SATO Users Manual

EHN MINI WLAN UNIT(EX1)

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SATO Users Manual

This manual provides complete information on how to setup and use LAN board.
Follow the manual corresponding to your network operation to realize network printing.

Explanation on Online Manual

This manual uses the following symbols to point out specific information. These symbols provide you with additional tips.


TIP

-Information after this mark explains the important points you need to regard when operating the product. Be sure to read the explanation for safe and proper usage.


NOTE

-Information after this mark gives you additional information to help you with the setup. Refer to the explanation when you have difficulties operating the product.

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SATO Users Manual

Safety Instruction

For safe and proper usage, please read the following information carefully.
The contents include how to handle the product and general issues for user's safety.

IMPORTANT SAFEGUARDS

Make sure to read all safety instructions carefully and to fully understand them before using our products.

This manual contains the safety instructions that must be observed to avoid potential hazards that could result in personal injuries or damages. The safety instructions have been classified according to the potential risk involved as follows.

Danger:

"Danger" indicates the existence of a hazard that could result in death or serious bodily injury if the safety instruction is not observed.

Warning:

"Warning" indicates the existence of a hazard that could result in bodily injury if the safety instruction is not observed.

Caution:

"Caution" indicates the existence of a hazard that could result in property damage if the safety instruction is not observed.

Notice:

"Notice" contains general information that relates to the safe operation of the computer.

SATO Users Manual

1. LAN board

Warning:

To avoid the risk of electric shock or possible damage, never remove the cover of LAN board and never disassemble LAN board. Contact the dealer of SATO Corporation products for assistance if repair or adjustment is necessary.

2. POWER SUPPLY

Danger:

Never attempt to disassemble or repair an power supply, as exposure to electric shock hazards may result. Always contact the dealer of SATO Corporation products if repair or replacement is required.

Warning:

Always use the power supply provided with LAN board to avoid any risk of fire or other damage to the computer. Using an unauthorized and incompatible power supply, in violation of this warning, could result in bodily injury or property damage.

Caution:

Never bend or twist the power cord, and never pull on the power cord in an attempt to remove the plug from the socket. Never place heavy objects on the power cord, as this could result in damage to the cord. Always grasp the plug directly when unplugging the power cord to avoid causing any damage to the cord.

3. NETWORK CABLES

Danger:

Never use damaged or worn network cables. The use of damaged or worn network cables could result in electric shock, burns or fire.

4. PROPER TREATMENT OF THE DEVICE

Warning:

To avoid any risk of short-circuit, fire or other internal damage, never allow any metal objects such as screws or paper clips to fall into the device. If that should happen, immediately turn off the power and unplug the power cord. Contact the dealer of SATO Corporation products for appropriate assistance. To avoid damage to LAN board, never allow any liquids to spill into any part of LAN board, and never expose LAN board to rain or water. If any of these events should occur, turn off LAN board immediately.

Contact the dealer of SATO Corporation products for assistance before attempting to use LAN board again. To prevent computer malfunction or equipment damage, never place LAN board on top of (or adjacent to) a heating device, and never expose it in direct sunlight. Never store LAN board in a locked and unventilated vehicle, (where excessive internal temperatures may be encountered). Always unplug the power cord during lightning storms in order to protect the device from possible damage as a result of a power surge. If LAN board is ever dropped and damaged, or if you ever detect the emission of an extraordinary odor or excessive heat, unplug the power cord and turn off the printer and LAN board immediately. Contact the dealer of SATO Corporation products for appropriate assistance.

Notice:

If LAN board has been exposed to cold temperature, allow it to warm to room temperature before turning on. This will prevent the occurrence of harmful condensation within the device (this is a particularly important concern when the device is being used in cold climates). Avoid using LAN board in dusty areas since dust particles can affect the reliability of LAN board. Contact the dealer of SATO Corporation products if your device has become contaminated with dust or dirt particles.

INDEX

SATO Users Manual

Overview

Thank you for purchasing our product this time. This manual provides complete information on how to configure and use LAN board.
This manual is edited commonly for several products and there are some parts not applied for your use.

Installation

This chapter explains how to install LAN board. Follow the instructions corresponding to the network environment in use to realize network printing. Refer to the parts you need to install the LAN board.


TIP

- The following instruction may vary depending on your network environment.


NOTE

- Make sure to install printer driver to your personal computer before you start using the LAN board.

Configuration Utility


NOTE

- The below contains the explanation for LAN board configuration. Choose an option corresponding to your network environment.

Configuration Utility	Quick Setup	Initial installation of LAN board (Recommended)	Chapter 3,4
	Advanced Setup	Advanced configuration for Administrators	Chapter 7
	ST-Print2003	Install Printing Software	Chapter 3,4

SATO Users Manual

Installation and Configuration (For Administrators)

This contains explanation for LAN board installation and configuration.

STEP1	Connect LAN board to printer	Chapter 1
STEP2	Use LAN board in Windows 95/98/Me	Chapter 3
	Use LAN board in Windows NT 4.0, Windows 2000, Windows XP	Chapter 4
	Use LAN board in UNIX/Linux	Chapter 5
	Use LAN board in Netware	Chapter 6

Configuration (For Clients)

This contains explanation for LAN board configuration.

STEP1 Configuration	Use LAN board in Windows 95/98/ME	Chapter 3
	Use LAN board in Windows NT 4.0, Windows 2000, Windows XP	Chapter 4
	Use LAN board in NetWare	Chapter 6
STEP2 Print	Test Print (Diagnostic/Configuration report) and verify the configuration	Chaprter 1

SATO Users Manual

Advanced Configuration for Administrators

This contains explanation for LAN board advanced configuration utility, AdminManager.

AdminManager	Configure LAN board by AdminManager	Chapter 7
	Configure LAN board by Web browser	
	Configure LAN board by TELNET	

1. About LAN board

This chapter explains LAN board operating environment, outline and how to connect LAN board to the network.

Features

- “Quick Setup” is included in the accessory kit for easy configuration.
- Management utility “AdminManager” is included in the accessory kit.
- Printing software “ST-Print2003” is included in the accessory kit.
- Embedded HTTP enables you to configure LAN board via Web browser.
- Embedded e-mail sending function.
- Supports multi-protocol.
- Enhanced Windows XP compatibility
  NetBIOS over TCP/IP is embedded. This allows NetBIOS printing environment to be configured on the PC running on Windows XP installed as the standard OS, without additional protocol installation.
- Supports WINS (Windows Internet Name Service) environment
  In an environment where WINS server exists, register an IP address solution information on NetBIOS name to WINS server.
- Embedded DDNS (Dynamic Domain Name System)
  Sends LAN board IP address to DNS server having DDNS function. When LAN board is dynamically given an IP address from DHCP server, it is immediately reflected upon Domain Name System, avoiding inconsistency from occurring between the domain name and the IP address.


NOTE

The LAN board uses a wired LAN interface if the wired LAN connection is detected when the printer is turned on.
If a wired LAN connection is not detected within 15 seconds, the LAN board uses a wireless interface.


TIP

<Restrictions on Wireless Mode>

- WPA2 is not supported.
- Atheros SuperG - XR is not supported.
- When running in AdHoc mode, the LAN board operates at the same communication speed as 802.11b.
- When using AES, the network connection between Broadcom's access point and the LAN board may become unstable.
- DSA certificate for EAP-TLS authentication is not supported.
- When using CKIP and CMIC, the communication speed may slow down because CKIP and CMIC are processed on the software side.
- LEAP authentication cannot be used with TKIP and AES encryption. Therefore, LEAP cannot be chosen for WPA authentication mode.
- When using CKIP, the LAN board will always try to connect to an access point even if the wrong cipher is used. (When using WPA, the LAN board will not connect to an access point if the wrong cipher is used.)

Operating Environment

[Required devices to connect to network]

-PC with wireless communication

-Printer

[Supported protocol/operating system]

<LAN board>

-Supported protocol : TCP/IP, NetBEUI, IPX/SPX

-Supported OS : Windows 95/98/Me, Windows NT 4.0, Windows 2000, Windows XP
UNIX, Linux
NetWare

Parts on LAN board

Parts and Function

(Front panel)

(1) LED

LED		Wired LAN mode		Wireless LAN mode	
Link LED（green）	Network Port	Blinking	Waiting for LINK	Off	-
		On	Being linked		
	Front panel	Off	-	Blinking	Waiting for LINK
				On	Being linked
Status LED（orange）	Network Port	Blinking	Receiving packet	Off	-
	Front panel	Off	-	Blinking	Receiving packet
Wireless LED（green）	Front panel	Off	-	Blinking	Ad hoc mode
				On	Infrastructure mode

(2) Level Indicator [1-3] LED(Green)

Wireless LAN Signal Strength (Infrastructure mode).

The wireless LAN signal strength is demonstrated by 3 levels in Infrastructure mode. More LEDs will light as the signal strength increases.

LED			Indicator
Network Port	Link LED	Weak(0-50%)	off
		Medium(50-75%)	blink
		Strong(75-100%)	on

Dip Switch Operation

The following list describes the function of each switch.

1	OFF	Normal operating setting
2	OFF	Normal operating setting
	ON	Initialization/Reset to factory default upon power up
3	OFF	Normal operating setting
	ON	Configuration report upon power up Prints Diagostic report upon power up
4	OFF	Wireless Mode Setting
	ON	

TIP
- Make sure to switch off printer when operating dip switches.
- Diagnostic/configuration report can not be printed depending on your printer.

<Initialization/Reset to factory default>

1. Switch off printer.
2. Switch on the dip switch No. 2.
3. Switch on printer and wait until the printer is ready for printing.
4. Switch off printer.
5. Switch off the dip switch No. 2.

<Configuration report / Diagnostic report>

1. Switch off printer.
2. Switch on the dip switch No. 3.
3. Switch on printer and wait until configuration report is printed and diagnostic report is printed.
4. Switch off printer.
5. Switch off the dip switch No. 3.

<Wireless mode setting>

1. Switch off printer.
2. Refer to the following table to configure dip switch 4.

SW-4	Wireless Mode
ON	Infrastructure
OFF	Ad hoc

3. When you switch on the printer, the configuration will take affect.

Install Hardware

Attach LAN board to the Printer

TIP

- Make sure to read the operating instructions of your printer before connecting LAN board to the printer for proper use.
- Make sure the power code of the printer is unplugged before attaching LAN board to the printer.
- If you have already used LAN board in another network, make sure to initialize LAN board to factory default.

1. Make sure that the printer is switched off and the printer power code is unplugged. Attach LAN board to the pritner enhanced interface.

2. Make sure that the power supply is not connected to LAN board.

2. About SATO User Software

This chapter explains about SATO User Software. LAN board configuration utility and Users Manual are contained in SATO User Software and can be used in Windows environments.

TIP
- SATO User Software can not be used in UNIX/Linux and NetWare.
- Use SATO User Software in a browser environment with Internet Explorer 4.0 (SP2) or above.

Use SATO User Software in Windows Environment

The below screen will be executed automatically when installing SATO User Software to your Windows PC.

TIP
- If the below screen does not open automatically, open the My Computer. Select the CD ROM drive and execute "run.exe".

-User Documentation

This CD contains both a Quick Start Guide and a manual(Admin). The Setup Guide contains instructions for quickly installing and configuring the SATO network card. The manual contains detailed information on how to install, configure and use the SATO network card.

-Product Catalog

View items available from SATO.

Configuration

Select the configuration method you want to use from the screen below.

NOTE

- If initial installation of LAN board has been complete, you can start using LAN board just by installing ST-Print2003 to your PC.

-Quickset Utility (recommended for initial installation)

The Quick Setup wizard is designed to make the initial configuration easy through simple interaction with the wizard. THe wizard can also start the installation of the ST-Print2003 printing software. This is the recommended method for initial installation.

- Advanced Setup

Start or install the management utility "AdminManager". AdminManager manages the detailed configuration and management of the SATO network card.

- IP Port Drivers

This software enables printing directly a Windows environment using LPR(specific to the SATO network card), IPP or Port 9100.

-SATO Printer Driver

The drivers for you SATO printer can be easily installed by selecting this option.

TIP

- You can not use the optional functions depending on the LAN board you use. Make sure the LAN board is supporting the enhanced features.

3. Using LAN board in Windows 95/98/Me

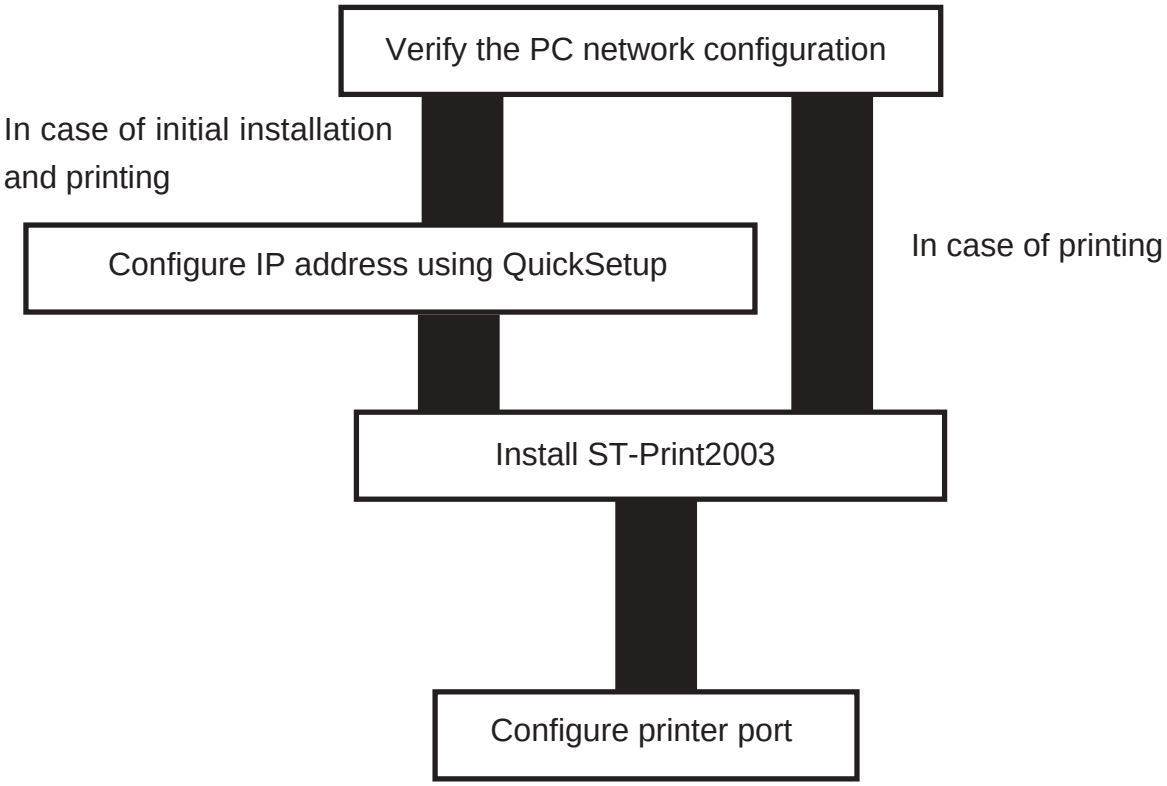
This chapter explains how to print using TCP/IP, NetBEUI and NetBIOS over TCP/IP protocol of Windows 95/98/Me.

Print Using TCP/IP of Windows 95/98/Me

Following indicates how to print using TCP/IP protocol.

NOTE

-Make sure to install printer driver before you start using LAN board.



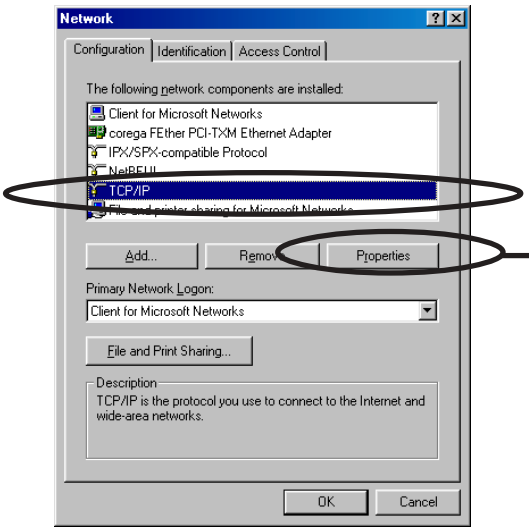
Verify the PC Network Configuration

Make sure that the ***TCP/IP*** and ***Microsoft TCP/IP Printing*** are added to the ***Services.***

1. Click ***Start***, then ***Settings***, then ***Control Panel***.

2. Double-click ***Network***.

3. Verify that ***TCP/IP*** is included in ***The following network components*** are installed.

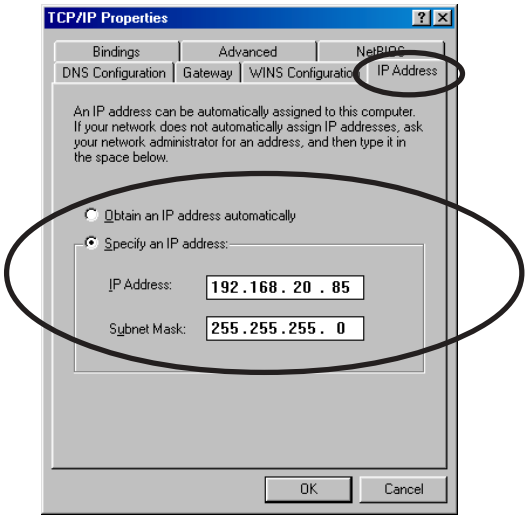


Click ***Properties.***

NOTE

- If ***TCP/IP*** Protocol is not in ***The following network components are installed,*** click ***Add,*** then ***Network component***, then ***Protocols***, then ***Microsoft TCP/IP*** to add ***TCP/IP***.

4. Verify if the configuration is proper for your environment in ***IP Address***.



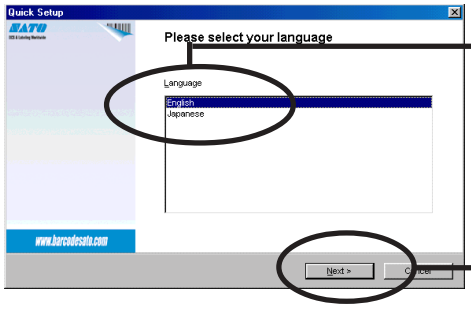
Quick Setup

1. Insert the SATO User Software in the CD-ROM drive of your Windows PC. The main menu screen will be displayed.

2. The below screen will be displayed.

Click ***Quickset Utility.***

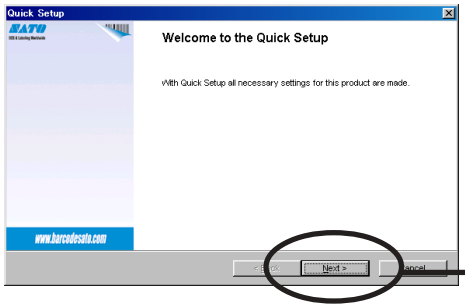
3. Select language.



Select your language.

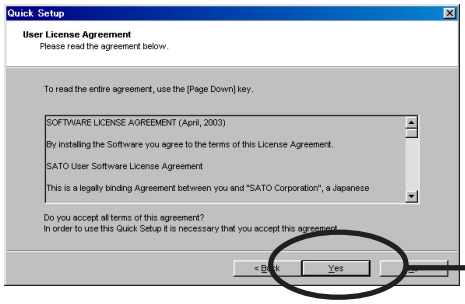
Click ***Next.***

4. Quick Setup loads.



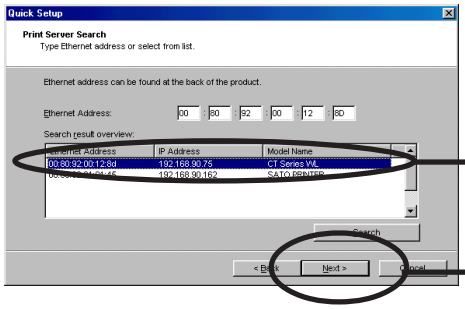
Click ***Next.***

5. Confirm the Software License Agreement.



Read the agreement and click ***Yes*** if you accept it.

6. Select LAN board to be configured.



Select LAN board to be configured.

Click ***Next.***

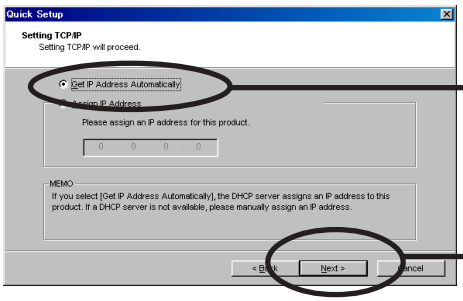
NOTE

- If the LAN board does not appear in the list, click ***Search***.
  You can search the LAN board by typing in Ethernet address directly.

7. Assign an IP address

When you have DHCP server in your environment.

(A) Obtain an IP address from DHCP server automatically.



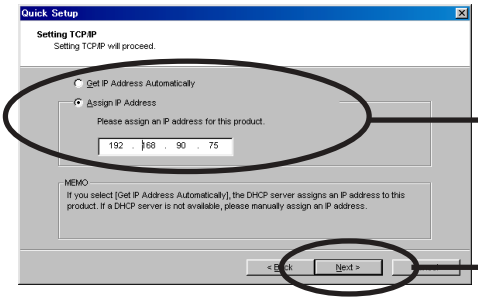
Click ***Get IP Address Automatically***.

Click ***Next***.

NOTE

- If NetWare Client is installed and LAN board is supporting NetWare (Enable), NetWare configuration screen will appear.

(B) Assign an IP address manually.



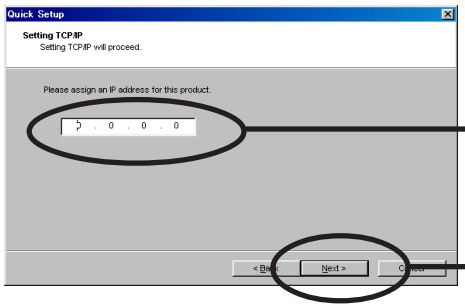
Assign an optional IP address.

Click ***Next***.

NOTE

- If NetWare Client is installed and LAN board is supporting NetWare (Enable), NetWare configuration screen will appear.

When you do not have DHCP server in your environment.



Assign the optional IP address.

Click ***Next***.

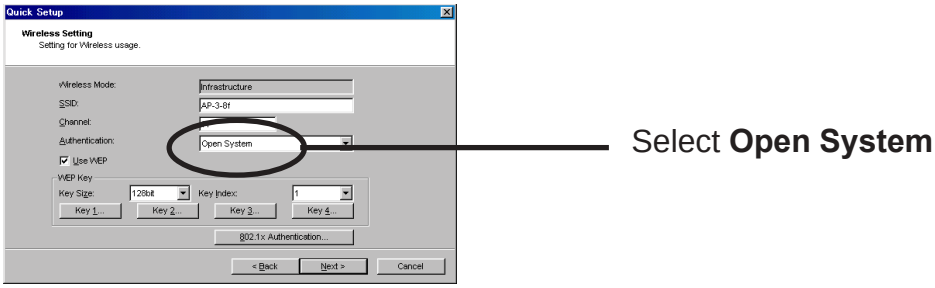
NOTE

- If NetWare Client is installed and LAN board is supporting Netware (Enable), NetWare configuration screen will appear.

8. Configure the wireless settings

When connecting in Infrastructure mode, the authentication settings on the screen change.The authentication configuration screens are shown below.

(A) When not using authentication.

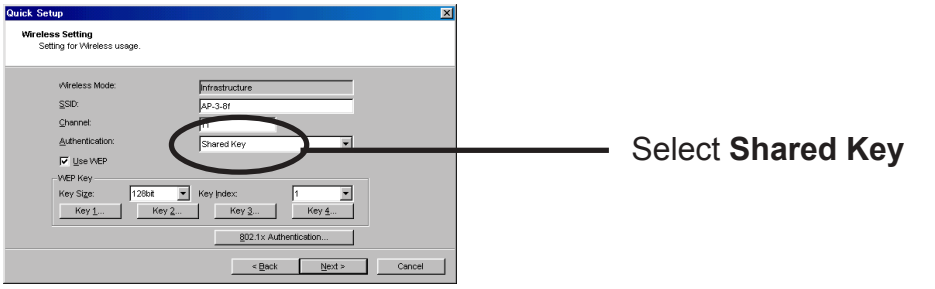


Select **Open System**

Select **Use WEP**.
Click on the Key Index button and enter the value for the WEP Key.
(Refer to “WEP key setup” for the configuration method.)

802.1x Authentication
Click **802.1x Authentication**.
(Refer to “802.1x Authentication “ for the configuration method.)

(B) WEP Authnitcation



Select **Shared Key**

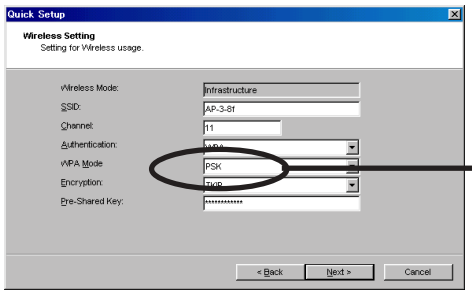
WEP Key is used
Select **Use WEP**.
Click on the Key Index button and enter the value for the WEP Key.
(Refer to “WEP key setup” for the configuration method.)

802.1x Authentication
Click **802.1x Authentication**.
(Refer to “802.1x Authentication “ for the configuration method.)

(C) WPA-PSK Authentication

Select **WPA** Authentication

(C-1) WPA-PSK Authenitcation

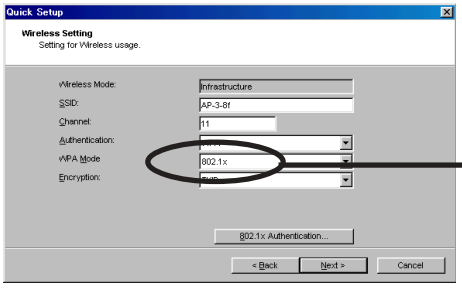


Select **PSK**

Select **Encryption**.

Select “Pre-Shared Key” for the share key.

(C-2) WPA-802.1x Authenitcation



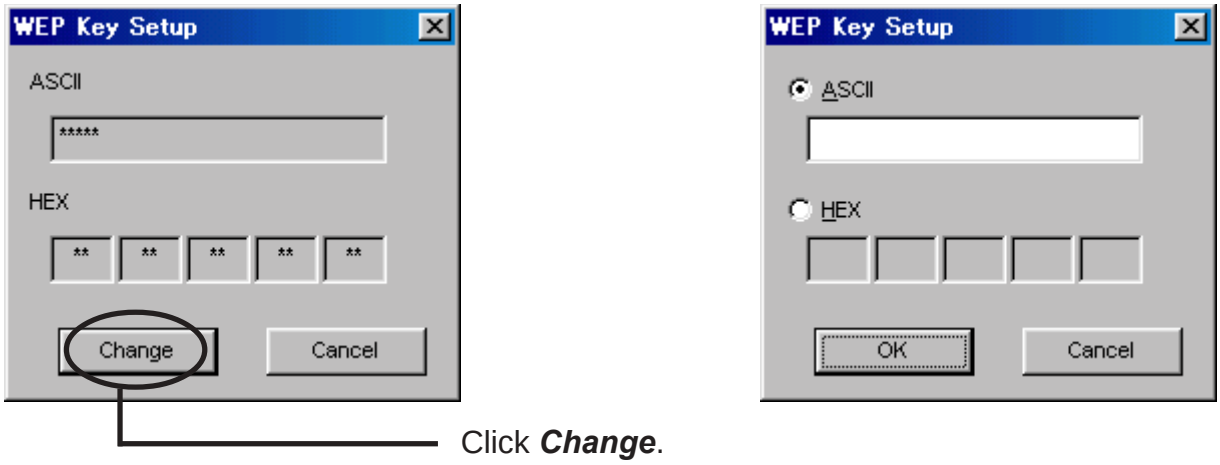
Select **802.1x**

Select **Encryption**.

Click **802.1x Authentication**.

[WEP Key Setup]

Check “Use WEP”, and the following screens will be displayed when the “Key 1”-” Key(s) 4" button is selected (the screen shown blow is for a “Key Size” of 64 bits).
If the WEP key has already been configured, please select either “ASCII” or “HEX” after pushing the “Change” button, and enter the WEP key.



The number of characters entered changes with “Key Size.”

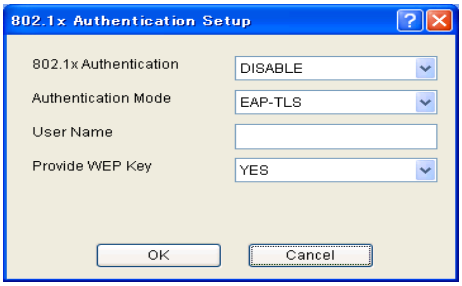
64bit : ASCII 5characters HEX 10 characters

128bit : ASCII 13 characters HEX 26 characters

[802.1x Authentication setup]

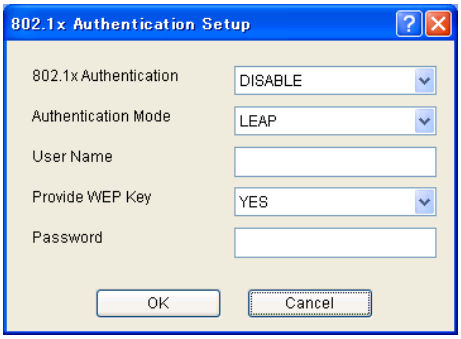
Selecting “802.1x Authentication” will display the following screen.
Since configuration items change with authentication systems, only the item that need to be configured will be displayed.

<mode of Network Authentication: Open System>



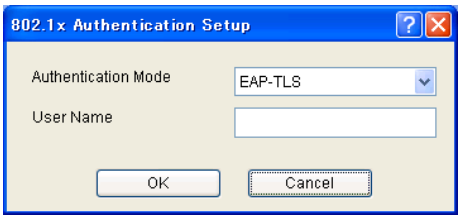
- Enable or disable “802.1x Authentication”
- Select **Authentication**.
- Enter the 802.1x user name
- Please choose NO, when manually entering the WEP key.
- Select YES when the WEP key is obtained from Access Point.

<mode of Network Authentication: Shared Key>



- Enable or disable “802.1x Authentication”
- Select **Authentication**.
- Enter the 802.1x user name
- Please choose NO, when manually entering the WEP key.
- Select YES when the WEP key is obtained from Access Point.
- Enter the password.

<mode of Network Authentication : WPA>

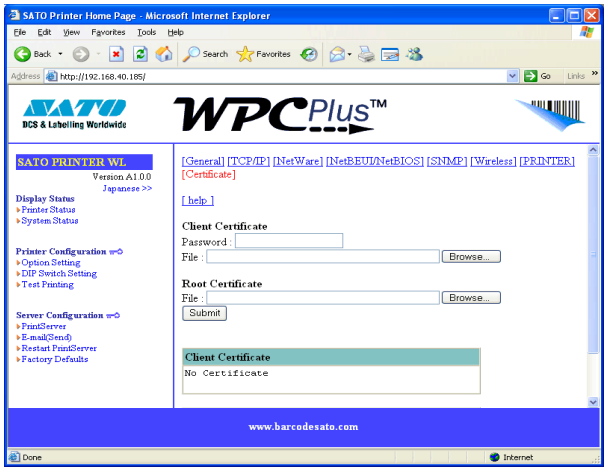


- Enable or disable “802.1x Authentication”
- Enter the 802.1x user name

NOTE

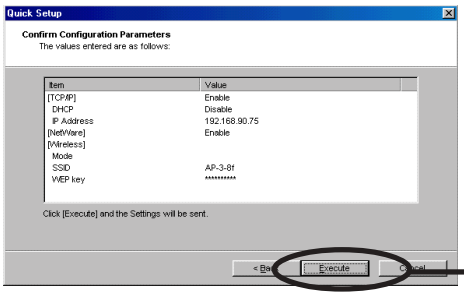
- Verify using a certificate. A certificate can be installed from a WEB page.

The [Certificate] page, allows for the certificate used by 802.1x WPA authentication to be installed.



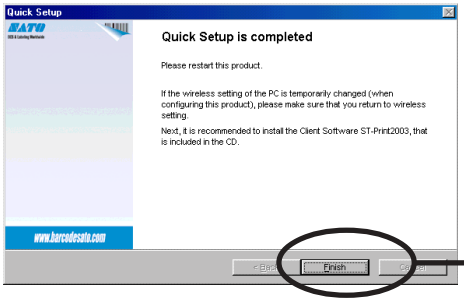
Item		Explanation
Client Certificate	Password	Input the necessary password to import the Client certificate
	File	Select the Client Certificate file.
Root Certificate	File	Select the Root Certificate file.

9. Verify the configuration parameters.



Click ***Execute***.

10. Setup is complete.



Click ***Finish.***

Install ST-Print2003

To print directly from Windows 95/98/Me environment using TCP/IP protocol, use the ST-Print2003 bundled with LAN board.
ST-Print2003 is a printing software that enables users to use LPR (dedicated to SATO products), IPP and Raw (9100) port.
When installation is complete, the wizard to add printer port to be stared.

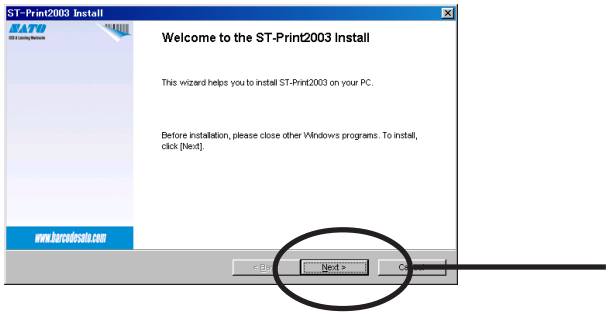
NOTE

- LPR (Line Printer Remote)
  A widely used protocol that enables users to execute printing to printers on the local area network (LAN).
- IPP (Internet Printing Protocol)
  This protocol enables users to execute printing to network printers remote via Internet.
- Raw (9100) port
  This function enables users to execute printing to printers on the local area network (LAN). Information can be printed at a high speed without spool.

1. Verifying installing method.

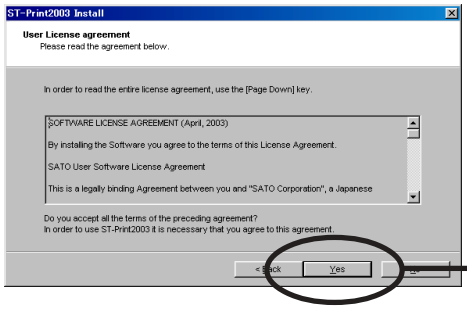
Mount the CD-ROM bundled, then click ***IP Port Drivers.***

2. ST-Print2003 installation wizard to be started.



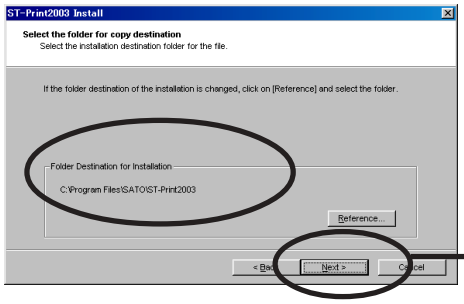
Click ***Next.***

3. Confirm the Software License Agreement.



Read the agreement and click ***Yes*** if you accept it.

4. Verify the Destination Directory.

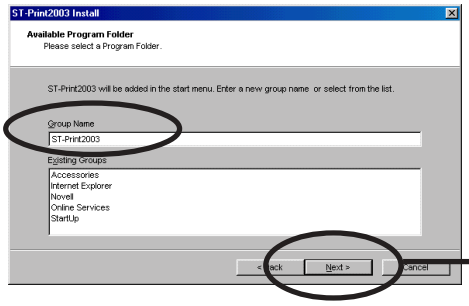


Click ***Next***.

NOTE

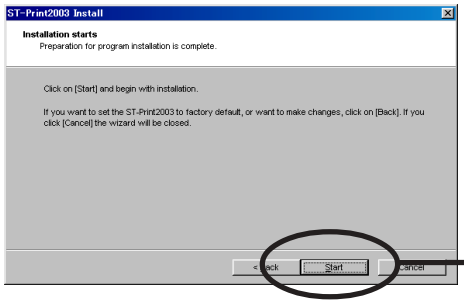
-Click ***Reference*** to specify the destination directory.

5. Specify the group name to be registered at the start menu.



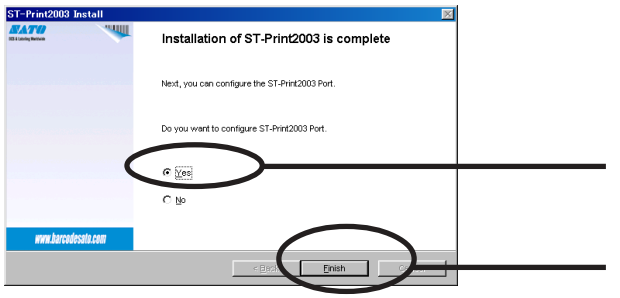
Click ***Next***.

6. Installation to be started.



Click ***Start.***

7. Configuration is complete.



Select ***Yes***.

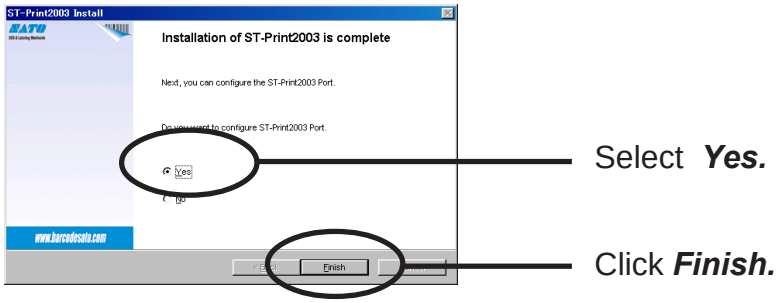
Click ***Finish.***

Adding Printer Port

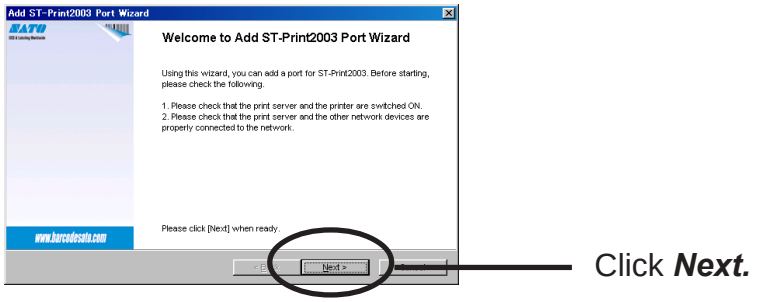
ST-Print2003 has three available options for printing; "***Print using LPR***", "***Print using IPP***" and "***Print using Raw Mode***".
Select the protocol to be used for printing, then click "***Next***" to start using the specified printing option.

(A)

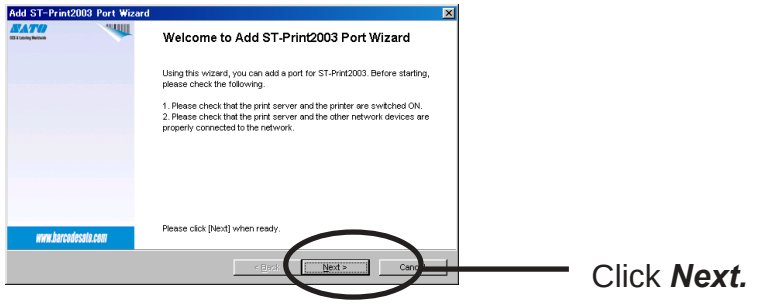
1. Adding printer port following the ST-Print2003 installation.



2. ST-Print2003 port adding wizard starts,

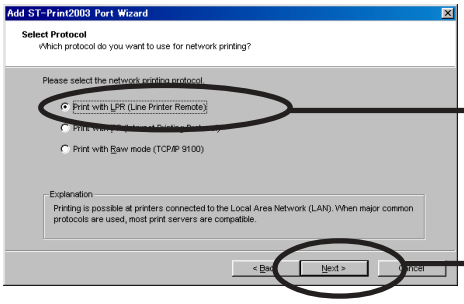


(B) Click ***Start***, then ***Programs***, then ***ST-Print2003***, then ***ST-Print2003 Port adding***.



Adding ST-Print2003 LPR Port

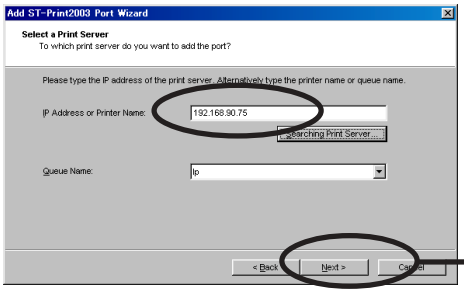
1. Select ***LPR (Line Printer Remote).***



Select ***Print with LPR (Line Printer Remote).***

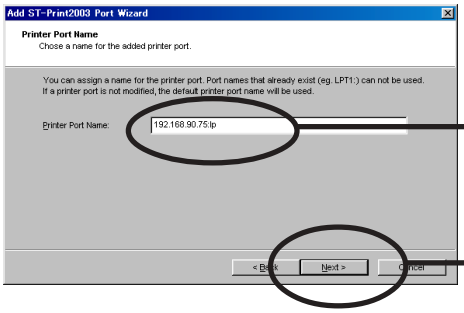
Click ***Next***.

2. Display the list of print servers on the network by clicking ***Searching Print Server***. Select LAN board you want to configure.



Click ***Next***.

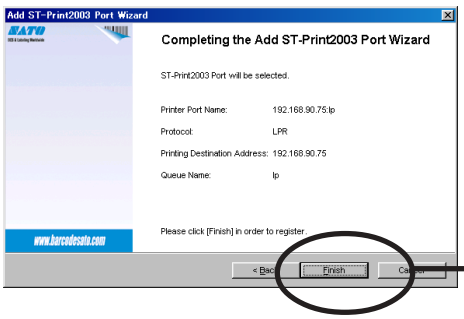
3. Type in printer port name.



If you do not want to have a specific name, use the default printer port name.

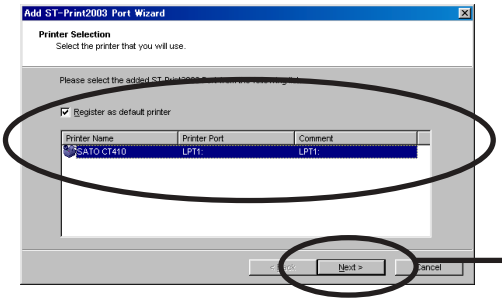
Click ***Next***.

4. Verify the configuration.



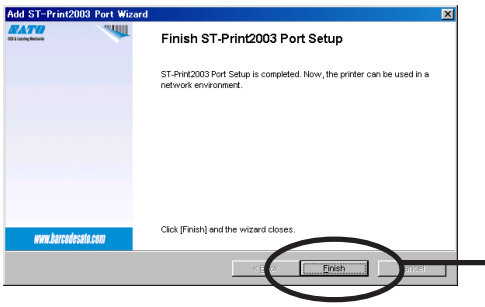
Click ***Finish.***

5. Select the printer you want to use with LAN board.



Click ***Next.***

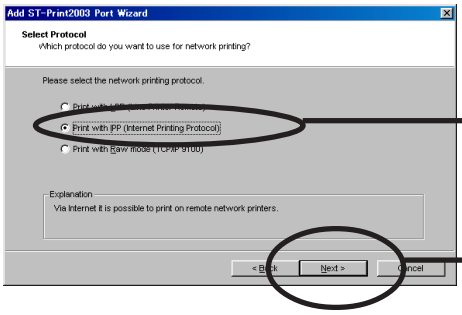
6. Port configuration is complete.



Click ***Finish.***

Adding ST-Print2003 IPP Port

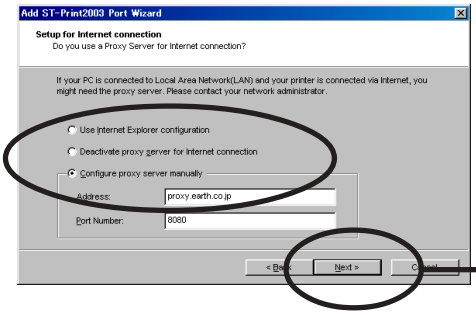
1. Select IPP (Internet Printing Protocol).



Select ***Print with IPP (Internet Printing Protocol).***

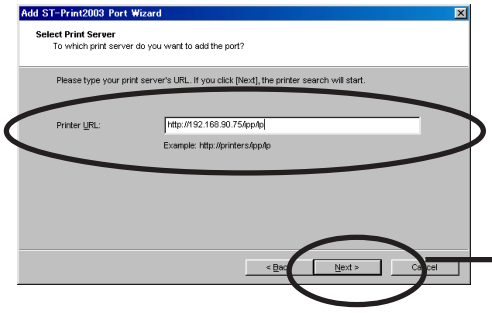
Click ***Next.***

2. Select either ***Use Internet Explorer configuration***, ***Deactivate proxy server for Internet connection*** or ***Configure proxy server manually.***



Click ***Next***.

3. Type in URL assigned to LAN board for ***Printer URL***. LAN board IPP printer URL is "/ipp" or "/ipp/lp".



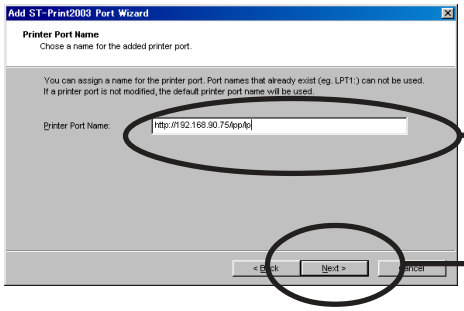
Click ***Next.***

Ex.): When URL is “abc.co.jp”,
http://abc.co.jp/ipp/lp
Ex.) When IP address is
“192.168.90.75”,
http://192.168.90.75/ipp/lp

NOTE

- If you click ***Next,*** you can make sure if specified URL exists.

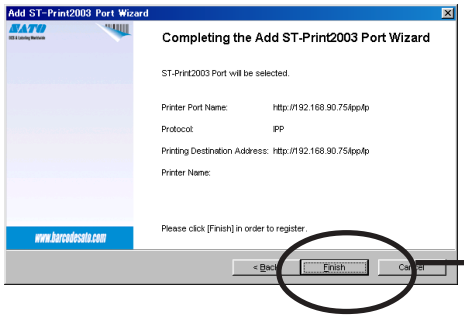
4. Configure the port name for printing.



If you do not want to have a specific name, use the default printer port name.

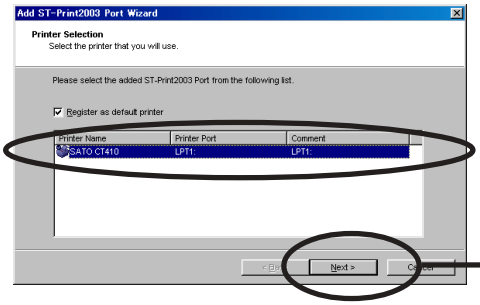
Click ***Next.***

5. Verify the configuration.



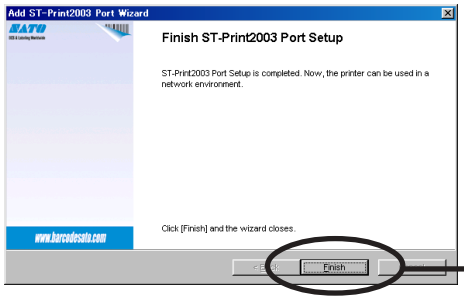
Click ***Finish.***

6. Select the printer you want to use with LAN board.



Click ***Next.***

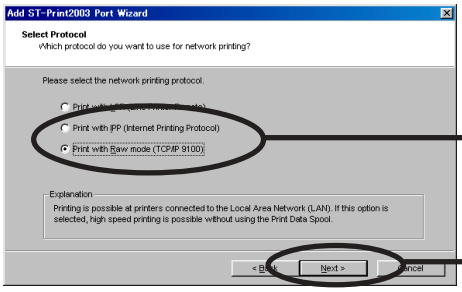
7. Configuration is complete.



Click ***Finish.***

Adding ST-Print2003 Raw (9100) Port

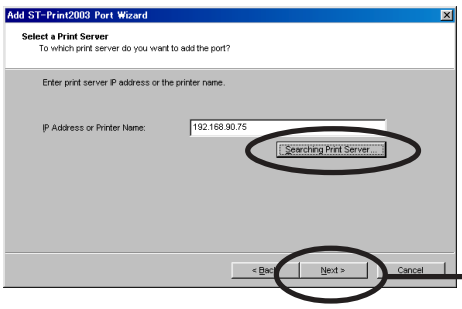
1. Select Raw mode.



Select ***Print with Raw mode (TCP/IP 9100).***

Click ***Next.***

2. Display the list of print servers on the network by clicking ***Searching Print Server*** Select LAN board you want to configure.

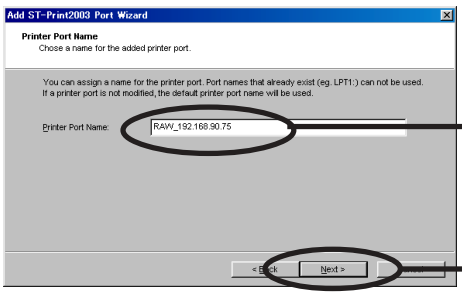


Click ***Next***.

NOTE

- To verify if the specified print server can access 9100 port, click ***Next***.

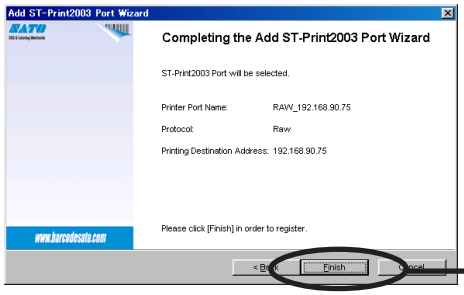
3. Type in print port name.



If there is no problem, use the default printer port name (RAW_IP address).

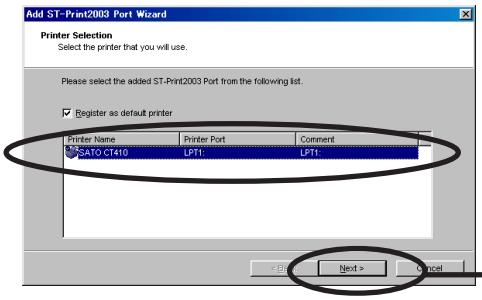
Click ***Next.***

4. Verify the configuration.



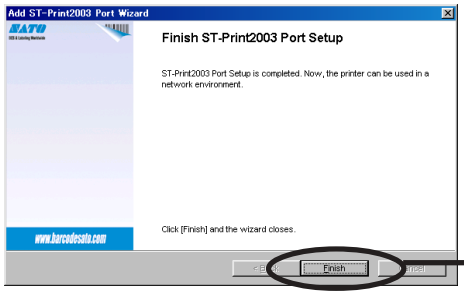
Click ***Finish.***

5. Select the printer you want to use with LAN board.



Click ***Next.***

6. Configuration is complete.



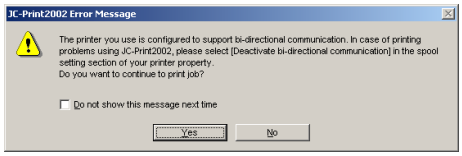
Click ***Finish.***

Configuring printer driver

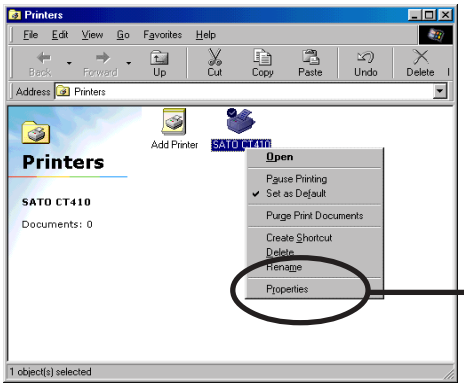
This section explains how to configure printer driver.

NOTE

-If you do not configure printer driver, the following error dialog may appear.
In this case, click ***No*** and configure printer driver by following steps.

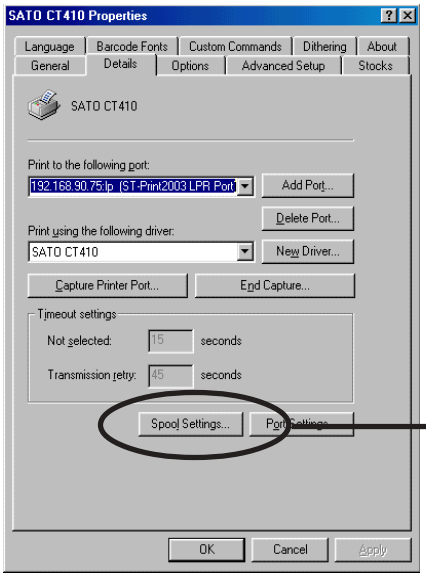


1. Click ***Start***, then ***Settings,*** then ***Printer,*** then open the printer property.



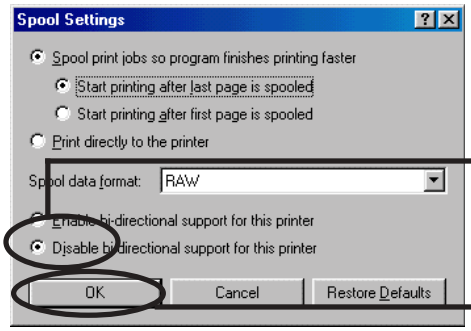
Select ***Properties.***

2. Select ***Details.***



Select ***Spool Settings.***

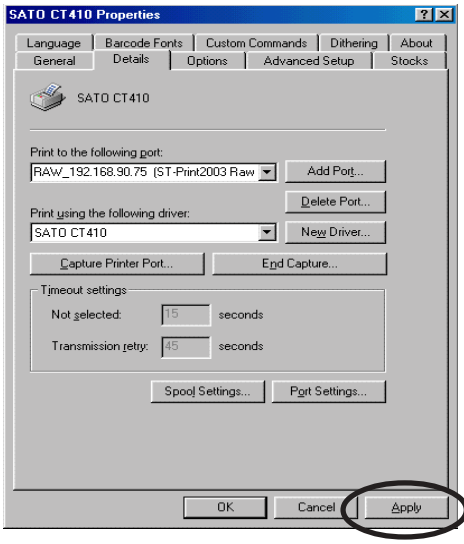
3. Select ***Disable bidirectional support for this printer.***



Select ***Disable bidirectional support*** for this printer.

Click ***OK.***

4. Configuration is complete.

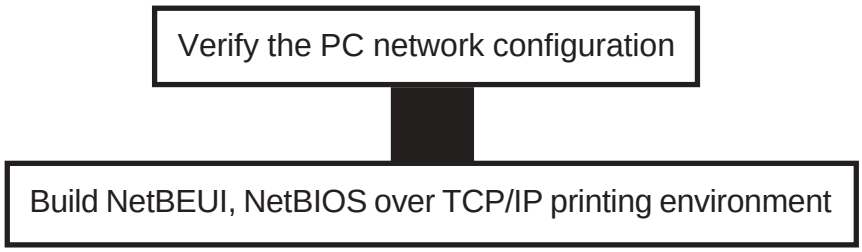


Click ***Apply.***

Print Using NetBEUI, NetBIOS over TCP/IP of Windows 95/98/Me

Follow the steps shown below to print from Windows 95/98/Me environment using NetBEUI, NetBIOS over TCP/IP protocol.

NOTE
- Make user to install printer driver before you start using LAN board.
- For further information on NetBEUI, NetBIOS over TCP/IP configuration, refer to Chapter 7 Functions for Configuration.



Verify the PC Network Configuration (NetBEUI)

Make sure that ***NetBEUI*** and ***Microsoft network shared service*** are added to ***Network*** of Windows 95/98/Me.

1. Click ***Start***, then ***Settings***, then ***Control Panel***.

2. Double-click ***Network*** icon.

3. Verify that ***NetBEUI*** and ***File and printer sharing for Microsoft Network*** are added to the network component list.

NOTE
- If NetBEUI protocol is not in the current network component list, click ***Add***, then ***Protocol***, then ***Microsoft*** , then ***NetBEUI*** to add ***NetBEUI.*** If ***File and printer sharing for Microsoft Network*** is not in the current network component list, click ***Services***, then ***File and printer for Microsoft Network*** to add File and printer sharing for Microsoft Network.

Verify the PC Network Configuration (NetBIOS over TCP/IP)

Make sure that ***TCP/IP*** and ***Microsoft network client*** are added to ***Network*** of Windows 95/98/Me and verify if NetBIOS over TCP/IP is usable at ***TCP/IP*** properties.

1. Click ***Start***, then ***Settings***, then ***Control Panel***.

2. Double-click ***Network***.

3. Verify that ***TCP/IP*** and ***Microsoft network client*** are added to ***Network***.

NOTE

- If ***TCP/IP*** is not in ***The following network components are installed***, click ***Add,*** then ***Protocols,*** then ***Microsoft,*** then ***TCP/IP.***
- If Microsoft network client is not in ***The following network components are installed,*** click ***Services,*** then ***Microsoft network client.***

4. Open ***TCP/IP*** properties, then select ***NetBEUI***, then verify if ***Enable NetBIOS on TCP/IP*** is checked.

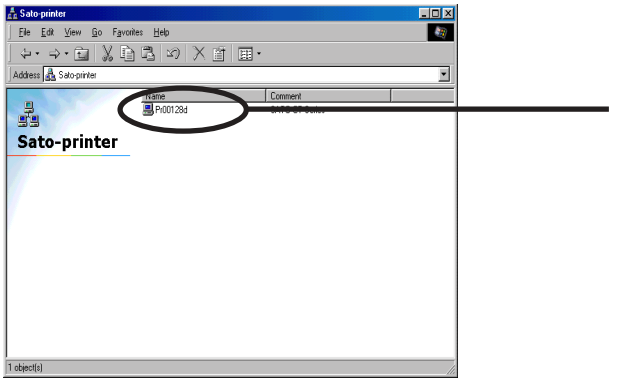
NOTE

-In the default, Enable NetBIOS on TCP/IP is generally checked.

Print Using NetBEUI, NetBIOS over TCP/IP

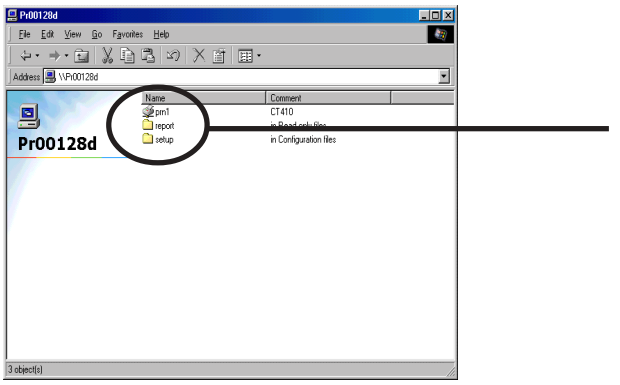
1. Double-click ***Network computer***, then open work group name; ***[SATO-printer]*** in the ***Whole Network.***

2.



Double-click the computer (LAN board)

3.



Double-click the printer.

4. Display printer configuration screen.

Click ***Yes***.

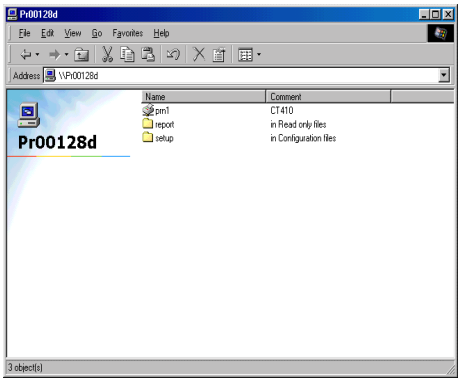
5. Printer add wizard to be started. Follow the instructions given by the wizard to complete configuration. If you get the printer test page, adding printer is complete.

About NetBEUI, NetBIOS over TCP/IP

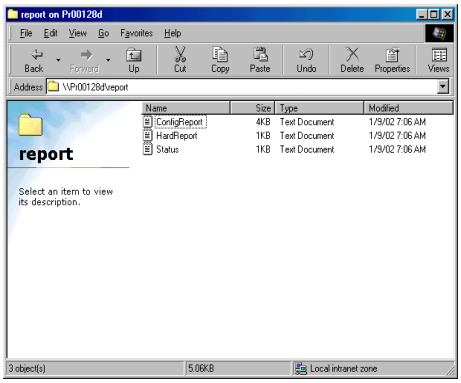
Structure of NetBEUI, NetBIOS over TCP/IP work group

This section explains about the structure of NetBEUI work group installed in LAN board.

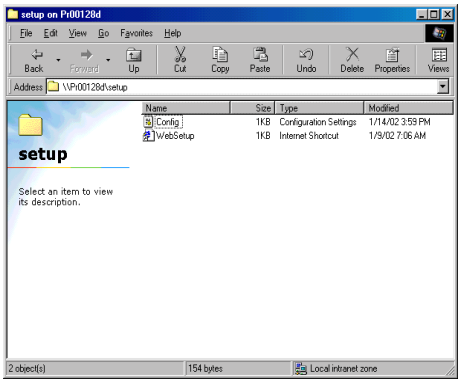
Ex.) : LAN board Ethernet address: 00:80:92:00:12:8d



\\Pr00128d: Computer (LAN board)
\\Pr00128d\prn1: Printer



\\Pr00128d\report\ConfigReport.txt:
Settings report (read only)
\\Pr00128d\report\Status.txt:
Diagnostic report (read only)
\\Pr00128d\report\HardReport.txt:
System status report (read only)



\\Pr00128d\setup\Config.ini:
Initial setting file (can be edited)
\\Pr00128d\setup\WebSetup:
Shortcut file (read only)

- Configuration report

  Outputs the internal information in the LAN board when activated.

- System status report

  Outputs the information on LAN board status when activated.

- Initial configuration file

  With the initialization file, ***Work group name*** and ***IP address*** can be described. Use editor like memo pad to edit and save files in the overwrite mode. In a few seconds, LAN board automatically resets and reboots.

  By editing the initialization file and saving the file in the overwrite mode, you can change work group name and IP address.

  Ex.)

  Workgroup=UserGroup

  IP address=192.168.90.75

  Specify work group name that already exist in the whole network. In case IP address is to be automatically assigned by using DHCP/BOOTP and RARP server, the IP address typed in [IP address] will be invalid.

- Shortcut file

  Once LAN board is given IP address, shortcut (WebSetup) is created. When double-clicking the shortcut icon, web browser to be activated and LAN board homepage to be displayed.

NOTE

- For the Web browser, refer to Chapter 7.

4. Using LAN board in Windows NT 4.0, Windows 2000 and Windows XP

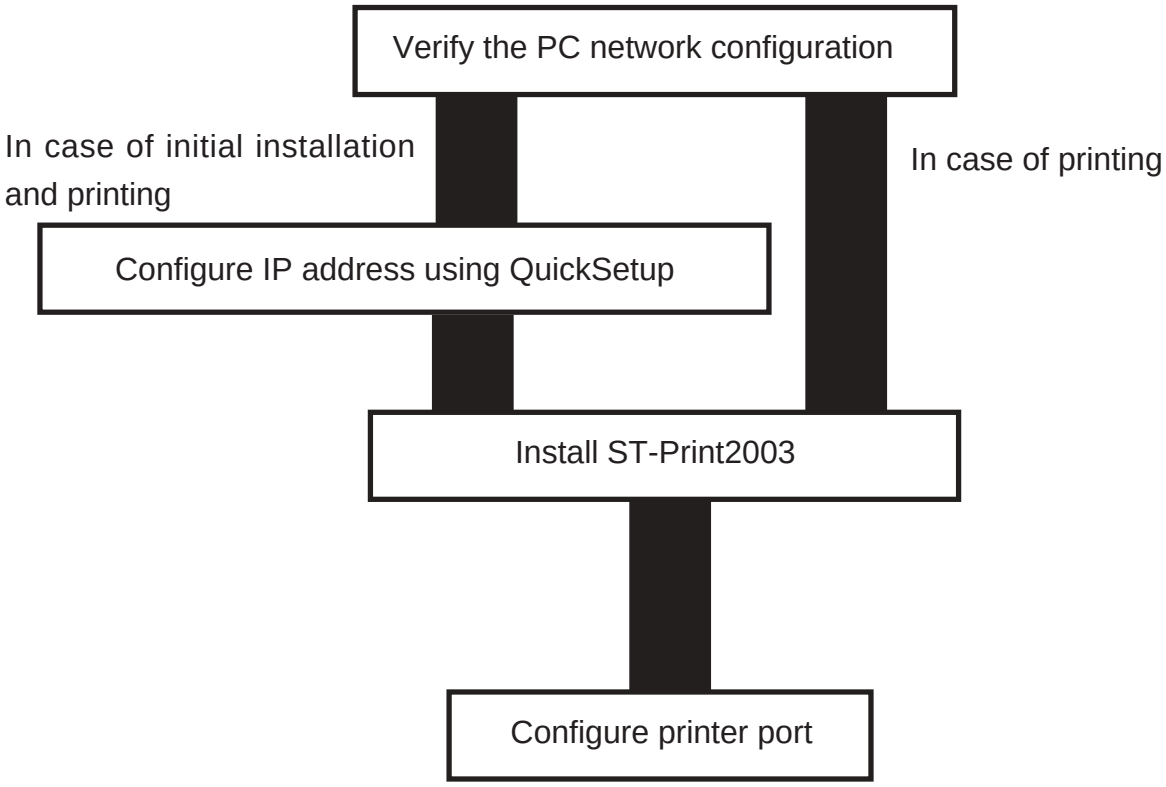
This chapter explains how to print using TCP/IP, NetBEUI and NetBIOS over TCP/IP protocol of Windows NT 4.0, Windows 2000 and Windows XP.

Print Using TCP/IP of Windows NT 4.0, Windows 2000 and Windows XP.

Following indicates how to print using TCP/IP protocol.

NOTE

- Make sure to install printer driver before you start using LAN board.
- For the print using embedded printing client function, refer to "Print Using Embedded Printing Client Function" in this chapter.



Verify the PC Network Configuration

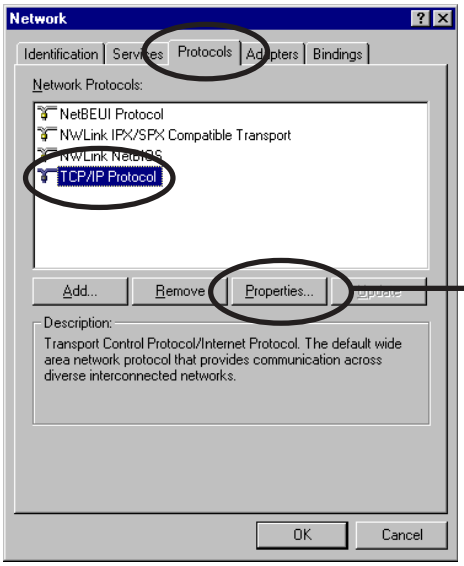
Windows NT 4.0

Make sure that the ***TCP/IP*** and ***Microsoft TCP/IP Printing*** are added to the ***Services.***

1. Click-***Start***, then ***Settings***, then ***Control Panel***.

2. Double-click ***Network***.

3. Verify that ***TCP/IP Protocol*** is included in ***Network Protocols***.

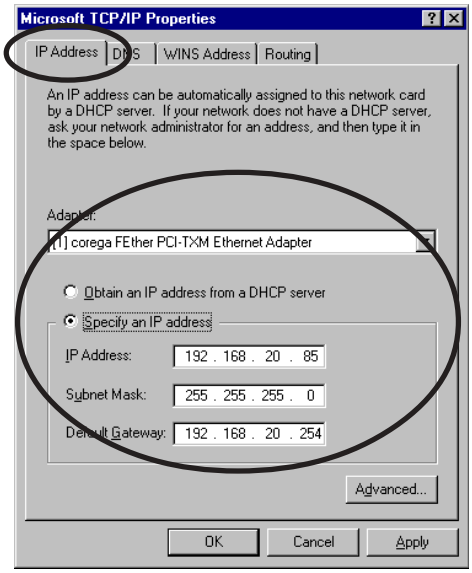


Click ***Properties.***

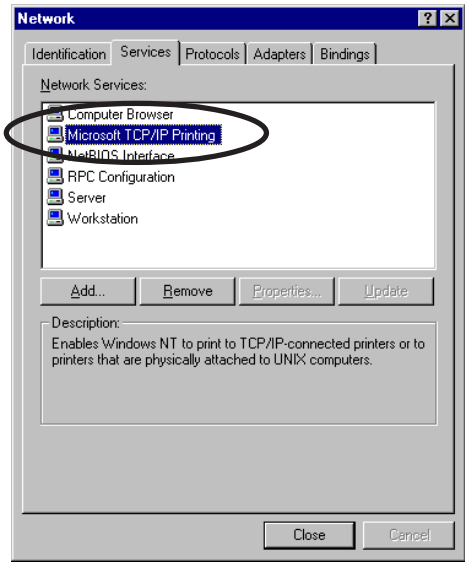
NOTE

- If ***TCP/IP Protocol*** is not in ***Network Protocols***, click ***Network Components***, then ***TCP/IP Protocol*** to add ***TCP/IP protocol.***

4. Verify if the configuration is proper for your environment in "***IP Address***".



5. Verify if ***Microsoft TCP/IP Printing*** is included in ***Network Services***.



NOTE

- If ***TCP/IP Printing*** is not in ***Services,*** click ***Add***, then ***Network Services***, then ***Microsoft TCP/IP Printing*** to add ***Microsoft TCP/IP Printing***.

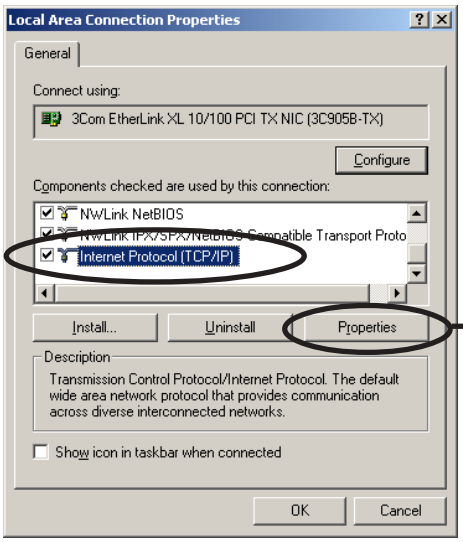
Windows 2000

Verify if ***Internet Protocol [TCP/IP]*** is added.

1. Click ***Start,*** then ***Settings***, then ***Control Panel***, then ***Network and Dial-up Connections***.

2. Right-click ***Local Area Connection***, then click ***Properties***.

3. Verify that ***Internet Protocol [TCP/IP]*** is added.

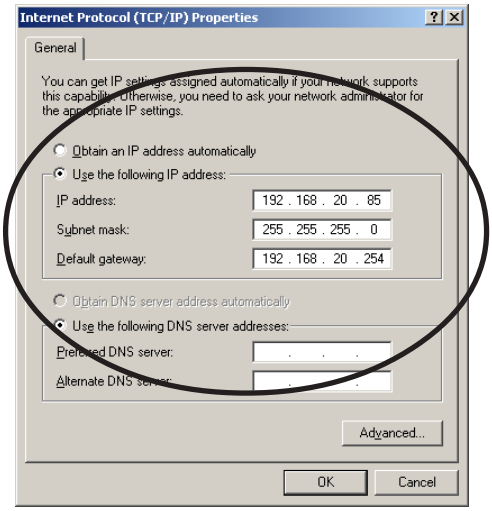


Click ***Properties***.

NOTE

- If ***Internet Protocol [TCP/IP]*** is not in ***Components checked are used by this connection***, click ***Install,*** then ***Internet Protocol [TCP/IP]*** to add ***Internet Protocol [TCP/IP]***.

4. Verify if the configuration is proper for your environment in ***General.***



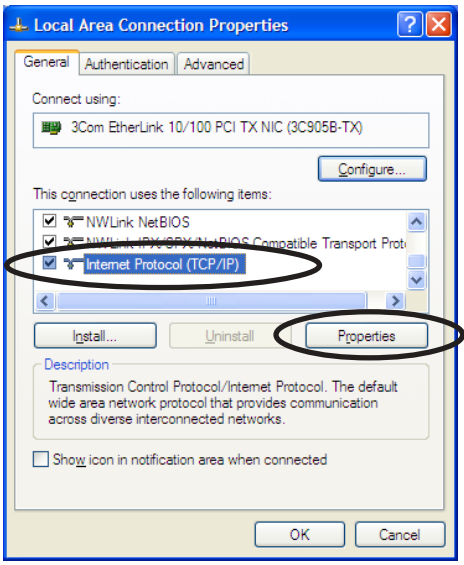
Windows XP

Verify if Internet Protocol (TCP/IP) is added.

1. Click ***start***, then ***Control Panel***, then ***Network and Internet Connections.***

2. Right-click ***Network Connections,*** then click ***Properties.***

3. Verify that Internet Protocol (TCP/IP) is added.

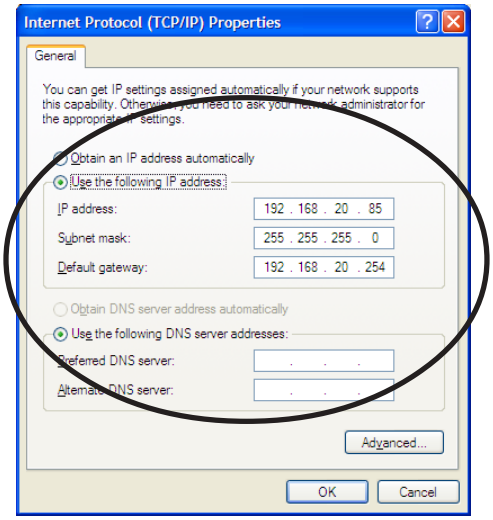


Click ***Properties.***

NOTE

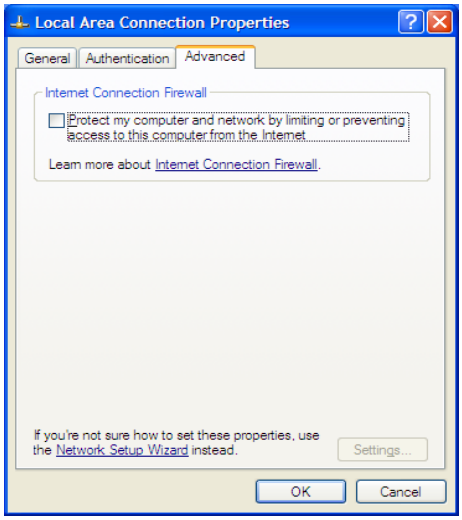
- If ***Internet Protocol (TCP/IP)*** is not in ***This connection uses the following items***, click ***Install,*** then ***Internet Protocol (TCP/IP)*** to add ***Internet Protocol (TCP/IP).***

4. Verify if the configuration is proper for your environment in ***General.***



TIP

- When you use TCP/ IP protocol in Windows XP, click ***Local Area Connection Properties,*** then ***Advanced***, then remove the check from ***Protect my computer and network by limiting or preventing access to this computer from the Internet.***



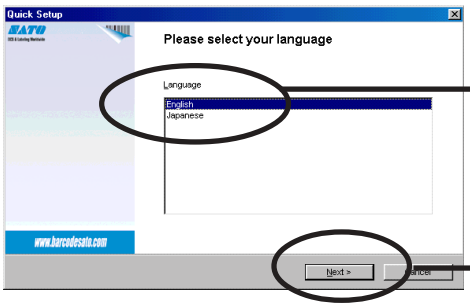
Quick Setup

1. Insert the SATO User Software in the CD-ROM drive of your Windows PC. The main menu screen will be displayed.

2. The below screen will be displayed.

Click ***Quickset Utility.***

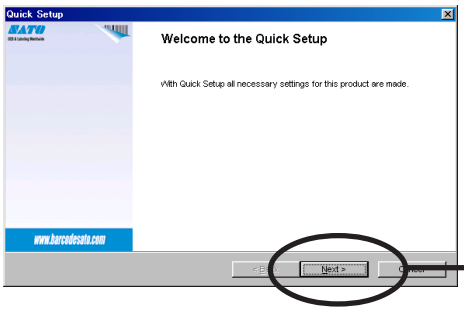
3. Select language.



Select your language.

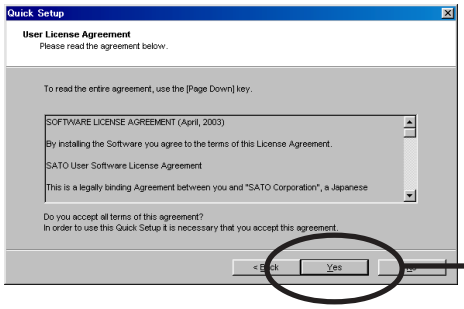
Click ***Next.***

4. Quick Setup loads.



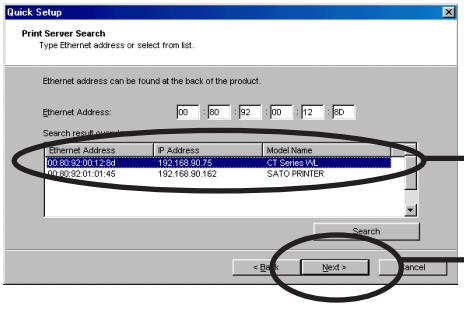
Click ***Next.***

5. Confirm the Software License Agreement.



Read the agreement and click ***Yes*** if you accept it.

6. Select LAN board to be configured.



Select LAN board to be configured.

Click ***Next.***

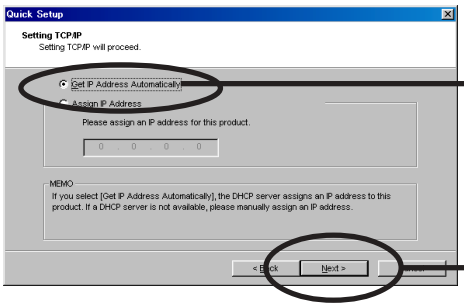
NOTE

- If LAN board does not appear in the list, click ***Search.***
  You can search LAN board by typing in Ethernet address directly.

7. Assign an IP address.

When you have DHCP server in your environment.

(A) Obtain an IP address from DHCP server automatically.



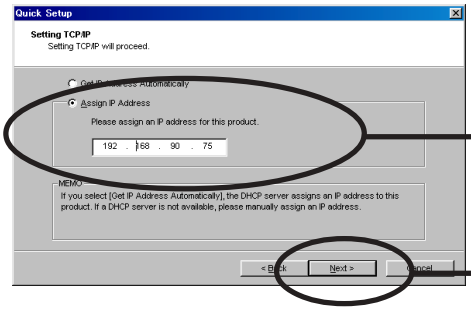
Click ***Get IP Address Automatically.***

Click ***Next***.

NOTE

- If NetWare Client is installed and LAN board is supporting NetWare (Enable), NetWare configuration screen will appear.

(B) Assign an IP address manually.



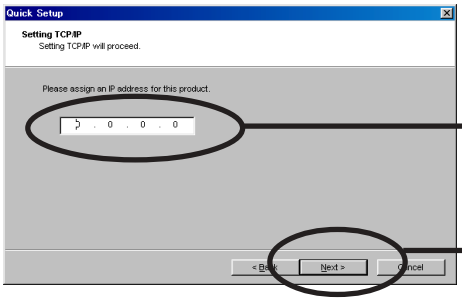
Assign an optional IP address.

Click ***Next.***

NOTE

- If NetWare Client is installed and LAN board is supporting NetWare (Enable), NetWare configuration screen will appear.

When you do not have DHCP server in your environment.



Assign an optional IP address.

Click ***Next.***

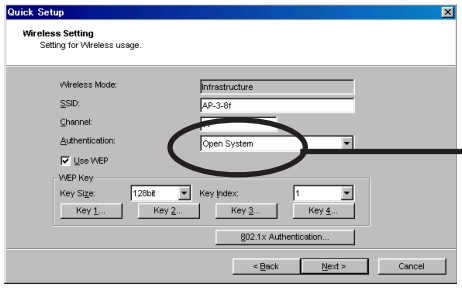
NOTE

- If NetWare Client is installed and LAN board is supporting NetWare (Enable), NetWare configuration screen will appear.

8. Configure the wireless settings

When connecting in Infrastructure mode, the authentication settings on the screen change.The authentication configuration screens are shown below.

(A) When not using authentication.

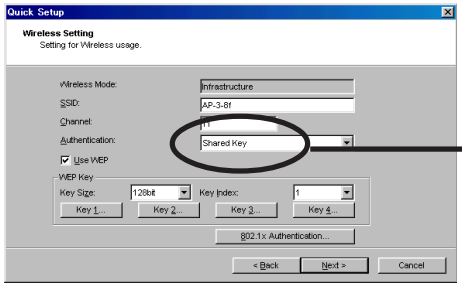


Select **Open System**

Select **Use WEP**.
Click on the Key Index button and enter the value for the WEP Key.
(Refer to “WEP key setup” for the configuration method.)

802.1x Authentication
Click **802.1x Authentication**.
(Refer to “802.1x Authentication “ for the configuration method.)

(B) WEP Authnitcation



Select **Shared Key**

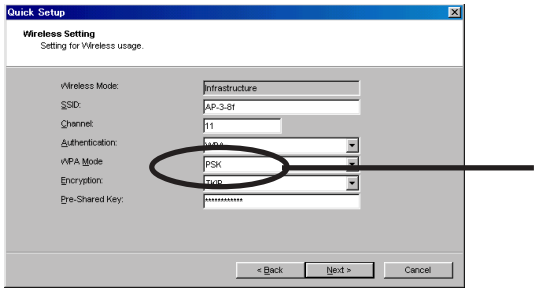
WEP Key is used
Select **Use WEP**.
Click on the Key Index button and enter the value for the WEP Key.
(Refer to “WEP key setup” for the configuration method.)

802.1x Authentication
Click **802.1x Authentication**.
(Refer to “802.1x Authentication “ for the configuration method.)

(C) WPA-PSK Authentication

Select **WPA** Authentication

(C-1) WPA-PSK Authenitcation

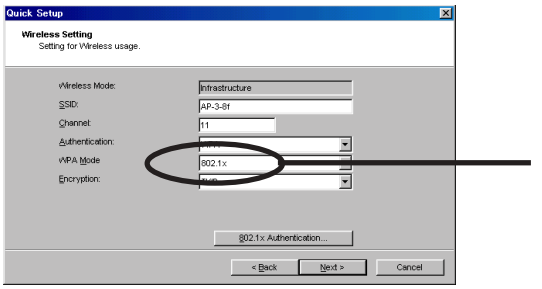


Select **PSK**

Select **Encryption**.

Select “Pre-Shared Key” for the share key.

(C-2) WPA-802.1x Authenitcation



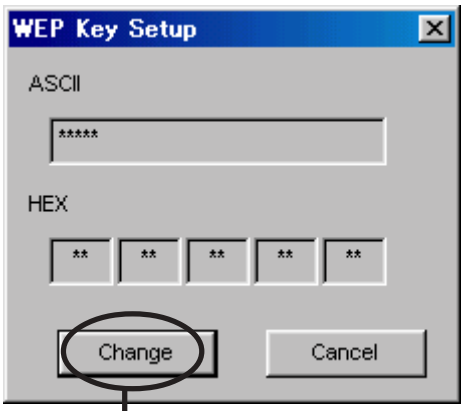
Select **802.1x**

Select **Encryption**.

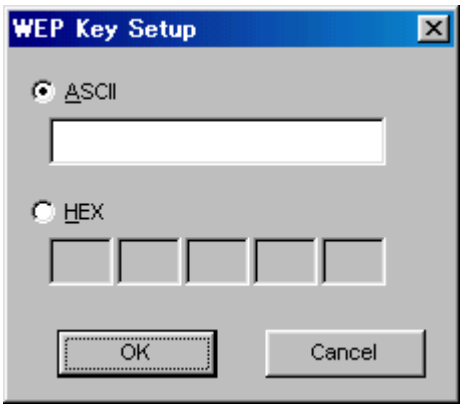
Click **802.1x Authentication**.

[WEP Key Setup]

Check “Use WEP”, and the following screens will be displayed when the “Key 1”-” Key(s) 4" button is selected (the screen shown blow is for a “Key Size” of 64 bits).
If the WEP key has already been configured, please select either “ASCII” or “HEX” after pushing the “Change” button, and enter the WEP key.



Click ***Change***.



The number of characters entered changes with “Key Size.”

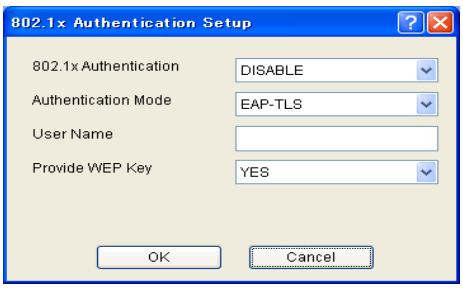
64bit : ASCII 5characters HEX 10 characters

128bit : ASCII 13 characters HEX 26 characters

[802.1x Authentication setup]

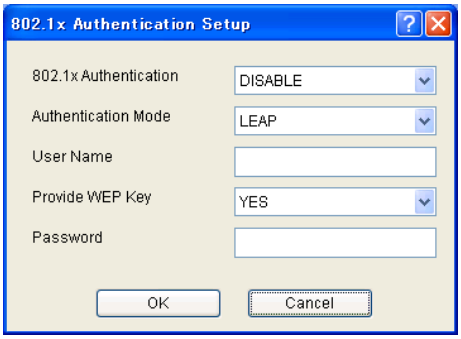
Selecting “802.1x Authentication” will display the following screen.
Since configuration items change with authentication systems, only the item that need to be configured will be displayed.

<mode of Network Authentication: Open System>



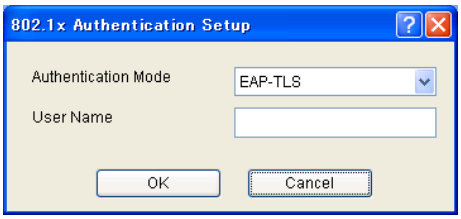
- Enable or disable “802.1x Authentication”
- Select **Authentication**.
- Enter the 802.1x user name
- Please choose NO, when manually entering the WEP key.
- Select YES when the WEP key is obtained from Access Point.

<mode of Network Authentication: Shared Key>



- Enable or disable “802.1x Authentication”
- Select **Authentication**.
- Enter the 802.1x user name
- Please choose NO, when manually entering the WEP key.
- Select YES when the WEP key is obtained from Access Point.
- Enter the password.

<mode of Network Authentication : WPA>

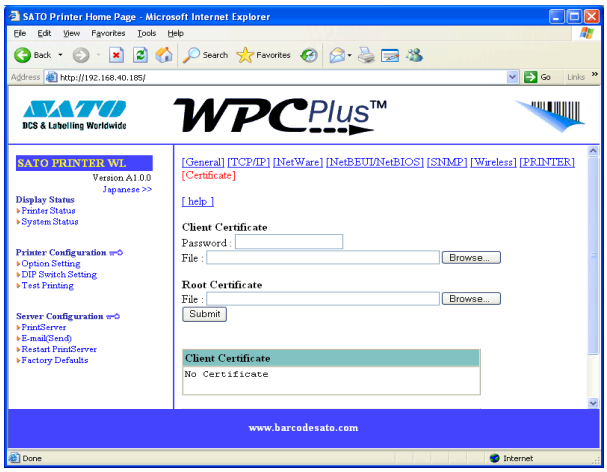


- Enable or disable “802.1x Authentication”
- Enter the 802.1x user name

NOTE

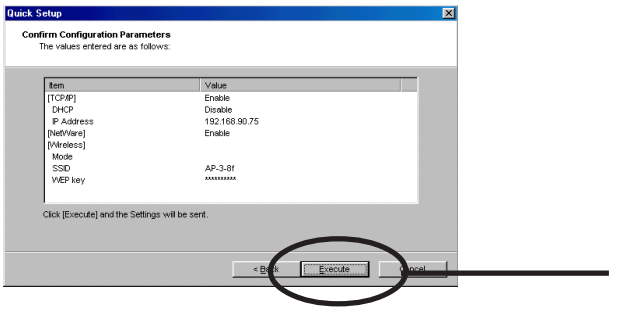
- Verify using a certificate. A certificate can be installed from a WEB page.

  The [Certificate] page, allows for the certificate used by 802.1x WPA authentication to be installed.



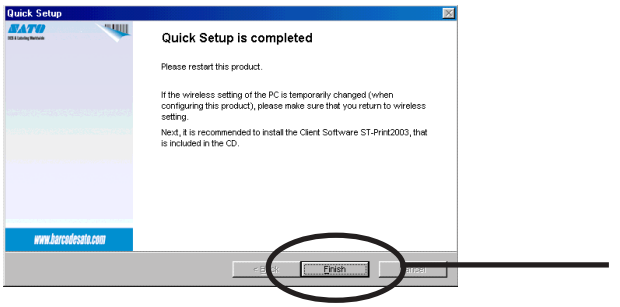
Item		Explanation
Client Certificate	Password	Input the necessary password to import the Client certificate
	File	Select the Client Certificate file.
Root Certificate	File	Select the Root Certificate file.

9. Verify the configuration parameters.



Click ***Execute.***

10. Setup is complete.



Click ***Finish.***

NOTE

- If you want to embedded prinitng client function in Windows NT 4.0, Windows 2000 or Windows XP, refer to "Print Using Embedded Printing Function" in this chapter.

Install ST-Print2003

To print directly from Windows NT 4.0, Windows 2000 or Windows XP environment using TCP/IP protocol, use the ST-Print2003 bundled with LAN board. ST-Print2003 is a printing software that enables users to use LPR (dedicated to SATO products), IPP and Raw (9100) port. When instllation is complete, the wizard to add printer port to be started.

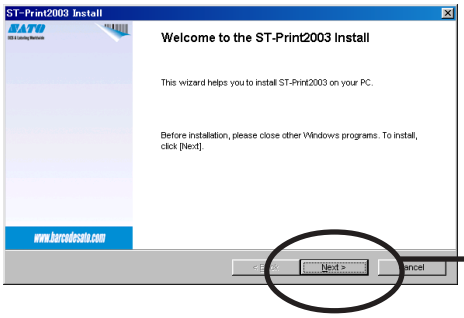
NOTE

- LPR (Line Printer Remote)
  A widely used popular protocol that enables users to execute printing to printers on the network.
- IPP (Internet Printing Protocol)
  This protocol enables users to execute printing to network printers remote via Internet.
- Raw (9100) port
  This function enables users to execute printing to printers on the local area network (LAN). Information can be printed at a high speed without spool.

1. Verifying installing method.

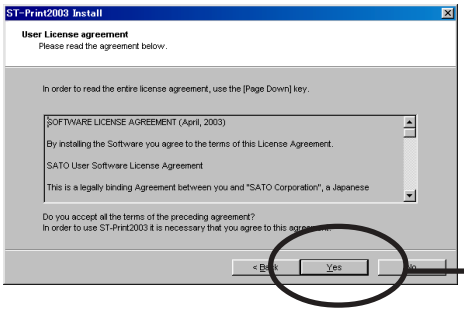
Mount the CD-ROM bundled, then click ***IP Port Drivers***.

2. ST-Print2003 installation wizard to be started.



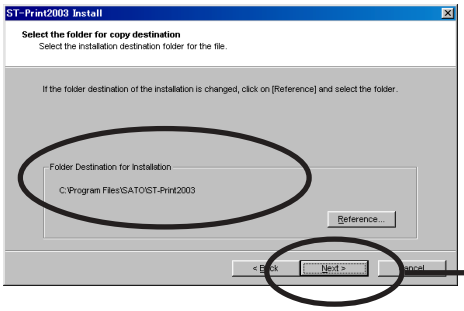
Click ***Next.***

3. Confirm the Software License Agreement.



Read the agreement and click ***Yes*** if you accept it.

4. Verify the Destination Directory.

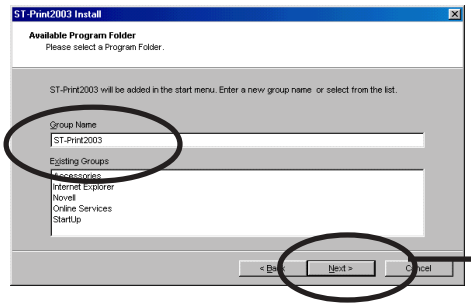


Click ***Next***.

NOTE

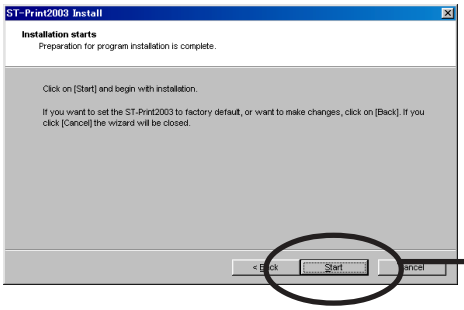
- Click ***Reference*** to specify the destination directory.

5. Specify the group name to be registered at the start menu.



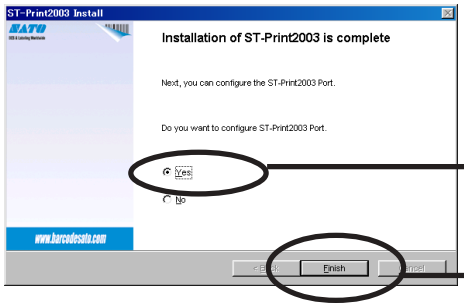
Click ***Next***.

6. Installation to be started.



Click ***Start.***

7. Configuration is complete.



Select ***Yes***.

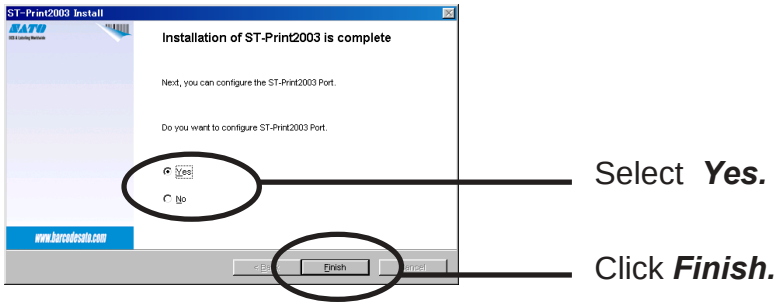
Click ***Finish.***

Adding Print Port

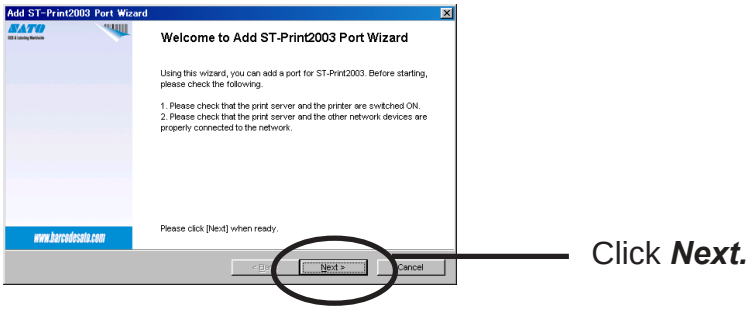
ST-Print2003 has three available options for printing. ***"Print with LPR"***, ***"Print with IPP"***, and ***"Print with Raw Mode"***. Select the protocol to be used for printing, then click Next to start using the specified printing option.

(A)

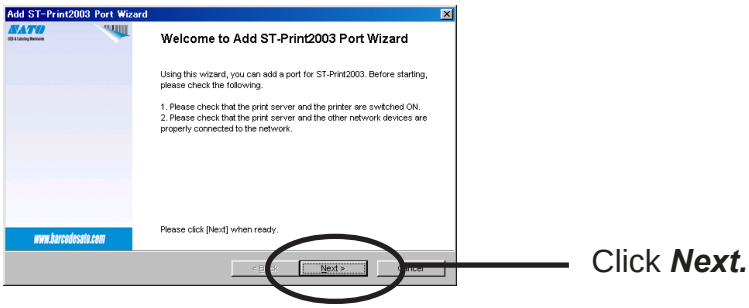
1. Adding printer port following the ST-Print2003 installation.



2. ST-Print2003 port adding wizard starts.

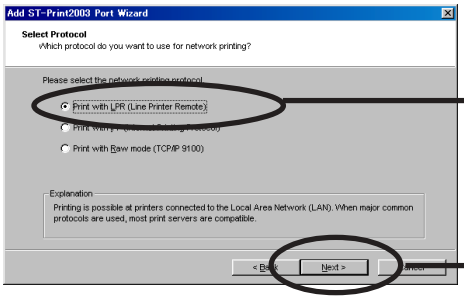


(B) Click ***Start***, then ***Programs***, then ***ST-Print2003***, then ***ST-Print2003 Port adding***.



Adding ST-Print2003 LPR Port.

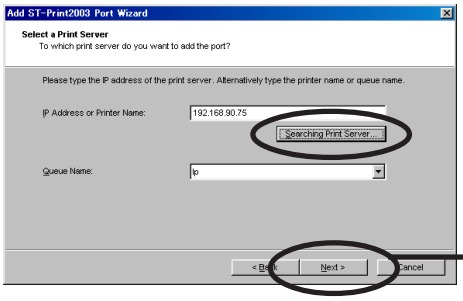
1. Select ***LPR (Line Printer Remote).***



Select ***Print with LPR (Line Printer Remote).***

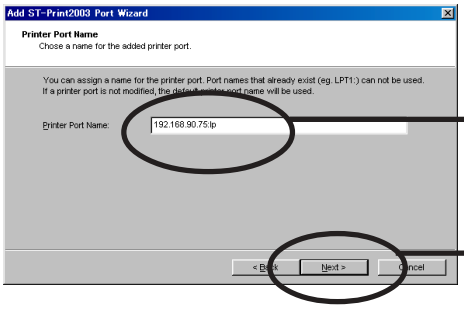
Click ***Next***.

2. Display the list of print servers on the network by ***Searching Print Server***. Select LAN board you want to configure.



Click ***Next***.

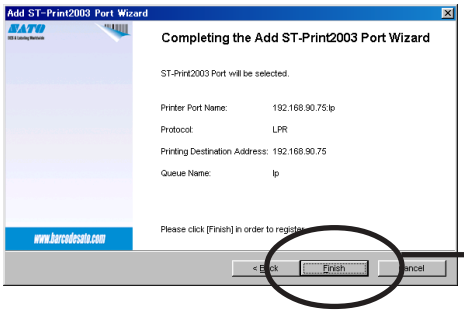
3. Type in printer port name.



If you do not want to have a specific name, use the default printer port name.

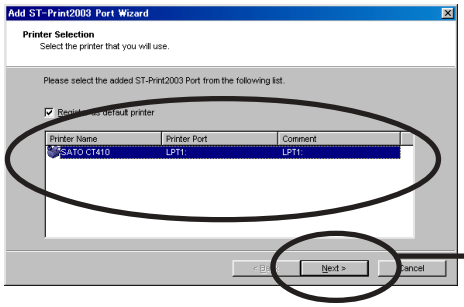
Click ***Next***.

4. Verify the configuration.



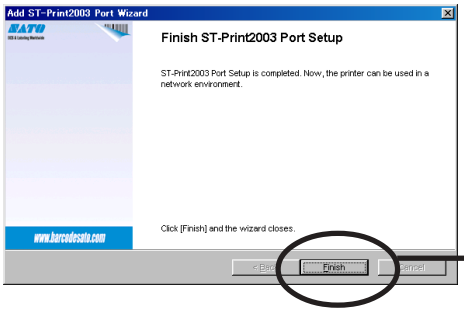
Click ***Finish.***

5. Select the printer you want to use with LAN board.



Click ***Next.***

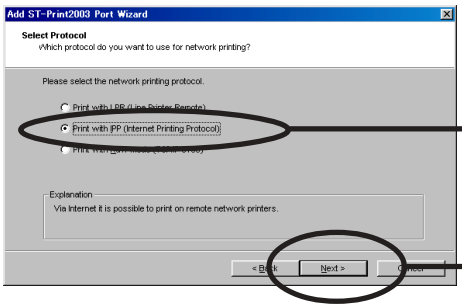
6. Port configuration is complete.



Click ***Finish.***

Adding ST-Print2003 IPP Port

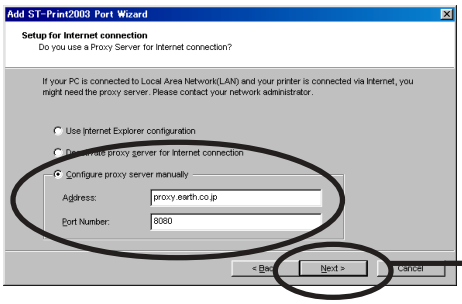
1. Select IPP (Internet Printing Protocol).



Select ***Print with IPP (Internet Printing Protocol).***

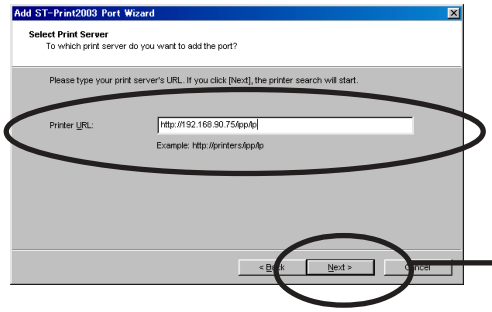
Click ***Next.***

2. Select either ***Deactivate proxy server for Internet connection*** or ***Configure proxy server manually.***



Click ***Next***.

3. Type in URL assigned to LAN board for ***Printer URL***. LAN board IPP printer URL is "/ipp" or "/ipp/lp".



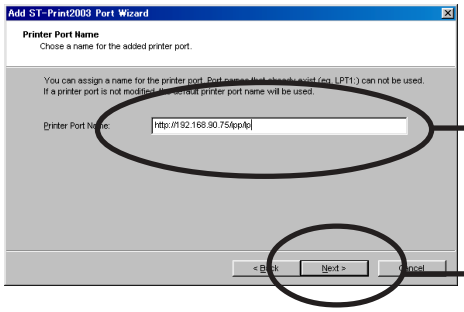
Click ***Next.***

Ex.): When URL is “abc.co.jp”,
http://abc.co.jp/ipp/lp
Ex.):When IP address is
“192.168.90.75”,
http://192.168.90.75/ipp/lp

NOTE

- If you click ***Next***, you can make sure if the specified URL exists.

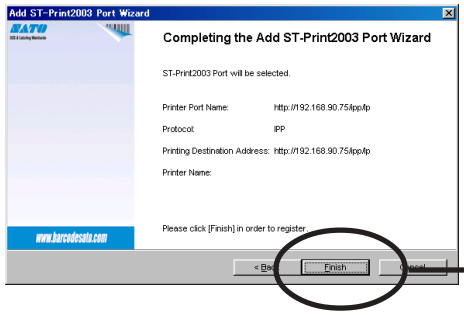
4. Configure the port name for printing.



If you do not want to have a specific port name, use the default printer port name.

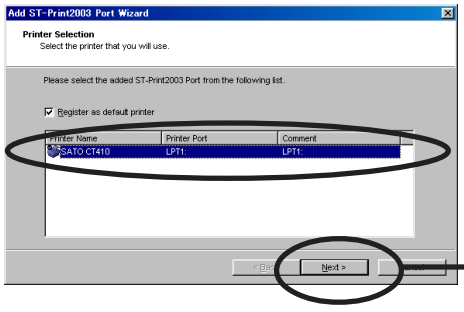
Click ***Next.***

5. Verify the configuration.



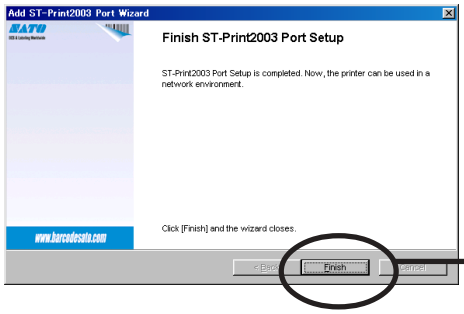
Click ***Finish.***

6. Select the printer you want to use with LAN board.



Click ***Next.***

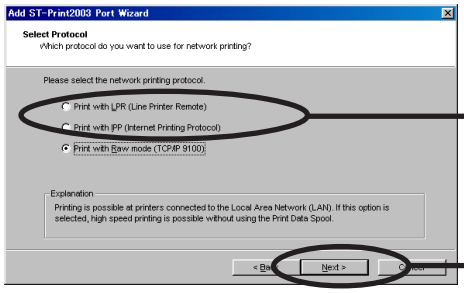
7. Configuration is complete.



Click ***Finish.***

Adding ST-Print2003 Raw (9100) Port

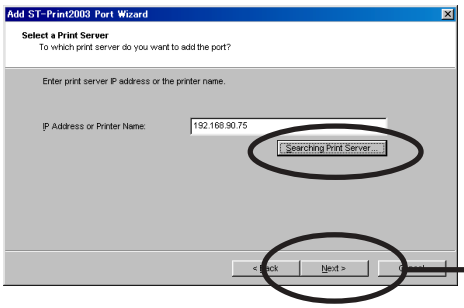
1. Select Raw mode.



Select ***Print with Raw mode (TCP/IP 9100).***

Click ***Next.***

2. Display the list of print servers on the network by ***Searching Print Server***. Select LAN board you want to configure.

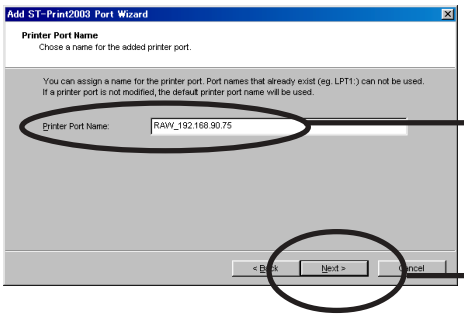


Click ***Next***.

NOTE

- To verify if the specified print server can access 9100 port, click ***Reference.***

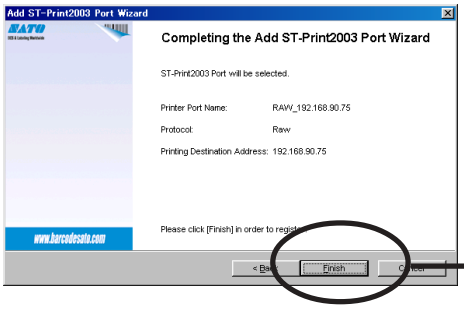
3. Type in printer port name.



If there is no problem, use the default printer port name (RAW_IP address).

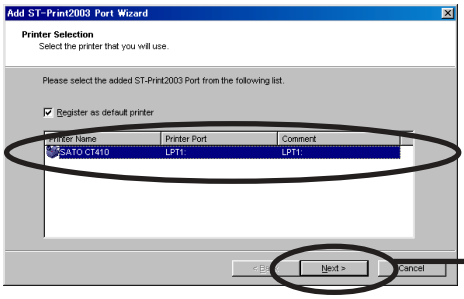
Click ***Next.***

4. Verify the configuration.



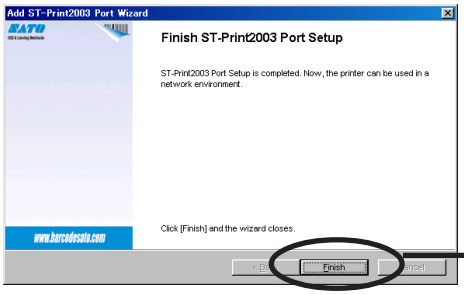
Click ***Finish.***

5. Select the printer you want to use with LAN board.



Click ***Next.***

6. Configuration is complete.



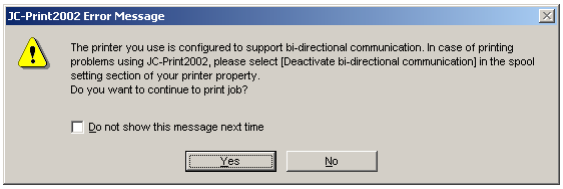
Click ***Finish.***

Configuring Printer Driver

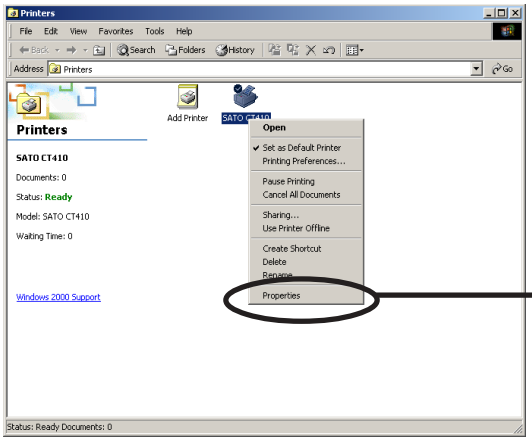
This section explains how to configure printer driver.

Ex.) Windows 2000

If you do not configure printer driver, the following error dialog may appear. In this case, click ***No*** and configure printer driver by following steps.

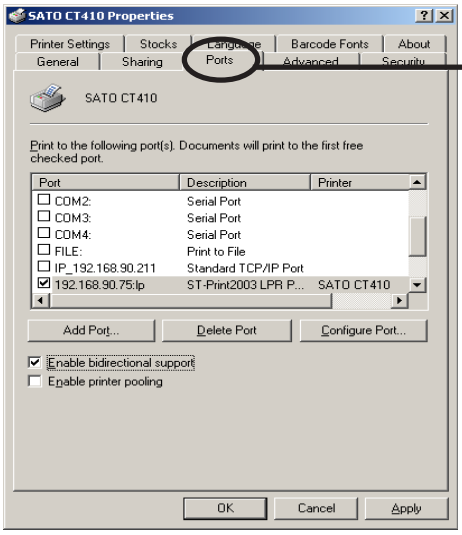


1. Click ***Start***, then ***Settings***, then ***Printer***, then open the printer property.



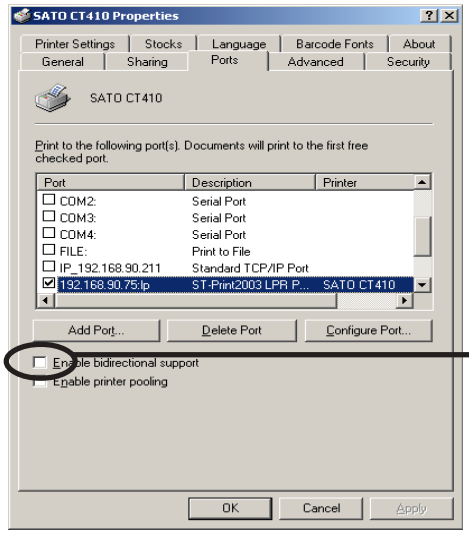
Select ***Properties.***

2. Select ***Ports.***



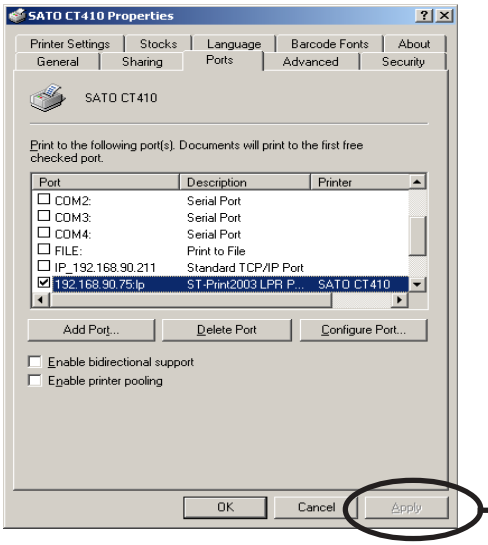
Select ***Ports***.

3. Configure bidirectional.



Check off ***Enable bidirectional support***.

4. Configuration is complete.



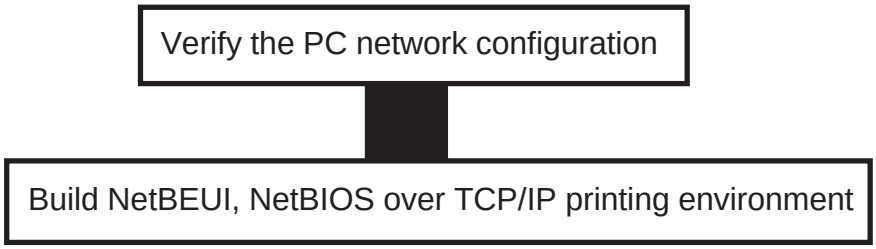
Click ***Apply.***

Print Using NetBEUI, NetBIOS over TCP/IP of Windows NT 4.0 and Windows 2000

Print Using NetBEUI, NetBIOS over TCP/IP of Windows NT 4.0

Follow the steps shown below to print from Windows NT 4.0, Windows 2000 and Windows XP environment using NetBEUI, NetBIOS over TCP/IP protocol.

NOTE
- Make sure to install printer driver before you start using LAN board.
- For further information on NetBEUI, NetBIOS over TCP/IP configuration, refer to Chapter 7.



Verify the Network Configuration (NetBEUI)

Make sure that ***Workstation, NetBIOS interface*** and ***NetBEUI protocol*** are added to ***Network*** of Windows NT 4.0.

1. Click ***Start***, then ***Settings***, then ***Control Panel***.

2. Double-click ***Network***.

3. Verify that ***Workstation*** and ***NetBIOS interface*** are added to the ***Services***.

NOTE
- If ***Workstation*** is not in the ***Network Service*** list, click ***Add,*** then select ***Workstation*** to add Workstation.

4. Verify ***NetBEUI*** is added to ***Protocol***.

NOTE
- If ***NetBEUI*** is not in the list, click ***Add***, then select ***NetBEUI*** from ***Network protocol.***

Verify the PC Network Configuration (NetBIOS over TCP/IP)

Make sure that ***Workstation, TCP/IP*** and ***NetBIOS interface*** are added to ***Network*** of Windows NT 4.0.

1. Click ***Start***, then ***Settings***, then ***Control Panel***.

2. Double-click ***Network*** icon.

3. Verify that ***Workstation*** and ***NetBIOS interface*** are added to the ***Services***.


NOTE

- If ***Workstation*** is not in the ***Network Service*** list, click ***Add,*** then select ***Workstation*** to add Workstation.

4. Verify ***TCP/IP*** is added to ***Protocol***.

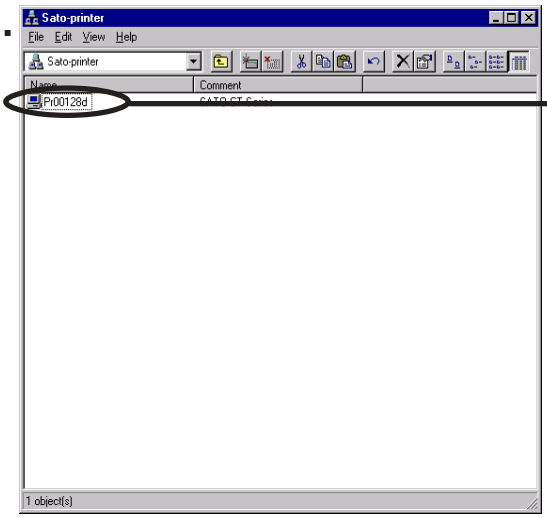

NOTE

- If ***TCP/IP*** is not in the list, click ***Add***, then select ***TCP/IP*** from ***Network protocol.***

Print Using NetBEUI, NetBIOS over TCP/IP

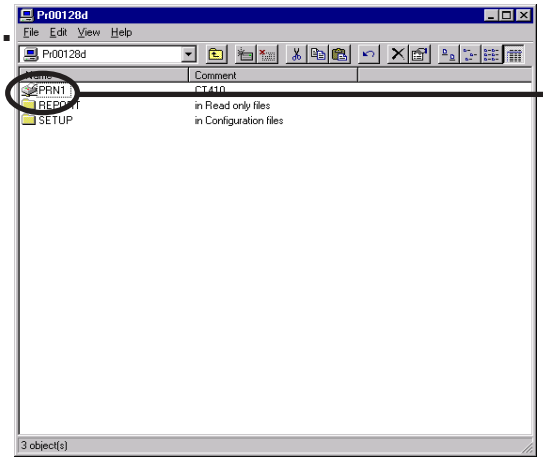
1. Double-click ***Network computer***, then open group name; ***[SATO-Printer]*** in the Whole Network.

2.



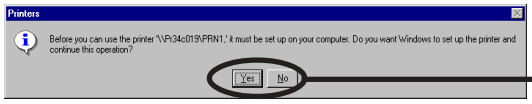
Double-click the computer (LAN board).

3.



Double-click the printer.

4. Confirmation message for printer configuration will be displayed.



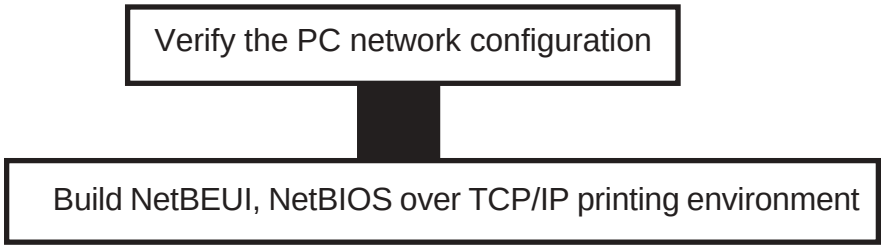
Click ***Yes***.

5. Printer add wizard to be started. Follow the instruction given by the wizard to complete configuration. If you get the printer test page, adding printer is complete.

Print Using NetBEUI, NetBIOS over TCP/IP of Windows 2000

Follow the steps shown below to print from Windows 2000 using NetBEUI, NetBIOS over TCP/IP protocol.

NOTE
- Make sure to install printer driver before you start using LAN board.
- For further information on NetBEUI, NetBIOS over TCP/IP configuration, refer to Chapter 7.



Verify Network Configuration

Make sure that ***NetBEUI protocol*** and ***Microsoft network shared service*** are added to the ***Network*** of the Windows 2000.

1. Click ***Start,*** then ***Settings***, then ***Control Panel,*** then ***Network and Internet Connection.***

2. Open ***Properties*** of ***Local area connection.***

3. Verify NetBEUI protocol is added.

NOTE
- If ***NetBEUI*** is not in the component list, click ***Install***, then ***Protocol***, then ***NetBEUI protocol***.

4. Verify that ***Microsoft Network Client*** is added.

NOTE
- If ***Microsoft Network Client*** is not in component list, click ***Install,*** then ***Client,*** then ***Microsoft Network Client.***

Verify the PC Network Configuration (NetBIOS over TCP/IP)

Make sure that ***Internet Protocol (TCP/IP)*** and ***Microsoft Network Sharing Service*** are added to ***Network*** of Windows NT 4.0 and verify if ***NetBIOS*** is configured to ***Internet Protocol (TCP/IP).***

1. Click ***Start***, then ***Settings***, then ***Control Panel***, then ***Network and Dial-up Connection.***

2. Right-click ***Local Area Connection***, then click ***properties.***

3. Verify Microsoft Network Sharing Services is added.

NOTE

- If ***Microsoft Network Sharing Services*** is not in the list, click ***Install,*** then ***Client,*** then ***Microsoft Network Sharing Services.***

4. Verify ***Internet Protocol (TCP/IP)*** is added.

NOTE

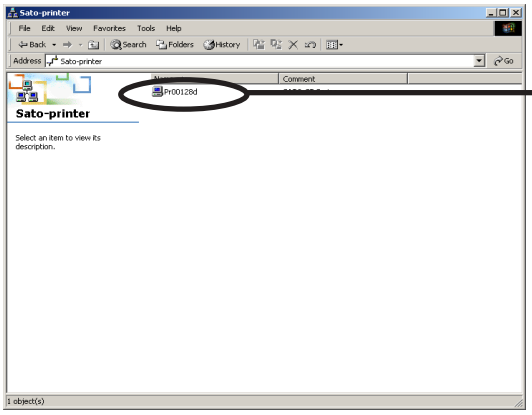
- If ***Internet Protocol (TCP/IP)*** is not in ***Components checked are used by this connection,*** click ***Install,*** then ***Internet Protocol (TCP/IP)*** to add ***Internet Protocol (TCP/IP).***

5. Verify ***Enable NetBIOS over TCP/IP*** is selected by clicking ***Internet Protocol (TCP/IP)***, then ***Properties***, then ***Details***, then ***WINS.***

Print Using NetBEUI, NetBIOS over TCP/IP

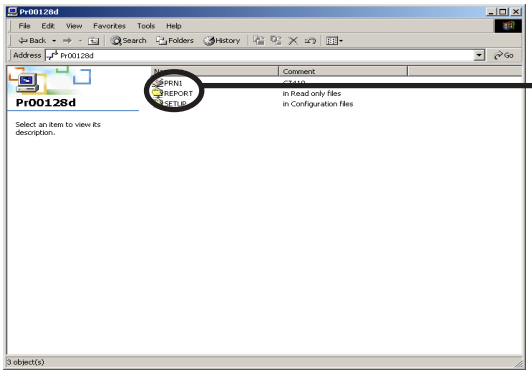
1. Double-click ***My network***, then ***Network***, then ***Microsoft Windows Network*** and open work group name, ***SATO-Printer.***

2.



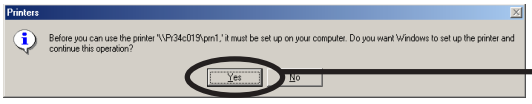
Double-click the computer (LAN board).

3.



Double-click your computer.

4. Confirmation message for printer configuration will be displayed.



Click ***Yes***.

5. Printer add wizard to be started. Follow the instruction given by the wizard to complete configuration. If you get the printer test page, adding printer is complete.

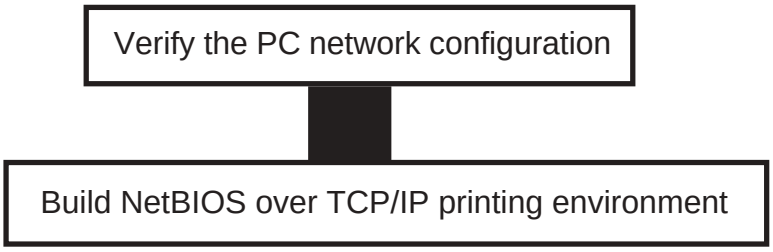
Print Using NetBIOS over TCP/IP of Windows XP

Print Using NetBIOS over TCP/IP of Windows XP

Follow the steps shown below to print from Windows XP using NetBIOS over TCP/IP protocol.

NOTE

- Make sure to install printer driver before you start using LAN board.
- For further information on NetBIOS over TCP/IP configuration, refer to Chapter 7.

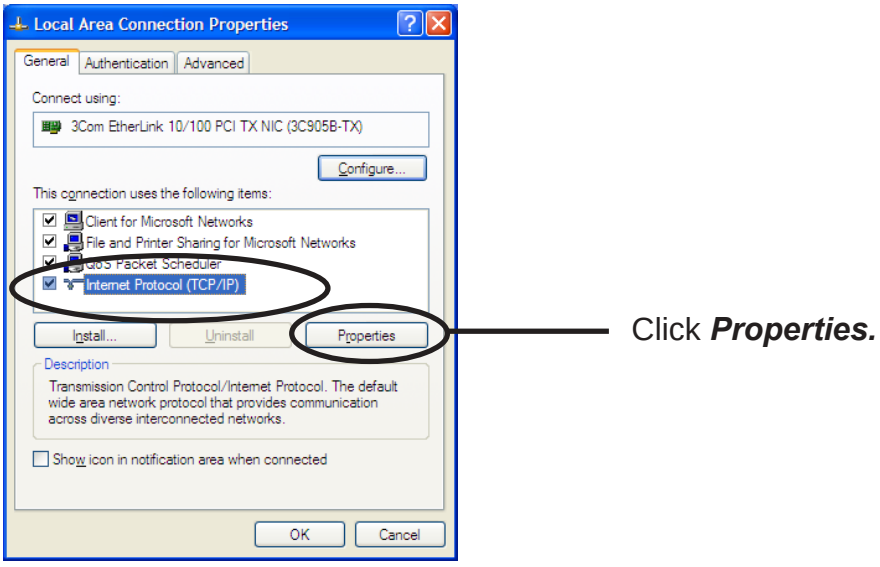


Verify the PC Network Configuration

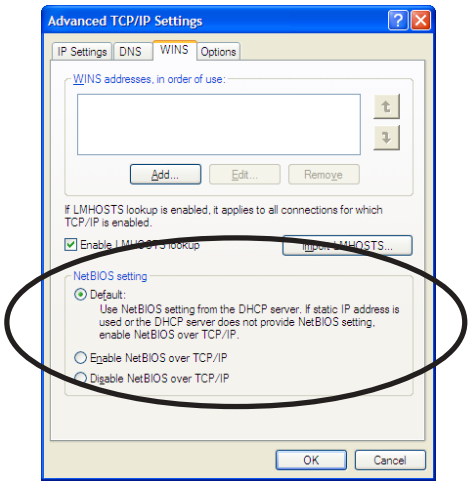
Make sure that ***NetBIOS*** is configured in ***Internet protocol (TCP/IP)*** and ***Microsoft Network Client*** is added to ***Network.***

1. Click ***start***, then ***Settings***, then ***Control Panel,*** then ***Network and Internet Connection,*** then ***Network Connection.***

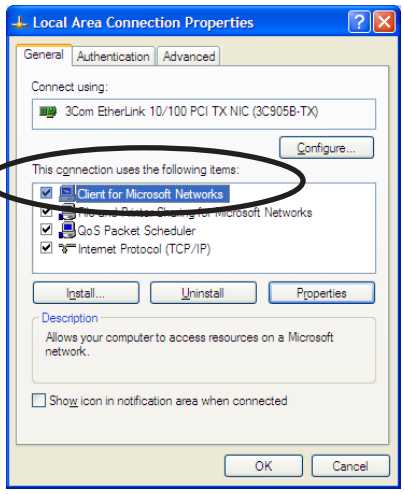
2. Open ***Properties*** of ***Local area connection.***



3. Click ***Internet protocol (TCP/IP)***, then ***Property***, then ***Details***, then ***WINS*** and verify ***Default*** or ***Enable NetBIOS over TCP/IP*** is selected for NetBIOS configuration.

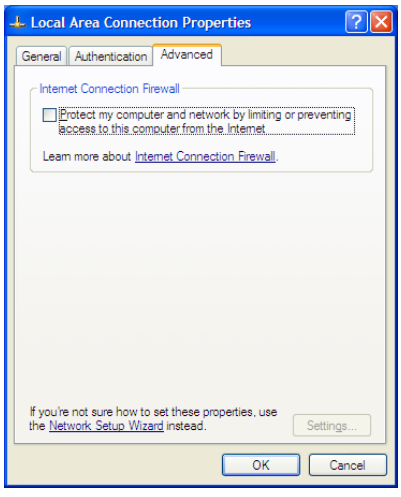


4. Verify that ***Microsoft Network Client*** is added.



TIP

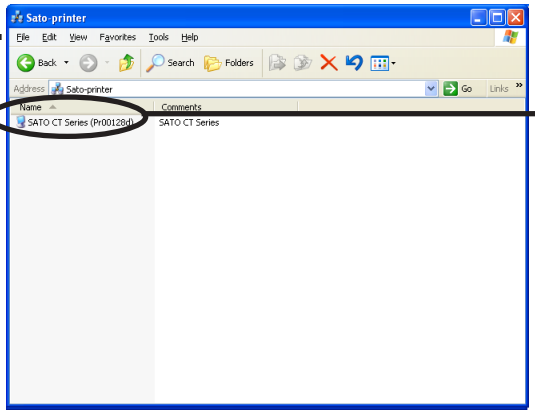
- When you use TCP/ IP protocol in Windows XP, click ***Local Area Connection Properties,*** then ***Advanced***, then remove the check from ***Protect my computer and network by limiting or preventing access to this computer from the Internet.***



Print Using NetBIOS over TCP/IP

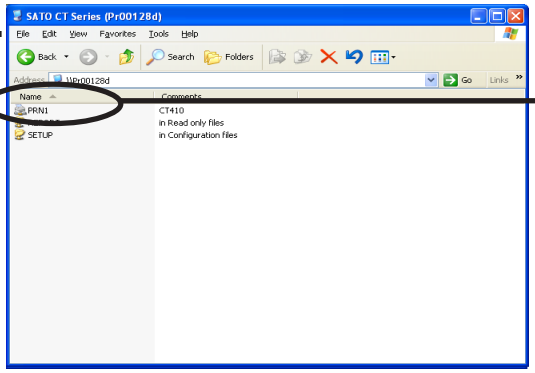
1. Double-click ***My network,*** then ***View workgroup computers***, then ***Microsoft Windows Network*** and open work group name, ***SATO-Printer.***

2.



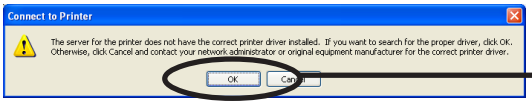
Double-click the computer (LAN board).

3.



Double-click the printer.

4. Confirmation message for printer configuration will be displayed.



Click ***Yes***.

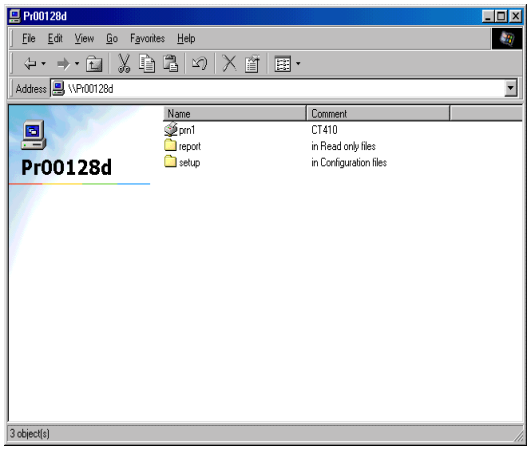
5. Follow the setting instructions given by the printer add wizard until the printer test page is output that means the end of printer adding sequence.

About NetBEUI, NetBIOS over TCP/IP

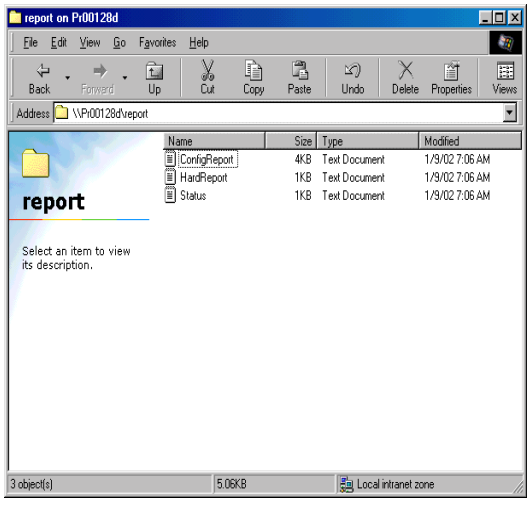
Structure of NetBEUI, NetBIOS over TCP/IP work group

This section explains about structure of NetBEUI, NetBIOS over TCP/IP work group installed in LAN board.

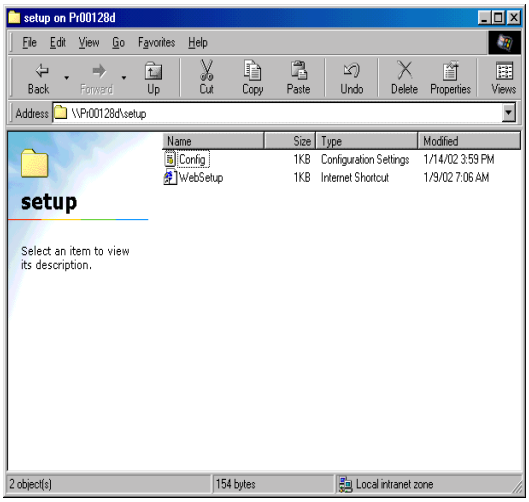
Ex.): LAN board Ethernet address: 00:80:92:00:12:8d



\\Pr00128d: Computer (LAN board)
\\Pr00128d\prn1: Printer



\\Pr00128d\report\ConfigReport.txt:
Settings report (read only)
\\Pr00128d\report\Status.txt:
Diagnostic report (read only)
System status report (read only)
\\Pr00128d\report\HardReport.txt:
System status report (read only)



\\Pr00128d\setup\Config.ini:
Initial setting file (can be edited)
\\Pr00128d\setup\WebSetup:
Shortcut file (read only)

- Configuration report

  Outputs the internal information in LAN board when activated.

- System status report

  Outputs the information on LAN board status when activated.

- Initial configuration file

  With the initialization file, ***Work group name*** and ***IP address*** can be described. Use editor like memo pad to edit and save files in the overwrite mode. In a few seconds, LAN board automatically resets and reboots.

  By editing the initialization file and saving the file in the overwrite mode, you can change work group name and IP address.

  Ex.)

  Workgroup=UserGroup
  IP address=192.168.90.75

  Specify work group name that already exist in the whole network. In case IP address is to be automatically assigned by using DHCP/BOOTP and RARP server, the IP address typed in [IP address] will be invalid.

- Shortcut file

  Once LAN board is given IP address, shortcut (WebSetup) is created. When double-clicking the shortcut icon, web browser to be activated and LAN board Web page to be displayed.

NOTE

- For the Web browser, refer to Chapter 7.

Print Using Embedded Printing Client Function

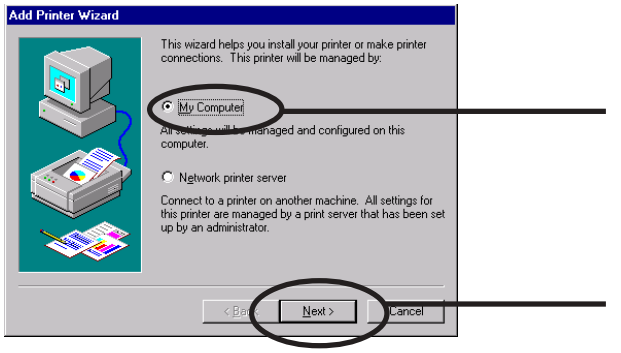
This section explains how to print using embedded printing client function.

Print Using LPR Port of Windows NT 4.0

TIP

- In order to print using LPR port, LPR port must be added. Click ***Start***, then ***Settings***, then ***Control Panel,*** then ***Network***, then select ***Services***, then click ***Add,*** then select ***Microsoft TCP/IP Printing***, then ***OK.*** Component is installed. Restart the computer.

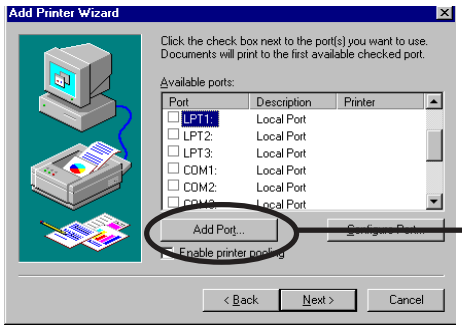
1. Click ***Start***, then ***Settings,*** then ***Printers***, then double-click ***Add Printer***.



Select ***My Computer.***

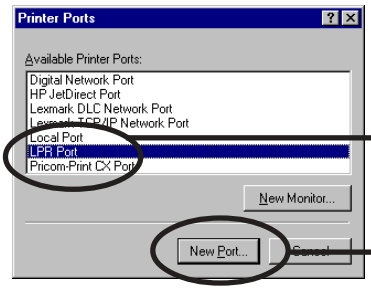
Click ***Next***.

2. Add Printer



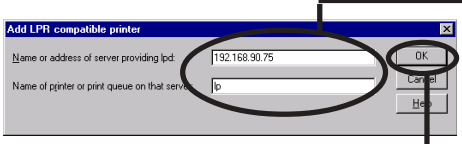
Click ***Add Port***.

3. Select the printer port.



Select ***LPR Port*** and click ***New Port***.

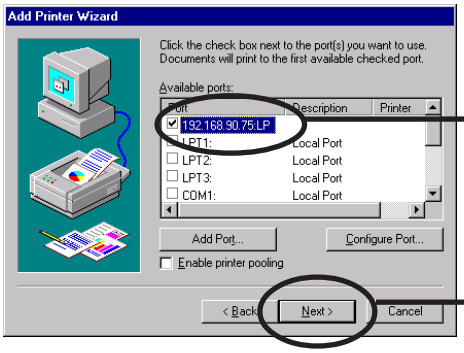
4. Add LPR compatible printer.



Type in the IP address configured to LAN board and type in lp.

Click ***OK***.

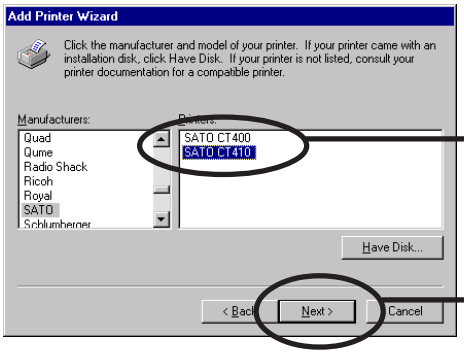
5. Verify the Printer Port.



Verify if the appropriate port is checked.

Click ***Next.***

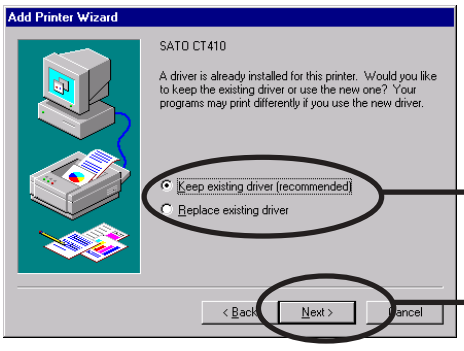
6. Select the printer driver.



Select the printer driver to be used.

Click ***Next.***

7. Verify the printer driver.



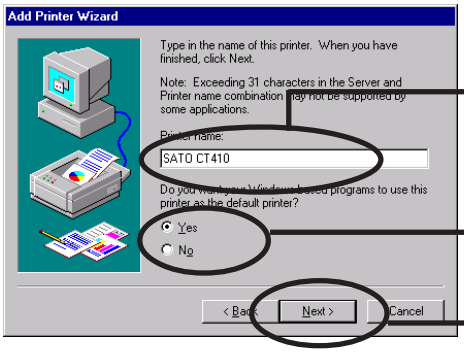
Select ***Keep existing driver (recommended)*** or ***Replace existing driver***.

Click ***Next.***

NOTE

- If installed the latest driver, select ***Replace existing driver***.

8. Register the Printer name.

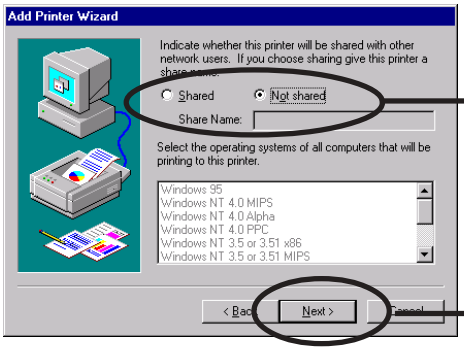


Select if use the printer as the default printer or not.

If you do not specify the printer name, use the printer name already set.

Click ***Next.***

9. Select if the printer to be shared or not .



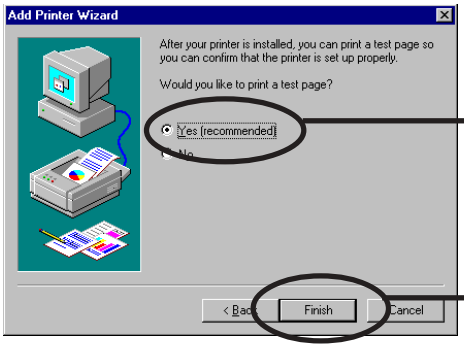
Select ***Shared*** or ***Not shared***.

Click ***Next.***

NOTE

- If the printer is shared with other computers in the same network, select ***Shared.***

10. Select if you want test print.



Select ***Yes***.

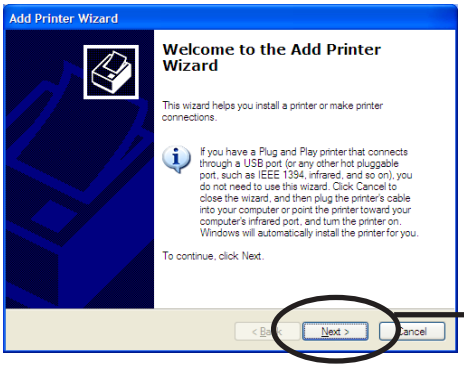
Click ***Finish.***

11. If the test page is printed properly, configuration is complete.

Print Using Standard TCP/IP Port of Windows 2000 and Windows XP

Screens displayed below are for Windows XP. If you use Windows 2000, the screen may vary.

1. Click ***start***, then ***Settings***, then ***Control Panel***, then ***Printers and Other Hardware,*** then ***Add a printer***.

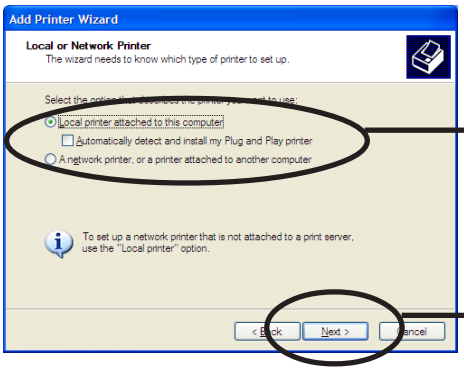


Click ***Next.***

NOTE

- If you use Windows 2000, click ***Start***, then ***Settings,*** then ***Control Panel,*** then ***Printers,*** then ***Add Printer.***

2. Select the printer to be configured.



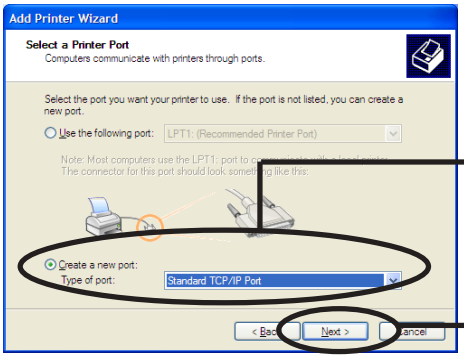
Select ***Local printer attached to this computer*** and remove the check from ***Aotomatically detect and install....***

Click ***Next***.

NOTE

- If you use Windows 2000, select ***Local Printer*** and remove the check from ***Automatically detect and...***

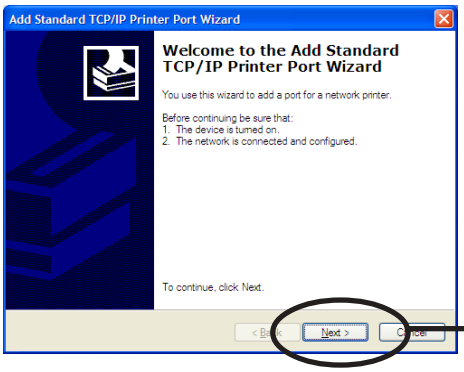
3. Select the printer port.



Check ***Create a new port*** and select ***Standard TCP/IP Port.***

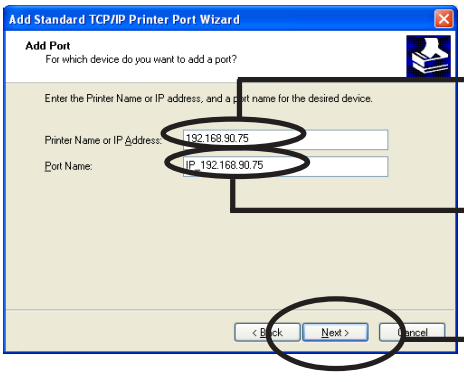
Click ***Next***.

4. Add Standard TCP/IP Printer Port Wizard will be started.



Click ***Next.***

5. Add TCP/IP Printer Port .

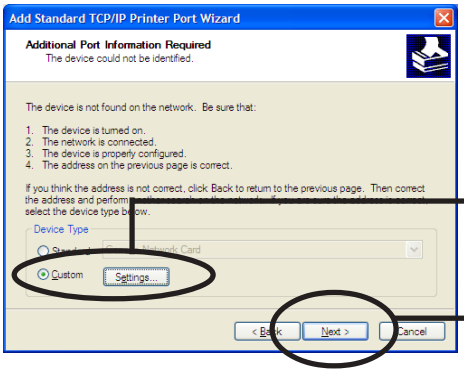


Type in the IP address configured to LAN board.

If you do not specify the ***Port Name***, use the established code (IP_xxx.xxx.xxx.xxx).

Click ***Next.***

6. Identify the device type.

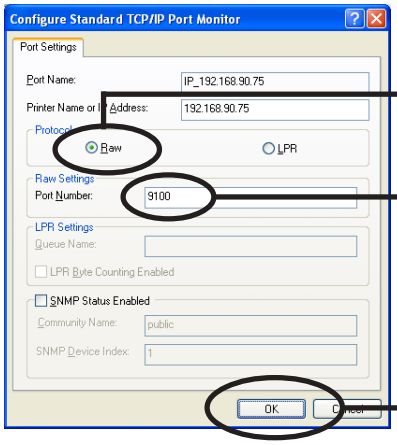


Check ***Custom*** and click ***Settings***.

Click ***Next.***

7. Type in the port information.

(A) Raw Mode



Select ***Raw***.

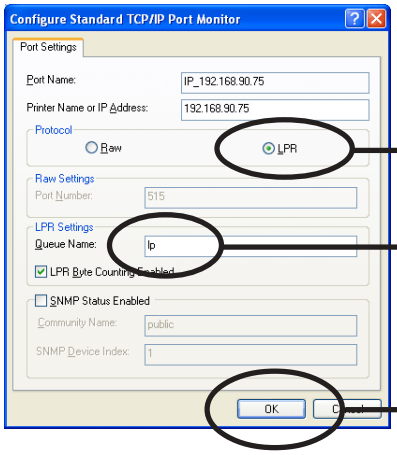
Type in ***9100***.

Click ***OK.***

NOTE

-If you click ***OK***, the screen 6 will be displayed, then click ***Next.***

(B) LPR Mode



Select ***LPR***.

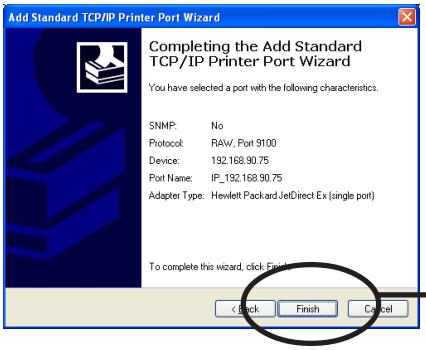
Type in ***lp*** and check ***LPR Byte Counting Enabled***.

Click ***OK.***

NOTE

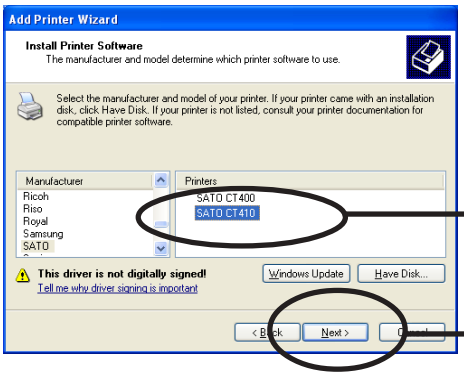
- If click ***OK***, the screen 6. will be displayed, then click ***Next***.

8. Verify the configuration.



Click ***Finish.***

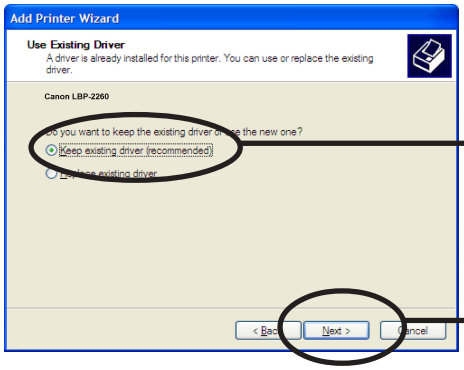
9. Select the printer driver.



Select the printer driver to be used.

Click ***Next***.

10. Verify the printer driver.



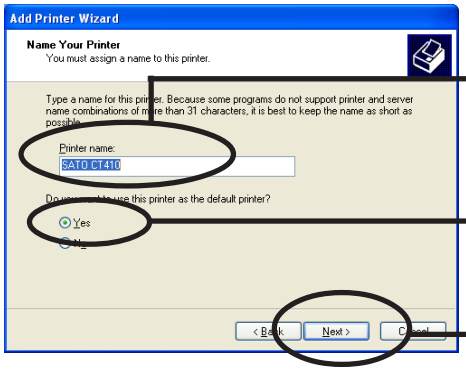
Select ***Keep existing printer driver (recommended)*** or ***Replace existing driver***.

Click ***Next.***

NOTE

- If installed the latest driver, select ***Replace existing driver***.

11. Register the Printer name.

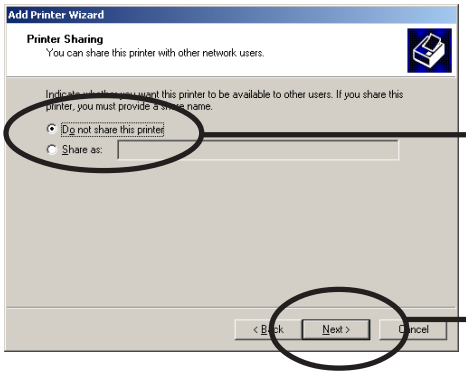


If you do not specify the printer name, use the printer name already set.

Select if use the printer as the default printer or not.

Click ***Next.***

12. Select if the printer to be shared or not.



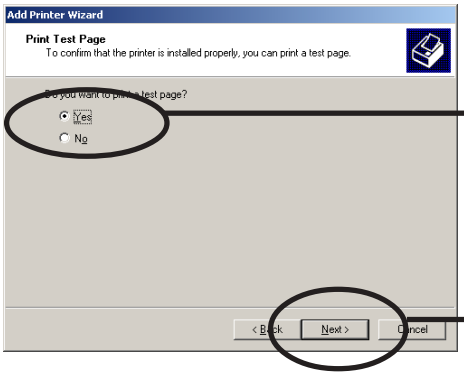
Select ***Do not share this printer*** or ***Shared as***.

Click ***Next.***

NOTE

- If the printer is shared with other computers in the same network, select ***Shared.***

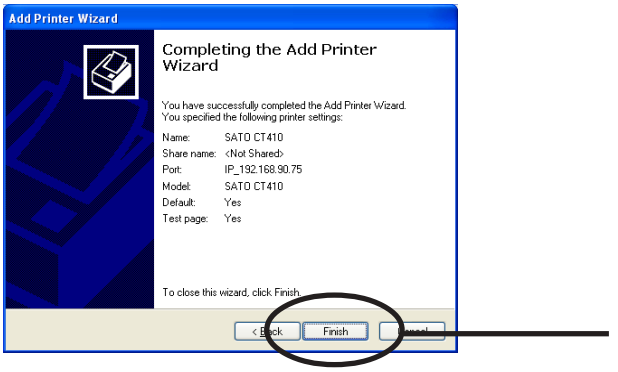
13. Select if you want test print.



Select ***Yes***.

Click ***Next.***

14. Verify the configuration.



Click ***Finish .***

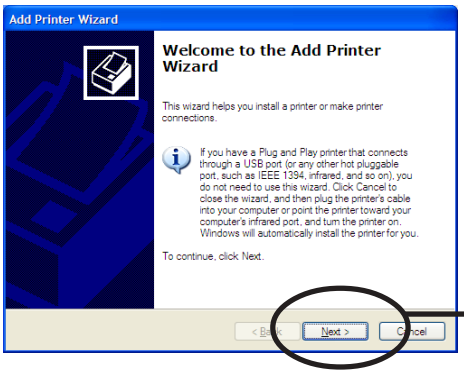
15. If the test page is printed properly, configuration is complete.

Print Using LPR Port of Windows 2000 and Windows XP

TIP

- In order to print using LPR port, LPR port must be added. Click ***Start,*** then ***Control Panel,*** then ***Add or Remove Prpgrams*** (For Windows 2000, click ***start***, then ***Settings***, then ***Control Panel***, then ***Add or Remove Programs***), then ***Add/Remove Windows Components***. ***Windows Components Wizard*** will be displayed, then click ***Components,*** then ***Other Network File and Printing Services***, then ***Details***, then ***Print Services for Unix***, then ***OK. Windows Components Wizard*** will be displayed. Click ***Finish***.
- Screens displayed below are for Windows XP. If you use Windows 2000, the screens may vary.

1. Click ***start***, then ***Control Panel***, then ***Printers and Other Hardware***, then ***Add a printer***.

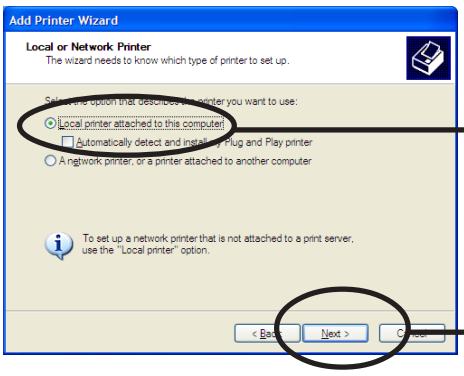


Click ***Next.***

NOTE

- If you use Windows 2000, click ***Start,*** then ***Settings***, then ***Printers***, then double-click ***Add Printer.***

2. Select the printer to be configured.



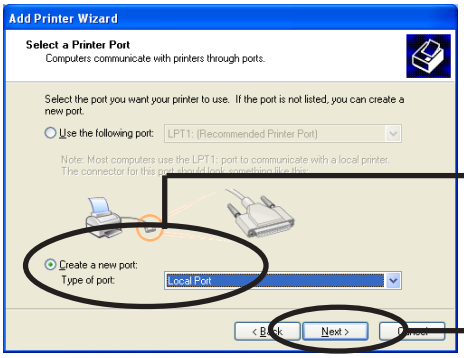
Select ***Local printer attached to this computer*** and remove the check from ***Automatically detect and ...***

Click ***Next.***

NOTE

- If you use Windows 2000, select ***Local printer*** and remove the check from ***Automatically detect and ...***

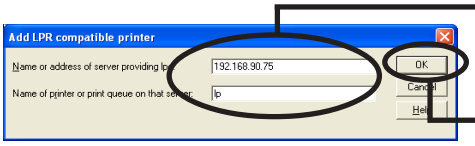
3. Select the printer port.



Check ***Create a new port*** and select ***Standard TCP/IP Port.***

Click ***Next.***

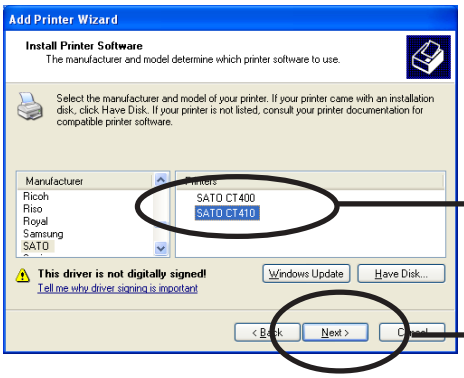
4. Add LPR compatible printer.



Type in the IP address configured to LAN board and type in lp.

Click ***OK.***

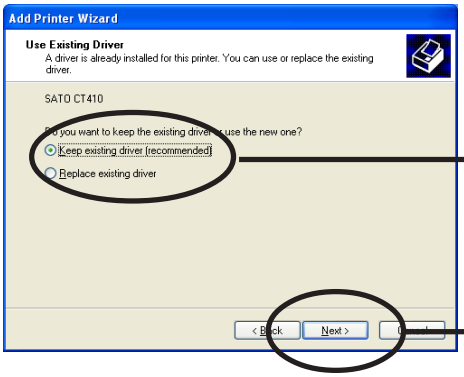
5. Select the printer driver.



Select the printer driver to be used.

Click ***Next.***

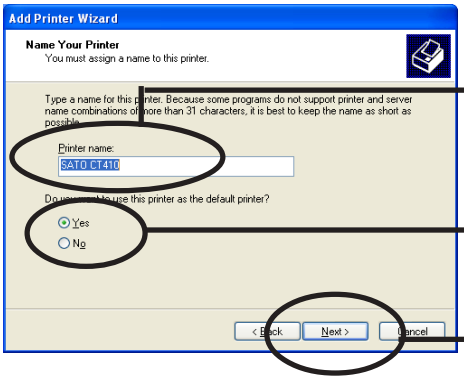
6. Verify the printer driver.



Select ***Keep existing driver (recommended)*** or ***Replace existing driver***.

Click ***Next.***

7. Register the printer name.

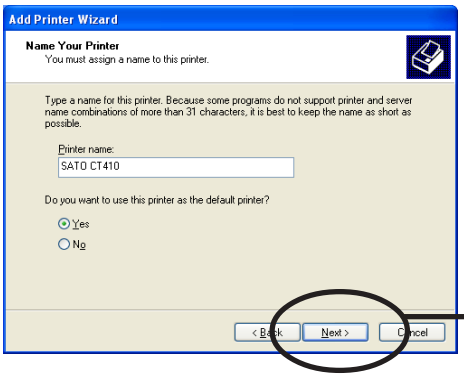


If you do not specify the printer name, use the printer name already set.

Select if use the printer as the default printer or not.

Click ***Next.***

8. Select if the printer to be shared or not .

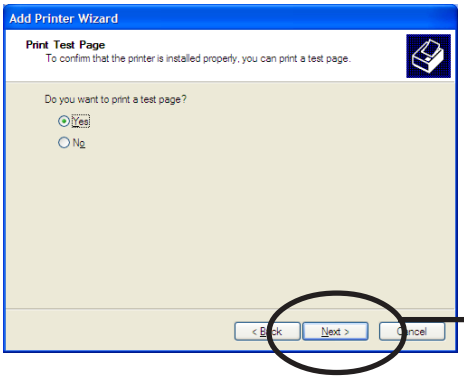


Click ***Next.***

NOTE

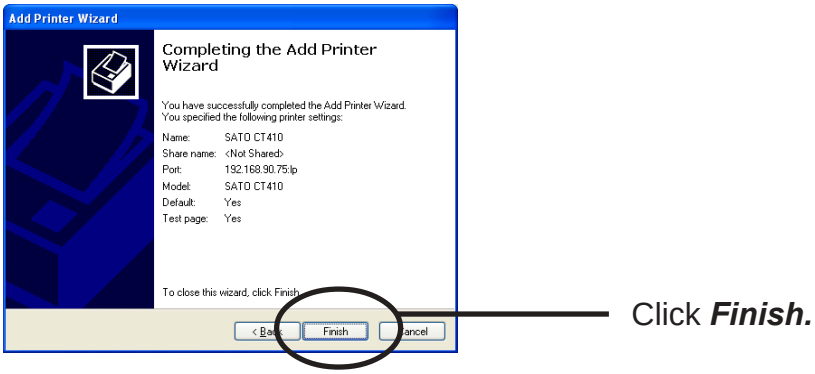
- If the printer is shared with other computers in the same network, select ***Shared as.***

9. Select if you want test print.



Click ***Next.***

10. Verify the configuration.



Click ***Finish.***

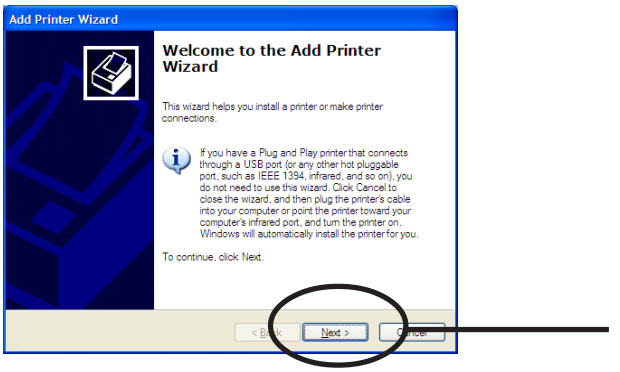
11. If the test page is printed properly, configuration is complete.

Print Using IPP Port of Windows 2000 and Wiondows XP

TIP

- Screens displayed below are for Windows 2000. If you use Windows 2000, the screens may vary.

1. Click ***start***, then ***Control Panel,*** then ***Printers and Other Hardware***, then ***Add a printer***.

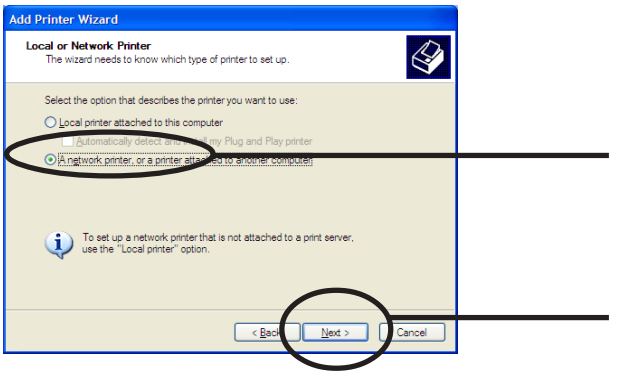


Click ***Next.***

NOTE

- If you use Windows 2000, click ***Start***, then ***Settings,*** then ***Printers***, then double-click ***Add Printer***.

2. Select the printer to be configured.



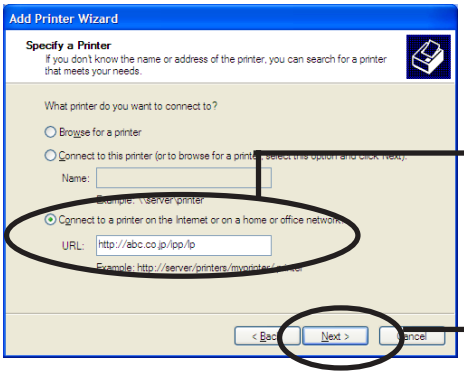
Select ***A network printer or a printer attached to another computer.***

Click ***Next***.

NOTE

- If you use Windows 2000, select ***Network Printer***.

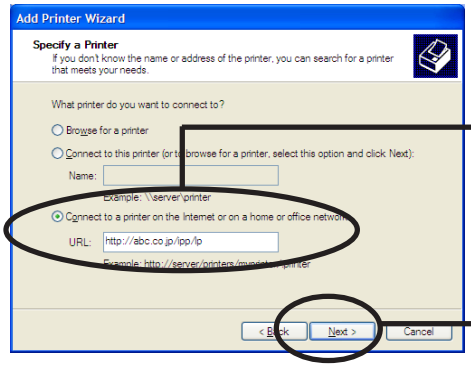
3. Type in LAN board IP address.



Select ***Connect to a printer on the Internet or on the home/office network.*** Specify URL or LAN board IP address.

Click ***Next.***

<Windows 2000>



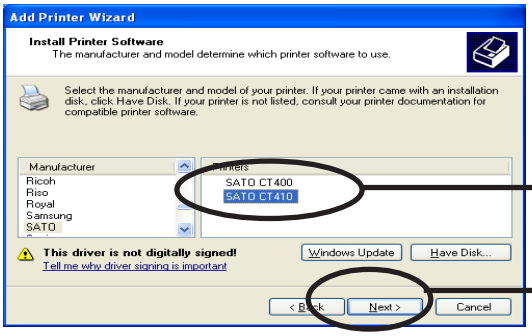
Select Connect to a printer on the Internet or intranet. Specify URL or IP address of LAN board.

Click ***Next.***

NOTE

Ex.): When URL is “abc.co.jp”,
http://abc.co.jp/ipp/lp or http://abc.co.jp/ipp
Ex.): When IP address is “192.168.90.75”,
http://192.168.90.75/ipp/lp or http://192.168.90.75/ipp

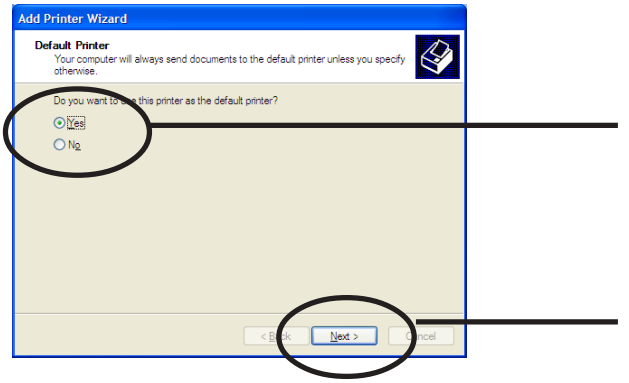
4. Select the printer driver.



Select the printer driver to be used.

Click ***Next.***

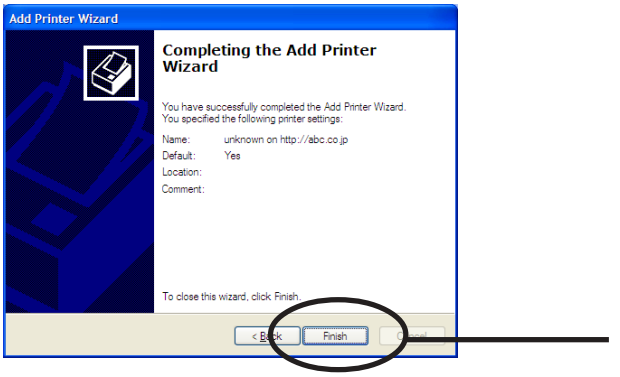
5. Configure the default printer.



Select if you want to use this printer as a default printer.

Click ***Next***.

6. Configuration is complete.



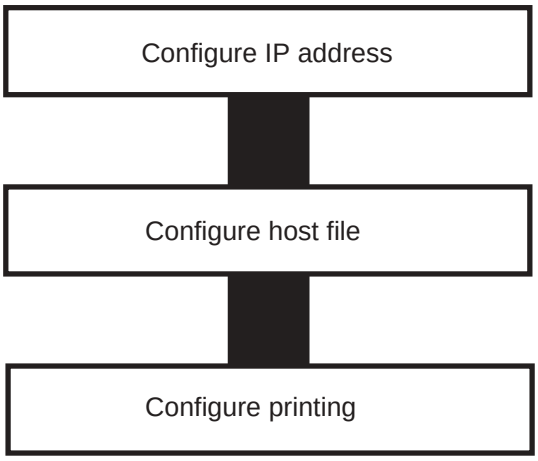
Click ***Finish.***

5. Using LAN board in UNIX/Linux Environment

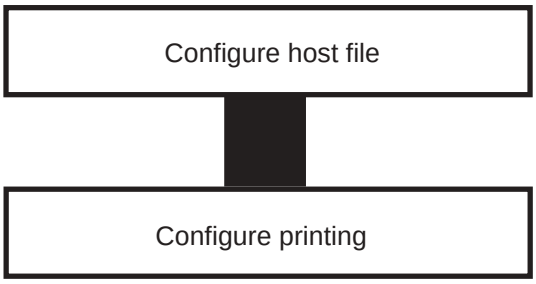
This chapter explains how to configure LAN board in UNIX/Linux environment and how to print using LPD and FTP.
For further information not covered in this manual, refer to the manual of workstation you use.

<Procedure to execute printing in UNIX/Linux environment.>

In case of initial installation and printing
(Administrator)



In case of printing
(Client)



Configuring IP Address

NOTE

- After configuring IP address, configure LAN board by TELNET.
  For information about TELNET, refer to Chapter 7 Functions for Configuration.

Configuring IP Address by BOOTP

Register the combination of IP address and Ethernet address that are to be registered on LAN board to BOOTP server. IP address will be configured to LAN board by turning the power on.

TIP

- To configure IP address by BOOTP, you need a workstation that is running BOOTP within the network.

The below shows an example of IP address configuration by UNIX BOOTP server.

Example: Ethernet address is “00809200100f”, IP address is “192.168.10.100” and host name is “pbox”.

1. Add following configuration to /etc/bootptab.

```
pbox:\
ht=ether:\              # Target hardware type is ETHERNET
ha=00809200110f:\       # Target hardware address
ip=192.168.10.100:\     # Target IP address
gw=192.168.10.254:\     # Default gateway address (If required)
sm=255.255.255.0:       # Target subnet mask (If required)
```

2. Add following configuration to /etc/inetd.conf.

```
bootps dgram udp wait root /etc/bootpd bootpd
```

3. Reboot inetd.

```
kill -1 1
```

4. Reset LAN board and printer.

Configuring IP Address by RARP

Add the combination of IP address and Ethernet address that are to be registered on LAN board to UNIX /etc/ethers and activate RARPD. IP address will be configured to LAN board by turning the power on.


TIP

- To configure IP address by RARP, you need a workstation that is running within the network.

The below shows an example of IP address configuration by UNIX RARP server.

Example: Ethernet address is “00809200110f”, IP address is “192.168.10.100” and host name is “pbox”.

1. Add following configuration to /etc/ethers.

```
00:80:92:00:11:0f     192.168.10.100     #pbox
```

2. Reboot RARPD.

```
rarpd -a
```

3. Reset LAN board and printer.

Configuring IP Address by ARP

Register the combination of IP address and Ethernet address on ARP table and execute PING.

TIP

- IP address configured in this method is temporary and will not be registered to LAN board. Be sure to register IP address by TELNET or utility.

Example: Ethernet address is “00809200110f”, IP address is “192.168.10.100” and host name is “pbox”.

1. Switch on LAN board.

2. Register the combination of IP address and Ethernet address on the ARP table by using ARP command.

```
arp -s 192.168.10.100 00:80:92:00:11:0f temp
```

3. Command PING.

```
ping 192.168.10.100
```

4. If you get reply from LAN board, configuration is complete.

```
192.168.10.100 is alive.
```

Configuring Host File

Register host name and IP address to UNIX or Linux hosts file.


NOTE

- Make sure to contact network administrator when editing hosts file.
- Editing hosts file may not be required if using IP administration system like DNS.

1. Log in to UNIX/Linux machine by “root”.

```
# login root
```

2. Register LAN board host name and IP address to /etc/hosts file.

To edit host file, use an editor, e.g. “vi”.
Example: The IP address is “192.168.10.100”, host name is “pbox”

```
192.168.10.98      venus     # UNIX-A
192.168.10.99      mars      # UNIX-B
192.168.10.100     pbox      # Print-Server
```

3. Switch on printer. Verify the network connection by using ping command.

```
# ping pbox
```


TIP

- If there is no response or error is indicated, there may be problems with IP address configuration, host file editing or network status. Contact network administrator.

Printing by LPD

This section explains how to print using LPD protocol of TCP/IP.
For further information on “lpr” and “lp” commands, refer to your workstation manual.


NOTE

LPD protocol:
LPD (Line Printer Daemon) is a protocol that enables you to execute printing to a printer on the network.

Remote-Printer Queue
LAN board has three remote printer queues.
For printing files using printer driver, use "lp". For printing text files using shift-JIS KANJI code, use "sjis". For printing text files using EUC KANJI code, use "euc".

Remote Printer	Function
lp	Direct output port
sjis	Shift- JIS KANJI code
euc	EUC KANJI code

Using LAN board in Solaris Environment

Solaris 2.6/7/8

This section explains how to print from Solaris2.6/7/8.
The blow command and path instruction may vary depending on OS version. Refer to your workstation manual.

TIP

- Remote Printer can not be configured with LAN board.

1. Create Printer Queue

1-1 Log in to UNIX machine by “root”.

```
# login root
```

1-2 Register print server name.

Example: Register the print queue name by “pboxlp”:

```
# lpadmin -p pboxlp -m netstandard -o protocol=bsd
                                    -o dest=pbox:lp -v /dev/null
```

(Print queue name)
(Remote printer name)
(Host name)

NOTE

- The “lp” following “:” represents LAN board remote printer name..
  EUC kanji text data can be directly printed as configuring the below example.

```
# lpadmin -p pboxeuc -m netstandard -o protocol=bsd
                                    -o dest=pbox:euc -v /dev/null
```

(Specify euc port)

1-3 Enable print queue.

```
#/usr/sbin/accept pboxlp
#/usr/bin/enable pboxlp
```

2. Printing

2-1 This section explains how to print using [lp] command. For more details, refer to Solaris manual.

```
# lp -d pboxlp <Name of print file>
```

This causes the banner page to be automatically printed.
To disable the banner printing feature, add the following option, “-o nobanner”.

```
# lp -d pboxlp -o nobannert <Name of print file>
```

Alternatively, type,

```
# lpadmin -p pboxlp -o nobanner
```

directly edit the filter file generated under /etc/lp/interfaces.
Either of these options disables banner print function.
Example: Using an editor e.g. vi, open the file shown below. Change “nobanner=no” to “nobanner=yes”.

```
# vi /etc/lp/interfaces/pboxlp
nobanner=no ---> nobanner=yes
```

3. Cancel the print request.

3-1 Use “cancel” command to cancel the current print job request.

TIP

- Depending on the timing or Solaris specification, canceling attempt will fail.

4. Check the printer status

4-1 Use “lpstat” to verify the printer status.

```
# lpstat -p pboxlp
```

TIP

- Depending on the UNIX specification, the command will fail to correctly display the printer status.

Solaris 2.3x-2.5x

This section explains how to print from Solaris 2.5 or below.
Command absolute path and configuration method may vary depending on OS version. Refer to your workstation manual for more details.

TIP

- Remoter printer can not be used with LAN board.

1. Prepare the print queue.

1-1 Log in to the UNIX machine by “root”.

```
# login root
```

1-2 Cancel the print scheduler.

```
# /usr/sbin/lpshut
```

1-3 Register the print server.

Example: Register the host name “pbox”:

```
# /usr/sbin/lpsystem -R0 -t bsd pbox
```

1-4 Configure the print queue.

Example: Register the print queue name “pboxlp”:

```
#/usr/sbin/lpadmin -p pboxlp -s pbox!lp
```

(Name of logical printer)
(Name of the host)
(Name of print queue)

NOTE

When using csh, replace “/!” or “\!” with “!”.
The “lp” following “!” represents the name of the LAN board logical printer.
EUC kanji text data can be directly printed as it is by the following setup.

```
#/usr/sbin/lpadmin -p pboxeuc -s pbox!euc
```

(Specify euc port)

1-5 Activate the print scheduler.

```
#/usr/bin/sh /etc/init.d/lp start
```

1-6 Enable the print queue.

```
#/usr/sbin/accept pboxlp
#/usr/bin/enable pboxlp
```

2. Printing.

2-1 Print using "lp" command.

```
# lp -d pboxlp <Print file name>
```

3. Cancel the print request.

3-1 Use the “cancel” command to cancel the current print job request.

```
# cancel pboxlp- <Name of print file>
```

4. Check the printer status.

4-1 Use the “lpstat” to verify the printer status.

```
# lpstat -p pboxlp
```

TIP

- Depending on the UNIX specification, the command will fail to correctly display the printer status.

TIP

[Limits]

When running LAN board with Solaris 2.x, following limits occurs due to Solaris specifications.

1) If, after starting printing, the printer becomes off line and cannot receive data for quite a while, timeout occurs on the Solaris side and then the printing continues (re-connection). This means that the data stream to the printer is discontinued, and the first page will be sent again.
2) When the printer status is displayed in the form “lpstat -p<printer name>”, optional character string returned to show the status (e.g. PrinterReady) cannot be interpreted by the Solaris. As a result, “Faulted” is displayed followed by unintentional characters.
3) When a print-related command is sent to LAN board while the Solaris is sending data from the same machine, the command cannot function as it should. This is because Solaris cannot output another packet until it finishes the transmission of the current data. Thus, “system not responding” will be displayed in response to “lpstat -p <printer name>.
4) Certain commands such as lpstat following cancel command will result in error. In such case, printer scheduler daemon may not be running, so verify using “lpstat -r”. If “scheduler is not running” is displayed, reboot the printer scheduler daemon by typing in as below.
   /bin/sh /etc/init.d/lp start
5) Even if “cancel” is used to delete a job that does not exist, no error occurs with Solaris.

Running LAN board in HP-UX 9.x/10.x Environment

This section explains how to print from Hewlett-Packard HP-UX.
Command absolute path and configuration method may vary depending on OS version. Refer to your workstation manual for more details.

1. Set the remote spooler.

When HP-UX machine is not configured to remote spooler, follow with the below configuration.

1-1 Log in to the UNIX machine by “root”.

```
# login root
```

1-2 Cancel the printer spooler.

```
#/usr/lib/lpshut
```

1-3 Register remote spooler by adding the line shown below to /etc/inetd.conf file.

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

1-4 Reboot inetd.

```
#/etc/inetd -c
```

2. Prepare the print queue.

2-1 Log in to the UNIX machine through “root”.

```
# login root
```

2-2 Configure print queue.

Example: Register the print queue name as “pboxlp”:

```
#/usr/lib/lpadmin -ppboxlp -mrmodel -ormpbox
                   (Print queue name)   (Host name)

-orplp -ocmrcmodel -osmrsmodel -ob3 -v/dev/null
(Remote printer name)
```

NOTE

-The “lp” following “-orp” represents the name of LAN board remote printer.
-SJIS kanji text data can be directly printed by configuring as below.

```
#/usr/lib/lpadmin -ppboxsjis -mrmodel -ormpbox
                  -orpsjis -ocmrcmodel -osmrsmodel -ob3 -v/dev/null
                           └── (Specify sjis port)
```

2-3 Enable the print queue.

```
#/usr/lib/accept pboxlp
#/usr/bin/enable  pboxlp
```

2-4 Boot the printer spooler.

```
#/usr/lib/lpsched
```

3. Prepare for printing.

3-1 Use the print command “lp”.

```
# lp -d pboxlp <Name of print file>
```

4. Cancel the print request.

4-1 Use the “cancel” command to cancel the current print job request.

```
# cancel pboxlp- <job number>
```

5. Check the printer status

5-1 Use the “lpstat” to verify the printer status.

```
# lpstat -p pboxlp
```

TIP

- Depending on UNIX specification, the command may fail to display the printer status correctly.

Using setnetlp Tool

TIP

- setnetlp utility is available for HP-UX, ver. 10.10 or below.

Example:
IP address: 192.168.10.100
Host name: pbox
These are already registered to /etc/hosts and to be registered by “pboxlp” as a queue name.

1. Log in by root and execute /usr/sbin/setnetlp. Below menu will be displayed. Select [1) Add Printer]

```
# /usr/sbin/setnetlp


    ####################################
    #            MAIN MENU             #
    #  Network Printer Configuration   #
    ####################################

       1) Add Printer
       2) Remove Printer

       q) Quit

Please enter a selection: 1
```

2. The below menu will be displayed. Select [1) LP destination name:]

```
Please enter a selection: 1

     Configurable Parameters:              Current Settings
     ------------------------              ----------------
     0) Done. Make Configuration now!
     1) Lp destination name:               [(N/A)]
     2) Remote System name:                [(N/A)]
     3) Remote Printer name:               [(N/A)]
     4) Local Model Script:                [(N/A)]

     q) Quit

Select an item for change or select "0":1
```

3. Registered printer list will be displayed. Type in printer name to be configured following [Please enter a lp destination name:].

```
Currently used names:
-----------------------------------------------------
pbox1lp    pbox3lp

Please enter a lp destination name: pboxlp
```

4. Select [2) Remote System name]. Type in the IP address configured to LAN board, or the host name registered to /etc/hosts after [Please enter a remote system name/ IP address:]. Host name is typed for this example.

```
Select an item for change or select "0":2
Please enter a remote system name/IP address: pbox
```

5. Select [Remote Printer name]. Type in [lp] following [Please enter a remote printer name:]

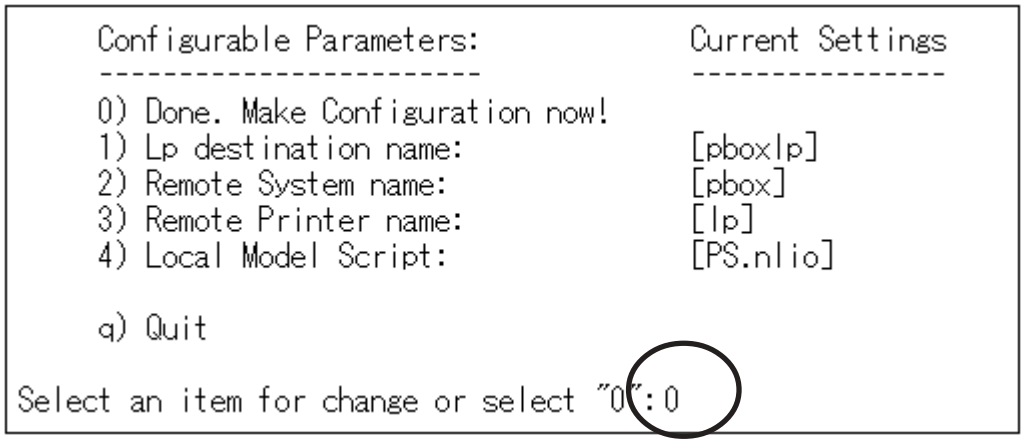
```
Select an item for change or select "0":3
Please enter a remote printer name: lp
```

6. Select [4) Local Model Script]. Model file list and prompt will be displayed. Type in model file name to be configured following [Please enter a model file:]. [PS.nlio] that is generally used by Japanese postscript is used for this example.

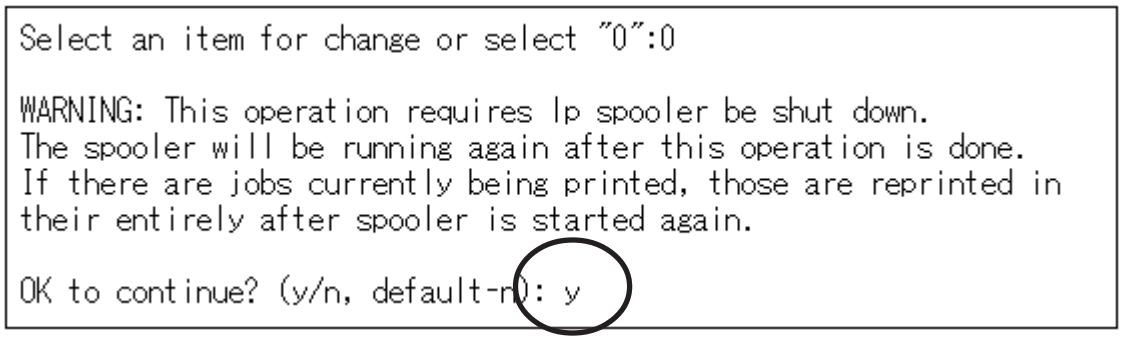
```
Select an item for change or select "0":4
Valid Models:
-----------------------------------------------------
ESCP            colorpro        hp2228a         hp2934a         laserjet4
HPGL1           deskjet         hp2235a         hp33440a        laserjet4Si
HPGL2           deskjet1200C    hp2276a         hp33447a        laserjet4v
HPGL2.cent      deskjet1600CM   hp2300-1100L    hp3630a         laserjet5Si
LIPS3           deskjet500      hp2300-840L     hp5000c30       laserjetIIISi
LIPS4           deskjet500C     hp2560          hp5000f100      paintjet
PCL1            deskjet550C     hp2563a         hp7440a         paintjetXL300
PCL2            deskjet850C     hp2564b         hp7475a         postscript
PCL3            deskjet855C     hp2565a         hp7550a         print_model.sh
PCL4            draftpro        hp2566b         hp7570a         quietjet
PCL4.nloo       dumb            hp2567b         hp7595a         rmodel
PCL5            dumbplot        hp256x.cent     hp7596a         rmodel.asx
PCL5.asian      fonts           hp2631g         hpC1208a        ruggedwriter
PCL5.nloo       hp2225a         hp2684a         hpc1200aj       sharedprint
PS.nlio         hp2225d         hp2686a         hpc1208a        thinkjet
colorlaserjet   hp2227a         hp2932a         laserjet

Please enter a model file: PS.nlio
```

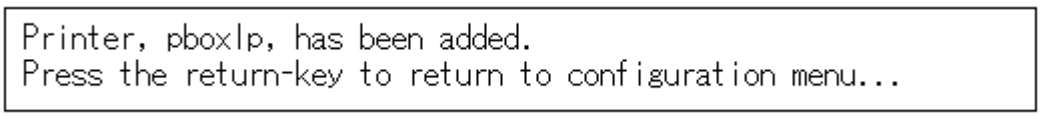
7. When everything is complete, the below to be displayed. Select [0) Done. Make configuration now!:] if there is nothing you want to change.



8. Make sure that the machine is not performing printing sequence, and then type in “y”.



9. This completes the printer addition procedure. Press [Return] key.



10. The display returns to registration confirmation screen. Enter “q” twice to quit the setnetlp tool.

```
     Configurable Parameters:              Current Settings
     ------------------------              ----------------
     0) Done. Make Configuration now!
     1) Lp destination name:               [pboxlp]
     2) Remote System name:                [pbox]
     3) Remote Printer name:               [lp]
     4) Local Model Script:                [PS.nlio]

     q) Quit

Select an item for change or select "0": q
```

11. Execute test print to verify the proper printing operation.

Example: Printing Japanese text file

To print Japanese text file, the following options are required. (For further information, refer to HP-UX manual.)

Character code	lp option
Shift JIS	japanese
Japanese EUC	japanese.euc

11-1 Shift JIS text test print

Command examples for test print is shown below.
#lp -d pboxlp -ojapanese “en quad” location of the text

11-2 Japanese text test print

Command example for test print is shown below.
#lp -d pboxlp -ojapanese.euc “en quad” location of the text

NOTE

To delete printer registered, the below command should be typed.
#/usr/sbin/setnetlp –x <destination>
<destination> is a registered printer name.

Using LAN board in AIX 4.x.x Environment

This section explains how to print from IBM AIX.
Command absolute path and setting method may vary depending on OS version. Refer to your workstation manual for more details.

1. Prepare the print queue.

1-1 Log in to the UNIX machine through “root”.

```
# login root
```

1-2 Add a print server.

Example: To add a host named “pbox”.

```
# ruser -a -p pbox
```

1-3 Start the remote printer daemon.

```
# startsrc -s lpd
# mkitab 'lpd:2:once:startsrc -s lpd'
```

1-4 Add a print queue by using smit command:

1-4-1 Once the command starts, shift to the option “Add printing queue”.

```
# smit mkrque
```

1-4-2 Among “Connection types”, select “remote”(a printer connected to a remote host).

1-4-3 Select “Standard processing” among “remote printing type".

1-4-4 Under “Add a standard remote queue”, configure the following items.
In addition, modify other options to match the conditions of the operating environment.

Example: To register the print queue under the name “pboxlp”.

Queue to be registered [pboxlp]
Host name of the remote server [pbox]
Name of the queue on the remote server [lp]
Type of print spooler on the remote server [BSD]
Printer name description on the remote server [any comment]


NOTE

- “lp” in the “Queue name on the remote server” line is LAN board remote printer name.
- SJIS kanji text data can be directly printed by typing “sjis” into “Queue name on the remote server”.

2. Printing

2-1 Print using command “lp”.

lp –d pboxlp <print file name>

3. Cancel the print request.

3-1 Use the “cancel” command to cancel the current print job request.

cancel pboxlp- <job number>

4. Check the printer status.

4-1 Use the “lpstat” to verify the printer status.

TIP

- Depending on UNIX specification, the command may fail to display the printer status correctly.

Using LAN board in BSD UNIX Environment

This section explains how to print from BSD UNIX.
Command absolute path and setting method may vary depending on OS version. Refer to your workstation manual for more details.

1. Prepare the print queue.

1-1 Log in to the UNIX machine by “root”.

```
# login root
```

1-2 Register the LAN board to /etc/printcap file.
Example: To register a print queue by the name “pboxlp”.

```
pboxlp:\                          ---(1)
:lp=:rm=pbox:rp=lp:\              ---(2)
:sd=/usr/spool/pboxlp:\           ---(3)
:lf=/usr/spool/pboxlp/pboxlp_errs:  ---(4)
```

<Description of parameters>

(1) Describes the printer name.
(2) lp: Device file name to connect printer.
No name designation required on the network.
rm: remote printer host name.
Type the host name registered to /etc/hosts file.
rp: Remote printer name.
LAN board remote printer name; select either lp, sjis or euc.
(3) sd: Spool directory name. Must be the absolute path.
(4) lf: Error log file name. Must be the absolute path.

1-3 Create the spool directory and error log file registered to /etc/printcap file.
Example: To create the spool directory “pboxlp” and error log file “pboxlp_errs”.

```
# mkdir /usr/spool/pboxlp                  Create the spool directory
# touch /usr/spool/pboxlp/pboxlp_errs      Create the error log file
# chown -R daemon /usr/spool/pboxlp        Change the owner to daemon
# chgrp -R daemon /usr/spool/pboxlp        Change the group to daemon
```

1-4 Check whether the lpd (printer daemon) is activated.

ps aux \ grap lpd

If lpd is not working, run the following command using a super user account.

/usr/lib/lpd&

1-5 Enable the print queue configured.

lpc restart pboxlp

2. Start printing.

2-1 Use the “lpr” command.

lpr -P pboxlp <print file name>

3. Cancel the print request.

3-1 The print job request can be cancelled by using “lprm” command.

lprm -Ppboxlp <job number>

4. Check the printer status.

4-1 The printer status can be checked by using “lpq” command.


TIP

-Certain UNIX specifications fail to display the status correctly.

-lpq short format is UNIX compatible but the long format is specific to LAN board to display the printer status.

Example: In case of short format

lpd -P pboxlp

Example: In case of long format

lpd -l -P pboxlp

Using LAN board in Linux Environment

This section explains how to print from Linux.
Command absolute path and setting method may vary depending on OS version. Refer to your workstation manual for more details.


NOTE

- For print queue creating tool of Red Hat Linux and Turbo Linux, refer to “Using Red Hat Linux print queue creating tool” and “Using Turbo Linux print queue creating tool”, respectively.

1. Prepare the print queue.

1-1 Log in to the Linux machine through “root”.

```
# login root
```

1-2 Register the LAN board to /etc/printcap file.

Example: To register a print queue by the name “pboxlp”.

```
pboxlp:\                              ---(1)
:lp=:rm=pbox:rp=lp:\                  ---(2)
:sd=/usr/spool/pboxlp:\               ---(3)
:lf=/usr/spool/pboxlp/pboxlp_errs:    ---(4)
```

<Description of parameters>

(1) Describes the printer name.
(2) lp: Device file name to connect printer.
No name designation required on the network.
rm: Host name for the remote printer
Type the host name registered to /etc/hosts file.
rp: Remote printer name.
LAN board remote printer name; select either lp, sjis or euc.
(3) sd: Spool directory name. Must be the absolute path.
(4) lf: Error log file name. Must be the absolute path.

1-3 Create the spool directory and error log file registered to /etc/printcap file.

Example: To create the spool directory “pboxlp” and error log file “pboxlp_errs”.

```
# mkdir /usr/spool/pboxlp                  Create the spool directory
# touch /usr/spool/pboxlp/pboxlp_errs      Create the error log file
# chown -R daemon /usr/spool/pboxlp        Change the owner to daemon
# chgrp -R daemon /usr/spool/pboxlp        Change the group to daemon
```

1-4 Check whether the lpd (printer daemon) is activated.

```
# ps aux / grap lpd
```

If lpd is not working, run the following command using a super user account.

```
# /usr/lib/lpd&
```

1-5 Enable the print queue configured.

```
# lpc restart pboxlp
```

2. Start printing.

2-1 Use the “lpr” command.

```
# lpr -P pboxlp <print file name>
```

3. Cancel the print request.

3-1 The print job request can be cancelled by using “lprm” command.

```
# lprm –Ppboxlp <job number>
```

4. Check the printer status.

4-1 The printer status can be checked by using “lpq” command.

Certain Linux specifications fail to display the status correctly.
Short format of lpq is UNIX compatible but the long format to show the printer state is a specific to the LAN board.

Example: In short format

```
# lpd -P pboxlp
```

Example: In long format

```
# lpq -l -P pboxlp
```

Using Print Queue Creation Tool of Red Hat Linux


TIP

- This section explains how to print using print queue creation utility of Red Hat Linux 7.1. Note that some steps may vary depending on Red Hat Linux version.

Example: IP address “192.168.10.100” and Host name “pbox” are registered to etc/hosts file and print queue is to be registered by the name “pboxlp”.

1. Select ***Main menu***, then ***Programs***, then ***System***, then ***Setting printer***.

2. Click ***New*** in the [printconf.gui] screen.

3. Click ***Name and alias***, then type ***pboxlp*** in ***Printer name***, then click ***Add.***

4. Type ***pboxlp*** in ***Alias***, then click ***OK.***

5. Click ***Printer type***, then select ***LPD***. Type ***pbox*** in the server and ***lp*** in the printer.

6. Select ***Printer driver*** and ***Printer option*** that correspond with your operating environment.

7. After configuration is complete, click ***OK*** in [Printer edit].

8. Verify that the printer created is displayed and selected in the [printconf.gui]. Click ***Apply***.

9. Verify the dialog message, “lpd has been successfully rebooted”, then Click ***OK.***

10. Click ***Test*** in [printconf.gui] screen. When you get test page, the configuration is complete.

Using the Print Queue Creation Tool of Turbo Linux


TIP

- This section explains how to print using print queue creation utility of Turbo Linux6.0. Note that some steps may vary depending on Turbo Linux version.

Example: IP address “192.168.10.100” and Host name “pbox” are registered to etc/hosts file and print queue is to be registered by the name “pboxlp”.

1. Select ***Main menu***, then ***Turbo Linux tool***, then ***Turbo Centro***.

2. Click ***Turboprintcfg*** in the ***Turbo Centro-GT***.

3. Click ***Add*** in ***Setting printer screen***.

3-1 Select ***Remote LPD queue*** in ***Add printer***.

3-2 Type ***pboxlp*** in ***New queue name***.

3-3 Click ***Change*** in ***LPD configuration*** of ***Change printer configuration.***

3-3-1 Type “pbox” in Host name.

3-3-2 Type “lp” in Queue name.

3-4 Click ***Change*** in Printer type, then select the printer driver that corresponds with your operating environment.

3-5 Select **Paper size** and ***Color depth*** that correspond with your operating environment.

4. Click ***OK*** in the [Printer configuration].

5. Click ***Save and Finish*** to complete the configuration.

Printing Using FTP

This section explains how to print using FTP of TCP/IP.
For further information on “ftp” command, refer to your workstation manual.

NOTE

About FTP

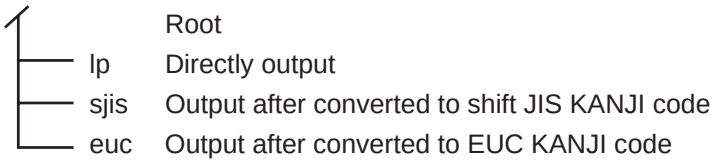
FTP (File Transfer Protocol) is a protocol used to transfer a file by TCP/IP. By transferring data to LAN board logical directory, printing can be executed.

Logical directory

LAN board is provided with 3 logical directories for correct printing and should be transferred by [cd] command.

To print a file using a printer driver, go to “lp” directory; to print a text file after converting it into shift JIS KANJI code file, go to “sjis” directory; to print a text file after converting it to EUC KANJI code text file, go to “euc” directory. And then transfer the converted file.

<LAN board logical directory structure>



Printing

1. Log in to LAN board.

TIP

- When printing using “ftp” command, any input to “User” and “Password” will not disturb printing job unless “root” is used in “User”. When the “User” name is “root”, type the password configured in environment settings.

Example: To log in to a printer whose host name is “pbox”
(or to log in to a printer having IP address “192.168.10.100”).

#ftp pbox (or **ftp 192.168.10.100**)
Connected to pbox
220 SATO xxxxx Ver 1.0.0 FTP Server.
User(SATO:root): root
331 Password required.
Password:
230 User Logged in.
ftp>

2. Using “cd” command to move to destination directory.

TIP

- LAN board has hierarchical structure for destination directory. Print data to the root directory is processed as output to “lp”.

Example: To move to lp directory and verify the current directory.

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

3. Changing transfer mode.

NOTE

- There are two kinds for transfer mode. One is “ASCII” mode converts LF code to CR+LF code, the other is “BINARY” mode transfers file contents. To transfer binary-converted file from the printer driver, configure the transfer mode to “BINARY” (otherwise, ASCII mode is used).

Example: To change transfer mode to BINARY and verify 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 LAN board using “put” command in file form.
There are two formats for transferring a file using “put” command.

Example: To transfer print data “test.prn”.

ftp>put test.prn

To transfer print data to the directory specified by “/users/test/test.prn”.

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


NOTE

- When printing data by specifying the directory, specify the destination logical directory. Not necessary to move directory using the cd command.

5. Use “quit” command to log out from LAN board.

ftp>quit

Checking the status

NOTE

- By using “stat” of "quote" command, IP address, use name for log in and transfer mode can be verified.
- By specifying the directory (lp, sjis, euc) following “stat”, the printer status can be checked.

Example: To display the Ethernet board status.

```
ftp>quote stat
211-FTP server status:
Connected to:   192,168,10,100
User logged in: guest
Transfer type:  BINARY
Data connection:Closed.
211 End of status.
ftp>
```

To display the printer status (directory name: lp).

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

6. Using LAN board in NetWare

This chapter explains how to configure LAN board and NetWare server to print from NetWare environment.

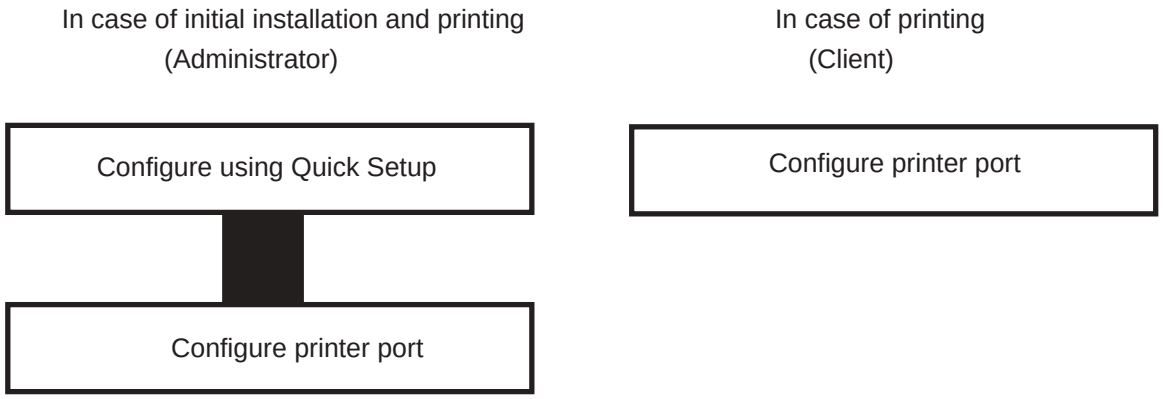
TIP

-Make sure the Novell client software has already been installed on the client and NetWare server is on the network.
-Make sure to install printer driver before you start using LAN board.

NOTE

-NetWare server can be configured by either SATO configuration utility (Quick Setup or AdminManager) or Novell utility, PCONSOLE.
-When configuring by AdminManager, refer to Chapter 7.

<Preparation for printing in NetWare environment>



Printing in NetWare Environment

Verifying NetWare Environment

When printing from NetWare client, configuration may vary depending on NetWare environment. For further information, contact your network administrator.

When the client is connected to the NetWare server using bindery mode:

→ go to 6.3

Using Bindery Mode

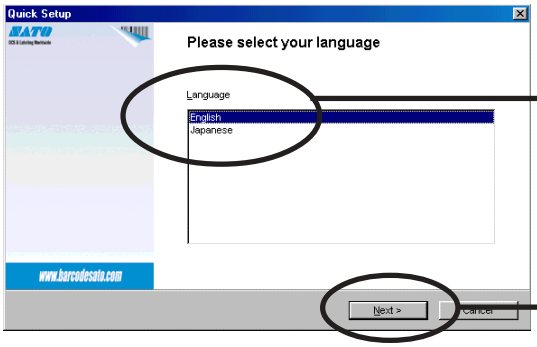
Configuration Using Quick Setup

1. Insert the SATO User Software in the CD-ROM drive of your Windows PC. The main menu screen will be displayed.

2. The below screen will be displayed.

Select ***Quickset Utility.***

3. Select language.



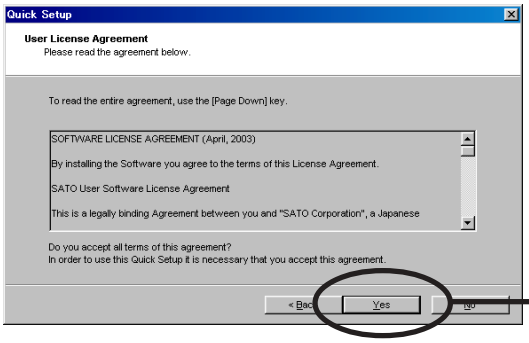
Select your language.

Click ***Next.***

4. Quick Setup loads.

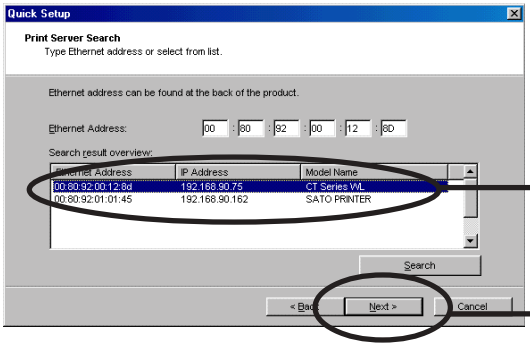
Click ***Next.***

5. Confirm the Software License Agreement.



Read the agreement and click ***Yes*** if you accept it.

6. Select LAN board to be configured.



Select LAN board to be configured.

Click ***Next.***

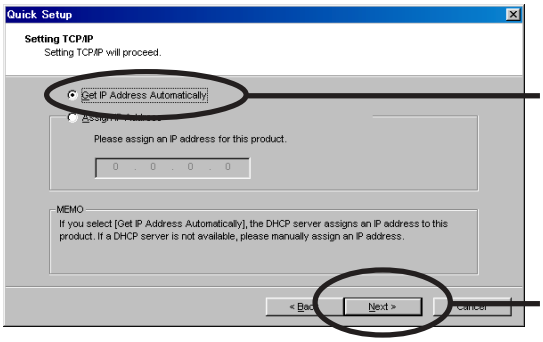
NOTE

-If LAN board does not appear in the list, click ***Search***. You can search LAN board by typing in Ethernet address directly.

7. Assign an IP address.

When you have DHCP server in your environment.

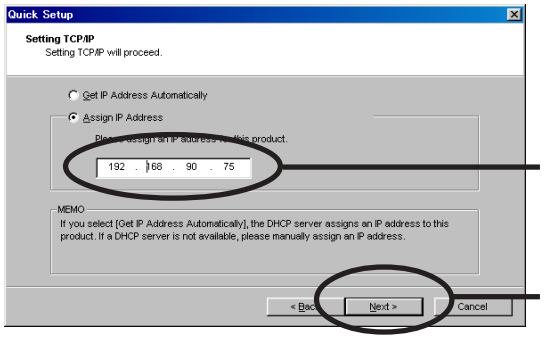
(A) Obtain an IP address from DHCP server automatically.



Select ***Get IP address automatically.***

Click ***Next.***

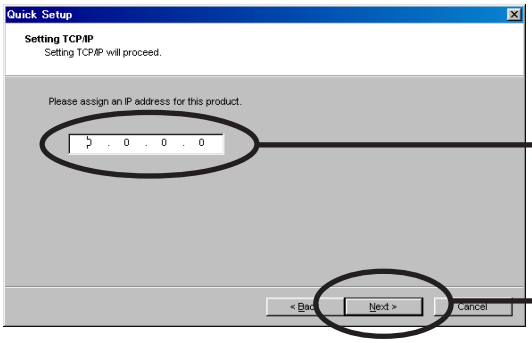
(B) Assign an IP address manually.



Assign the optional IP address.

Click ***Next.***

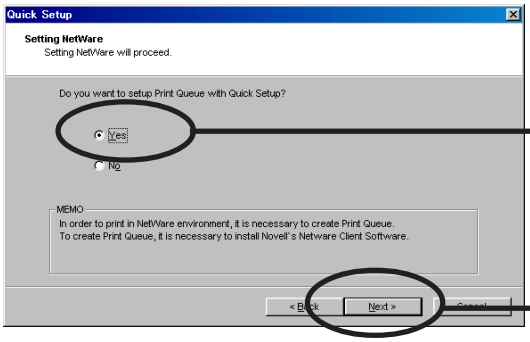
When you do not DHCP server in your environment.



Assign the optional IP address.

Click ***Next.***

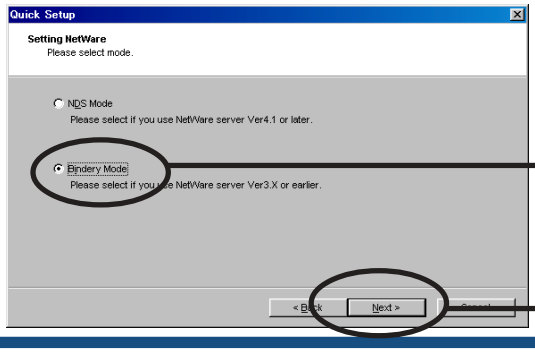
8. Configure NetWare.



Click ***Yes.***

Click ***Next.***

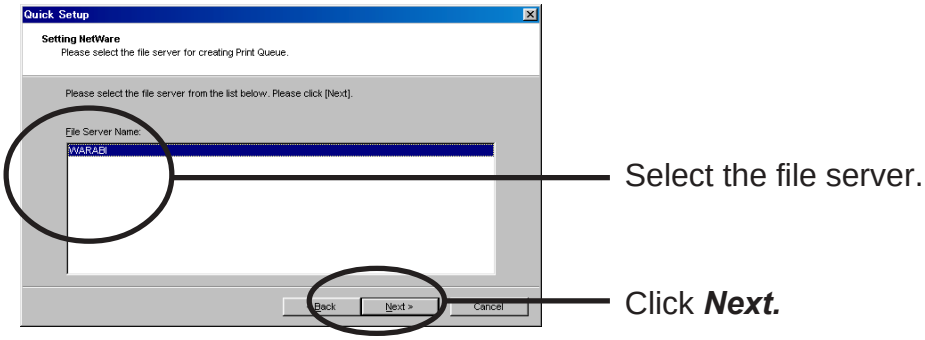
9. Select the operation mode of the NetWare server.



Select ***Bindery mode.***

Click ***Next.***

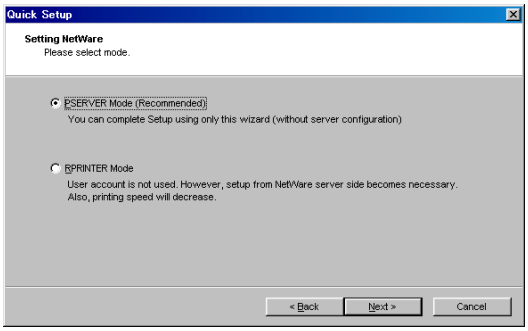
10. Select the file server to create a print queue.



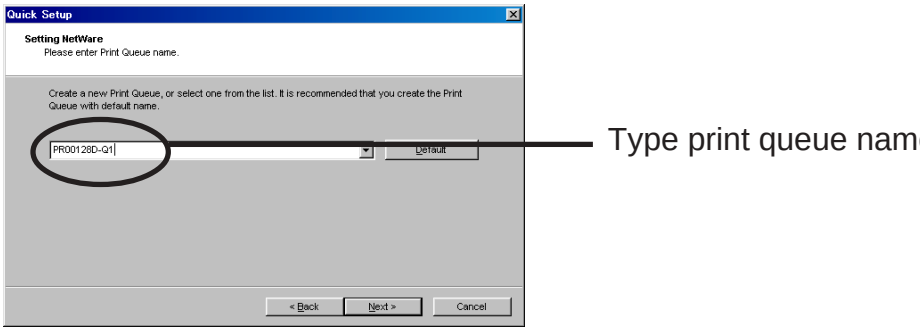
TIP

-The next screen to be displayed vary depending on NetWare server selected.
NetWare 3 or below will go to ->11 (A)
NetWare 4 or above will go to ->11 (B)
-When NetWare 4 or above file server is selected, print server mode will be automatically selected.

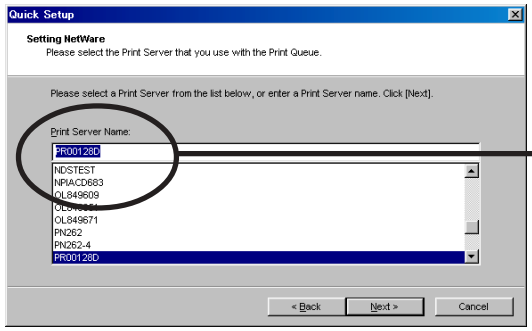
11(A). Select printing mode. **<NetWare 3 or below>**



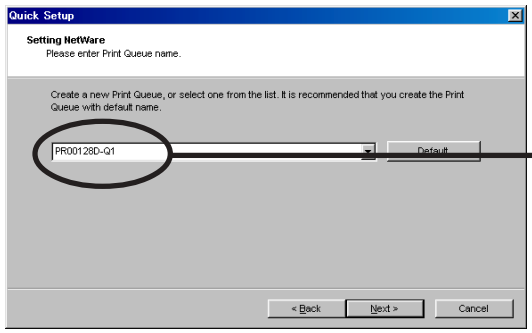
<Print server mode>



<Remote printer mode>

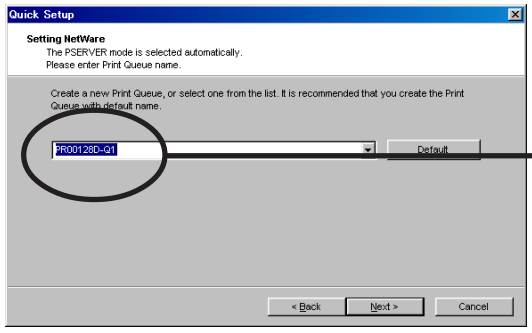


Select print server.



Type print queue name.

11(B). Type print queue name. **<NetWare 4 or above>**

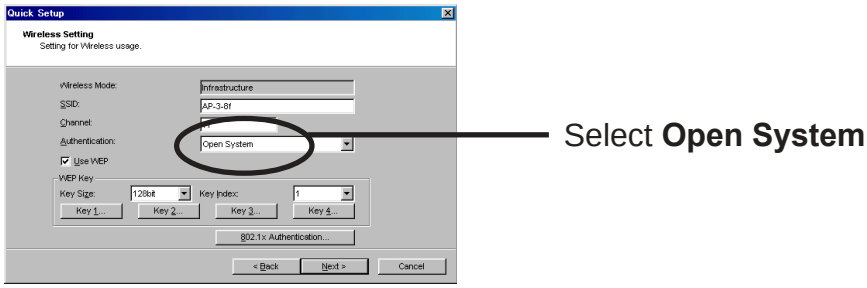


Type the print queue name.

12. Configure the wireless settings

When connecting in Infrastructure mode, the authentication settings on the screen change.The authentication configuration screens are shown below.

(A) When not using authentication.

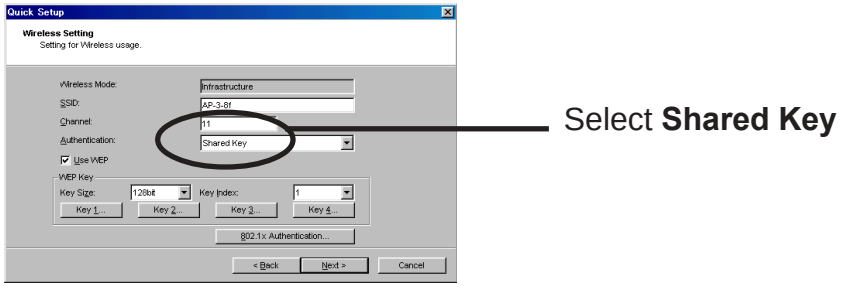


Select **Open System**

Select **Use WEP**.
Click on the Key Index button and enter the value for the WEP Key.
(Refer to “WEP key setup” for the configuration method.)

802.1x Authentication
Click **802.1x Authentication**.
(Refer to “802.1x Authentication “ for the configuration method.)

(B) WEP Authnitcation



Select **Shared Key**

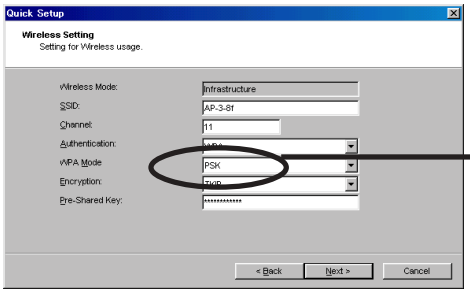
WEP Key is used
Select **Use WEP**.
Click on the Key Index button and enter the value for the WEP Key.
(Refer to “WEP key setup” for the configuration method.)

802.1x Authentication
Click **802.1x Authentication**.
(Refer to “802.1x Authentication “ for the configuration method.)

(C) WPA-PSK Authentication

Select **WPA** Authentication

(C-1) WPA-PSK Authenitcation

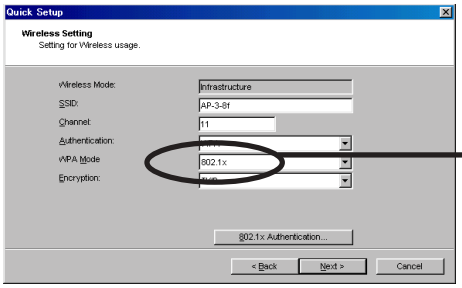


Select **PSK**

Select **Encryption**.

Select “Pre-Shared Key” for the share key.

(C-2) WPA-802.1x Authenitcation



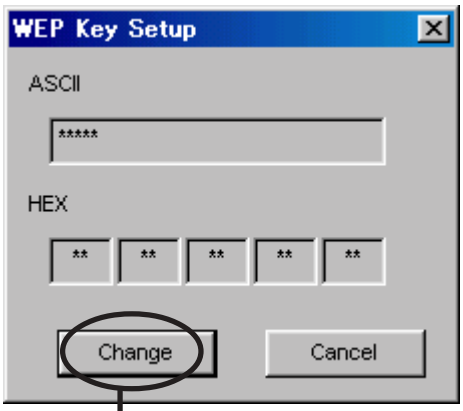
Select **802.1x**

Select **Encryption**.

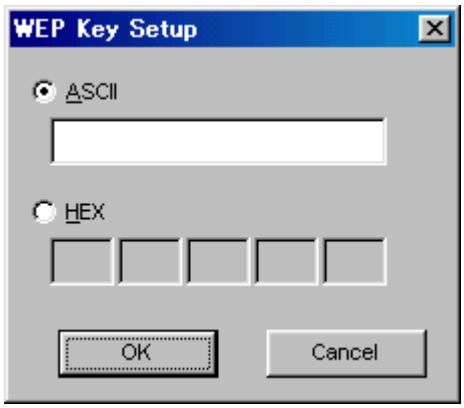
Click **802.1x Authentication**.

[WEP Key Setup]

Check “Use WEP”, and the following screens will be displayed when the “Key 1”-” Key(s) 4" button is selected (the screen shown blow is for a “Key Size” of 64 bits).
If the WEP key has already been configured, please select either “ASCII” or “HEX” after pushing the “Change” button, and enter the WEP key.



Click ***Change***.



The number of characters entered changes with “Key Size.”

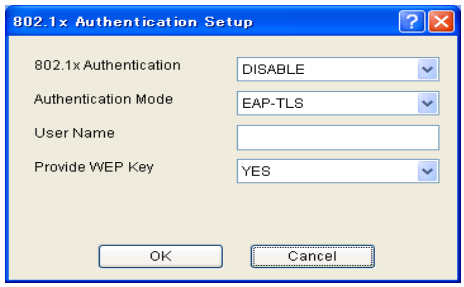
64bit : ASCII 5characters HEX 10 characters

128bit : ASCII 13 characters HEX 26 characters

[802.1x Authentication setup]

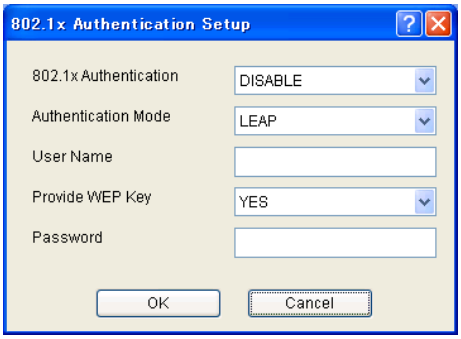
Selecting “802.1x Authentication” will display the following screen.
Since configuration items change with authentication systems, only the item that need to be configured will be displayed.

<mode of Network Authentication: Open System>



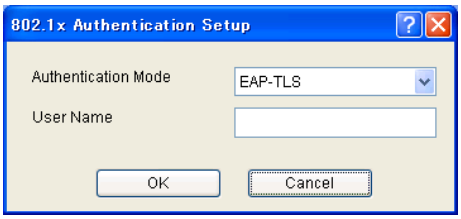
- Enable or disable “802.1x Authentication”
- Select **Authentication**.
- Enter the 802.1x user name
- Please choose NO, when manually entering the WEP key.
- Select YES when the WEP key is obtained from Access Point.

<mode of Network Authentication: Shared Key>



- Enable or disable “802.1x Authentication”
- Select **Authentication**.
- Enter the 802.1x user name
- Please choose NO, when manually entering the WEP key.
- Select YES when the WEP key is obtained from Access Point.
- Enter the password.

<mode of Network Authentication : WPA>

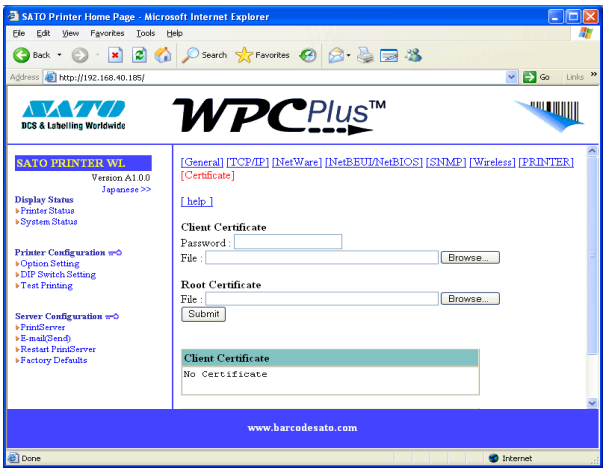


- Enable or disable “802.1x Authentication”
- Enter the 802.1x user name

NOTE

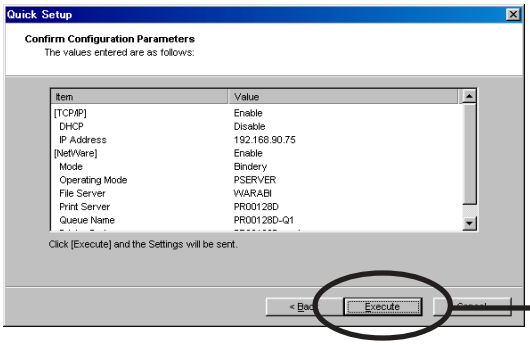
- Verify using a certificate. A certificate can be installed from a WEB page.

The [Certificate] page, allows for the certificate used by 802.1x WPA authentication to be installed.



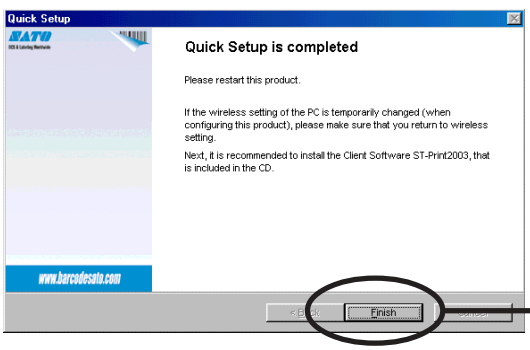
Item		Explanation
Client Certificate	Password	Input the necessary password to import the Client certificate
	File	Select the Client Certificate file.
Root Certificate	File	Select the Root Certificate file.

13. Verify the configuration parameters.



Click ***Execute.***

14. Setup is complete.

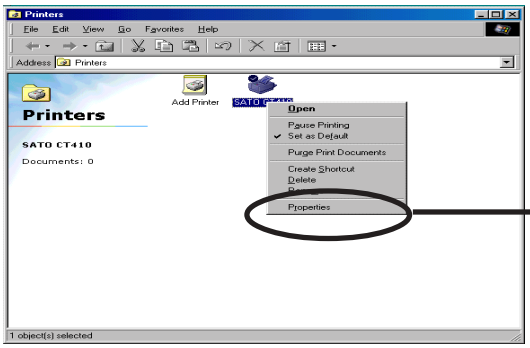


Click ***Finish.***

Configuring Printer Port

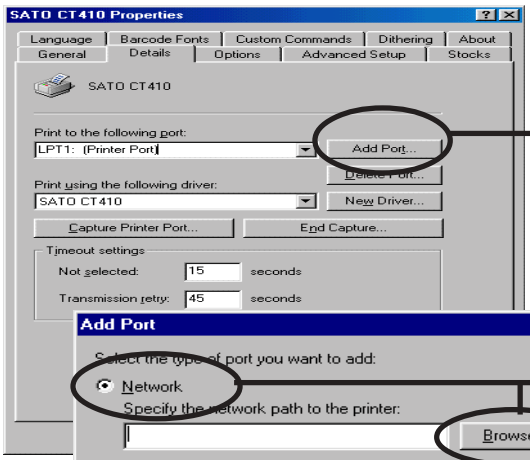
This section explains how to configure printer port to printer in Windows 95/98/Me.
For configuring printer port in Windows NT 4.0, Windows 2000 or Windows XP, refer to the below description.

1. Click ***Start***, then ***Settings***, then ***Printe***r. Open the ***Properties*** of printer you use.

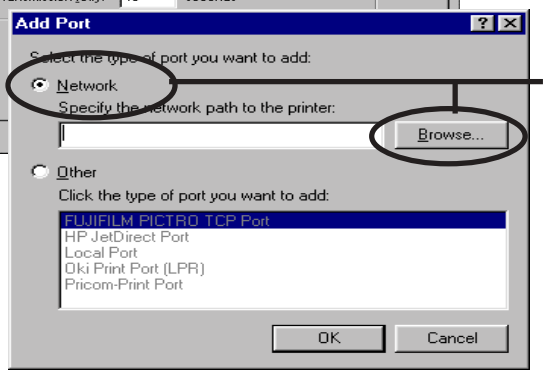


Select ***Properties*** of the printer to be used.

2. Move to ***Details.***

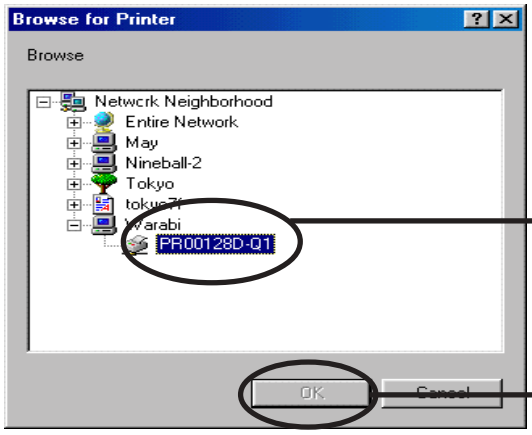


Select ***Add Port.***



Select ***Network*** and Click ***Browse.***

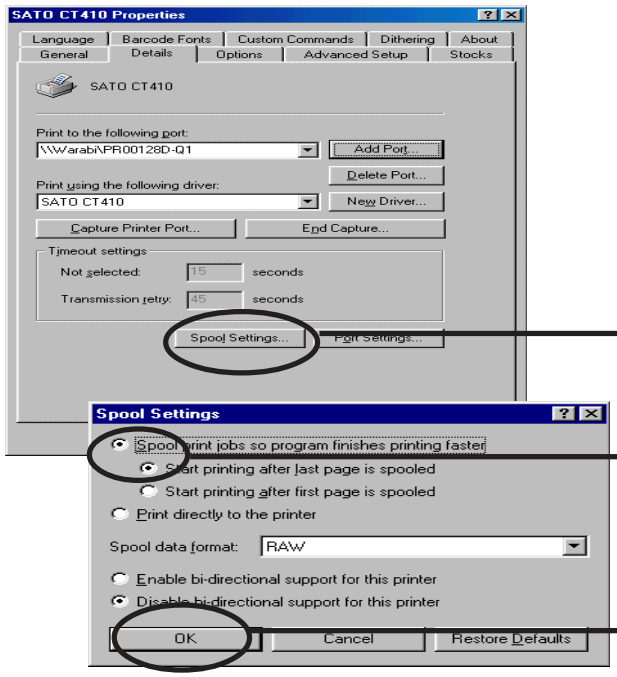
3. Assign a print queue to the printer port.



Select the print queue to use.

Click ***OK.***

4. Configure spool settings.



Select ***Spool Settings.***

Select ***Start printing after the last page is spooled.***

Click ***OK.***

5. Configuration is complete. Click OK and close Properties.
Now, the printer can be used in NetWare environment.
Execute test print and confirm if it's printed properly.

Printing Mode

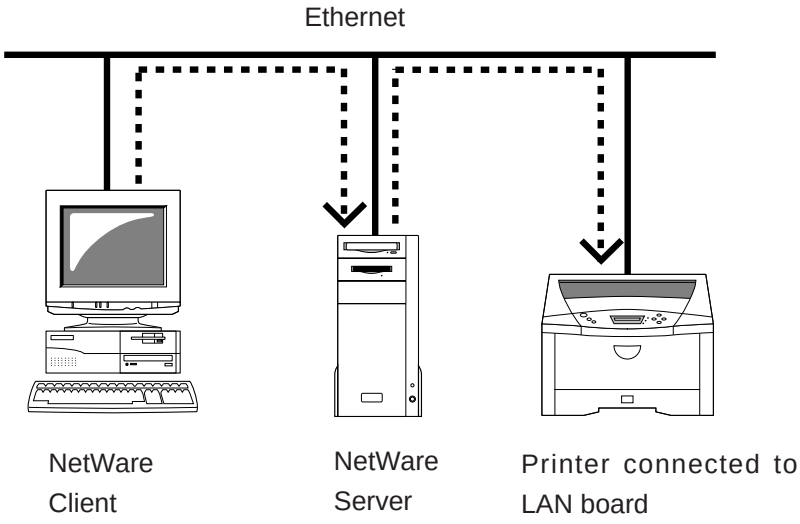
This section explains about print server mode and remote printer mode.

Print Server Mode

When LAN board is used in print server mode, no other print server (PC on NetWare server or a PC exclusively used for print server) is required. LAN board operates in the following way when in the print server mode.

1. A print job is spooled from the client to the NetWare server.
2. LAN board derives a job directly from the NetWare server.
3. Printing starts.

<Job flow>



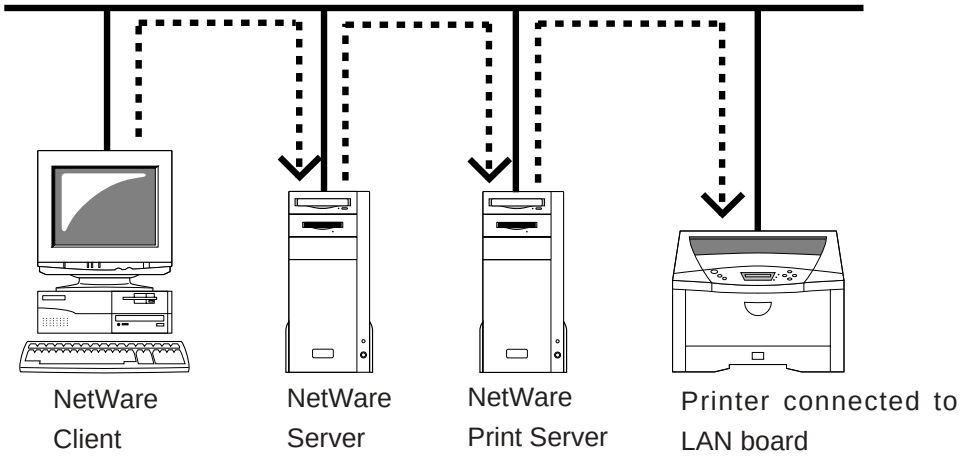
Remote Printer Mode

When using LAN board in remote printer mode, other print servers (PC on NetWare server or a PC exclusively used for print server) are required. This mode makes use of NetWare normal printing feature (PSERVER.EXE/PSERVER.NLM). Printing in remote printer mode proceeds as follows.

1. Spool the print job from the client to NetWare server.
2. The Print server (PC on NetWare server or a PC exclusively used for print) derives the job from the Netware server.
3. The Print server transfers the job to the printer assigned to the print queue.
4. Printing starts.

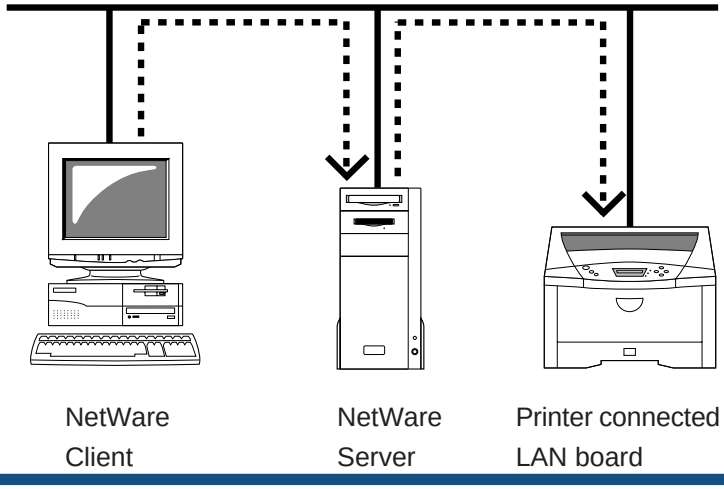
<When PSERVER.EXE>

One PC functions as a print server.



<When PSERVER.NLM>

NetWare server functions as a print server



7. Functions for Configuration

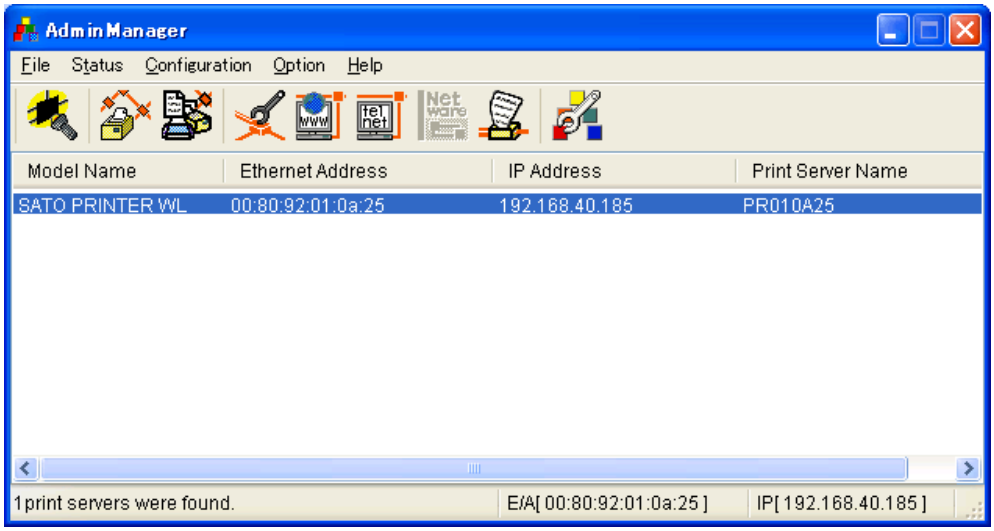
This chapter explains how to configure options in details by using AdminManager, Web browser or TELNET.

Configuration by Using AdminManager

By using AdminManager, you can specify or modify LAN board detail configuration. AdminManager also has convenient additional features such as, remote rebooting, self-diagnostic printing, printer status monitoring and NetWare queuing wizard.

TIP

- Remote rebooting and remote self-diagnostic printing may not be available on some LAN board models.
- To use AdminManager, TCP/IP or IPX/SPX protocol must have been installed on your PC. Contents displayed on the AdminManager may vary depending on LAN board you use.
- When you use TC/IP protocol in Windows XP, click ***Local Area Connection Properties,*** then ***Advanced***, then remove the check from ***Protect my computer and network by limiting or*** preventing access to this computer from the Internet.



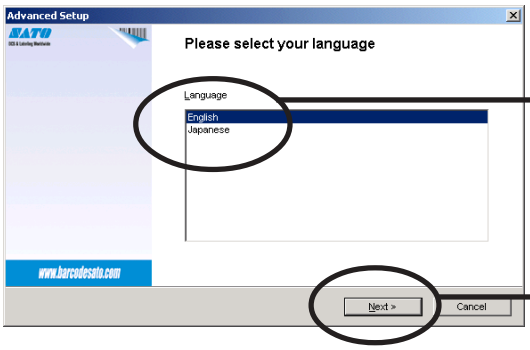
Starting AdminManager

1. Insert the SATO User Software in the CD-ROM drive. The main menu screen will be displayed.

2. The below screen will be displayed.

Click ***Advanced Utility.***

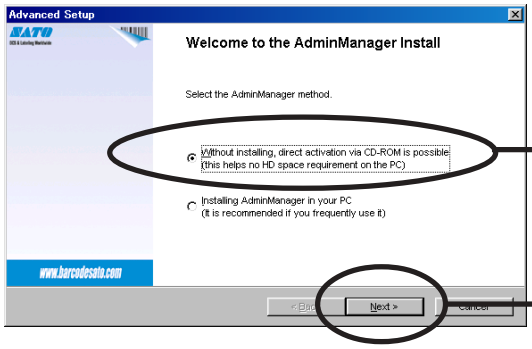
3. Select language.



Select your language.

Click ***Next.***

4. Installation confirmation screen will be displayed.



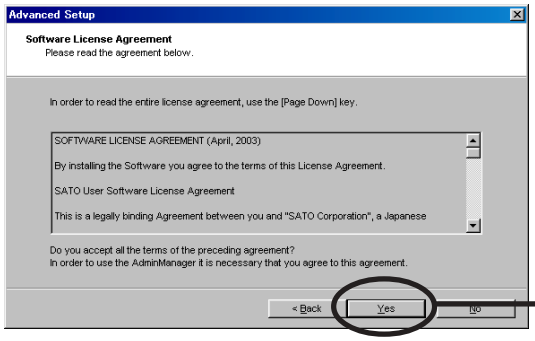
Select ***Without installing, direct activation via CD-ROM is possible.***

Click ***Next.***

NOTE

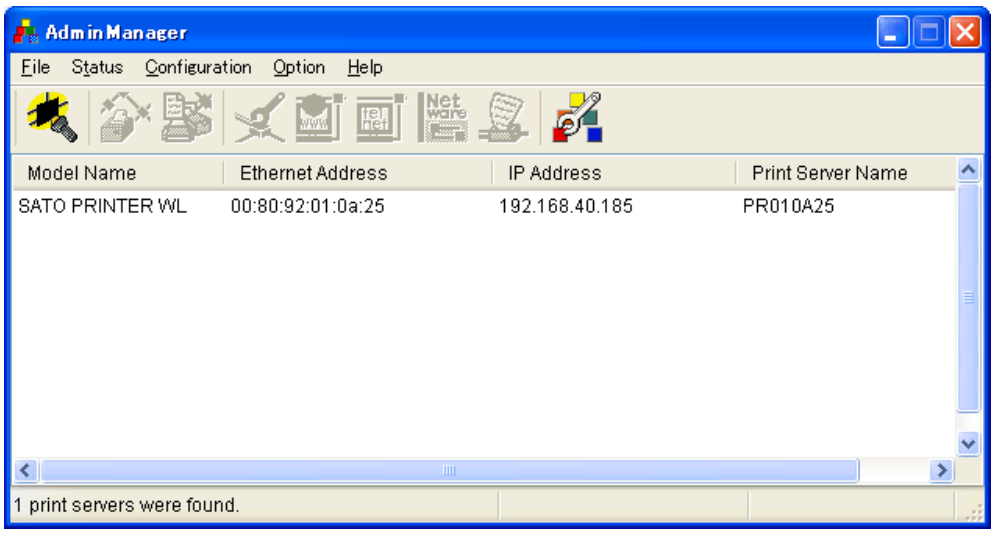
- If you intend to use the AdminManager frequently, select ***Installing AdminManager in your PC***.

5. Confirm the Software License Agreement.



Read the agreement and click ***Yes*** if you accept it.

6. AdminManager will start.



Searching LAN board Using AdminManager

Before setting up LAN board, verify that it can be discovered by AdminManager. If not, select Configuration, then assign an IP address.

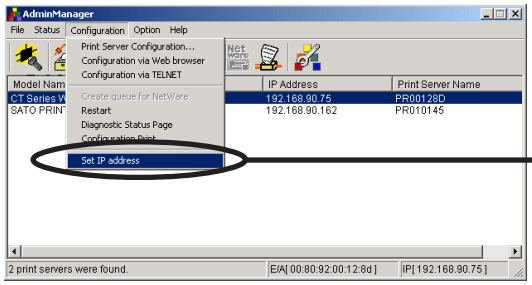
Assigning an IP address

Assign an IP address manually.

NOTE

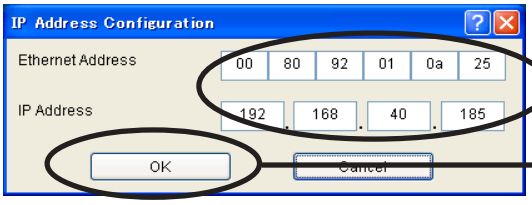
- Before assigning an IP address, verify LAN board Ethernet address. The address can be found on the self-diagnostic print sheet. (e.g. 00:80:92:34:c0:19)

1.



On the AdminManager menu bar, select ***Configuration***, then ***Set IP address*** to start IP address configuration tool.

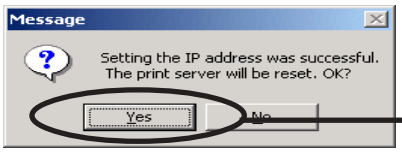
2.



Enter Ethernet address and IP address of LAN board to be configured.

Click ***OK.***

3.



To validate the IP address, reset LAN board.

TIP

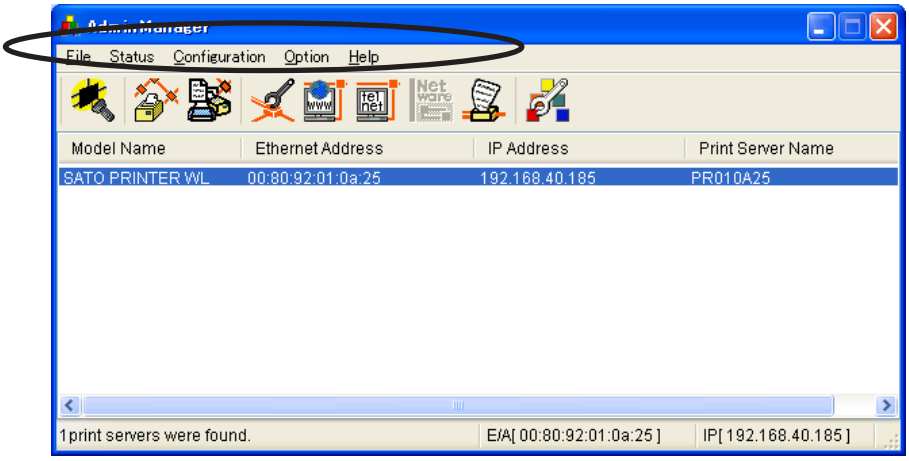
-Restart process of AdminManager may not work depending on printer type.
In that case, switch off and on the printer power.

Functions of AdminManager

AdminManager menu structure

TIP

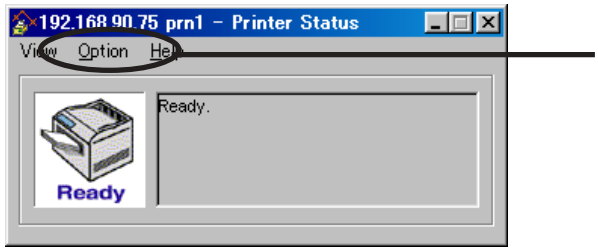
- The menu options displayed on AdminManager may vary depending on the model or operating environment.

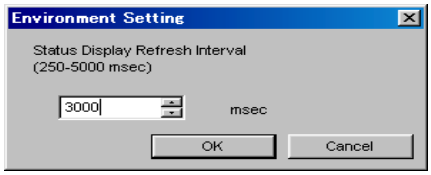


Menu	Item	Explanation
File	Search	Search LAN board in the network.
	Exit	Quit the AdminManager.
Status	Printer Status	Display the system status monitor
	System Status	Display the printer status monitor
	Configuration Summary	Display LAN board internal configuration information.
Configuration	Print Server Configuration	Configure various parameters of LAN board
	Configuration via Web browser	Start LAN board Web site
	Configuration via TELNET	Start TELNET
	Create queue for NetWare	Create queue on NetWare Server
	Restart	Restart LAN board
	Diagnostic Status Page	Start LAN board self-diagnostic print
	Configuration Print	Start LAN board Configuration print
	Set IP address	Manually assign the IP address.
Option	Search using TCP/IP Protocol	Search LAN board using TCP/IP
	Search using IPX/SPX Protocol	Search LAN board using IPX/SPX
	Environment Setting	Configure AdminManager environment
Help	About	Display AdminManager version

Printer status

You can monitor the status of printer connected to LAN board by AdminManger. You can also specify the refresh time of printer status on the environment configuration screen.





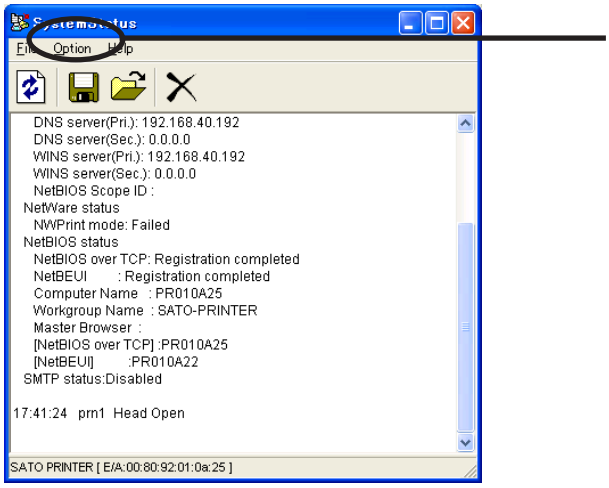
Printer status environment configuration.

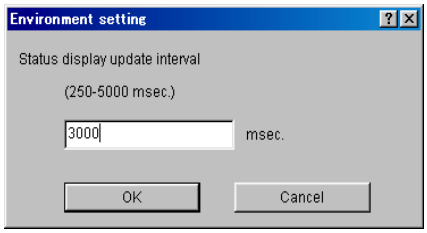
TIP

-Printer status may not be obtained properly depending on the printer model.

System status

Operating status of the LAN board selected on AdminManager screen is displayed. The operating status can be saved onto a file (log registration) and referenced later. You can also specify the refresh time of printer status on the environment configuration screen.



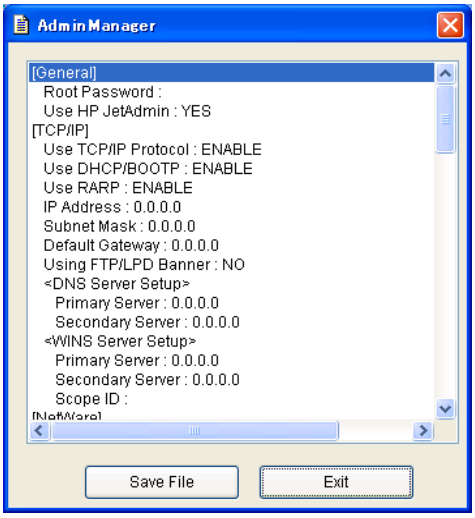


TIP

- The displayed contents may vary depending on the LAN board you use.

Configuration Parameters List

The list of LAN board configuration parameters will appear. These configuration can be printed to file and managed.



TIP

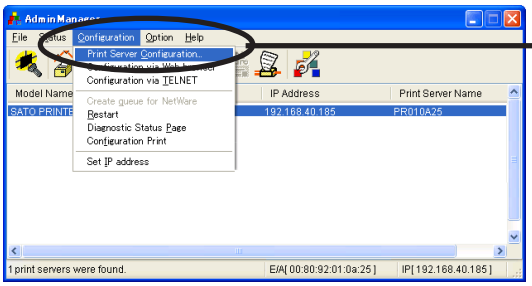
-The displayed contents may vary depending on LAN board you use.

Configuring LAN board Using AdminManager

Configuring Print Server

Click ***Configuration***, then ***Print Server Configuration*** for LAN board detail configuration and modification of the configuration.

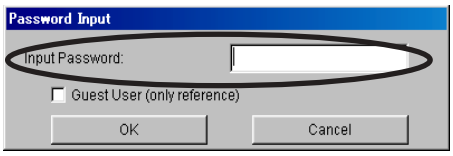
1.



Choose LAN board to be configured and then click ***Configuration***, then ***Print Server Configuration*** in the AdminManager menu bar.

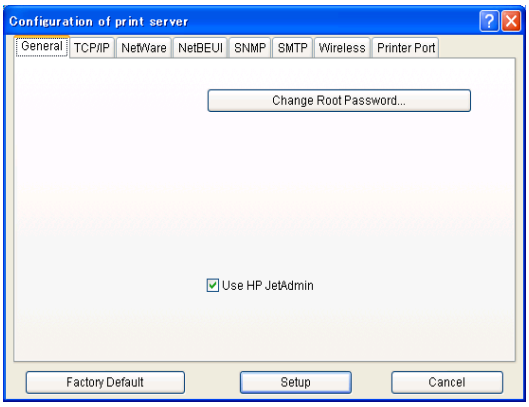
NOTE

- When LAN board is protected with the password, password input screen will be displayed.
- By checking ***Guest user***, you can view configuration parameters, but cannot change the information.



Password input screen

2.

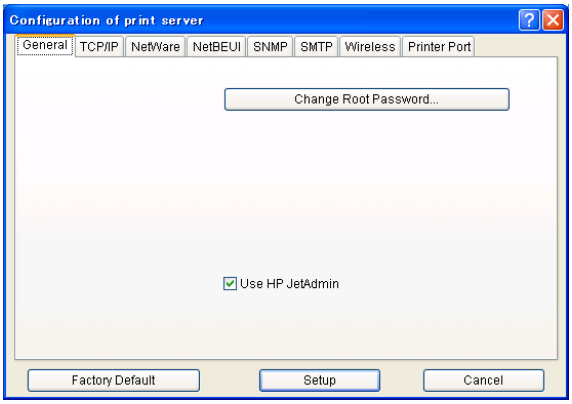


The screen shown left will be displayed. Select the tab you want to configure.

NOTE

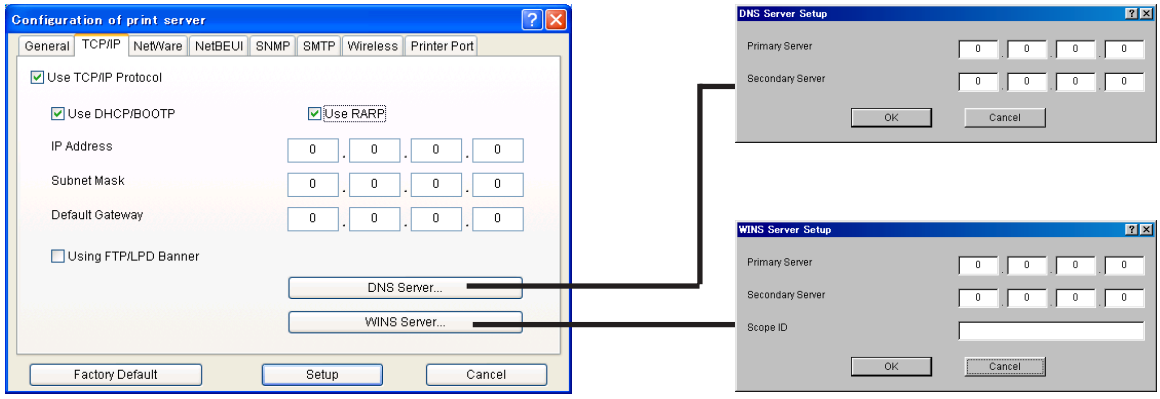
- The displayed tab may vary depending on LAN board you use.
- Use the scroll button to view remaining tabs, if any.

General Configuration



Tab	Item	Explanation	Factory Default
General	Change Root Password	The input screen for root password opens.	-
	Use HP JetAdmin	Please select whether you want to use HEWLETT PACKARD's JetAdmin/WebJetAdmin.	DISABLE

TCP/IP Configuration

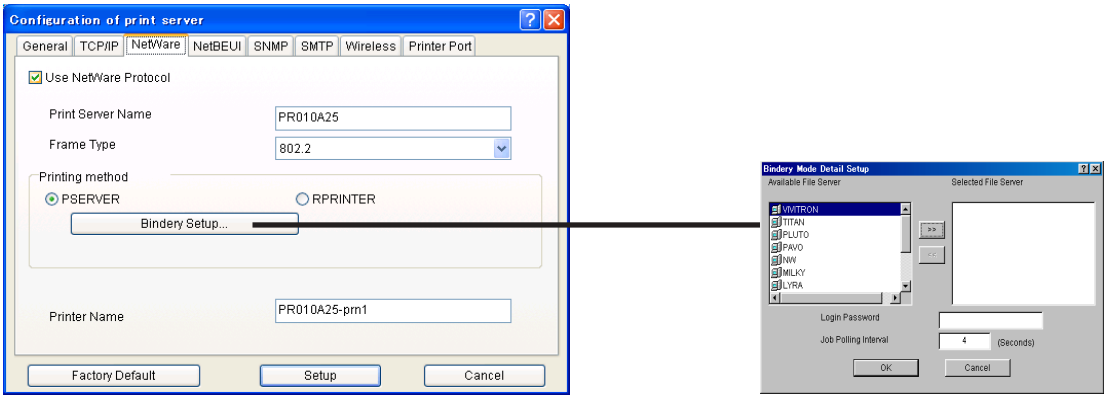


Tab	Item	Explanation	Factory Default
TCP/IP	Use TCP/IP Protocol	Enable/Disable TCP/IP protocol operations. This has influence on the configuration of Setup Tools, LPR, FTP, TELNET, SNMP, HTTP and other protocols over TCP/IP.	ENABLE
	Use DHCP/BOOTP	Enable/Disable DHCP/BOOTP protocol operations. DHCP/BOOTP is a protocol, via which IP address gets assigned by the BOOTP server or DHCP server. If you use DHCP/BOOTP server, the DHCP/BOOTP server must be in the same segment as the print server. This print server detects DHCP and BOOTP automatically. If more than 1 address get returned, the IP address which is returned first will be used.	ENABLE
	Use RARP	Enable/Disable RARP protocol operations. RARP is a protocol, via which IP address gets assigned by the RARP server. If you use RARP server, the RARP server must be in the same segment as the print server.	ENABLE
	IP Address	Setting the Print Server IP address. The IP address must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
	Subnet Mask	Setting the print server subnet mask. The subnet mask must be 4 numbers, each between 0-255 (eg. 255.255.255.0). However, entering 0.0.0.0 would not be valid, and the subnet mask corresponding to the IP address would be used automatically.	0.0.0.0

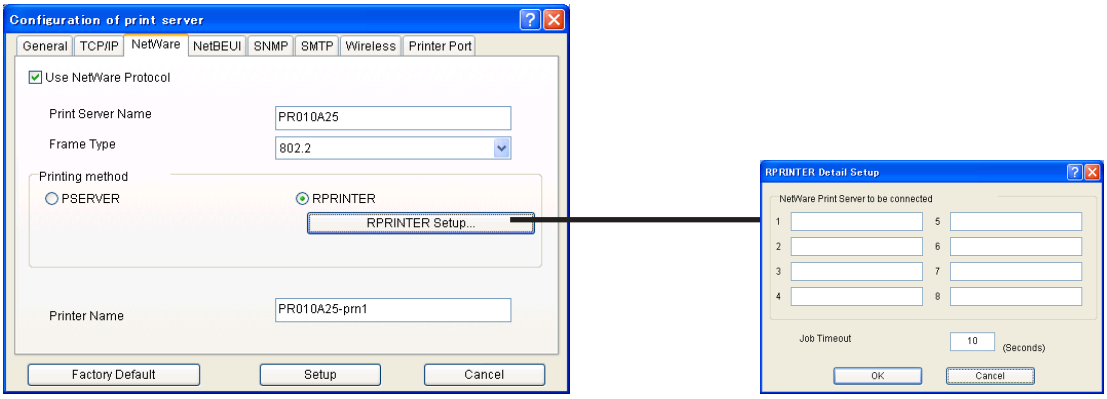
Tab	Item		Explanation	Factory Default
TCP/IP	Default Gateway		Setting the default gateway address. The default gateway address must be 4 numbers, each between 0-255 (eg. 192.168.100.240). If you use a gateway, the gateway must be in the same segment as the print server. However, entering 0.0.0.0 would not be valid.	0.0.0.0
	Using FTP/LPD Banner		You can select to use a banner page when printing with LPR and FTP. (A banner page is print cover page with print job explanations.)	DISABLE
	DNS Server	Primary Server	Setting the DNS server (primary) address. When SMTP server name is configured directly at IP address, the DNS server's setting is not necessary.	0.0.0.0
		Secondary Server	Setting the DNS server (secondary) address. When SMTP server name is configured directly at IP address, the DNS server's setting is not necessary. The values must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
	WINS Server	Primary Server	Setting the WINS server (primary) address. WINS server will resolve the IP address from the host name. Therefore you can use a hostname instead of the IP address when printing. The values must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
		Secondary Server	Setting the WINS server (secondary) address. WINS server will resolve the IP address from the host name. Therefore you can use a hostname instead of the IP address when printing. The values must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
		Scope ID	The scoop ID defines the computer group that recognized the registered host name.	-

NetWare Configuration

Operation mode: PSERVER



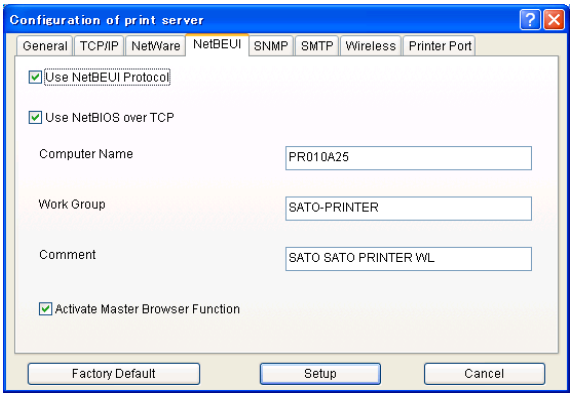
Operation mode: RPRINTER



Tab	Item				Explanation	Factory Default
NetWare	Use NetWare Protocol				Enable/Disable NetWare protocol.	ENABLE
	Print Server Name				Specify the print server name for the print server when starting in PSERVER mode. Because this configuration is used as the identifier on the network in the NetWare protocol, the print server name set must be different from other names in the NetWare environment. It is used as a login name in connecting to the NetWare server.	PRxxxxxx (Lower 6 digits of Ethernet address)
	Frame Type				Select the default frame type of the print server. If the set frame type does not work, it will be changed to a different frame type automatically.	802.2
	Printing method				Select the primary operation mode (PSERVER mode / RPRINTER mode) of the print server. If the set mode does not work, the print server starts in a different mode.	Print server
		PSERVER			Send the job via NetWare	
			Bindery Setup	NetWare File Server to be connected	Set the name of the file server primarily connected to. The print server logs into the file server set here when operating in PSERVER mode. The print server searches the file server automatically and logs in if the value is blank.	-
				Login Password	Set the password that is authenticated when the print server logs into the file server as a PSERVER mode. When the password is set for the print server, the same password must be set to the corresponding file server. If the print server is connected to two or more file servers, the same password must be set to all the file servers.	-
				Job Polling Interval	Set the interval for the print server to query the file server for jobs in units of seconds. Usually the value should be the default.	4

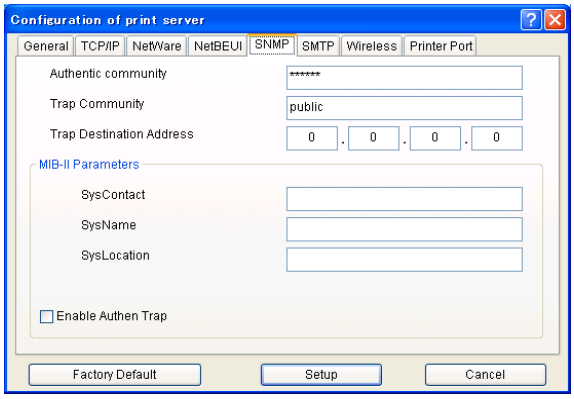
Tab	Item		Explanation			Factory Default
NetWare	Printing Method	RPRINTER	Job management can be performed via NetWare server.			
			RPRINTER Setup	NetWare Print Server to be connected	Set the name of the print server primarily connected to. This product connects to the print server set here when operating in RPRINTER mode. This product searches print server automatically and connects if the value is blank.	-
				Job Timeout	Set the timeout value (in units of seconds) for the print server to determine the end of the job when operating in RPRINTER mode. Usually the value should be the default.	10
	Printer Name		Set the printer name under print server information within the NetWare server. It must be the same as the "Printer Name" registered in the NetWare server.			PRxxxxxx-Prn1 (Lower 6 digits of Ethernet address)

NetBEUI/NetBIOS Configuration



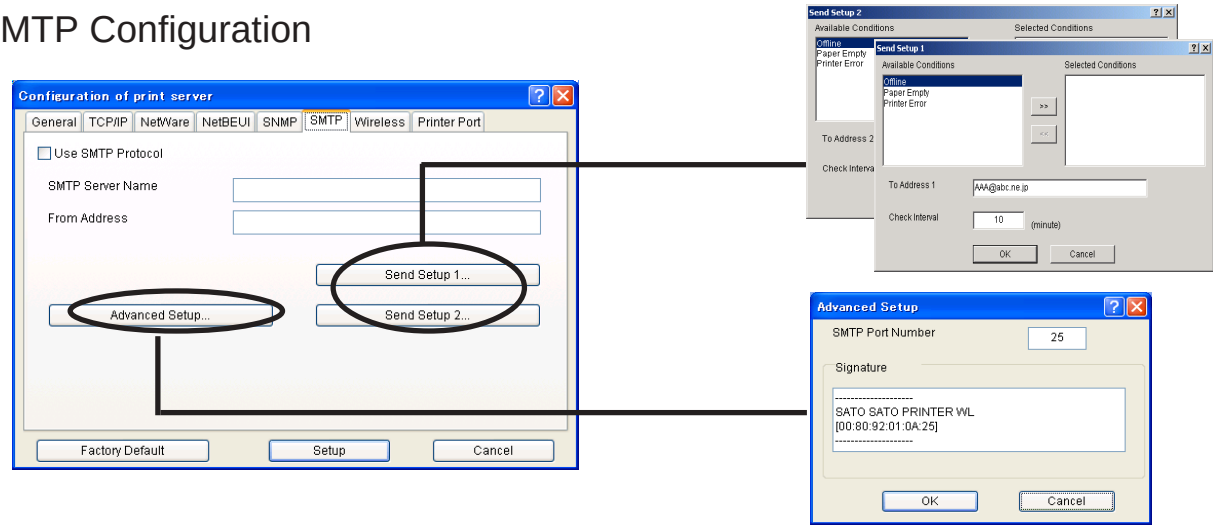
Tab	Item	Explanation	Factory Default
NetBEUI/ NetBIOS	Use NetBEUI Protocol	Enable/ Disable NetBEUI protocol operations.	ENABLE
	Use NetBIOS over TCP	Enable/ Disable NetBIOS over TCP operations.	ENABLE
	Computer Name	Specify a computer name. The name set here is shown as a computer in Windows Explorer. The name must be different from those of other computers.	PRxxxxxx (Lower 6 digits of Ethernet address)
	Work Group	Specify the workgroup that this print server belongs to. Enter the default workgroup name or an existing workgroup name. A new workgroup name that does not exist in the network is not shown as Workgroup.	SATO-PRINTER
	Comment	Set the description of the print server. The information set here is shown as the description (comments) of the print server in Windows Explorer.	SATO XXXXX
	Activate Master Browser Function	In NetBEUI or NetBIOS over TCP, you can specify whether to activate the master browser function.	ENABLE

SNMP Configuration



Tab	Item		Explanation	Factory Default
SNMP	Authentication community		Specify the authentication community name of SNMP. This community name is authenticated when an SNMP set request is received.	public
	Trap Community		Specify the trap community of SNMP. This community name is used when the print server send a trap.	public
	Trap Destination Address		Specify the destination IP address of the SNMP trap. The value is a four-part series of numbers separated by decimal points, such as "xxx.xxx.xxx.xxx". When the value is "0.0.0.0"(default), this item is disabled and a trap will not be generated in any case.	0.0.0.0
	MIB-II Parameters	SysContact	Specify the SysContact of the MIB-II object. The e-mail address of the network administrator is used.	-
		SysName	Specify the SysName of the MIB-II object. The host name or domain name of the print server is used.	-
		SysLocation	Specify the SysLocation of the MIB-II object. The location of the print server is used.	-
		Enable Authen Trap	Select whether to allow or disallow the "EnableAuthenTrap" of the MIB-II object. If a violation of the community occurs "allow" is the setting, the SNMP trap is sent to the IP address specified in "TRAP Address".	ENABLE

SMTP Configuration

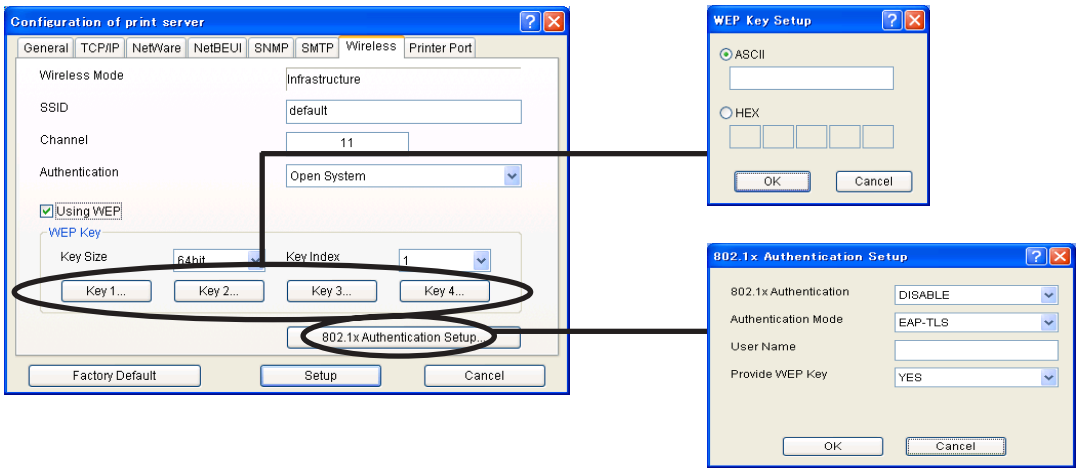


Tab	Item		Explanation	Factory Default
SMTP	Use SMTP Protocol		Enable/Disable SMTP protocol operations. If "Disable" is selected, e-mail "send" function is not available.	DISABLE
	SMTP Server Name		Setting SMTP server host name. Entering domain name or IP address as host name. If a domain name is used, it is necessary to configure the DNS server.	-
	From Address		Setting the sender address (From Address). Usually the mail address of the network administrator is set.	-
	Send Setup (1-2)	Offline	Mail is sent while the printer is off line.	OFF
		Paper Empty	Mail is sent when the printer is out of paper.	OFF
		Printer Error	Mail is sent when abnormal conditions are encountered in the printer.	OFF
		To Address (1-2)	Setting mail destination address (To Address).	-
		Check Interval	In regular intervals the existence of events is checked. This interval is defined in minutes. If more than one event occurs within this interval, a bundled report is sent.	10
	Advanced Setup	SMTP Port Number	Setting the SMTP port number. It is recommend to use the default value (=25).	25
		Signature	Specify the signature string to be added at the end of an e-mail.	---------- SATO yyyyy [00:80:92:XX:XX:XX] ---------- (Yyyyy is printer model name. xx:xx:xx is the last 6 digits of the Ethernet Address listed.)

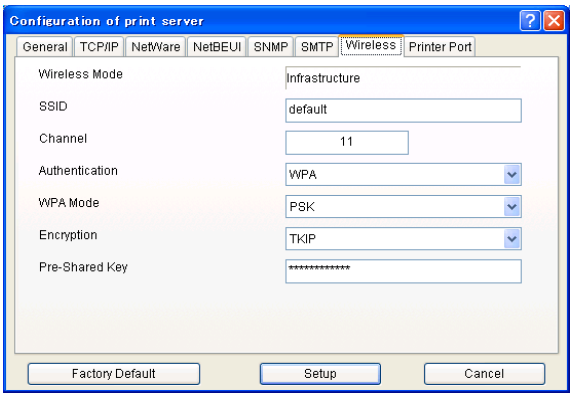
Wireless Configuration

When connecting in Infrastructure mode, the authentication settings on the screen change.

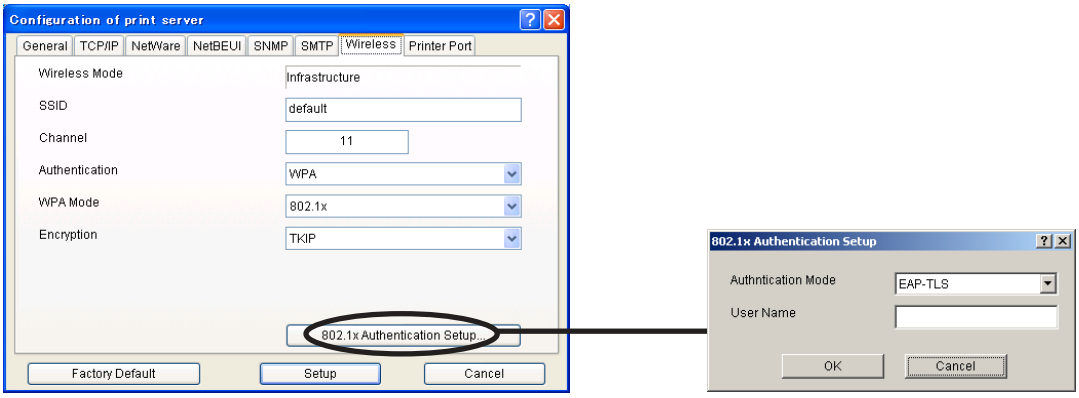
Open System/Shared Key



WPA-PSK



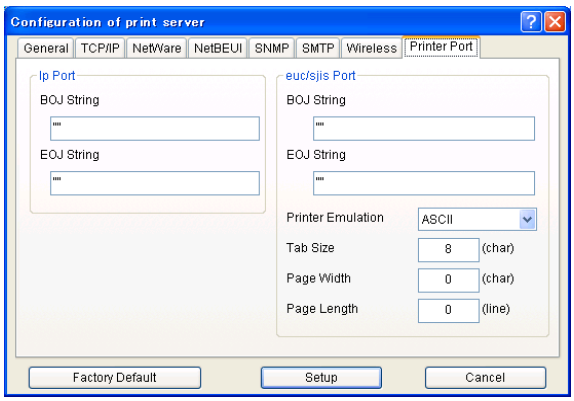
WPA-802.1x



Tab	Item				Explanation	Factory Default
Wireless	SSID				The ID logically differentiates the wireless LAN network. If the SSID do not match, communication between two points is not possible, even if they use the same channel in that specific communication area. Usage in "Infrastructure" mode and "Ad hoc" mode.	default
	Channel				The communication channels are used in "Ad hoc" mode. It is necessary that the two devices use the same communication channel.	11
	Authentication				Specify an authentication method.	Open System
	Open System	Using WEP			Setting the use/ non-use of WEP. IN wireless LAN, Sent and Received Data are encrypted with WEP key.	DISABLE
		WEP Key	Key Size		Specify the key size used for WEP. If you select "64", a WEP Key in size of 5 letters in ASCII and 5-byte in HEX will be created. If you select "128", a WEP Key in size of 13 letters in ASCII, and 13-byte in HEX will be crated.	64 bit
			Key Index		Select a WEP Key number to use.	1
			Key (1-4)	ASCII	Enter the WEP Key in ASCII code.	-
				HEX	Enter the WEP Key in hexadecimal numerals (00-FF).	-
		802.1x Authentication Setup	802.1x Authentication		Specify whether 802.1x Authentication is used or not.	DISABLE
			Authentication mode		Specify an Authentication Mode.	EAP-TLS
			User Name		Specify an 802.1x UserName.	-
			Using WEP	Provide WEP Key	Specify whether the WEP key is offered from an Access Point.	NO
			LEAP	Password	Specify the password. This password is only used for LEAP authentication.	-
	Shared Key	Using WEP			Setting the use/ non-use of WEP. IN wireless LAN, Sent and Received Data are encrypted with WEP key.	DISABLE
		WEP Key	Key Size		Specify the key size used for WEP. If you select "64", a WEP Key in size of 5 letters in ASCII and 5-byte in HEX will be created. If you select "128", a WEP Key in size of 13 letters in ASCII, and 13-byte in HEX will be crated.	64 bit
			Key Index		Select a WEP Key number to use.	1
			Key (1-4)	ASCII	Enter the WEP Key in ASCII code.	-
				HEX	Enter the WEP Key in hexadecimal numerals (00-FF).	-

Tab	Item				Explanation	Factory Default
Wireless	Shared Key	Shared Key	802.1x Authentication		Specify whether 802.1x Authentication is used or not.	DISABLE
			Authentication mode		Specify an Authentication Mode.	EAP-TLS
			User Name		Specify an 802.1x UserName.	-
			Provide WEP Key		Specify whether the WEP key is offered from an Access Point.	NO
			LEAP	Password	Specify the password. This password is only used for LEAP authentication.	-
	WPA	WPA Mode			Specify a WPA Mode.	PSK
		Encryption			Specify an encryption method.	TKIP
		PSK	Pre-Shared Key		Set the Pre-Shared Key.	"sato printer"
		802.1x	802.1x Authentication Setup	Authentication mode	Specify an Authentication Mode.	EAP-TLS
				User Name	Specify an 802.1x UserName.	-

PrinterPort Configuration



Tab	Item		Explanation	Factory Default
Printer Port	Ip Port	BOJ String	Specify the string to be transmitted to the printer before output to the direct output port (lp port). Specify the string when a control code, etc. needs to be sent before printing.	-
		EOJ String	Specify the string to be transmitted to the printer after output to the direct output port (lp port). Specify the string when a control code, etc. needs to be sent after printing.	-
	euc/sjis Port	BOJ String	Specify the string to be transmitted to the printer before output to the port via a Kanji filter (sjis/euc). Specify the string when a control code, etc. needs to be sent before printing. (Kanji - double sized character for Japanese)	-
		EOJ String	Specify the string to be transmitted to the printer after output to the port via a Kanji filter (sjis/euc). Specify the string when a control code, etc. needs to be sent after printing. (Kanji - double sized character for Japanese)	-
		Printer Emulation	Configure to correspond with the PDL(Printer Description Language). The printing data will be converted to a code that corresponds to the printer emulation in outputting to the output port via Kanji filter (sjis/euc). (Kanji - double sized character for Japanese)	ASCII
		Tab Size	Specify the number of characters to convert the tab code (0x09) to half size (single-byte) space (0x20) in outputting via a Kanji filter. When the value is 0, the tab is not converted. The value is from 0 to 16. (Kanji - double sized character for Japanese)	8

Tab	Item		Explanation	Factory Default
Printer Port	euc/sjis Port	Page Width	Specify the number of characters in a line when outputting via Kanji filter. The value is from 0 to 255. (Kanji - double sized character for Japanese)	0
		Page Length	Specify the number of lines on a page when outputting via Kanji filter. The value is from 0 to 255. (Kanji - double sized character for Japanese)	0

Configuration NetWare

Creating NetWare queue

A NetWare object necessary to use LAN board in the bindery emulation mode can be created.

TIP

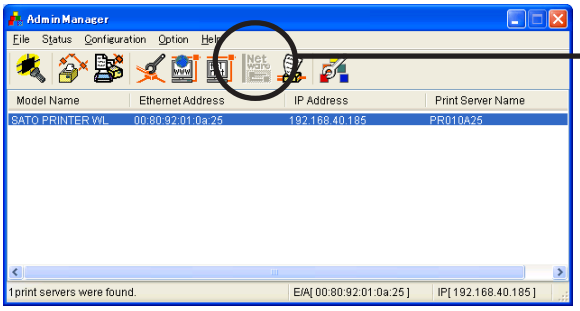
- To control NetWare object, the Novell client software is required.
- AdminManager does not show “Create NetWare queue” icon and option if the Novell client software is not installed.
- Before creating NetWare queue, select AdminManager Settings, then Print Server Configuration, then NetWare to configure NetWare protocol.
- Before creating NetWare queue, contact your network administrator for NetWare environment and print mode.

NOTE

-Also refer to chapter 6.

Using LAN board with bindery connection

1. Create NetWare queue.

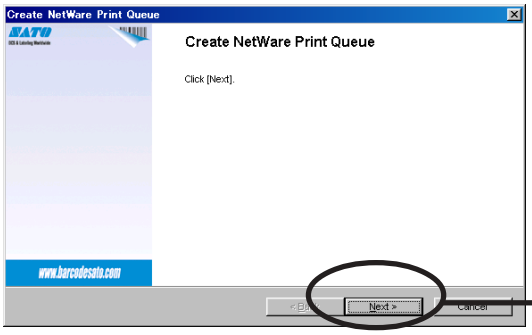


Click ***Create NetWare queue.***

NOTE

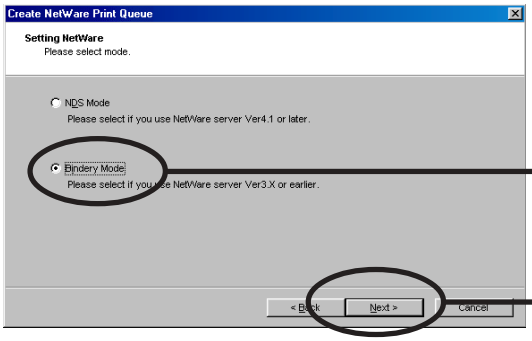
- To run the NetWare queue creation wizard, alternatively click ***Configuration***, then ***Create NetWare queue*** in the AdminManager main menu.

2.Configure NetWare.



Click ***Next.***

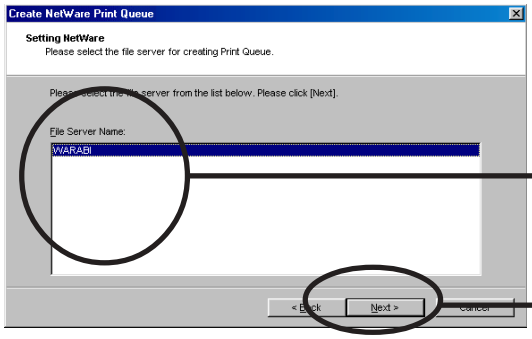
3. Select the NetWare server operation mode.



Select ***Bindery Mode.***

Click ***Next.***

4. Select the file server name to create a print queue.



Select the file server name.

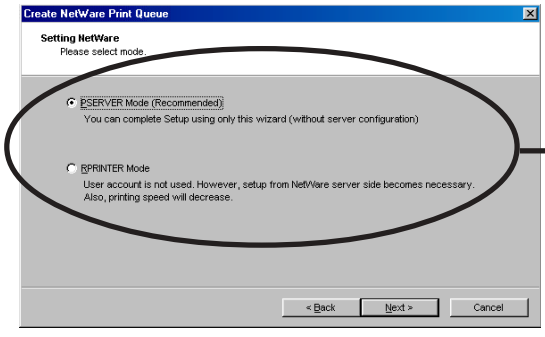
Click ***Next.***

TIP

- The next screens to be displayed may vary depending on the NetWare server selected.
  NetWare3 or below will go to -> 5 (A)
  NetWare4 or above will go to -> 5 (B)

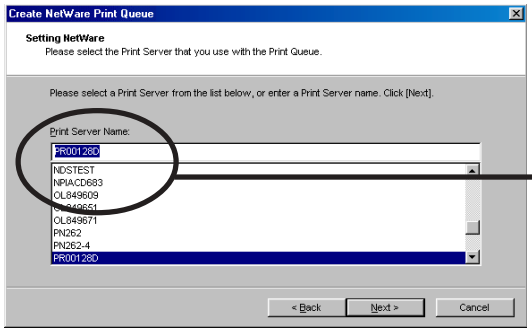
When NetWare 4 or above file server is selected, print server mode will be automatically selected.

5(A). Select printing mode **<NetWare 3 or below>**

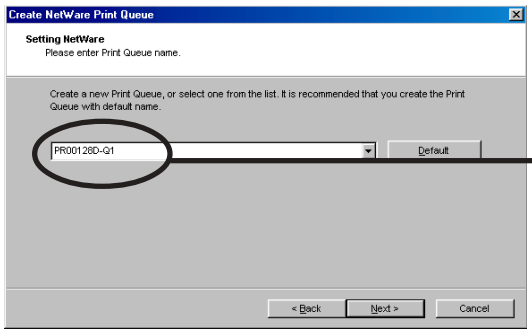


Select the ***PSERVER Mode***.

< Remote printer mode>

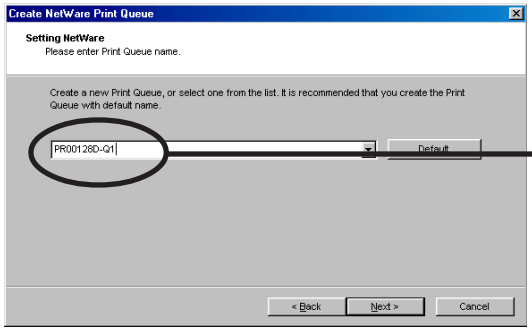


Select print server.



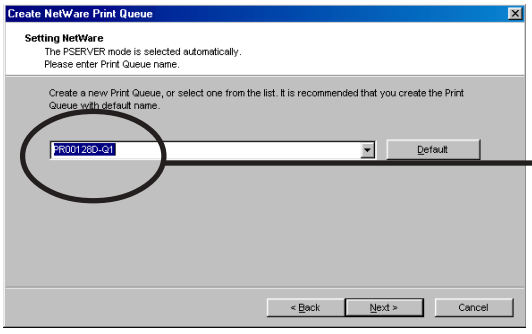
Type print queue name.

<Print server mode >



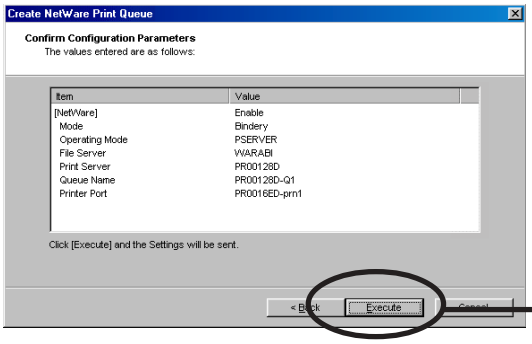
Type print queue name.

5(B). Type print queue name. **<NetWare4 or above>**



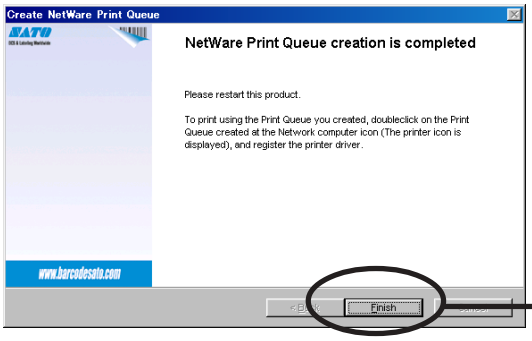
Type the print queue name.

6. Verify the configuration parameters.



Click ***Execute.***

7. Configuration is complete.

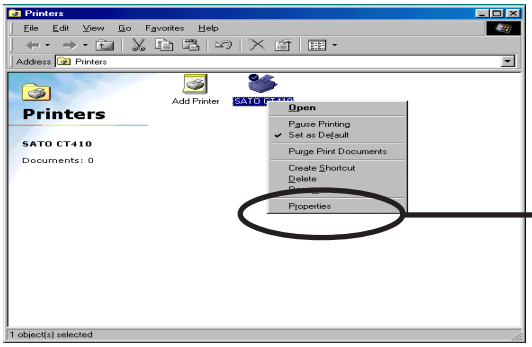


Click ***Finish.***

Using LAN board via bindery mode: Configuring print port

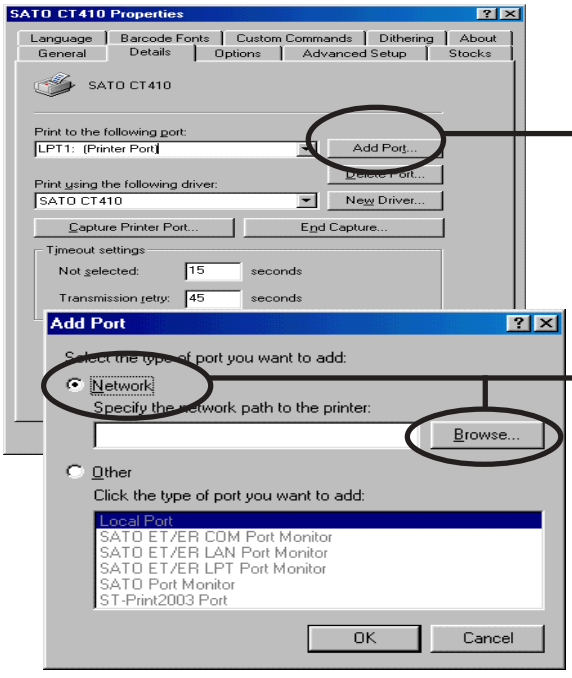
This section explains how to configure printer port tp printer in Windows 95/98/Me.

1. Click ***Start,*** then ***Settings,*** then ***Printers***. Open the ***Properties*** of printer you use.



Select ***Properties*** of the printer to be used.

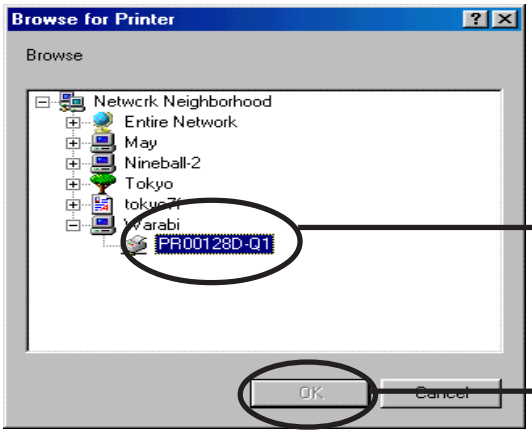
2. Move to ***Details.***



Select ***Add Port.***

Select ***Network*** and Click ***Browse.***

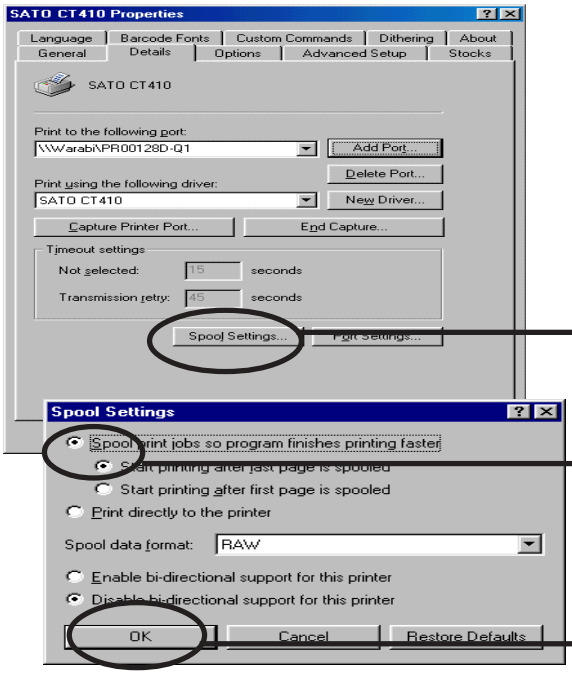
3. Assign a printer queue to printer print port.



Select the print queue to use.

Click ***OK.***

4. Configure spool settings.



Select ***Spool Settings.***

Select ***Start printing after the last page is spooled.***

Click ***OK.***

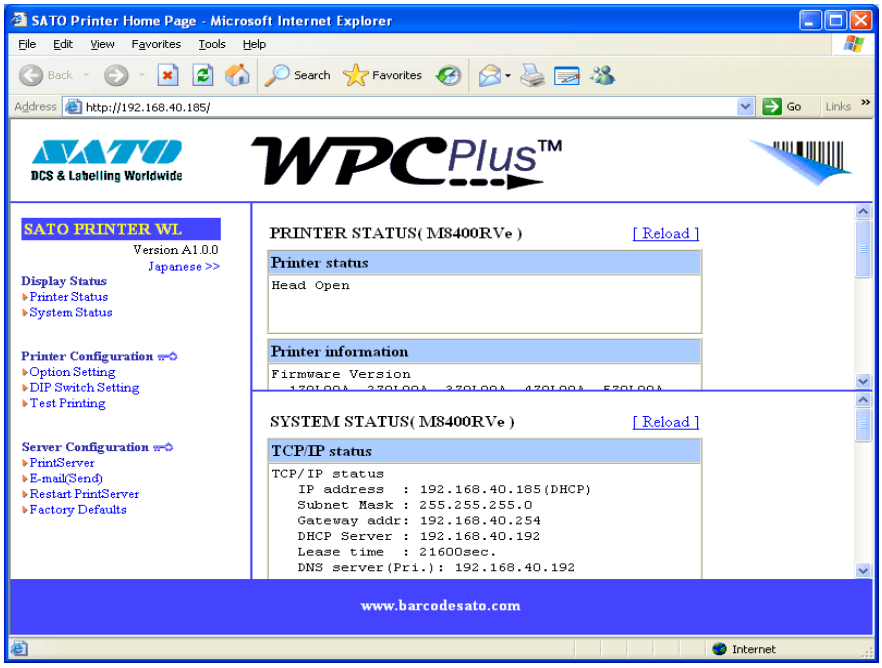
5. Configuration is complete. Click ***OK*** and close ***Properties.*** Now, LAN board can be used in NetWare environment.

Configuring LAN board via Web browser

This chapter explains how to access LAN board Webpage by using Web browser. LAN board has HTTP which enables you to check or change LAN board configuration and check the printer status.

TIP

- IP address must be assigned to LAN board when using Web browser.
- Internet Explorer3.0 (or above) or Netscape Navigater3.0 (or above) are recommended for Web browser.
- The display contents may vary depending on LAN board you use.

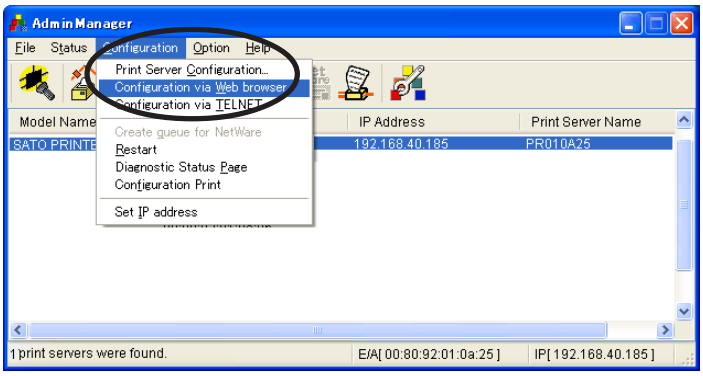


Display LAN board Webpage

To display the Webpage of LAN board to be configured, follow one of the following steps.

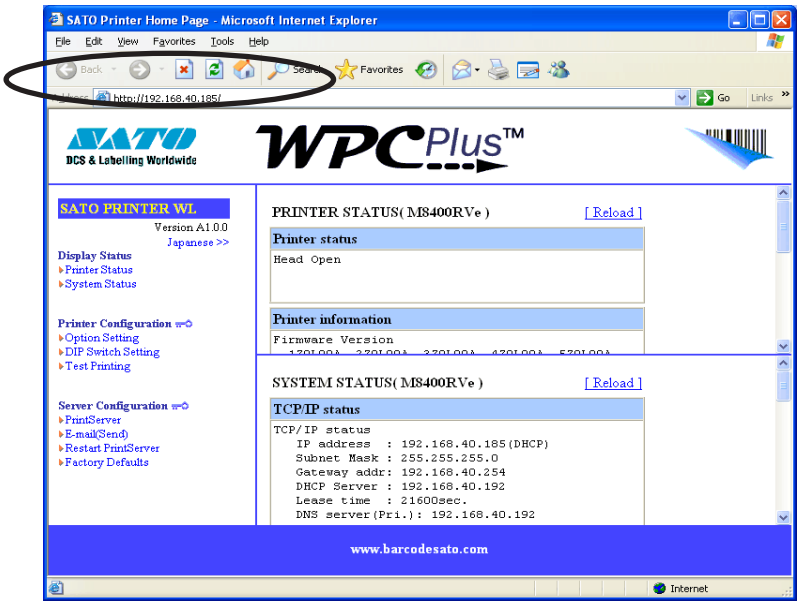
Displaying the webpage from AdminManager

Select LAN board to be configured from the AdminManager list, then click ***Configuration***, then ***Configuration via Web browser***.



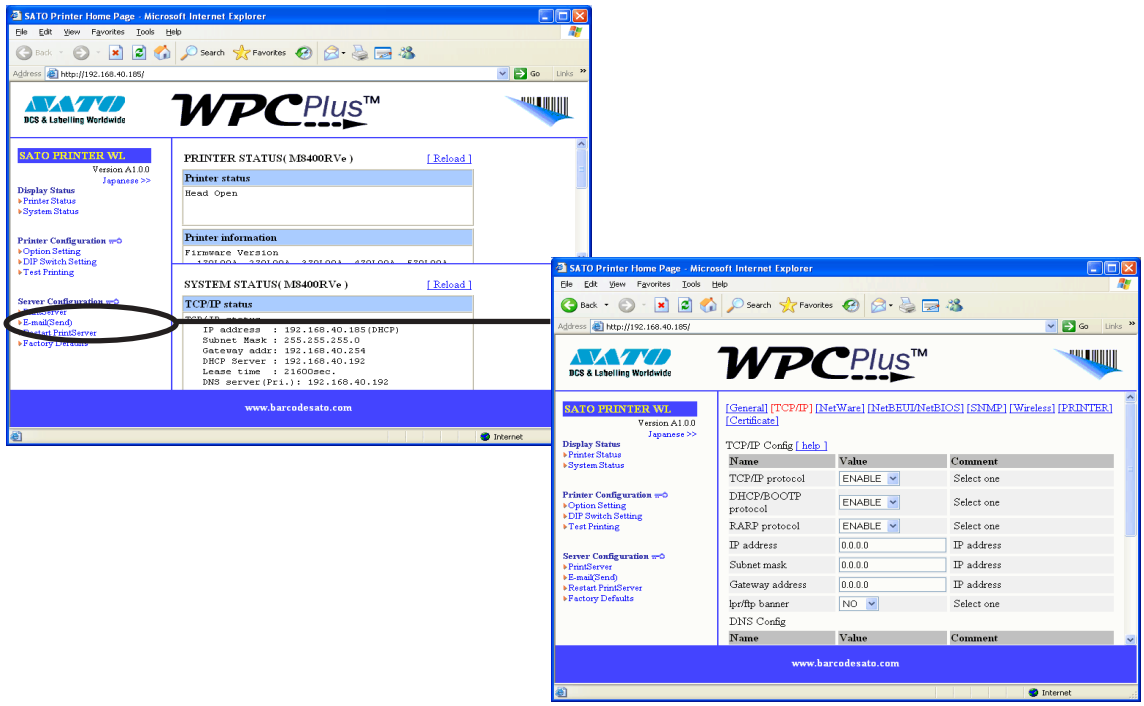
Displaying the webpage from Web browser

Enter the IP to assign for the LAN board to the Web browser.
Example: http://192.168.90.75 (LAN board)



Configuration via the Webpage

Configuration screen will be displayed if you click the desired items among those listed on the Web browser. Enter the set value into the selected item.

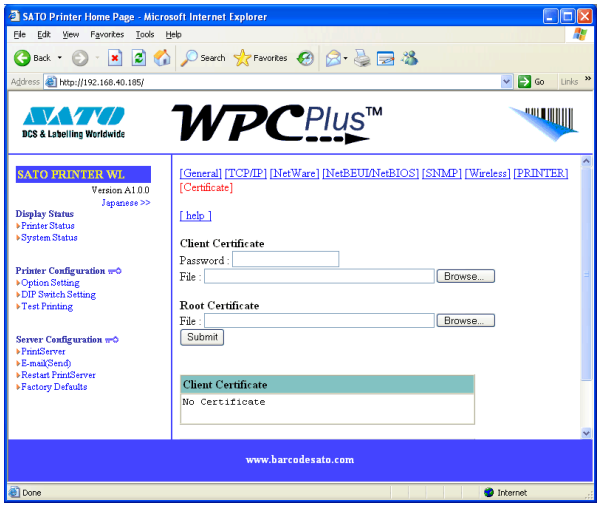


Structure of LAN board webpage menu.

Item		Explanation
Display Status	Printer Status	Display the status of the printer
	System Status	Display the status of the system
Printer Configuration	Option Setting	Printer operation configuration.
	Dip Switch Setting	You can configure the virtual dipswitch.
	Test Printing	Print out a Test Print.
Server Configuration	PrintServer	Set up various parameters of the Lan board
	E-Mail (Send)	Set up E-Mail transmitting function
	Restart PrintServer	Reboot the LAN board
	Factory Defaults	Recover the factory settings of LAN board

TIP

- Top page of LAN board webpage can be uniquely displayed by using the top page customizing function.
- Printer Configuration can not be setup depending on your printer.



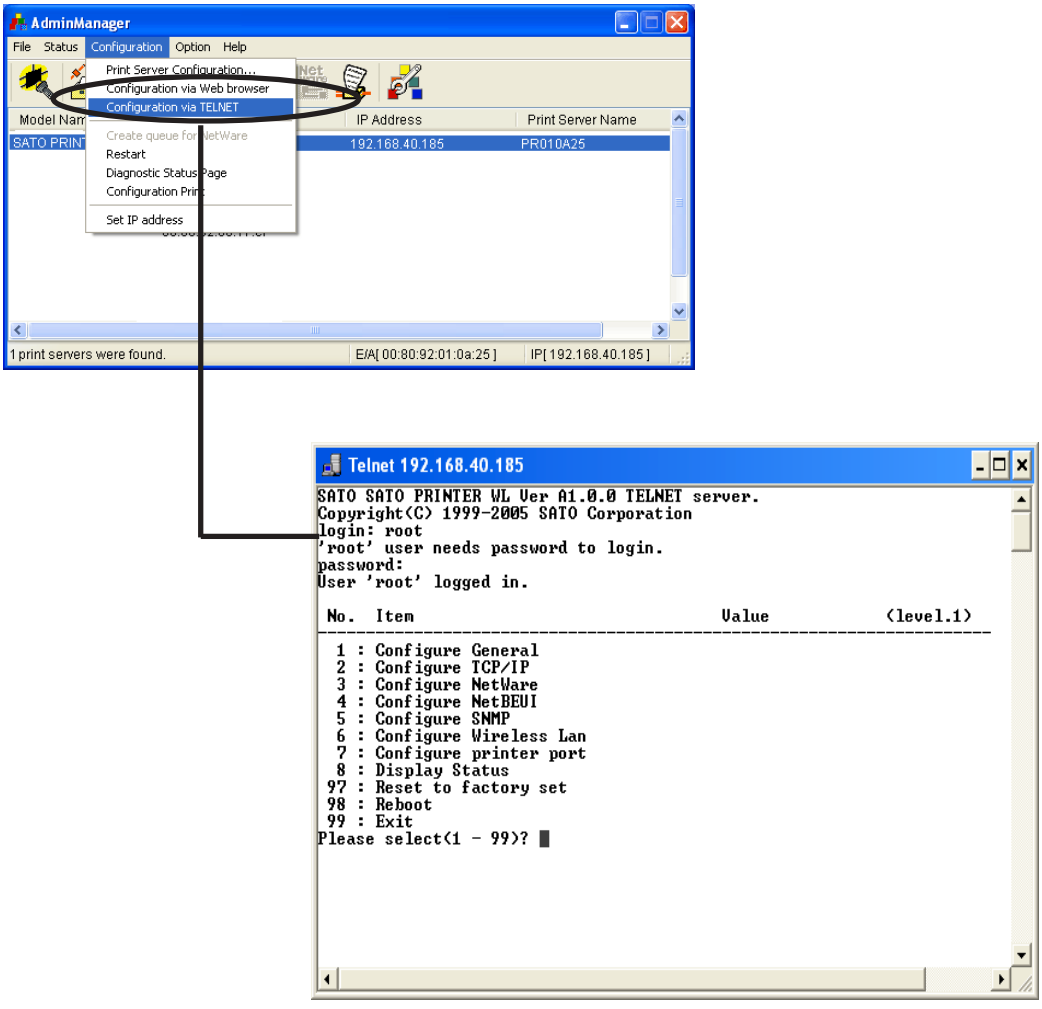
Item		Explanation
Client Certificate	Password	Input the necessary password for import of the Client Certificate.
	File	Select the Client Certificate file.
Root Certificate	File	Select the Root Certificate file.

Configuring LAN board using TELNET

Since TELNET protocol is embedded in LAN board, TELNET supplied with UNIX machine or PC TCP/IP software can be used to configure LAN board in detail and also to change configuration.

TIP

- IP address need to be configured if using TELNET.
- You need to log in by root user to configure by TELNET.



Web browser/TELNET configuration items

Print server function

General

	Item		Explanation	Factory Default
	Web browser	TELNET		
General	root password	root password	Please enter the password.(in ASCII TEXT) This password will be used for configuration changes via Telnet, Web page and Setup Tools.	-
	Use HP JetAdmin	Use HP JetAdmin	Please select whether you want to use HEWLETT PACKARD's JetAdmin/WebJetAdmin.	YES

TCP/IP

	Item		Explanation	Facory Default
	Web browser	TELNET		
TCP/IP	TCP/IP protocol	TCP/IP protocol	Enable/Disable TCP/IP protocol operations. This has influence on the configuration of Setup Tools, LPR, FTP, TELNET, SNMP, HTTP and other protocols over TCP/IP.	ENABLE
	DHCP/BOOTP protocol	DHCP/BOOTP protocol	Enable/Disable DHCP/BOOTP protocol operations. DHCP/BOOTP is a protocol, via which IP address gets assigned by the BOOTP server or DHCP server. If you use DHCP/BOOTP server, the DHCP/BOOTP server must be in the same segment as the print server. This print server detects DHCP and BOOTP automatically. If more than 1 address get returned, the IP address which is returned first will be used.	ENABLE
	RARP protocol	RARP protocol	Enable/Disable RARP protocol operations. RARP is a protocol, via which IP address gets assigned by the RARP server. If you use RARP server, the RARP server must be in the same segment as the print server.	ENABLE

	Item		Explanation	Factory Default
	Web browser	TELNET		
TCP/IP	IP address	IP address	Setting the Print Server IP address. The IP address must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
	Subnet mask	Subnet mask	Setting the print server subnet mask. The subnet mask must be 4 numbers, each between 0-255 (eg. 255.255.255.0). However, entering 0.0.0.0 would not be valid, and the subnet mask corresponding to the IP address would be used automatically.	0.0.0.0
	Gateway address	Gateway address	Setting the default gateway address. The default gateway address must be 4 numbers, each between 0-255 (eg. 192.168.100.240). If you use a gateway, the gateway must be in the same segment as the print server. However, entering 0.0.0.0 would not be valid.	0.0.0.0
	lpr/ftp banner	lpr/ftp banner	You can select to use a banner page when printing with LPR and FTP. (A banner page is print cover page with print job explanations.)	DISABLE
	DNS Config	DNS		
	DNS Server (Pri.)	DNS Server (Pri.)	Setting the DNS server (primary) address. When /SMTP server name is configured directly at IP address, the DNS server's setting is not necessary.	0.0.0.0
	DNS Server (Sec.)	DNS Server (Sec.)	Setting the DNS server (secondary) address. When SMTP server name is configured directly at IP address, the DNS server's setting is not necessary. The values must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
		SMTP		
		SMTP protocol	Enable/Disable SMTP protocol operations. If "Disable" is selected, e-mail "send" function is not available.	DISABLE
		SMTP server name	Setting SMTP server host name. Entering domain name or IP address as host name. If a domain name is used, it is necessary to configure the DNS server.	-
		Reply-To address	Setting the sender address (From Address). Usually the mail address of the network administrator is set.	-

	Item			Explanation	Factory Default
	Web browser	TELNET			
TCP/IP	Event to address (1-2)				
		To address(1-2)		Setting mail destination address (To Address).	-
		Check interval (min.)		In regular intervals the existence of events is checked. This interval is defined in minutes. If more than one event occurs within this interval, a bundled report is sent.	10
		Offline		Mail is sent while the printer is off line.	OFF
		Peper empty		Mail is sent when the printer is out of paper.	OFF
		Fault		Mail is sent when abnormal conditions are encountered in the printer.	OFF
		Advanced	SMTP port number	Setting the SMTP port number. It is recommend to use the default value (=25).	25
		Advanced	Signature line (1-4)	Specify the signature string to be added at the end of an e-mail.	---------- SATO yyyyy [00:80:92:XX:XX:XX] ---------- (Yyyyy is printer model name. xx:xx:xx is the last 6 digits of the Ethernet Address listed.)
	WINS Config	WINS			
	Primary Server	Primary Server		Setting the WINS server (primary) address. WINS server will resolve the IP address from the host name. Therefore you can use a hostname instead of the IP address when printing. The values must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
	Secondary Server	Secondary Server		Setting the WINS server (secondary) address. WINS server will resolve the IP address from the host name. Therefore you can use a hostname instead of the IP address when printing. The values must be 4 numbers, each between 0-255 (eg. 192.168.100.10).	0.0.0.0
	Scope ID	Scope ID		The scoop ID defines the computer group that recognized the registered host name.	-

NetWare

	Item		Explanation	Factory Default
	Web browser	TELNET		
Net Ware	NetWare protocol	NetWare protocol	Enable/Disable NetWare protocol.	ENABLE
	Packet type	Packet type	Select the default frame type of the print server. If the set frame type does not work, it will be changed to a different frame type automatically.	802.2
	NetWare mode	NetWare mode	Select the primary operation mode (PSERVER mode / RPRINTER mode) of the print server. If the set mode does not work, the print server starts in a different mode.	PSERVER
	NetWare port name	NetWare port name	Set the printer name under print server information within the NetWare server. It must be the same as the "Printer Name" registered in the NetWare server.	PRxxxxxx-Prn1 (Lower 6 digits of Ethernet address)
	PSERVER Config	PSERVER Mode	Send the job via NetWare	
	Machine name	Machine name	Specify the print server name for the print server when starting in PSERVER mode. Because this configuration is used as the identifier on the network in the NetWare protocol, the print server name set must be different from other names in the NetWare environment. It is used as a login name in connecting to the NetWare server.	PRxxxxxx (Lower 6 digits of Ethernet address)

	Item			Explanation	Factory Default
	Web browser	TELNET			
Net Ware	Password	Password		Set the password that is authenticated when the print server logs into the file server as a PSERVER mode. When the password is set for the print server, the same password must be set to the corresponding file server. If the print server is connected to two or more file servers, the same password must be set to all the file servers.	-
	Job polling interval (sec.)	Job polling interval (sec.)		Set the interval for the print server to query the file server for jobs in units of seconds. Usually the value should be the default.	4
	FSERVER name (1-8)	Bindery Mode	FSERVER name (1-8)	Set the name of the file server primarily connected to. The print server logs into the file server set here when operating in PSERVER mode. The print server searches the file server automatically and logs in if the value is blank.	-
	RPRINTER Config	PSERVER Mode		Job management can be performed via NetWare server.	
	PSERVER name (1-8)	PSERVER name (1-8)		Set the name of the print server primarily connected to. This product connects to the print server set here when operating in RPRINTER mode. This product searches print server automatically and connects if the value is blank.	-
	Job timeout(sec.)	Job timeout(sec.)		Set the timeout value (in units of seconds) for the print server to determine the end of the job when operating in RPRINTER mode. Usually the value should be the default.	10

NetBEUI/NetBIOS

	Item		Explanation	Factory Default
	Web browser	TELNET		
NetBEUI/ NetBIOS	NetBEUI protocol	NetBEUI protocol	Enable/ Disable NetBEUI protocol operations.	ENABLE
	NetBIOS over TCP	NetBIOS over TCP	Enable/ Disable NetBIOS over TCP operations.	ENABLE
	Computer name	Computer name	Specify a computer name. The name set here is shown as a computer in Windows Explorer. The name must be different from those of other computers.	PRxxxxxx (Lower 6 digits of Ethernet address)
	Workgroup name	Workgroup name	Specify the workgroup that this print server belongs to. Enter the default workgroup name or an existing workgroup name. A new workgroup name that does not exist in the network is not shown as Workgroup.	SATO-PRINTER
	Comment	Comment	Set the description of the print server. The information set here is shown as the description (comments) of the print server in Windows Explorer.	SATO XXXXX
	Browse Master	Browse Master	In NetBEUI or NetBIOS over TCP, you can specify whether to activate the master browser function.	ENABLE

SNMP

	Item		Explanation	Factory Default
	Web browser	TELNET		
SNMP	Authentic community	Authentic community	Specify the authentication community name of SNMP. This community name is authenticated when an SNMP set request is received.	public
	Trap community	Trap community	Specify the trap community of SNMP. This community name is used when the print server send a trap.	public
	Trap address	Trap address	Specify the destination IP address of the SNMP trap. The value is a four-part series of numbers separated by decimal points, such as "xxx.xxx.xxx.xxx". When the value is "0.0.0.0"(default), this item is disabled and a trap will not be generated in any case.	0.0.0.0
	SysContact	SysContact	Specify the SysContact of the MIB-II object. The e-mail address of the network administrator is used.	-
	SysName	SysName	Specify the SysName of the MIB-II object. The host name or domain name of the print server is used.	-
	SysLocation	SysLocation	Specify the SysLocation of the MIB-II object. The location of the print server is used.	-
	Enable Authen Trap	Enable Authen Trap	Select whether to allow or disallow the "EnableAuthenTrap" of the MIB-II object. If a violation of the community occurs "allow" is the setting, the SNMP trap is sent to the IP address specified in "TRAP Address".	2

Wireless

Item						Explanation	Factory Default
Web browser			TELNET				
Wireless	SSID		SSID			The ID logically differentiates the wireless LAN network. If the SSID do not match, communication between two points is not possible, even if they use the same channel in that specific communication area. Usage in "Infrastructure" mode.	default
	Channel		Channel			The communication channels are used in "Ad hoc" mode. It is necessary that the two devices use the same communication channel.	11
	Network Authentication		Network Authentication			Specify an authentication method.	Open System
	WEP Key Config	Use WEP	Configure WEP key	Use WEP		Setting the use/ non-use of WEP. IN wireless LAN, Sent and Received Data are encrypted with WEP key.	DISABLE
		Key Index		Key Index		Select a WEP Key number to use.	1
		Key Size		Key Size		Specify the key size used for WEP. If you select "64", a WEP Key in size of 5 letters in ASCII and 5-byte in HEX will be created. If you select "128", a WEP Key in size of 13 letters in ASCII, and 13-byte in HEX will be crated.	64 bit
		Key(1-4)		Key(1-4)		Enter the WEP Key in hexadecimal numerals (00-FF).	-
	802.1x Config	802.1x Authentication		Configure 802.1x	802.1x Authentication	Specify whether 802.1x Authentication is used or not.	DISABLE
		Authentication Mode			Authentication Mode	Specify an Authentication Mode.	EAP-TLS
		User Name			User Name	Specify an 802.1x UserName.	-
		Password			Password	Specify an password. The password is only used for LEAP authentication.	-
		Provide WEP Key			Provide WEP Key	Specify whether the WEP key is offered from an Access Point.	NO
	Aironet Extensions	Aironet Extensions			Aironet Extensions	Specify whether Aironet Extensionis or not.	NO
		Extension Encryption Mode			Extension Encryption Mode	Specify the Encryption Mode for wireless communication when Aironet Extension is enabled.	WEP
	WPA Config	WPA Mode	Configure WPA	WPA Mode		Specify a WPA Mode.	PSK
		Encryption		Encryption		Specify an encryption method.	TKIP
	WPA-PSK Config	Pre-Shared Key		Pre-Shared Key	Pre-Shared Key	Set the Pre-Shared Key.	"sato printer"

Item						Explanation	Factory Default
	Web browser		TELNET				
Wireless	WPA-802.1X Config	Authentication Mode	Configure WPA	Configure 802.1X	Authentication Mode	Specify an Authentication Mode.	EAP-TLS
		User Name			User Name	Specify an 802.1x UserName.	-

PRINTER

	Item		Explanation	Factory Default
	Web browser	TELNET		
PRINTER	BOJ string	BOJ string	Specify the string to be transmitted to the printer before output to the direct output port (lp port). Specify the string when a control code, etc. needs to be sent before printing.	-
	EOJ string	EOJ string	Specify the string to be transmitted to the printer after output to the direct output port (lp port). Specify the string when a control code, etc. needs to be sent after printing.	-
	BOJ string (KANJI)	BOJ string (KANJI)	Specify the string to be transmitted to the printer before output to the port via a Kanji filter (sjis/euc). Specify the string when a control code, etc. needs to be sent before printing. (Kanji - double sized character for Japanese)	-
	EOJ string (KANJI)	EOJ string (KANJI)	Specify the string to be transmitted to the printer after output to the port via a Kanji filter (sjis/euc). Specify the string when a control code, etc. needs to be sent after printing. (Kanji - double sized character for Japanese)	-
	Printer type	Printer type	Configure to correspond with the PDL(Printer Description Language). The printing data will be converted to a code that corresponds to the printer emulation in outputting to the output port via Kanji filter (sjis/euc). (Kanji - double sized character for Japanese)	ASCII
	TAB size (char.)	TAB size (char.)	Specify the number of characters to convert the tab code (0x09) to half size (single-byte) space (0x20) in outputting via a Kanji filter. When the value is 0, the tab is not converted. The value is from 0 to 16. (Kanji - double sized character for Japanese)	8
	Page width (char.)	Page width (char.)	Specify the number of characters in a line when outputting via Kanji filter. The value is from 0 to 255. (Kanji - double sized character for Japanese)	0
	Page length (line)	Page length (line)	Specify the number of lines on a page when outputting via Kanji filter. The value is from 0 to 255. (Kanji - double sized character for Japanese)	0

E-Mail (SMTP)

	Item		Explanation	Factory Default
	Web browser	TELNET		
E-Mail (Send)	SMTP protocol		Enable/Disable SMTP protocol operations. If "Disable" is selected, e-mail "send" function is not available.	DISABLE
	SMTP server name		Setting SMTP server host name. Entering domain name or IP address as host name. If a domain name is used, it is necessary to configure the DNS server.	-
	SMTP port number		Setting the SMTP port number. It is recommend to use the default value (=25).	25
	Reply-To addtess		Mail is sent when the printer is out of paper.	-
	Signature line (1-4)		Specify the signature string to be added at the end of an e-mail.	---------- SATO yyyyyy [00:80:92:XX:XX:XX] ---------- (Yyyyyy is printer model name. xx:xx:xx is the last 6 digits of the Ethernet Address listed.)
	Send Address (1-2)			-
	To Address		Setting mail destination address (To Address).	-
	Check interval (min.)		In regular intervals the existence of events is checked. This interval is defined in minutes. If more than one event occurs within this interval, a bundled report is sent.	10
	Offline		Mail is sent while the printer is off line.	OFF
	Paper empty		Mail is sent when the printer is out of paper.	OFF
	Fault		Mail is sent when abnormal conditions are encountered in the printer.	OFF

8. Questions & Answers

This chapter explains the trouble shooting procedures for possible problems you may experience while installing LAN board.

Legend;

CHECK

Make sure to verify the listed items to identify your problem.

SOLUTION

Find the trouble shooting procedure for resolution.

Problems while Initial Installation

Main menu does not start even after inserting the CD-ROM

SOLUTION

If your computer does not support Autorun, the menu will not start automatically even after inserting the CD-ROM. In this case, execute "run.exe" in the root directory of the CD-ROM.

LAN board is not found even after searching in the configuration utility (Quick Setup, AdminManager) or LAN board is not recognized in the network

CHECK1

Check the followings and retry the configuration.

- If the printer for internal LAN board type is turned on or LAN board power is turned on.
- Print the self-diagnostic and configuration report. If NG is printed, refer to "NG is printed in the diagnostic report....." on page 3 of this chapter.
- If the parameters are configured correctly.

NOTE

-For printing self-diagnostic/configuration report, refer to chapter 1.

CHECK2

Check the following and retry the configuration.

- Do the SSID WEP key and channel match the wireless network environment?
- Is the network cable connected to the access point?
  Is the access point communicating properly?
- If the PC is connected to a LAN, is the LAN cable connected properly?
  Can it communicate with the access point?

CHECK3

When operating in Windows environment, run AdminManager and click ***Option***, then ***search using TCP/IP protocol.*** When operating in NetWare environment, click ***Search using IPX/SPX protocol***, and search LAN board again.

CHECK4

When you use TCP/IP protocol in Windows XP environment, click ***Local Area Connection Properties,*** then ***Advanced***, then remove the check from ***Protect my computer and network by limiting or preventing access to this computer from the Internet.***

SOLUTION

If your problems still continues after Check 1, 2 and 3, initialize LAN board to factory default and retry the configuration corresponding to your network environment.

NOTE

- For initializing LAN board to factory default, refer to chapter 1.

Unable to print self-diagnostic report

CHECK1

Make sure that the printer is ready for printing. (Online, Interface type etc.)

CHECK2

Check the printer data receive lamp.
If it is lighting, off-line the printer and press the eject button.

NG is printed in self-diagnostic report

CHECK

Check if the following applies before turning on LAN board or printer.

- Check the proper connection between LAN board and printer when you find NG in ROM or RAM.
- When you find NG in EEPROM check, the you may have improper connection between LAN board and printer or improper Dip switch settings.
- When you find NG in NIC check, check the proper connection of the network cable.

Communication error occurs when configuring IP address

CHECK

- Send PING command from MS-DOS to verify the proepr communication between your PC and other PCs in the network.
- Verify if LAN board has been initialized to factory default.
  * For the procedure to initialize LAN board to factory default, refer to chapter 1.
- DHCP or RARP server may exist in the network.
  * An inappropriate IP address may have been assigned to LAN board by Router or the servers. Configure IP address in a local environment where router or server do not exist (one PC, one HUB, one printer and one LAN board exist in the environment).
- LAN board and the PC you are using for the configuration may not be in the same segment.
  *Verify that LAN board and the PC you are using for the configuration are in the same segment.

Problems in Printing

Print job in not printed

CHECK1

Check the followings and retry the configuration.

- If the printer power is switched on.

CHECK2

Check the following and retry the configuration.

-Do the SSID WEP key and channel match the wireless network environment?

-Is the network cable connected to the access point? Is the access point communicating properly?

-If the PC is connected to a LAN, is the LAN cable connected properly? Can it communicate with the access point?

CHECK3

Printing data such as text may not be printed due to nonexistence of eject command. In such case, verify if the printer job lump lights and push ***off-line*** button, then ***Eject*** button to eject the data.

NOTE

- **Windows, NetWare, UNIX.**
  When "/f" is specified in EOJ string or EOJ string (kanji) of LAN board, the text data without eject command will be automatically processed to print.

Problems in TCP/IP

Print job in not printed

CHECK1

If you are using TCP/IP protocol, ping LAN board with the assigned IP address to see if there are any reply. If there is no reply to ping, IP address may not have been configured properly.
Reset LAN board to factory default and configure again from the beginning.

Example:

Issue ping in Windows 98 MS-DOS
Click ***Start*** - ***Programs*** - ***MS-DOS Prompt***, then execute Ping xxx.xxx.xxx.xxx.
You will see the message below. "xxx.xxx.xxx.xxx" is the IP address configured to LANboard.

-When there is a reply to Ping:

Reply from xxx.xxx.xxx.xxx:bytes=32 time=58ms TTL=253
Reply from xxx.xxx.xxx.xxx:bytes=32 time=58ms TTL=253
Reply from xxx.xxx.xxx.xxx:bytes=32 time=58ms TTL=253
Reply from xxx.xxx.xxx.xxx:bytes=32 time=58ms TTL=253

-When there is no reply to Ping:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

NOTE

- For the initializing LAN board to factory default, refer to chapter 1.

CHECK2

The Destination printer port of printer driver may not have been configured properly. Click ***Printer*** at Properties, then ***Details***, then check the printer port name of LAN board at ***Print to the following port***. The port name is indicated "ST-Print2003 LPR Port" or "ST-Print2003 IPP Port" or "ST-Print2003 Raw Port" after the assigned port name.

Ex.) Printer port=xxx.xxx.xxx.xxx: lp (ST-Print2003 LPR Port)
* xxx.xxx.xxx.xxx. = IP Address

SOLUTION1

When the PC and LAN board are not on the same segment, a subnet mask and lately address must be configured on LAN board. Using AdminManager or LAN board web page to verify that subnet mask and gateway address are correctly configured.

SOLUTION2

If DHCP/BOOTP server or RARP server resides on the network, the IP addresses are assigned automatically, which may rewrite the IP address that you have manually assigned to LAN board. To avoid this problem, tick off ***Use DHCP/BOOTP*** check box and configure the IP address again.

Error during printing

CHECK

If you try to print while other users are printing large data (e.g. many pages or color pages with high resolution), the printer is unable to accept your print job until the ongoing print is finished. If the waiting time of your print job exceeds a certain limit, a time out occurs, which causes the error message. In such case, execute the print job again afterwards.

Dial-up connection box appears when printing job is executed.

CHECK

Printing will be complete after you cancel this dial box to shift the process to LAN adapter from the dial-up adapter. This problem is caused due to Windows specifications.

Problems in Windows NetBEUI/NetBIOS over TCP/IP

Error message appears when printing with NetBEUI

SOLUTION

Error message may appear depending on printer status due to NetBEUI protocol specification. When this phenomenon disturbs operation, use LPD/IPP printing in TCP/IP protocol.

Problems in UNIX/Linux

When printing kanji text on UNIX, kanji code is mutilated.

CHECK

LAN board is compatible with "SJIS" and "EUC" kanji filter.
Check the kanji code of printing data.
When ejecting the data through LAN board kanji filter, configure the printer kanji code to "JIS".

When test printing with “Red Hat Linux queue creating tool”, characters are mutilated

SOLUTION

Select RAW print queue in the printer driver, print "ASCII Test Page" which can be processed without printer driver. If the printing is processed properly, there may be a problem with your printer driver. Contact your printer manufacturer for the appropriate LINUX printer driver information.

Problems in NetWare

LAN board can not establish the connection with NetWare

CHECK1

From the AdminManager or the LAN board Web page, verify the proper configuration for "Frame Type", "Mode".

NOTE -The automatic changeover of NetWare operation mode on LAN board may require some time depending on the operating environment.

CHECK2

When two or more LAN boards are used, make sure that the same printer name (NetWare printer name) is not duplicated.

LAN board can not establish the connection with NetWare server (RPRINTER mode)

CHECK1

Click ***Print server***, then ***Printer list,*** then ***Current status*** on NetWare server to verify if the LAN board is operating properly.

CHECK2

Make sure that the ***Print Server Name*** specified on the LAN board is the same as that of the print server operating on your file server.

LAN board can not establish the connection with NetWare server. (PSERVER mode)

SOLUTION

Verify that the following parameters in LAN board consistent with those in the NetWare server.

* File server name (when the file server is specified)
* Printer name (NetWare printer name)
* Print server name
* Log in password

Other

Configuration can not be changed by LAN board web page

CHECK

Select Internet option in your Web browser, then ***LAN setting***, then tick off ***Use a proxy server for your LAN.***

Appendix

Software Specification

Supported Protocols

<LAN board>

*TCP/IP

Raw(9100) Port, LPD, FTP, IPP, HTTP, TELNET, DHCP, BOOTP, SNMP, SMTP, DNS, DDNS, WINS, TCP, UDP, ARP, RARP, IP, ICMP, NetBIOS over TCP/IP

*NetBEUI

SMB, NetBIOS

*NetWare

IPX, SPX, SNMP, (NetWare 4.x/5/6)
Remote printer mode (up to 8 servers)
Print server mode (up to 8 servers, 32 queue)
Frame automatic detection from IEEE 802.2, IEEE 802.3, Ethernet-II or SNAP frame type

HP-compatibility

LAN board supports the compatibility function of Hewlett Packards JetDirect series of print server This enables you to administrate via JetAdmin/WebJetAdmin and also support Jetdirect Printing Functions (TCP/IP #9100 printing, Direct IPX Printing)


TIP

- JetAdmin enables you to manage IPX/SPX and TCP/IP devices.
- TCP/IP model supports only the printing utility (TCP/IP #9100 printing) of JetDirect. It does not support Direct IPX Printing.

-JetAdmin-compatibility

LAN board is compatible with JetAdmin and can be used for administration and configuration.

JetAdmin is a network printer administration utility available commonly for the JetDirect series .


TIP

- LAN board does not support all the features of JetAdmin.
- Refer to JetAdmin help option for the usage of JetAdmin.

-WebJetAdmin-compatibility

LAN board is compatible with WebJetAdmin and can be used for configuration and administration.

WebJetAdmin is a sophisticated network printer administration utility for use in large-scale intranet.


TIP

- LAN board does not support all the features of WebJetAdmin.
- Refer to WebJetAdmin help option for the usage of WebJetAdmin.

-JetDirect port-compatibility

LAN board is compatible with JetDirect port, which enables you to share printers in a small-scale environment where no server exists. TCP/IP or IPX/SPX protocol can be used for printing.