP and Rendezvous network connections only.

If you have added additional hardware, for example additional paper trays, to your printer these must be enabled in the printer driver.

1. Choose **Apple Menu > System Preferences > Print and Fax.**
2. Click the **Printers** menu, and choose **Show Info.**
3. From the popup menu, select **Installable Options.**
4. Select any options appropriate to your hardware, and click **Apply Changes.**

UNIX

NOTE

Not all utilities are provided for every operating system. Please check with your User's Guide and your support website for latest information. This section applies to devices which support PCL or Postscript.

OVERVIEW

The printer supports many protocols such as LPD, FTP, TELNET, SNMP and IPP, and works within the UNIX environment.

To use the network card within the UNIX environment, the following steps are required:

CONFIGURATION

NETWORK INTERFACE CARD SETTING

The first step in installing the network card under UNIX is to set up the IP address, Subnet Mask and Gateway. This section explains one way to set them up from a UNIX workstation.

- > The network addresses used in this manual are shown as examples only. Network addresses used in your installation must be generated for your own network.
- > Log in as root to change the configuration of the printer.
- > If an incorrect IP address, Subnet Mask or Gateway is entered, the network may go down or other damage may occur. Check the address with your network manager.

The following explanation uses Sun Solaris 2.8 (Solaris 8) as an example. The actual commands may differ between versions of UNIX, so refer to the workstation manuals for more information.

NOTE

If you do not have superuser rights, the network manager should conduct the configuration.

1. Log in as root to the workstation.
2. If the printer does not have an IP address already assigned, use the *arp* command to set a temporary IP address.

Example: for IP address 192.68.20.127 and network card address 00:80:87:01:00:D2

```
# arp -s 192.168.20.127 00:80:87:01:00:D2
```

3. Use the *ping* command to confirm the connection with the network interface card.

Example: for IP address 192.168.20.127

```
# ping 192.168.20.127
```

If there is no reply, there is a problem with the configuration of the IP address (the IP address has already been set manually or dynamically), or with the network. Reset the network interface card settings to default and try to set a temporary IP address.

If you still have the problem after resetting the network interface card, consult the network manager.

4. Login to the network interface card using TELNET.

Example: Logging in to IP address 192.168.20.127

```
#telnet 192.168.20.127
Trying 192.168.20.127
Connected to 192.168.20.127
Escape character is '^'.
myprn TELNET server (Ver 01.01).
login: root
`root' user needs password to login.
password:
User `root' logged in.
No. MENU (level.1)
1 : Status / Information
2 : Device Config
3 : Network Config
4 : Security Config
5 : Maintenance
99 : Exit setup
Please select (1- 99)?
```

5. Type 1 and press the **Enter** key. Perform the following settings:

```
Please select (1- 99)? 1
No. MENU (level.2)
1 : Device
2 : Network
3 : Version
99 : Back to prior menu
Please select (1- 99)?
```

6. Logout from the network interface card. Turn the printer off for about 15 seconds and on again to validate the settings.

LPD Printing

Line Printer Daemon (LPD) is the most common protocol for printing with TCP/IP to a network printer. Refer to the workstation's manual for details of `lpr` and `lp` commands. The following explanation in this section uses the printing of print file **test.prn** with printer name *myprn_lp* as an example.

Logical printers

The printer's network interface includes three logical printers.

- > lp must be used for printing a file created using the printer driver.
- > sjis must be used for printing a text file of Shift JIS Kanji code.
- > euc must be used for the printing a text file of the EUC Kanji code.

LOGICAL PRINTER	PRINTER FUNCTION
lp	For direct output
sjis	For Shift JIS Kanji converted output
euc	For EUC Kanji converted output

- > sjis and euc function only as PostScript printers.

BSD-based UNIX

Print using the **lpr** command.

```
# lpr myprn_lp test.prn
```

If the **lprm** command is used, the print job is cancelled.

Example: To delete a print job (Job ID 123) on the myprn_lp

```
# lprm myprn_lp 123
```

Verify the printer status using the **lpq** command.

- > The result of **lpq** may not be displayed correctly depending on UNIX operating system specification.

```
# lpq myprn_lp
```

System V-based UNIX

Print using the **lp** command.

```
# lp -d myprn_lp_lp test.prn
```

Delete a print job using **cancel** command.

Example: To delete a print job (Job ID 456) in the myprn_lp

```
# cancel myprn_lp -456
```

Verify the printer status using the **lpstat** command.

```
# lpstat
```

The result of **lpstat** may not be displayed correctly depending on UNIX operating system specification (e.g. Solaris 2.x).

FTP printing

FTP (File Transfer Protocol) is used for transferring a file with TCP/IP. If the print data is sent to a logical printer via FTP, it is printed.

Refer to the workstation's manual for details of the ftp command. The following explanation uses print file *test.prn* with printer name **myprn_lp** as an example.

LOGICAL DIRECTORIES

The printer's network interface includes three logical directories.

- > **lp** must be used for printing a file created using the printer driver.
- > **sjis** must be used for printing a text file of Shift JIS Kanji code.
- > **euc** must be used for the printing a text file of the EUC Kanji code

LOGICAL DIRECTORY	PRINTER FUNCTION
lp	For direct output
sjis	For Shift JIS Kanji converted output
euc	For EUC Kanji converted output

- > **jis** and **euc** function only as PostScript printers.
- > You can not send data to the root directory.

1. Log in to the network interface card.

When printing with ftp, use any values for name and password. However, if the user name is root, the password set under TELNET or the utility is required. See the appropriate section for details.

*Example: Logging in with host name **myprn** (or IP address 192.168.20.127).*

```
# ftp myprn (or ftp 192.168.20.127)
Connected to myprn
220 EthernetBoard 8100e Ver 01.50 FTP Server
Name (myprn:<none>) : root
331 Password required.
Password:<CR>
230 User Logged in
ftp>
```

The network card logical directory structure is hierarchical. Move to the logical directory; it is not possible to output print data to the root directory.

2. Move to the preferable logical directory using the `cd` command.

Example: moving to the `lp` directory and confirming the current directory.

```
ftp> cd /lp
250 Command OK.
ftp> pwd
257 "/lp" is current directory
ftp>
```

3. Configure the transfer mode.

There are two types of transfer mode: BINARY mode, in which the file content is output as it is and ASCII mode, which converts the LF code to the CR+LF code. If a binary file converted by the printer driver is transferred, the transfer mode has to be BINARY mode.

Example: Changing transfer mode to binary mode and verifying the current mode:

```
ftp> type binary
200 Type set to I.
ftp> type
Using binary mode to transfer files.
ftp>
```

4. Transfer the print data to the network card using the put command. Two methods of file transfer using the put command are available.

Example: Transferring print data test.prn

```
ftp> put test.prn
```

Example: Transferring print data specified by absolute path/users/test/test.prn

```
ftp> put /users/test/test.prn
```

5. Logout from the network card using the quit command.

```
ftp> quit
```

Three states can be verified using the quote command stat: the IP address, login user name and transfer mode. In addition, printer status can be verified by specifying the directory after the stat (lp, sjis, euc).

Example: Displaying network card status

```
ftp> quote stat
211-FTP server status:
Connected to: 192.168.20.10.000.00
User logged in: root
Transfer type: BINARY
Data connection: Closed.
211 End of status.
ftp>
```

Example: Displaying the network card status (directory name: lp)

```
ftp> quote stat /lp
211-FTP directory status:
Ready
211 End of status
ftp>
```

TROUBLESHOOTING

The network addresses used in this manual are shown for example only. Network addresses used in your installation must be generated from your own network.

SELF-DIAGNOSTIC TEST

PRINTER DOES NOT PRINT

- > Check that your printer is switched on.
- > Check the printer status.
- > Ensure that the printer is connected to your computer.

NG IS PRINTED IN THE SELF-DIAGNOSTIC TEST

If NG is printed in the self-diagnostic test or a Flash ROM Check Registers NG:

1. Turn the printer off for 15 seconds and then on again.
2. Press the reset button, located close to the Network Interface Panel at the back of your printer, to re-initialize it.

TCP/IP

COMPUTER CANNOT FIND THE NETWORK INTERFACE CARD

Carry out the following procedures to verify the printer settings:

- > Turn the printer off for 15 seconds and then on again.
- > Confirm the network interface is enabled on the printer.
- > Check there is a response to the PING command.
- > Check that the network cable is correctly connected and that the green LED close to the printer's network interface is lit. If not, change the cable and try again.
- > Run the Self-diagnostic test as described on [page 7](#).
- > Check the IP Address, Subnet Mask and Gateway are correct.
- > Check that the TCP/IP protocol is set to Enable.
- > Reset the network interface card to factory default settings.
- > If DHCP, BOOTP and RARP are not used, ensure they have been set to Disable.

CANNOT PRINT WITH LPR AND FTP

- > Turn the printer off for 15 seconds and then on again.
- > Check there is a response to the *ping* command.
- > Check the network cable is correctly connected.
- > Change the cable and try again.
- > Check the host name and IP address are configured in the workstation.
- > Check the printer port name is configured in the workstation.
- > There are three port names: *lp*, *euc* and *sjis*. Use *lp* by default as *euc* and *sjis* are specific to PostScript printers.

WEB BROWSER

If you are using the Web browser to configure your machine settings, but do not see the most recent settings displaying on the Web page, you should temporarily switch off your browser's page caching. To prevent your web browser caching the printer web pages, carry out the following steps as appropriate for your web browser.

NOTE

Keeping this setting enabled all the time may slow down web browsing. You may want to revert to the browser default setting once you have finished using the printer web page.

MICROSOFT INTERNET EXPLORER

1. Select **Tools > Internet Options**.
2. Select the General tab and, in **Temporary Internet files**, click **Settings**.
3. Under **Check for newer versions of stored pages**, select **Every visit to the page**.
4. Click **OK**.



MOZILLA FIREFOX

1. In the Firefox address bar, type **about:config**.
2. In the Filter field, type **frequency**.
3. Double click on the entry **browser.cache.check_doc_frequency**.
4. Change the Value to **1**.
 - > 0: Check once per browser session
 - > 1: Check every time I view the page
 - > 2: Never check (always use cached page)
 - > 3 (default): Check when the page is out of date (automatically determined)

5. Click **OK**.



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