



ThinConnect4 User Manual

EXP Computer, Inc.



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FCC COMPLIANCE STATEMENTS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the Distance between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

CAUTION

CHANGE OR MODIFICATIONS NOT EXPRESSLY APPROVED BY PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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Chapter 1 Getting Started

- 1.1 Feature
- 1.2 Contents in Package

1.1 Features

ThinConnect4 is an integrating HUB, Router, and two high-speed serial interface ports. The equipment also has IP sharing, E-Mail sharing and Remote Access Service (RAS) functions. ThinConnect4 is installed as part of Local Area Network (LAN) suitable for a Small Office Home Office (SOHO).

ThinConnect4 various connection functions

- ISP Dial-Up IP Connection
- RAS Client Dial-Up IP Connection
- RAS Server IP Connection
- Leased Line IP Connection
- ISP Dial-Up IP Connection + RAS Server IP Connection
- RAS Client Dial-Up IP Connection + RAS Server IP Connection
- ISP Networking Dial-Up IP Connection
- Networking Dial-Up IP Connection
- ISP Leased Line IP Connection

IP Masquerade

This IP sharing function allows more than one personal computer (PCs) to simultaneously connect to the Internet.

Call Back

This feature reduces the telephone charges of the individual who calls in and tries to access a LAN using RAS (Remote Access Service) Server. The ThinConnect4 will call back a user if the user name and password has been authenticated.

Automatic Connection and Disconnection

Automatic connection: By starting an Internet application (e-mail, WEB browser etc.), ThinConnect4 begins Dial-up automatically.

Automatic disconnection: ThinConnect4 automatically disconnects from an ISP when there is no communication activity for a period of time.

Firewall Protection

By setting the filter information to ThinConnect4 beforehand, the router will monitor all incoming packet data and protect your network.

DHCP Server

ThinConnect4 has a built-in Dynamic Host Configuration Protocol Server which provides a dynamic IP address setting for PCs.

E-Mail Sharing

ThinConnect4 has an E-Mail sharing feature which allows all users to have his or her private e-mail from a single e-mail account.

High Speed Serial Interface

Two RS-232C high-speed serial interfaces with 460.8kbps (Max.) data transmission rate.

Setup Utility

User friendly Setup utility for easy installation, even for a beginner.

Flash ROM

The control program is in Flash ROM. You can easily upgrade firmware if necessary.

End of 1.1 Feature

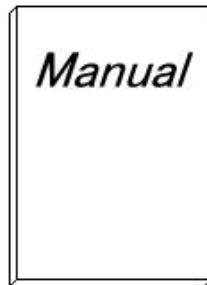
1.2 Contents in Package

The following items should be included in your package.
If you are missing any of these items please contact your retailer.

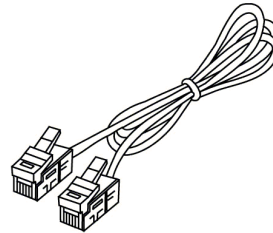
- **ThinConnect4**



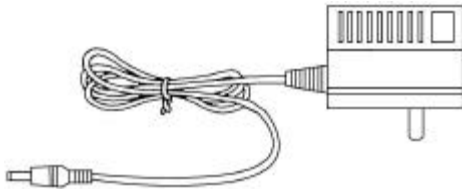
- **User's Manual**



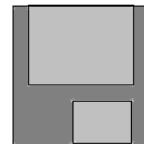
- **10BASE-T straight cable**



- **AC adaptor**



- **Setup Utility floppy diskette**



*Note: A copy of the ThinConnect4 Setup Utility diskette is also available at
<http://www.expnet.com>*

End of Contents in Package

Chapter 2 Prepare for Installation

- 2.1 Components of System**
- 2.2 Your ThinConnect4**
- 2.3 How to prepare LAN**
- 2.4 MODEM/TA Installation on Set-Up PC**
- 2.5 Cable Connections**
 - 2.5.1 Serial Cable (MODEM/TA)
 - 2.5.2 AC Adapter
 - 2.5.3 10BASE-T Cable (PC connection)
- 2.6 Windows 95/98 Setting for LAN Connection**
 - 2.6.1 Verify the TCP/IP protocol
 - 2.6.2 TCP/IP Installation
 - 2.6.3 TCP/IP Setting

2.1 Components of Systems

The following additional system components needed for setting up a Local Area Network with the ThinConnect4.

Connecting four PCs or less

- MODEM or Terminal Adapter with DSU (Data Service Unit).
Choose MODEM (regular phone line) or TA (ISDN line) corresponds to your telephone network. If using TA, please make sure the DSU is included.
- 10BASE-T Ethernet Card (Network Adapter Card)
Install in each PC.
- 10BASE-T Ethernet straight cable (One included in the package)
This cable connects each PC to the ThinConnect4.

Connecting five PCs or more

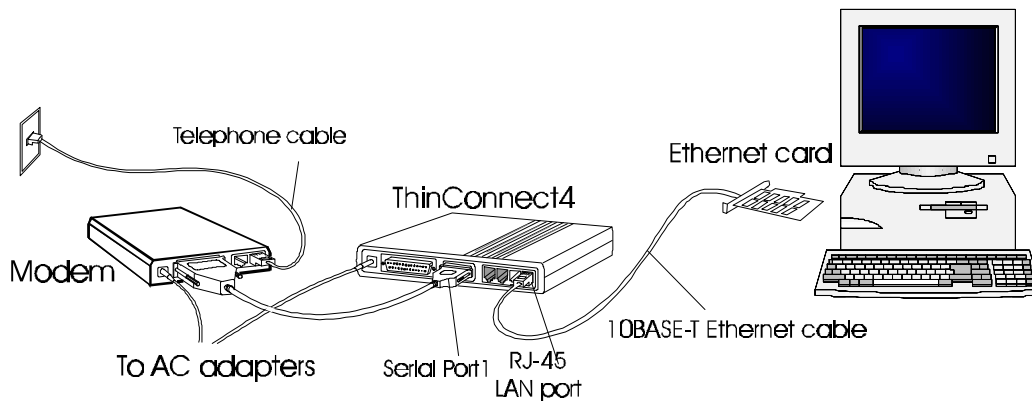
- All the system's component in 2.1.1
- Ethernet HUB
If using an Ethernet HUB without a cascade switch, connect a 10BASE-T **crossover cable** to the ThinConnect4.

ISP (Internet Service Provider) Connection

Sign up with a reliable ISP (If you do not have one) and obtain the following informations.

- Dial-up communication parameter (Number of Databit, Parity, Stop bit)
- Domain Names Server IP address (Call your ISP customer service)
- Dial-up user ID and Password
- POP3 e-mail server IP address_(Call your ISP customer service)

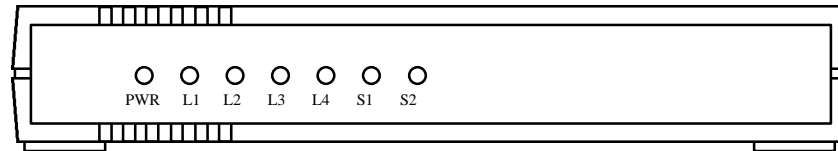
The minimum system requirement using a modem connection



End of 2.1 Components of Systems

2.2 Your ThinConnect4

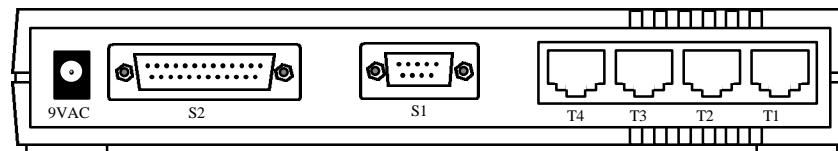
● Front Panel



Monitor LED: Shows ThinConnect4 working status.

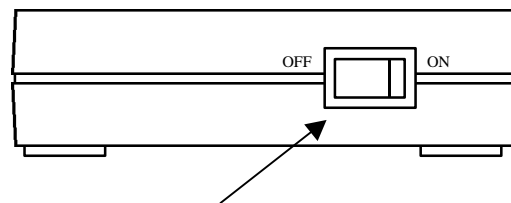
- S1 Light when serial port 1 is sending/receiving data.
- S2 Light when serial port 2 is sending/receiving data.
- L1 Light when 10BASE-T port 1 is confirming link or receiving data.
- L2 Light when 10BASE-T port 2 is confirming link or receiving data.
- L3 Light when 10BASE-T port 3 is confirming link or receiving data.
- L4 Light when 10BASE-T port 4 is confirming link or receiving data.
- PWR Light when ThinConnect4 is powered on.

● Rear of ThinConnect4 (Connectors)



- T1 Port 1: Connects to Ethernet adapter or HUB through 10BASE-T cable.
- T2 Port 2: Connects to Ethernet adapter or HUB through 10BASE-T cable.
- T3 Port 3: Connects to Ethernet adapter or HUB through 10BASE-T cable.
- T4 Port 4: Connects to Ethernet adapter or HUB through 10BASE-T cable.
- S1 Serial Port 1: Connects to MODEM or TA.
- S2 Serial Port 2: Connects to MODEM or TA.
- 9 VAC Power connector: Connects to the AC adapter in the package.

● Right Side of ThinConnect4



Power Switch: ThinConnect4 power on/off switch.

End of 2.2 Your ThinConnect4

2.3 How to Prepare Your LAN

In order to set up your Local Area Network with the ThinConnect4, we recommend user set up all the PCs first then the ThinConnect4. One of the PCs on your network should have ThinConnect4 setup utility installed. A system administrator can configure all the ThinConnect4 functions from this Set-Up PC.

Setting up your PCs

All PCs should have a 10BASE-T Ethernet card (network adapter card) install along with associated device driver. Since the installation involves networking, it may need additional network supporting file or driver. Please have Windows 95/98 CD-ROM or floppy handy during installation. Some PC may have Windows 95/98 pre-installed. Make sure you know the path to your Windows 95/98 files.

Note: The ThinConnect4 supports 10BASE-T only. Consult the Ethernet card manual to verify your card's interface.

PC running ThinConnect4 Setup Utility (Set-Up PC)

One of the PCs on your LAN should be dedicated as a **Set-up PC**. Please follow following steps to complete the installation for the Set-Up PC:

1. Install ThinConnect4 Setup Utility (Section 3.1, Page 21 to 32)
Note: The Setup Utility is compatible with Windows 95/98 and Windows NT.
2. MODEM/TA Installation on Set-Up PC (Section 2.4, Page 8)
3. Cable Connections (Section 2.4, Page 9 to 12)
4. PC Windows 95/98 settings for LAN Connection (Section 2.6, Page 13 to 19)

Setting up other PCs without ThinConnect4 Setup Utility

For those PCs without the ThinConnect4 Utility, include those PCs connected through a HUB. Please follow these two steps:

1. 10BASE-T cable (PC Connection) (Section 2.5.3, Page 11 to 12)
2. PC Windows 95/98 settings for LAN Connection (Section 2.6, Page 13 to 16)

End of 2.3 How to Prepare Your LAN

2.4 MODEM/TA Installation on Set-Up PC

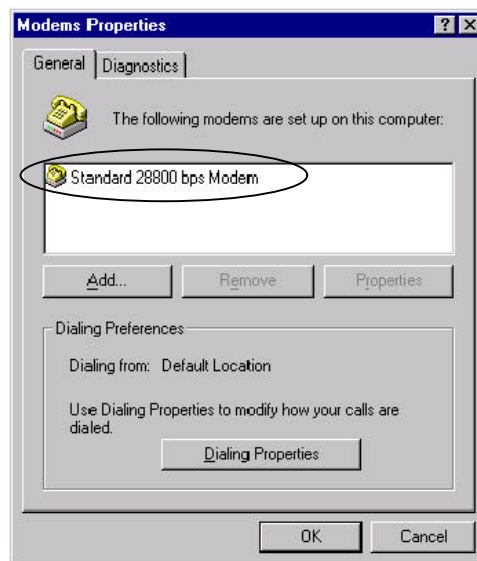
In order to initialize a modem to work with the ThinConnect4 properly, the ThinConnect4 setup utility requires a Modem setup information file (INF file).

User should follow the modem manufacturer instruction. Once the modem is installed the ThinConnect4 setup utility will be able to select the modem from “Windows” list.

Note: These modem installation procedures apply to the Set-up PC ONLY.

Verify the modem installation

Double-click “My Computer” -> “Control Panel” -> “MODEM”, the following “Modem Properties” window will show:



Your modem should be listed in the “Modems Properties”.

It is recommended to test the modem by dialing up to your ISP.

Modem or TA setting

The DCD(RLSD) signal from the Modem or TA should be set for active mode.

Example with general AT command:

AT&C1: DCD(RLSD) follows the state of the carrier

Please refer to the modem or TA User’s manual for more details.

Add the AT command to “Extra AT Commands (Page 44)” field if needed.

End of 2.4 MODEM/TA Installation on Set-Up PC

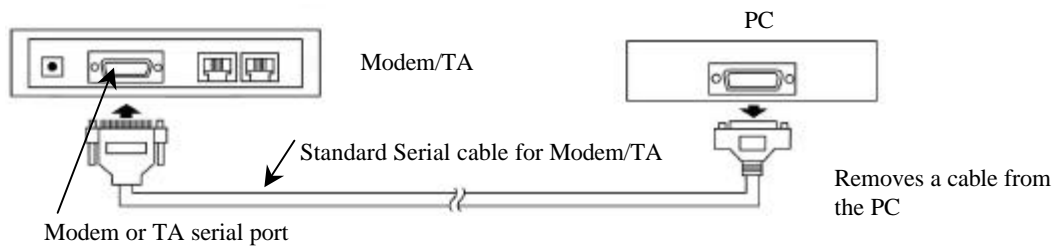
2.5 Cable Connections

2.5.1 Serial Cable (MODEM/TA)

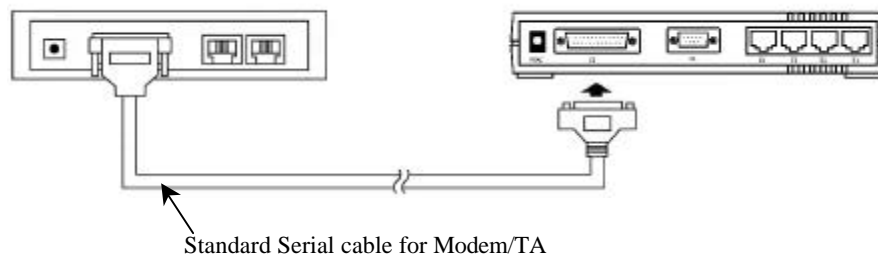
Use only standard serial cable provided by MODEM or TA. If the cable provided with MODEM or TA has different shape or PIN assignment, please use proper adapter (not include) to match the ThinConnect4 serial (S1 or S2) port connector.

Note: Make sure all devices are powered off, before connecting serial cable.

1. If the modem or TA is currently connected to the PC, remove the serial cable from the PC side.



2. Connect a standard serial cable (RS-232) to a serial connector (S1 or S2) on the back of ThinConnect4.



Note: If your application need only one modem connects the cable to serial port 1.

Go to next page

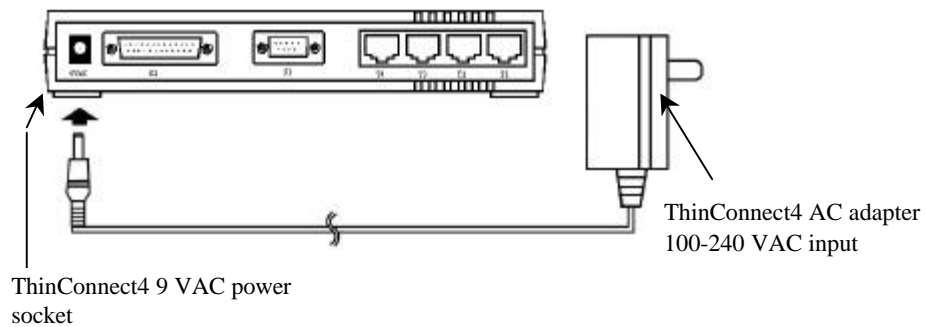
<10> ThinConnect4

2.5.2 AC Adapter

Before connecting the AC adapter to ThinConnect4, make sure the power switch is off.

Connect the power (round) connector into the input socket (9 VAC) in the back of ThinConnect4.

Plug the AC adapter to a wall receptacle.



Observe the following safety precaution

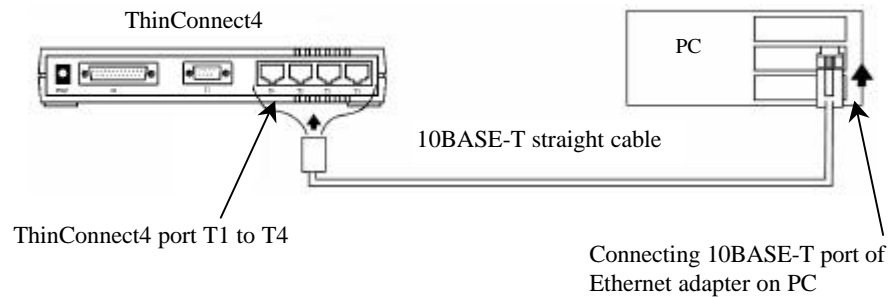
- Use the adapter enclosed in this package only. (The output is **9 VAC**)
- Do not use the power source other than your home/business electric power.
- Plug in the AC adapter firmly.
- Do not touch the plug of AC adapter with any metal such as a screwdriver.
- Do not pull on the AC cord.

Go to next page

2.5.3 10BASE-T Cable (PC connection)

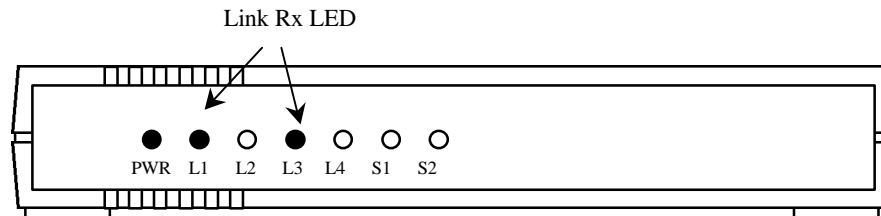
Turn the PC and ThinConnect4 power off before connecting the Ethernet cable.

1. Use 10BASE-T straight cable to connect Ethernet adapters and ThinConnect4 10BASE-T ports (T1 to T4).



2. Power on ThinConnect4 and PC. Make sure that the Link Rx LED lit up in correspondence to the 10BASE-T port.

For example: If you connect the cables to port T1 and T3 the Link Rx LED L1 and L3 should light up. If the LED does not light up, go to the next page.



Note: If you are installing your LAN with a HUB to ThinConnect4, make sure the HUB connection has a cascade (invert lines) switch, otherwise, connect with 10BASE-T crossover cable.
Insert the RJ-45 connector firmly until you hear a click sound to secure lock of the cable.

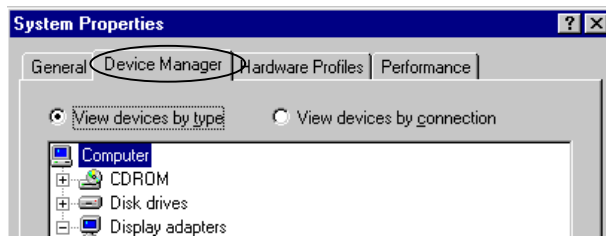
Windows 95 user:

Please proceed to 2.6 PC Windows 95 Settings for LAN Connection
 (Page 13 to 19)

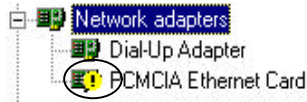
Troubleshooting the Link RX LED

- Make sure there is power to the ThinConnect4 and PC.
- Check if the RJ-45 connector on both ends is secured.
- Verify the Ethernet card installation on the PC.

Double-click “My Computer”, “Control Panel”, “System”
Click “Device manager”.



Select “Network adapter” from the device menu. Click “+” sign on the left.
Please check if there is mark “!” at front of the Ethernet card name.



If there is a “!” mark, the Ethernet card installation is not complete.
See troubleshooting guide in your Ethernet card User manual for more detail

End of 2.5 Cable connection

2.6 Windows 95/98 Settings for LAN Connection

This section applies to all PCs connect to ThinConnect4.

In order to connect to the Internet successfully, all PCs connected to the ThinConnect4 have to have the TCP/IP protocol installed and set properly.

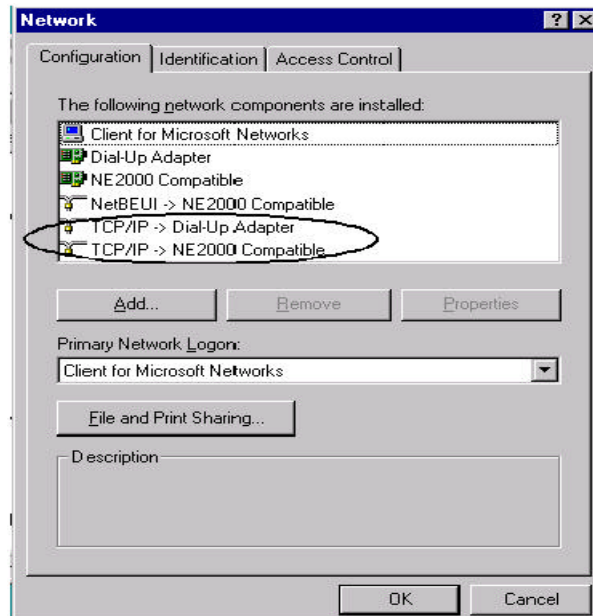
2.6.1 Verify the TCP/IP protocol installation

To verify if TCP/IP protocol is installed properly, please proceed to the following steps.

Double-click on “My Computer” -> “Control Panel” -> “Network”

In Network window, check if TCP/IP is shown and properly set up.

(The following display shows the TCP/IP protocol is already installed.)



If TCP/IP protocol has properly installed, please proceed to **2.6.3 TCP/IP Settings** (Page 16).

If there is **NO** TCP/IP protocol show in the “Network” window show above, go to the next page to install TCP/IP protocol.

2.6.2 TCP/IP protocol installation

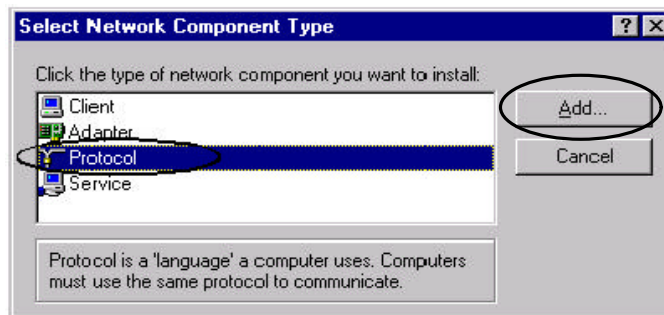
Windows 95/98 CD-ROM requires

During the TCP/IP protocol installation, you will need Windows 95/98 CD-ROM to complete the task.

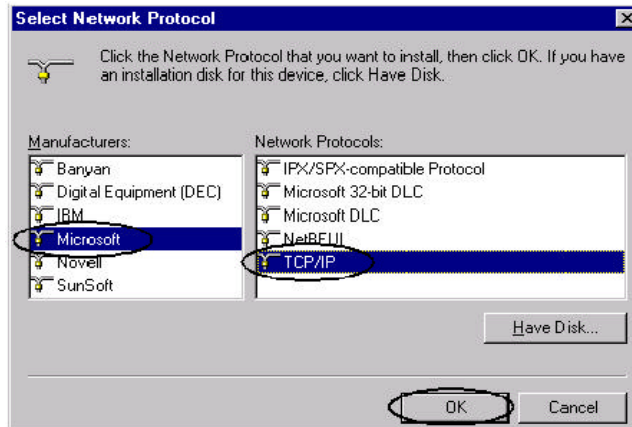
- Note:*
1. If you are working on a PC that has Windows 95/98 pre-installed and the TCP/IP installation procedures request the Windows 95/98 CD-ROM, you may try the folder `C:\windows\options\cabs`. This is where a copy of the Windows 95/98 can be found.
 2. In some computers the default path for the CD-ROM drive is incorrect. You may have to adjust the path as needed. (`D:\win95` or `E:\win95`)

The procedures to install TCP/IP

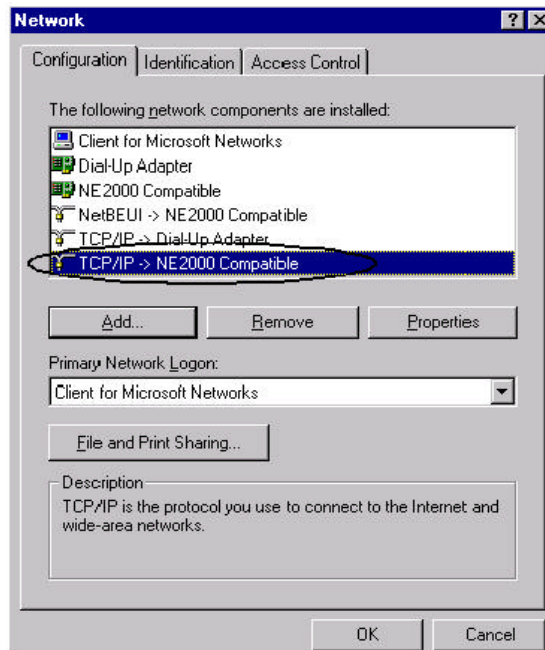
1. Please refer to the window on previous page of **2.6.1 Verify the TCP/IP protocol Installation** and click on “Add” button.
2. Choose protocol and click “Add” below window.



3. On the window below, choose **Microsoft** in **Manufacturer** and **TCP/IP** in Network Protocols and click "OK".



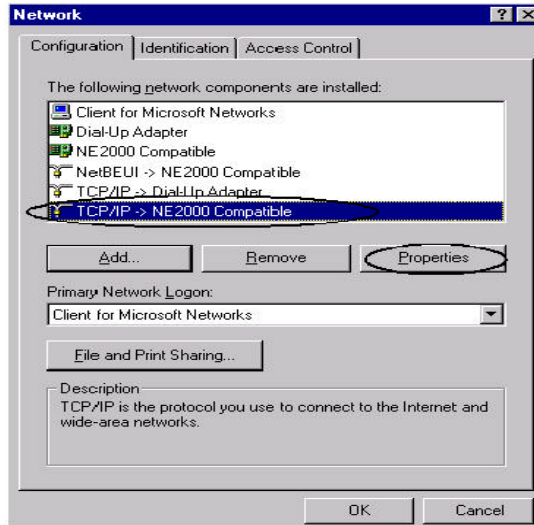
4. Verify if the TCP/IP protocol has been correctly setup with your Ethernet card. (The example in the window below using NE2000 compatible adapter) If Dial-Up Networking is not installed, the system will not show the dial-Up adapter and the TCP/IP.



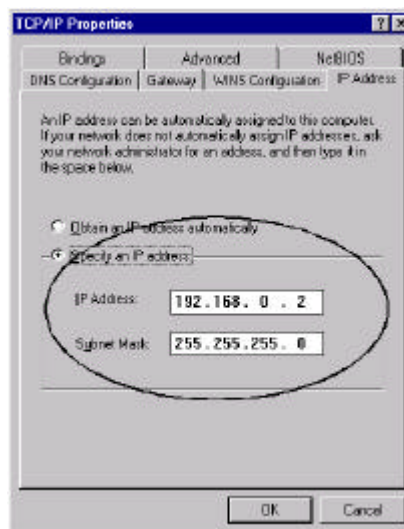
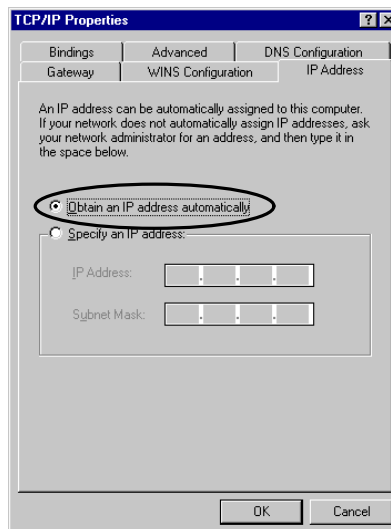
<16> ThinConnect4

2.6.3 TCP/IP Settings

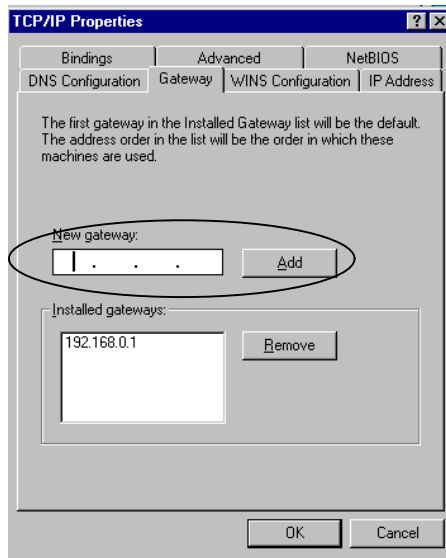
1. Choose “TCP/IP -> Ethernet card name” and click on “Property”.



2. Click “IP Address” Tab and click “Obtain an IP address automatically”(recommended).
Continue to the next page. (Gateway)
3. If you are not using “Obtain an IP address automatically (DHCP)” function, set “IP Address and Subnet Mask”, then continue to the next page. (Gateway)



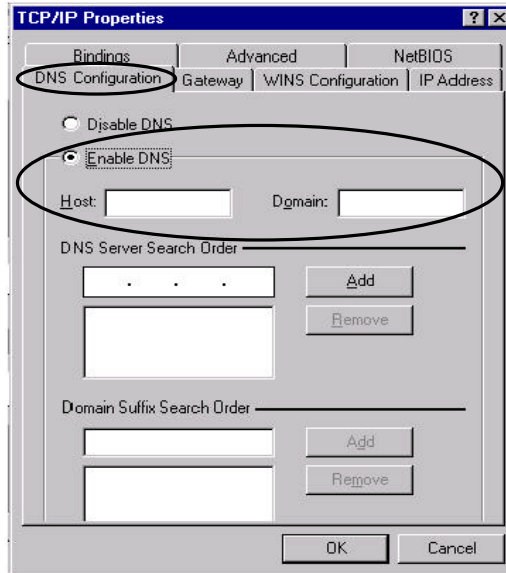
- Click the Gateway tab.
In the “New gateway”, put in the ThinConnect4 IP address (Default 192.168.0.1).
Click the “Add” button. New Gateway IP address will be added into the “Installed Gateways”.



*Note: If you change the ThinConnect4 IP address, make sure the “Installed gateway” IP address **match** the ThinConnect4 IP address. Otherwise the ThinConnect4 Setup Utility will report “No ThinConnect4 on your network” and prevent further configuration. The Gateway setting mismatch is the most common mistake in setting the ThinConnect4 with LAN system.*

<18> ThinConnect4

5. Click “DNS Configuration” Tab and click “Enable DNS” button.

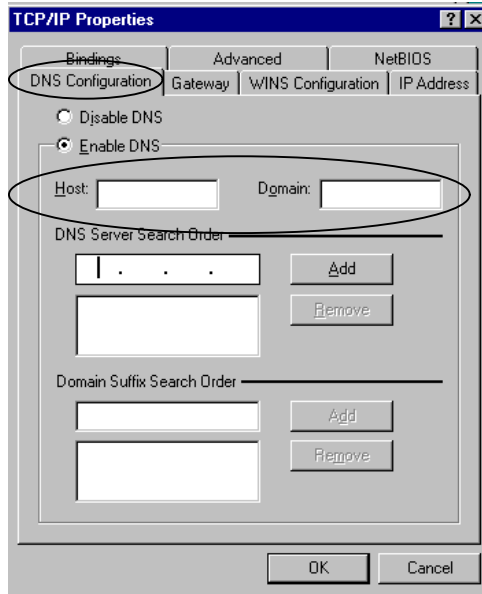


Enter each of the following contents:

- Host: PC Host Name (PC name).
- Domain: DNS Server domain name. (See note)
- DNS Server Searching Order: DNS Server IP Address. (See note)

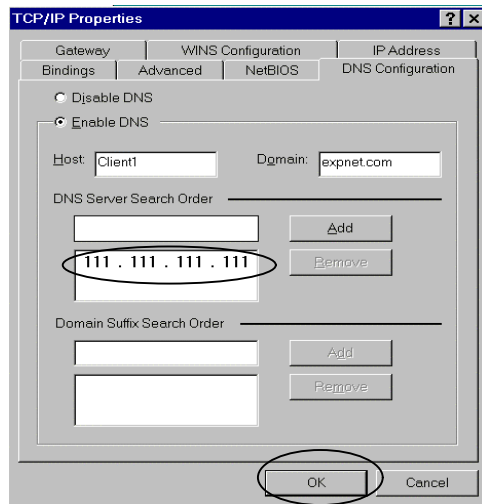
Note: In general an Internet Service Provider (ISP) will have a Domain Name Server (DNS). You have to contact the ISP for the name of DNS server and associate IP address. If there is more than one server, you should enter all of them. If there is a DNS server on your LAN, you should enter that information here.

6. Enter DNS Server settings and click “Add” button.



Note: Data example in this window is for reference only.

7. The DNS IP address will be added on the list of DNS Server Search order. Click “OK” button.



Please follow the instruction and restart your computer, then go to **Chapter 3 Basic Setup** (Required) on next page.

End of 2.6 Windows 95/98 Settings for LAN Connection

Chapter 3 Basic Setup

3.1 Installing ThinConnect4 Setup Utility

- 3.1.1 Before Installation
- 3.1.2 Installation

3.2 Setup Procedure

3.3 Common Setup

- 3.3.1 Start Up ThinConnect4 Setup Utility
- 3.3.2 Searching for ThinConnect4
- 3.3.3 Nick Name Setup and Confirmation of Firmware Version
- 3.3.4 ThinConnect4 LAN Settings
- 3.3.5 DHCP Server Settings
- 3.3.6 Password Settings
- 3.3.7 Serial Port option
- 3.3.8 Settings for MODEM/TA connection
- 3.3.9 DTE speed

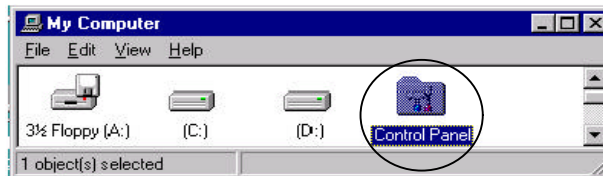
3.1 Install ThinConnect4 Setup Utility

The ThinConnect4 Setup is a utility program helps user configure ThinConnect4's variety of functions. Before you start installing the utility, see notes below:

- ThinConnect4 utility is on the Installation floppy disk, to install the program requires a floppy disk drive.
- ThinConnect4 utility can only be run under Windows 95/98 or Windows NT. However, after ThinConnect4 has been properly configured, most Internet functions are possible from most of OS.
- Do not use "Resume" function on your PC (especially notebook PC) under Windows NT 4.0.

3.1.1 Installation

1. Double-click on "Control Panel" icon in "My Computer".

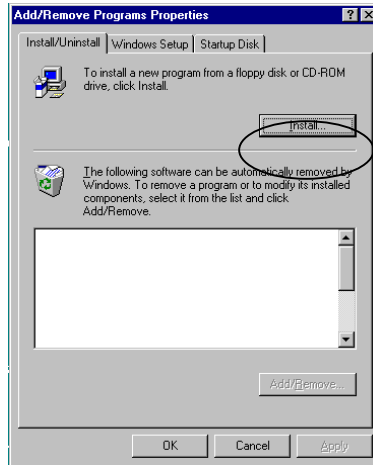


2. Double-click on "Add/Remove Programs" icon.

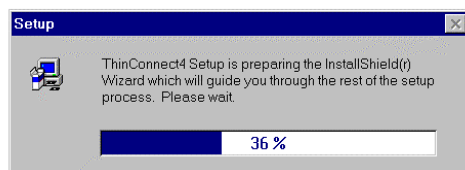
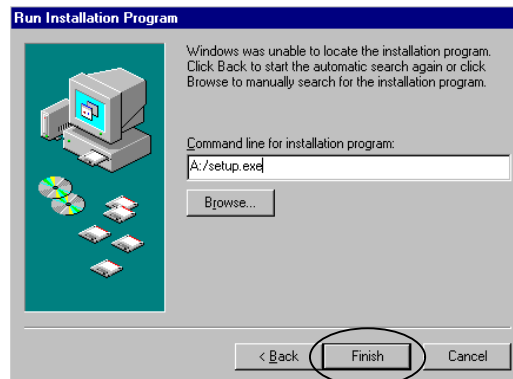


<22> ThinConnect4

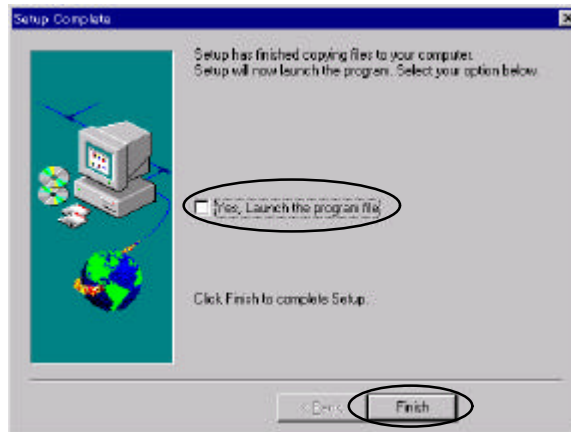
Click "Install" button.



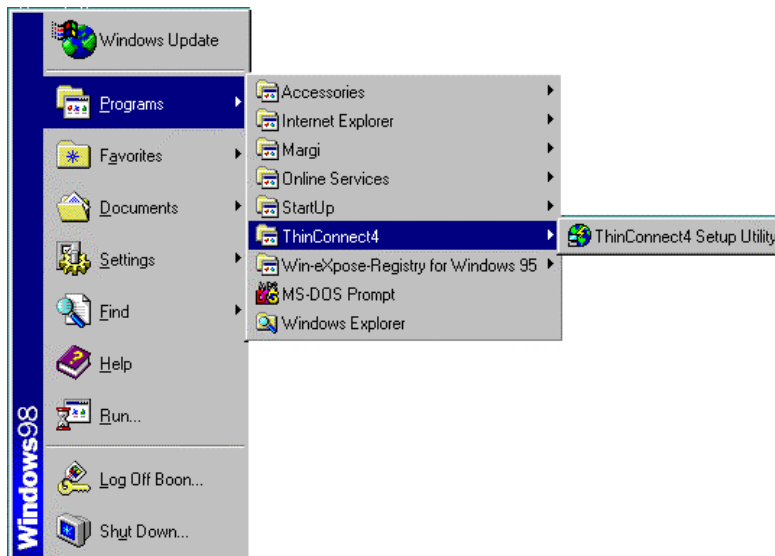
3. Insert the ThinConnect4 diskette into the drive and click "Next" button.
4. The "Add/Remove Program" will search for setup.exe program in the floppy disk and then display on command line: **A:\SETUP.EXE** click "Finish"



Follow instructions on the screen. The setup is completed when the following window is displayed. Click “Finish”



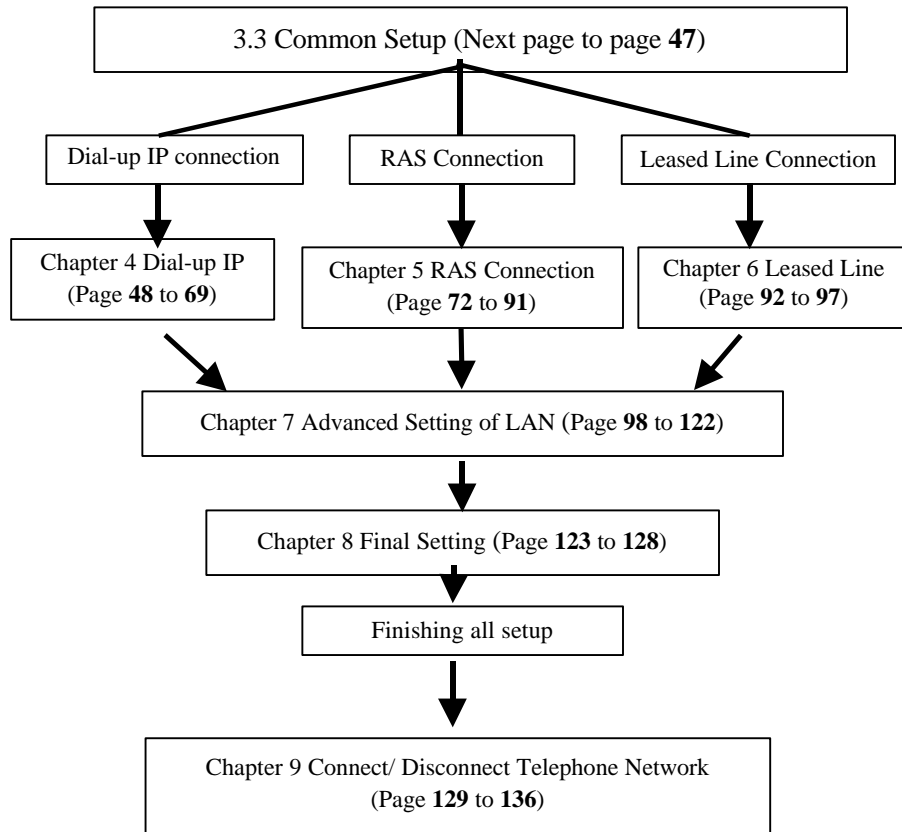
5. To start the ThinConnect4 setup utility or verify the installation:
 - Click the “Start” button on the Task-bar. (Lower left-hand corner)
 - Choose “Programs” then ThinConnect4 -> ThinConnect4 Setup Utility.



End of 3.1 Install ThinConnect4 Setup Utility

3.2 Setup Road Map

Since the ThinConnect4 have different types of connections, user should consult the illustration below and proceed according to his or her type of connection.



Chapter 4 Dial-up IP:

- 4.1 ISP Dial-Up IP Connection Settings (Page 48)
- 4.2 ISP Networking Dial-Up IP Connection Settings (Page 60)
- 4.3 Networking Dial-Up IP Connection Settings (Page 63)

Chapter 5 RAS Connection:

- 5.1 RAS Client Dial-Up IP Connection Settings (Page 72)
- 5.2 RAS Server IP Connection Settings (Page 80)

Chapter 6 Leased Line:

- 6.1 ISP Leased Line IP Connection Settings (Page 92)
- 6.2 Leased Line Connection Settings (Page 93)

End of 3.2 Setup Road Map

3.3 Common Setup

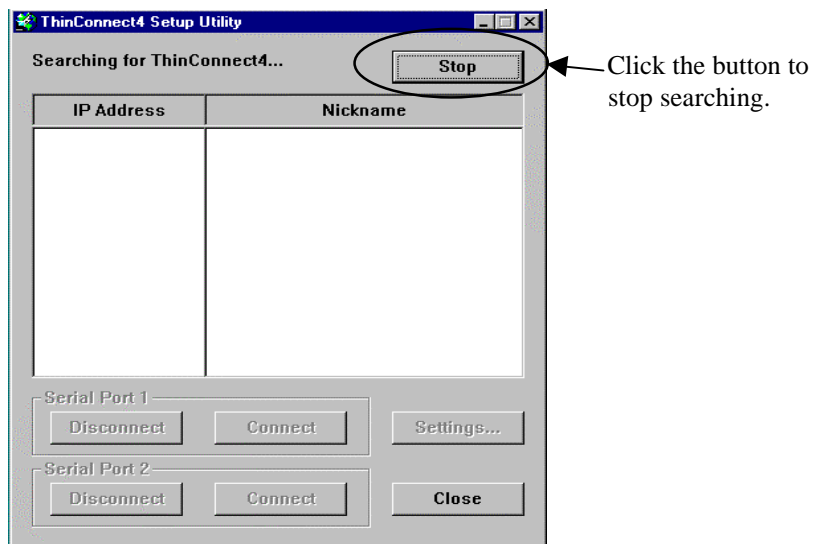
3.3.1 Start the ThinConnect4 Setup Utility

Click “Start” button on task bar and select Program ->ThinConnect4 (or other location assigned during installation) and click on “ThinConnect4 Setup Utility”.

3.3.2 Searching for ThinConnect4

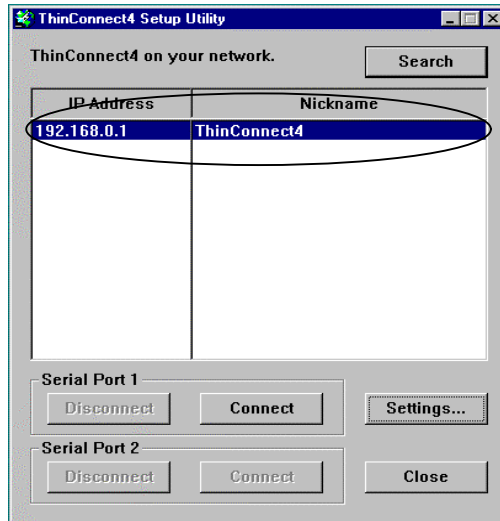
1. Upon starting up the ThinConnect4 utility, the program will start searching for any ThinConnect4 connection to the LAN. Click on “Stop” button to stop searching.

Note: If you have more than one ThinConnect4 on LAN, make sure each one has a unique IP address to avoid any collision.

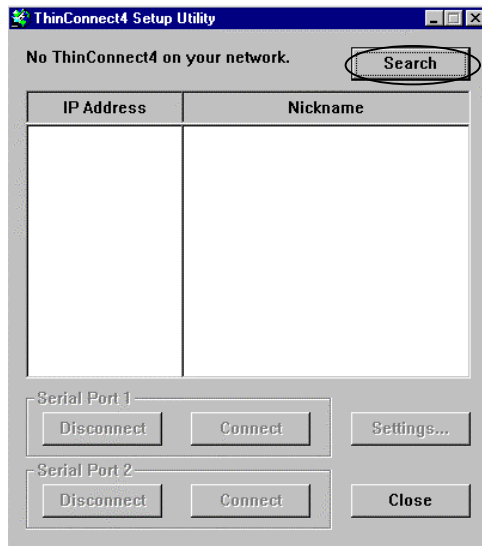


<26> ThinConnect4

- All ThinConnect4(s) connected with the LAN will be searched and listed.



- If the setup utility cannot find any ThinConnect4, check the LAN connection and then click "Search" again.



Note: If the list is still empty, please proceed to "ThinConnect4 can not be found" on next page.

ThinConnect4 can not be found

Follow some of these steps, which may help you trouble shoot:

Check the RJ-45 connectors for the PC and ThinConnect4. The connector should not be loose and click “Search” again.

Check if the power switch is on (The power LED should light up) and click “Search” again.

Check if the Link Rx monitor LED in the front of ThinConnect4 is lit up.

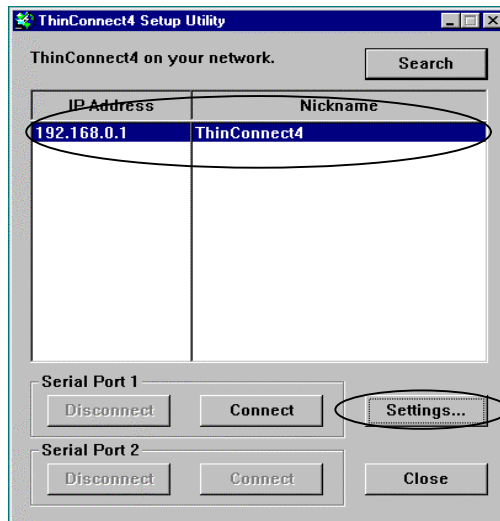
Please refer (**When Link Rx monitor lamp does not light**) page 12.

Check the TCP/IP Protocol setting again.

Please refer to **2.6 Windows 95 Settings for LAN Connection** (Page 13 to 19)

PC setup.

4. Choose the ThinConnect4 to setup by highlighting it and click “Settings”.



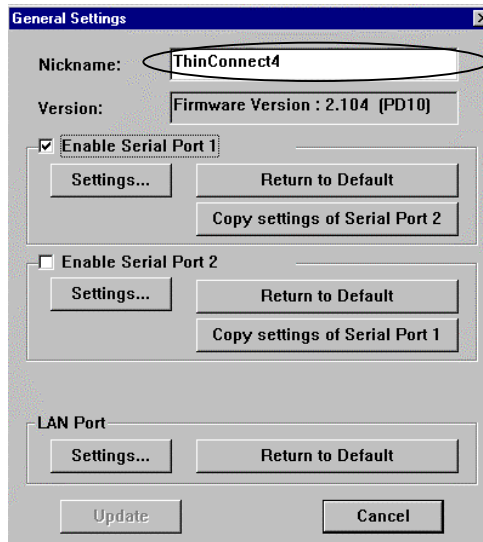
Note: You can exit the ThinConnect4 utility by clicking on “Close” at any time.

<28> ThinConnect4

3.3.3 Nickname Setup and Firmware Version

Nickname Setup

1. After finishing the setting from **3.3.1 Start the ThinConnect4 Setup Utility** through **3.3.2 Searching for ThinConnect4** (Page 25 to 27), the window below will be display..



2. Enter a name you prefer in the “Nickname” field. The maximum string lengths are 32 characters.

Note: When there are more than one ThinConnect4 on LAN, the nickname will help user identify each one of them.

In the last window, you can click “Close” button. This will put you back to the 3.3.2 Searching for ThinConnect4 (on page 27 step 4).

Firmware Version

Below the nickname, there is a field shows the ThinConnect4 firmware version. You can verify the ThinConnect4 firmware revision here.

3.3.4 ThinConnect4 Settings

This section describes how to setup ThinConnect4 IP address and details setting for LAN static routing. The IP address and Subnet Mask for the ThinConnect4 have their default setting as:

IP Address: 192.168.0.1
Subnet Mask: 255.255.255.0

Note: If you are using the default value, go to section **3.3.5 Options of Serial Port** (Page 37) for next step.

In a normal Dial-Up IP Connection, set up for static routing is not necessary except for the following conditions:

1. There are more than one ThinConnect4 on your LAN.
2. There are other router(s) on LAN beside ThinConnect4.

Note: If your system does not require Static Routing setting, please go to section **3.3.5 Options of Serial Port** (Page 37).

ThinConnect4 IP address setup

The following are for ThinConnect4 IP address setup.

- Use default IP (192.168.0.1) settings for ThinConnect4. Go to **3.3.5 Options of Serial Port** (Page 37).
- Add ThinConnect4 to existing LAN. Go to next page.
- Change IP address. Go to **Change/ Confirm ThinConnect4 IP Address** (Page 32).

Note: Even if there is an existing DHCP server in your LAN, the IP address setting of ThinConnect4 is still required. ThinConnect4 IP address cannot be distributed from DHCP server automatically. In this case, manually setting a unique IP address for ThinConnect4 in DHCP server is necessary. (Please contacts your network manager for all details.)

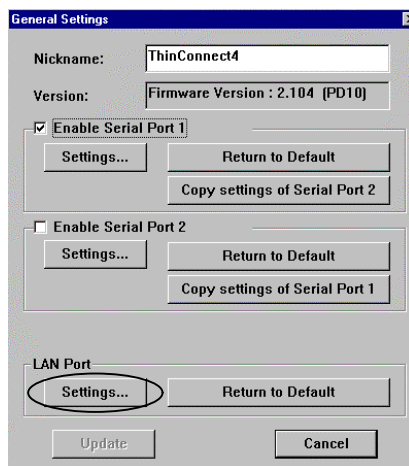
<30> ThinConnect4

Add ThinConnect4 to existing LAN

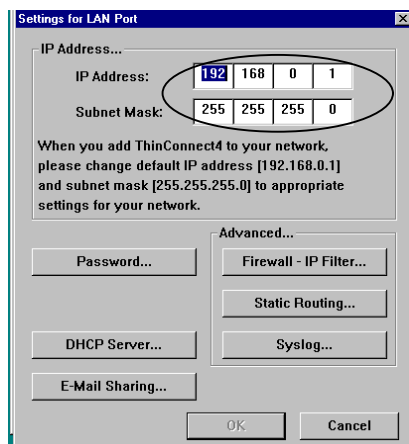
If you are adding ThinConnect4 to an existing LAN which IP address setting is different from ThinConnect4 default value (192.168.0.1, Subnet Mask: 255.255.255.0), then the ThinConnect4 IP should be changed to meet with those existing setting. Please contact the network manager for proper IP and Subnet Mask setting.

Changing IP address and Subnet Mask

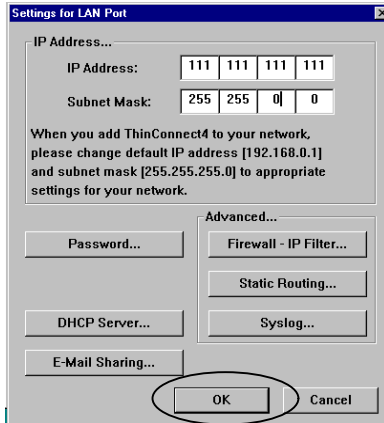
1. In the window on page 27 step 4), click on the “Settings”, and then click “Settings” button in the LAN Port section.



2. In the window below, enter the IP Address and Subnet Mask you wish to use.
 - IP Address: Enter ThinConnect4 new IP address.
 - Subnet Mask: The Subnet Mask of the network.

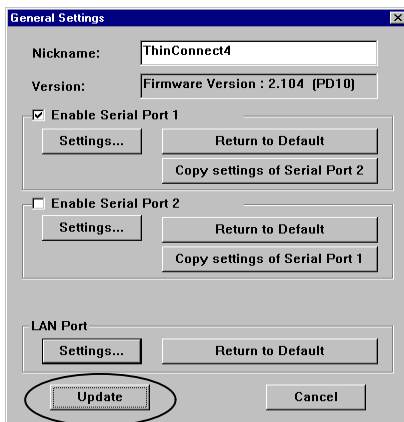


3. If all information is correct, click the “OK” button.

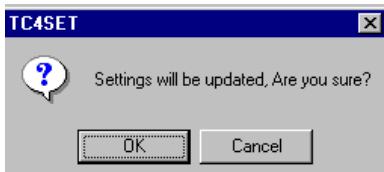


The value in the window is just an example. Please enter your proper setting to meet with your LAN requirements.

4. Click the “Update” button.



5. Click the “OK” to overwrite the settings made to ThinConnect4, or click the “Cancel” button to undo the change.



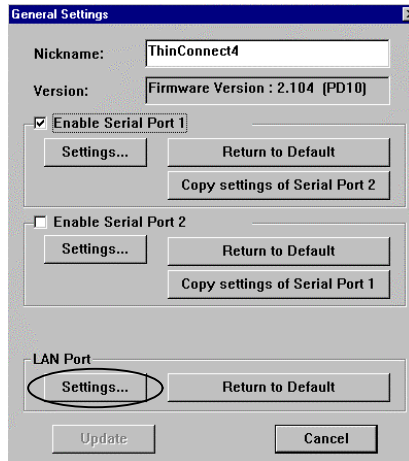
6. When you click “OK”, ThinConnect4 will be updated and reboot. The Setup Utility will start searching again. Please refer to section **3.3.2 Searching for ThinConnect4** (Page 25 to 27) Step 1 to 4) to proceed.

<32> ThinConnect4

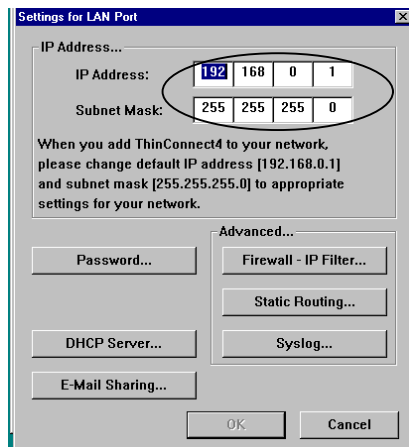
Changing and Verifying ThinConnect4 IP Address

If for any reason you wish to change and/or verify the ThinConnect4 IP address, you can do so by starting the ThinConnect4 set up utility. From the window on page 27 step 4), click the “Settings” button :

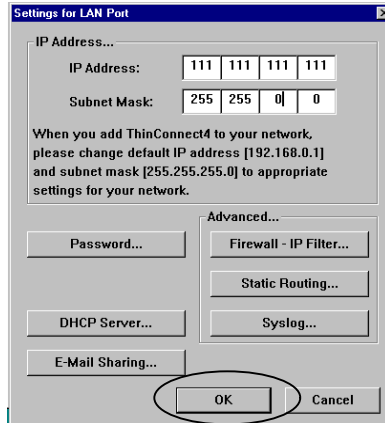
1. Click the “Settings” button in the LAN Port section.



2. In the window below, enter the IP Address and Subnet Mask you wish to use.
 - IP Address: Enter ThinConnect4's new IP address.
 - Subnet Mask: The Subnet Mask of the network.

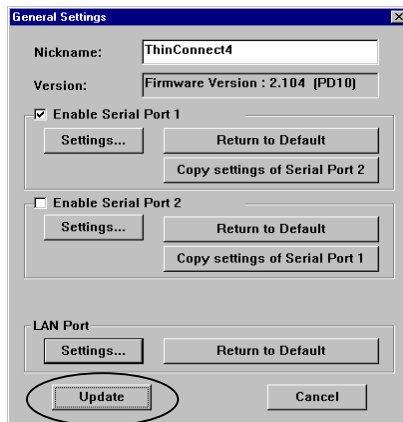


3. If all information is correct, click the “OK” button.

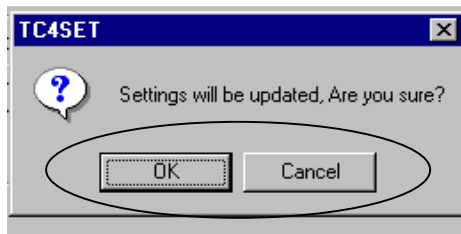


The value in the window is just an example. Please enter your proper setting to meet with your LAN requirements.

4. Click the “Update” button.



5. Click the “OK” to overwrite the settings made to ThinConnect4. Click the “Cancel” button to undo the change.



6. When you click “OK”, ThinConnect4 will be updated and reboot.

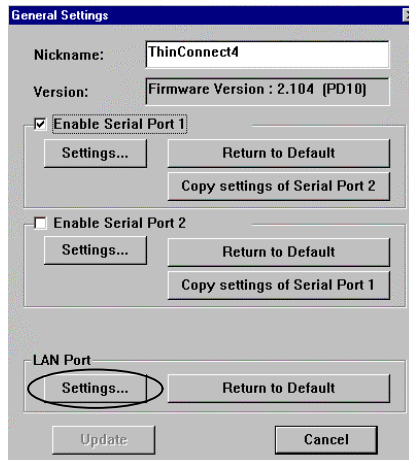
There is more detail on “Advanced” setting on page 97.

<34> ThinConnect4

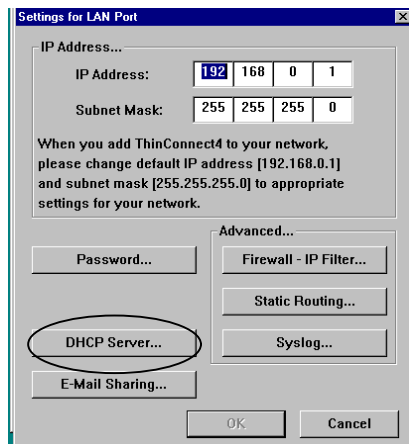
3.3.5 DHCP Server Settings

DHCP(**D**ynamic **H**ost **C**onfiguration **P**rotocol) Server provides a dynamic IP address to PCs connected to the ThinConnect4, follow the steps below to set up the DHCP server:

1. Click the “Settings” button in LAN Port setup.



2. Click the “DHCP Server” button.



3. We recommend user to select “Use DHCP Server Function”.
Otherwise, clear the check mark on “Use DHCP Server Function” and click “OK”.

The screenshot shows a 'DHCP Server' configuration window. The 'Use DHCP Server Function' checkbox is checked and circled in red. The Start IP Address is set to 192.168.0.2, Subnet Mask is 255.255.255.0, and Number of Addresses is 32 (Limited to 32 IPs). Other fields like Gateway, Primary DNS, Secondary DNS, Domain, and Lease Duration (24 Hours) are also visible.

Factory default:

When the ThinConnect4 IP address is set to default (192.168.0.1), the following parameters will be set to the DHCP Server setting:

- Start IP Address: 192.168.0.2
- Subnet Mask: 255.255.255.0
- Number of Addresses: 32
- Gateway: 192.168.0.1

As for the above default setting, the IP address distribution pool will start from “192.168.0.2” for a maximum of 32 Ips which ends at “192.168.0.33”. The DHCP sever can assign any IP address in this range to a PC.

If you are choosing factory default, continue to the next page.

Change DHCP setting:

Do not set the IP address that will overlap the existing address.

- Start IP Address: Start IP address pool assign to PC.
- Subnet Mask: Subnet Mask to assign to PC.
- Number of Addresses: Setting range is from 1 to 32.
- Gateway: This setting should be identical to the IP address for ThinConnect4

<36> ThinConnect4

4. Enter the DNS Server IP Address both Primary and Secondary (if your ISP have more than one server) then fill in the Domain name.

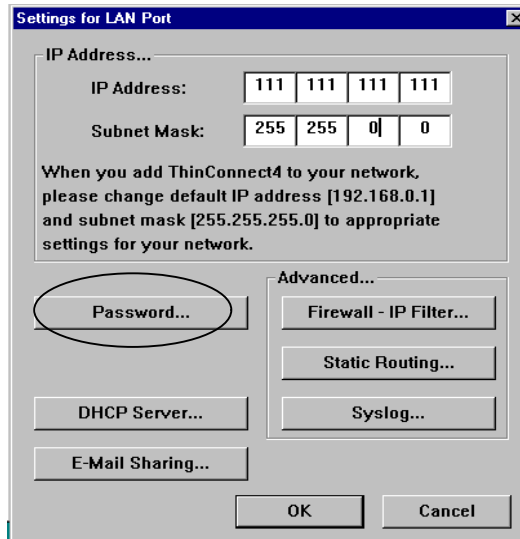
The screenshot shows the DHCP Server configuration window. The 'Use DHCP Server Function' checkbox is checked. The Start IP Address is 192.168.0.2 and the Subnet Mask is 255.255.255.0. The Number of Addresses is 32. The Primary DNS, Secondary DNS, and Domain fields are currently empty and are circled in red. The Lease Duration is set to 24 Hours. The OK button at the bottom is also circled in red.

- Primary DNS: IP Address of DNS Server, which is provided by your ISP.
 - Secondary DNS: If Secondary DNS is available, set IP Address in the Secondary DNS" field.
 - Domain: Enter Domain name from your ISP here.
5. Please enter the number of hours, which assigns the IP address for PC in the "Lease Duration" field.
 6. Verify all information, then click "OK".

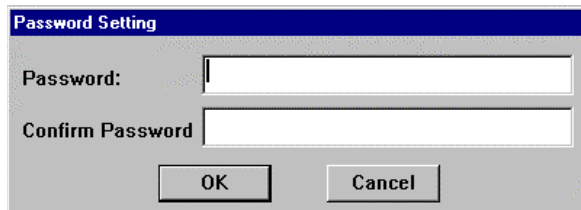
3.3.6 Password Settings

To prevent unauthorized changing of ThinConnect4's operation or parameters, we recommend setting up a password by follow these steps:

1. Click the "Password" button.



2. Enter the same password in two fields.



Make sure you enter an identical password then click the "OK" button.
You are now required to enter a password, in order to change any of ThinConnect4 setting.

Note: The password will be erased if user upgrades theThinConnect4 firmware.

3.3.7 Options for Serial Port

ThinConnect4 has seven basic connecting functions as listed below:

- ISP Dial-Up IP Connection
- RAS Client Dial-Up IP Connection
- RAS Server IP Connection
- Leased Line IP Connection
- ISP Networking Dial-Up IP Connection
- Networking Dial-Up IP Connection
- ISP Leased Line IP Connection

When using *one* serial port, you can choose one of eight types of connections below:

- ISP Dial-Up IP Connection
- RAS Client Dial-Up IP Connection
- RAS Server IP Connection
- Leased Line IP Connection
- ISP Networking Dial-Up IP Connection
- Networking Dial-Up IP Connection
- ISP Leased Line IP Connection
- ISP Dial-Up IP Connection + RAS Server IP Connection
- RAS Client Dial-Up IP Connection + RAS Server IP Connection

If you are using *both* serial ports, you can choose one of possible combination below:

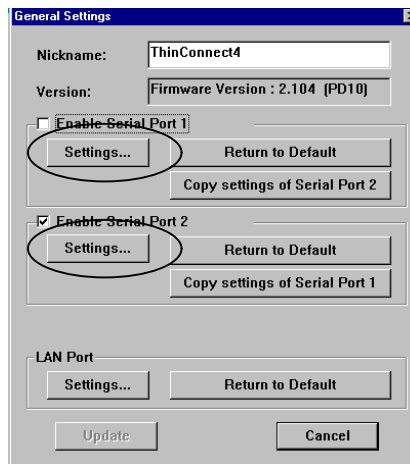
		Serial Port 2										
		ID	IDS	RC	RCS	RS	IN	N	ND	IL	L	LD
Serial Port 1	ID	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	IDS	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	RC	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	RCS	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	RS	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
	IN	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	N	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
	ND	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	IL	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A
	L	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
	LD	N/A	N/A	N/A	N/A	OK	N/A	OK	N/A	N/A	OK	N/A

- ID: ISP Dial-Up IP Connection
- IDS: ISP Dial-Up IP Connection + RAS Server IP Connection
- RC: RAS Client Dial-Up IP Connection
- RCS: RAS Client Dial-Up IP Connection + RAS Server IP Connection
- RS: RAS Server IP Connection
- IN: ISP Networking Dial-Up IP Connection
- N: Networking Dial-Up IP Connection (without “default gateway” settings)
- ND: Networking Dial-Up IP Connection (with “default gateway” settings)
- IL: ISP Leased Line IP Connection
- L: Leased Line IP Connection (without “default gateway” settings)
- LD: Leased Line IP Connection (with “default gateway” settings)
- N/A: Not applicable
- OK: The serial port combination is allowed.

Serial Port setting

User needs to configure the two high-speed serial ports for usage. Follow step below:

1. Serial port connection setup.

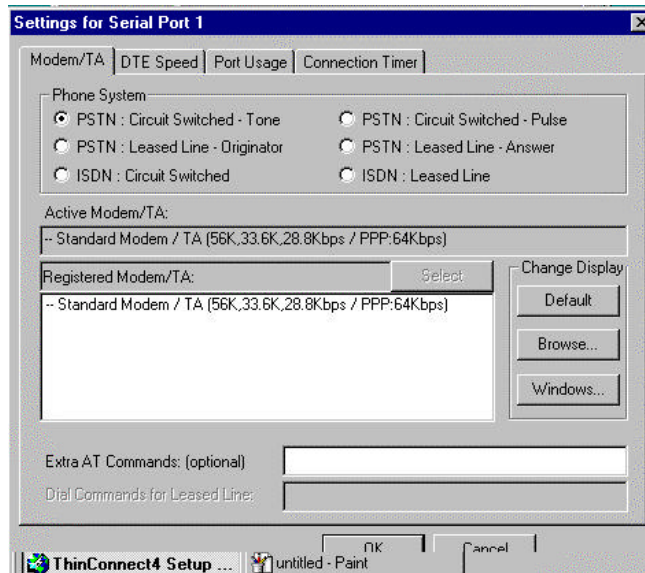


Click “Settings” in “Enable Serial Port 1” to setup serial port 1.

Click “Settings” in “Enable Serial Port 2” to setup serial port 2.

2. The “Setting for Serial Port ” will show the Tab for each setting.

- Modem/TA
- DTE Speed
- Port Usage
- Connection timer



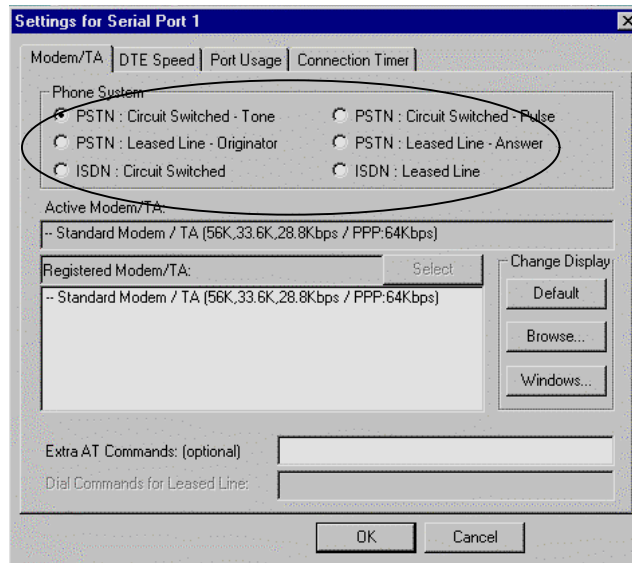
Go to next page for each of serial port setup

3.3.8 Settings for MODEM/TA connection

Selecting your telephone system

Click on the telephone system type.

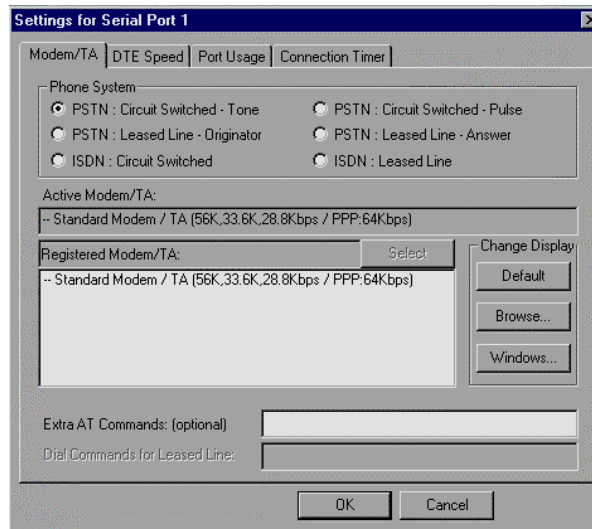
- PSTN: Circuit Switched - Tone
- PSTN: Circuit Switched - Pulse
- PSTN: Leased Line - Originator
- PSTN: Leased Line - Answer
- ISDN: Circuit Switched
- ISDN: Leased Line



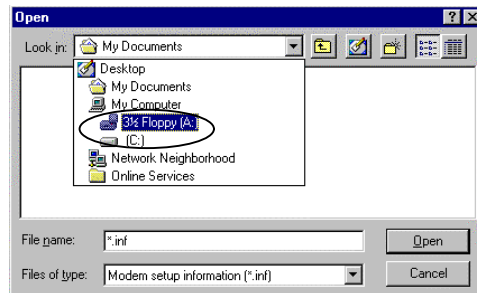
Note: Select the telephone system carefully. If the system type is not correct, you may not be able to connect to your ISP.

Register a Modem with ThinConnect4

In the “Change Display” below, there are “Browse...” and “Windows” buttons to help you register a modem with ThinConnect4 utility.

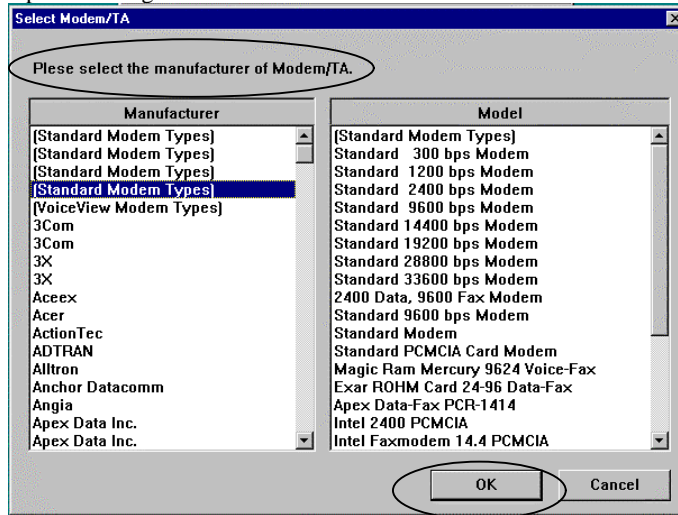


1. Click on “Browse...” to register a modem using a manufacturer’s modem setup information (*.inf) file. The utility can either read the file from a floppy or CD-ROM.



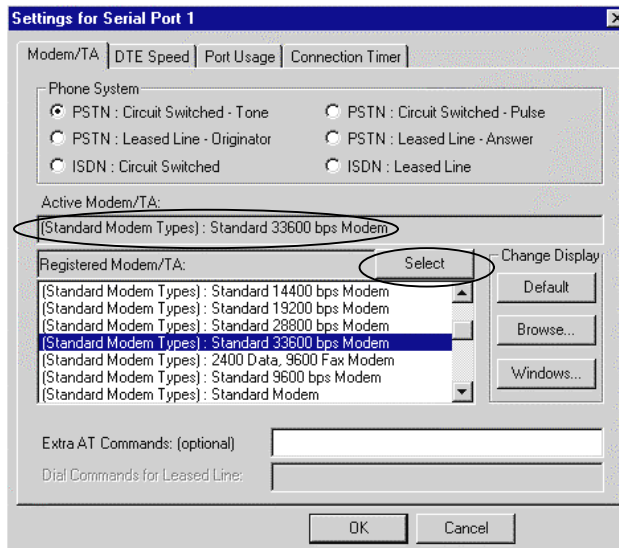
<42> ThinConnect4

2. Click “Windows..” to register a modem from Windows 95/98 or Windows NT modem list. Select your modem manufacturer from the list. Then click “OK”. Go to the next step “Choosing MODEM/TA”



Choosing MODEM/TA

1. Choose a MODEM or TA (Terminal Adapter) from the “Registered MODEM/TA” list by highlighting the modem.
2. Click “Select” to confirm your selection. The selected MODEM/TA will be shown in the “Active MODEM/TA” field.



Change Display

There are three buttons on the 'Change Display' to help you select and register a Modem/TA with the ThinConnect4. The following are the button descriptions:

- “Default” button:
Shows the same list of the modem from My Computer ->Control Panel -> Modem.
(Usually this is the default list, Window 95 only)
- “Browse” button:
Click to have the ThinConnect4 utility read the modem definition (*.inf file) from a floppy disk or CD-ROM.
- “Windows” button:
Shows the standard Windows modem for Windows 95 / 98 or Windows NT. If your modem has been installed in this PC, it will be listed.

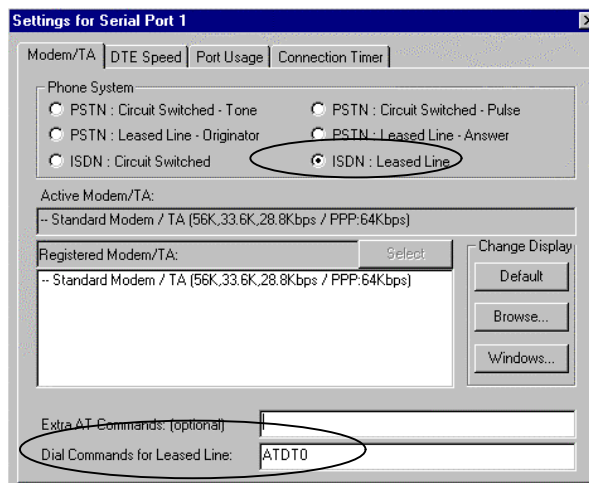
If you are connected to “ISDN: Leased Line”, go to next step.

To add “Extra AT Commands” go to Page 44.

Otherwise, skips to 3.3.9 DTE speed Page 45.

ISDN: Leased line Dialing

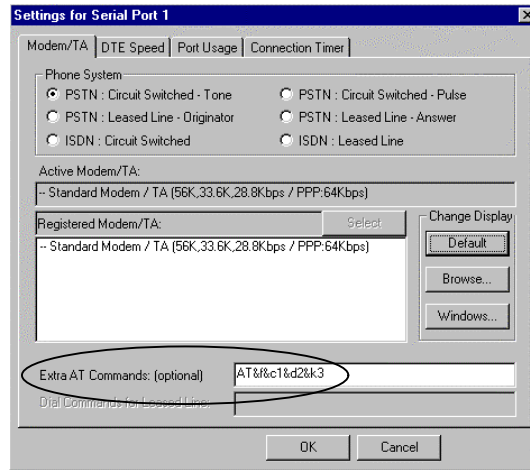
For user who choose the “ISDN: Leased Line” in **Selecting your telephone system type** (Page 40), make sure you enter proper AT command for your modem in “Dial Commands for leased Line” field. Refer to your Modem/TA user manual. (Default value is ATDT0)



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Extra AT commands

The extra AT Command may be enter in the Extra AT Command filed show below:

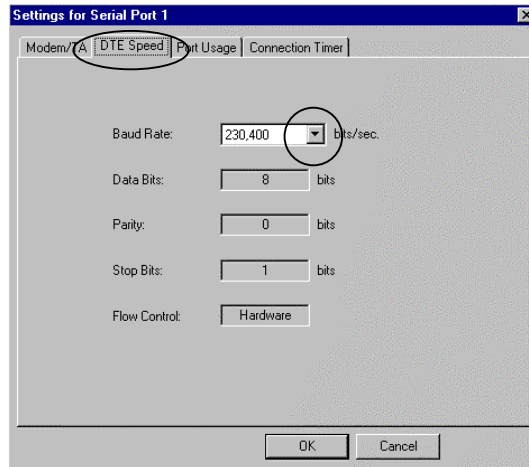


*Note: The AT command entered here overwrites setting for MODEM/TA definition (INF file). The setting will effect the MODEM/TA in this application only. It will not modify the MODEM/TA INF file, which you have installed in your Windows.
Please refer AT commands from your MODEM/TA manual.*

3.3.9 DTE Speed

The DTE speed also known as Terminal speed which ThinConnect4 serial ports communicate with modem. Click on “DTE Speed” Tab, the window below will pop-up.

1. Click on the list box of “DTE Speed”. Then click pull-down arrow.

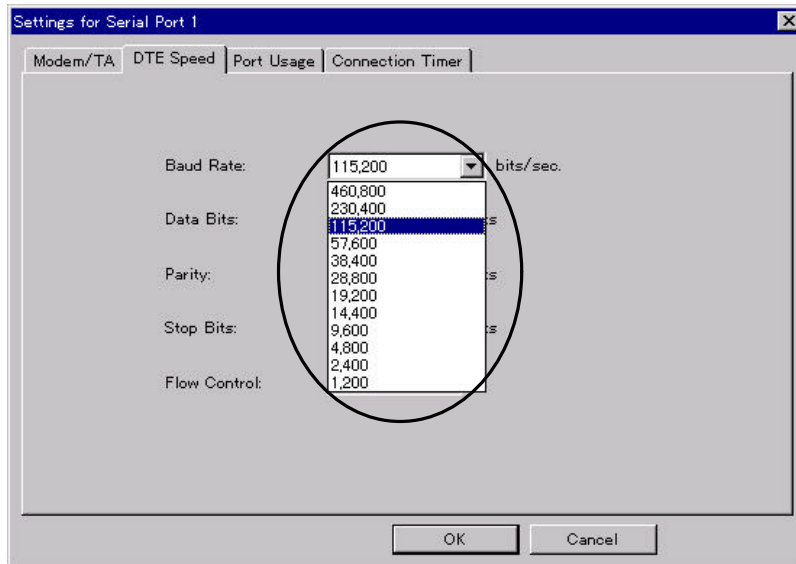


Note: The DTE speed is NOT a modem speed, which is usually referred to a telephone line or DCE, or Modem-to-Modem speed.

2. For a start, try to select the DTE speed equal to the Modem/TA speed or one selection higher first. This setting will ensure the ThinConnect4 can communicate with Modem/TA. Later you may experiment with DTE setting at higher speed. Normally, it set at three times the Modem/TA speed.

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- Please select a proper MODEM/TA communication speed (Terminal speed, DTE speed).



End of Basic setup

Please continue to setup the functions you want to use.

- For different connection types, please follow the instructions below:
ISP Dial-Up IP Connection, ISP Networking IP Connection, and ISP Dial-Up Connection + RAS Server
*Go to **Chapter 4 Dial-Up IP Connection** (Next page)*
- RAS Client Connection, RAS Server Connection, and RAS Client Connection + RAS Server Connection
*Go to **Chapter 5 RAS Connection** (Page 71)*
- Leased line Connection (ISP Leased line IP Connection and Local Leased Line Connection)
*Go to **Chapter 6 leased Line Connection** (Page 91)*

End of 3.3 Common setup

Chapter 4 Dial-Up IP Connection Setup

4.1 ISP Dial-Up IP Connection

- 4.1.1 Connection Settings
- 4.1.2 Address Translation
- 4.1.3 Detail setting of IP Masquerade

4.2 ISP Networking Dial-Up IP Connection

4.3 Networking Dial-Up IP Connection

- 4.3.1 Connection Setting
- 4.3.2 Static Routing Table Settings

4.4 Connection Timer

- 4.4.1 Automatic Connection
- 4.4.2 Automatic Disconnection

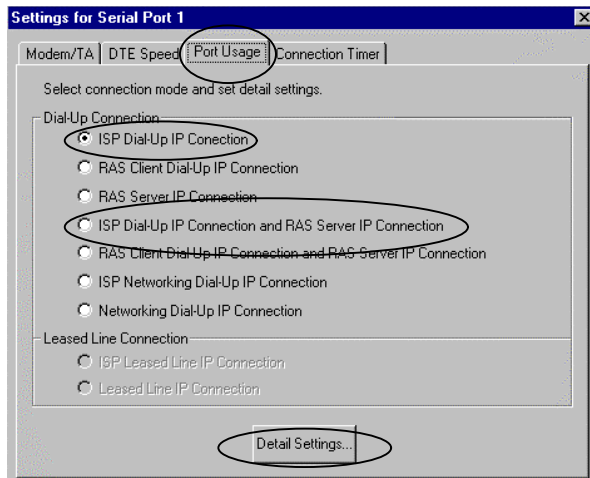
4.1 ISP Dial-Up IP Connection

This section explains how to setup an ISP (Internet Service Provider) dial-up connection. For details in ISP Networking Dial-Up IP Connection, please go to section **4.2 ISP Networking Dial-Up IP Connection** (Page 60).

4.1.1 Connection Settings

ISP connection requires a Dial-up user ID, password, and telephone number (point of present) from your local ISP. Click “Port Usage” Tab for connection setup.

1. Select “ISP Dial-Up IP Connection” and click “Detail Settings”. If you want to also use RAS Server at the same port, please select “ISP Dial-Up IP Connection and RAS Server IP Connection” and click “Detail Settings”.



Note: The function of the Dial-up relation can be set only to one of the serial ports 1 or 2. For example, if you set the serial port 1 to “ISP Dial-UP IP Connection”, you cannot set up another “ISP Dial-UP IP Connection” or “RAS Client Dial-UP IP Connection” on serial port 2. You can use “RAS Server IP Connection” or “Networking Dial-Up IP Connection” or “Leased Line IP Connection” without the default gateway settings.

Please refer to all the possible function combination of both serial ports on **3.3.5 Options of serial port** (Page 37).

2. Enter your user ID and password ISP in “User Name” field and “Password” field respectively.

*Note: For security purpose, the password will show as “*****” whatever you type in. To confirm the password entered please type in your password again in the “Confirm Password” field.*

3. Fill in the ISP dial-up numbers, in “Phone number #1 through #3”. The “Phone number #1” is a primary number, # 2 and 3 are alternate numbers.

Note: Please key in the telephone number carefully. If the number is not correct, ThinConnect4 will keep trying to dial those three numbers.

The Connection process

The Dial-Up Connection (connecting process) to ISP process triggered by user start an Internet (Web Browser or Mail Software) application. If you have enabled the “Automatic Connection”(4.4 Connection Timer Page 68) then through the configured serial port the ThinConnect4 will initialize your MODEM/TA for dialing out. ThinConnect4 will send commands to MODEM/TA to dial your first phone number “Phone Number #1”. If the line is busy or cannot connect for some reason, MODEM/TA will reply “Cannot connect” and ThinConnect4 will attempt to dial your second number “Phone number #2” (if one was assigned). If “Phone number #2” cannot connect, ThinConnect4 will try to dial your third phone number “phone number #3” (if one was assigned). If all three attempts fail, please restart your Internet application again.

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Internet Application setting

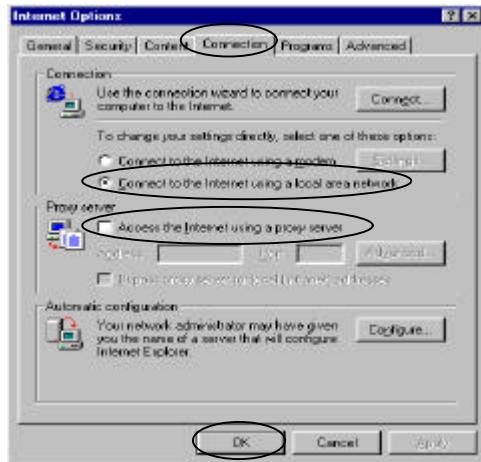
Your Internet application needs to be configured before using with it ThinConnect4.
Follow the instructions

Setting for WEB browser:

- Choose LAN connection (Do not setup as Dial-up connection)
- Do not use Proxy server.

Internet Explorer 4.x

1. Double click on “My Computer” -> “Control panel” -> “Internet”
Click on “Connection” tab.



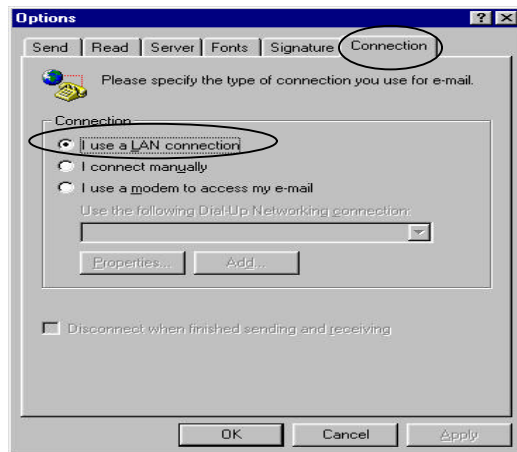
2. Choose “Connect to the Internet using a local area network”
Uncheck “Access the Internet using a local area network”
3. Click “OK’ after you have finished.

Setting for e-mail program:

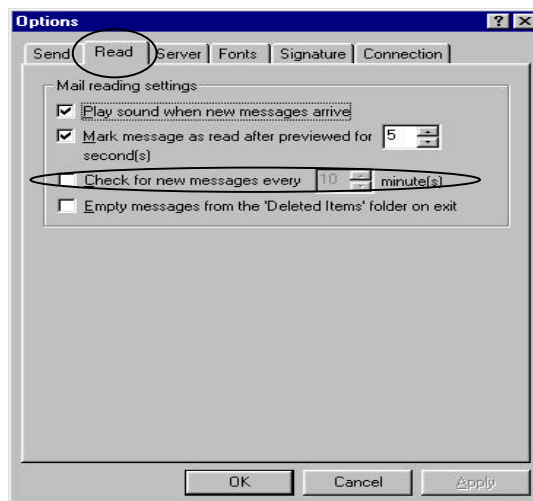
- Choose LAN connection. (Do not setup as dial-up connection)
- Do not check the mail frequently.

Internet Mail 3.0

1. Choose “View” from menu, select “option”, and click “Connection” Tab. Choose “I use a LAN connection”.



2. Click the “Read” Tab. Uncheck “Check for new messages every”. This setting is recommended because the ThinConnect4 does not have to connect to the ISP and check for e-mail frequently.



4.1.2 Address Translation

This section explains two types of the IP address translation available as a part of the many feature of the ThinConnect4.

IP Masquerade

Normally, when you sign up with a local ISP for the Internet, that account is usually valid for only one user. This type of address translation allows you to share a single account with multi-users. The maximum 256 sessions are available. For the popular web browser and e-mail programs, each PC is considered to occupy 10 sessions. That is, about 20 PCs can run Internet applications at the same time through one single connection. Some application softwares may not be compatible under IP Masquerade. In this case select NAT (Network Address Translation) instead.

NAT (Network Address Translation)

NAT allows multiple PC connection together, but while one PC is connected to the Internet, others cannot be connected at the same time.

1. If you want to connect all PCs to Internet at the same time, select "IP Masquerade" in the "Address Translation" window below. For sequential connection one at a time, choose "NAT".

The screenshot shows the 'ISP Dial-Up IP Connection' dialog box. It has several input fields: 'User Name' (EXP), 'Password' (masked with asterisks), 'Confirm Password' (masked with asterisks), 'Phone Number #1' (555-1212, marked as 'must'), 'Phone Number #2' (999-9999, marked as 'optional'), and 'Phone Number #3' (111-1111, marked as 'optional'). Below these is the 'Address Translation' section with two radio buttons: 'IP Masquerade' (selected) and 'NAT'. A 'Details...' button is next to 'IP Masquerade'. To the right is the 'Translation Table' section with an 'Aging Time' field set to '180 sec.'. At the bottom are 'OK' and 'Cancel' buttons. Three red circles highlight the 'Address Translation' section, the 'Translation Table' section, and the 'OK' button.

2. To setup the “Translation Table”, pull down the “Aging Time” list box and choose a time period.

What is Setup Aging Time?

The “Aging Time” means if a PC is not using the Internet for the setup time period, ThinConnect4 will relocate the connection to the next PC.

In a situation which ThinConnect4 exceeds 256 sections in the “IP masquerade” or one user is already logged on in the “NAT”, the other user will not be able to access the Internet.

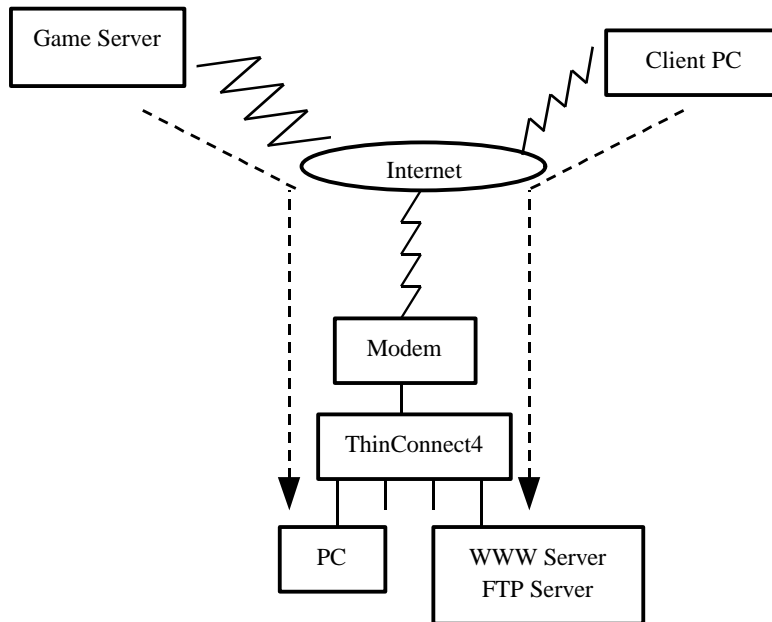
If there is an idle connection and the “Aging timer” counter goes to zero, ThinConnect4 will automatically relocate the connection to the next user.

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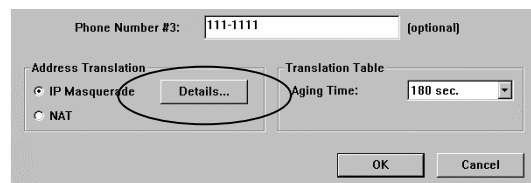
4.1.3 Detail Settings of IP Masquerade

This setup is optional and only needs to be done if IP Masquerade is selected.

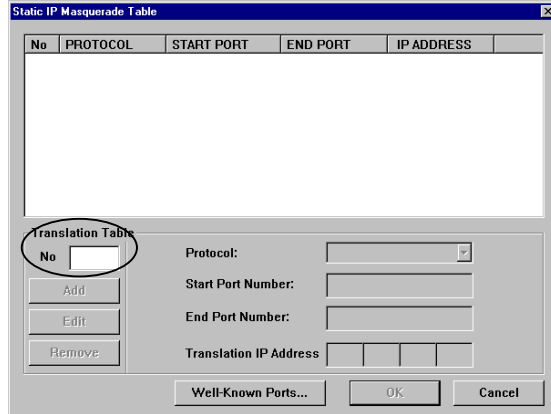
This function translates the IP frame, which begins the connection with the Internet.
Maximum entry is 32.



Click the "Details" button.



1. Enter the entry number in “No” field. (Maximum entry is 32)



Static IP Masquerade Table

No	PROTOCOL	START PORT	END PORT	IP ADDRESS
----	----------	------------	----------	------------

Translation Table

No:

Protocol:

Start Port Number:

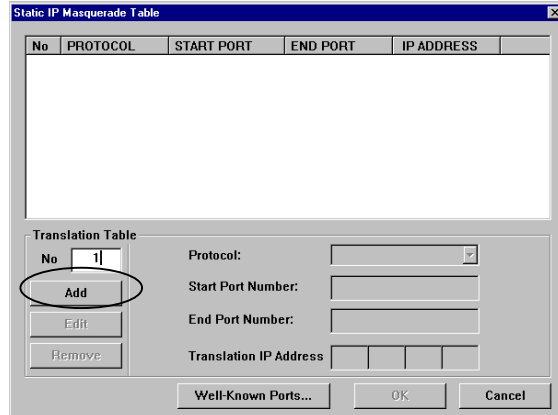
End Port Number:

Translation IP Address:

Well-Known Ports... OK Cancel

Buttons: Add, Edit, Remove

2. Click the “Add” button after entering the entry number.



Static IP Masquerade Table

No	PROTOCOL	START PORT	END PORT	IP ADDRESS
----	----------	------------	----------	------------

Translation Table

No:

Protocol:

Start Port Number:

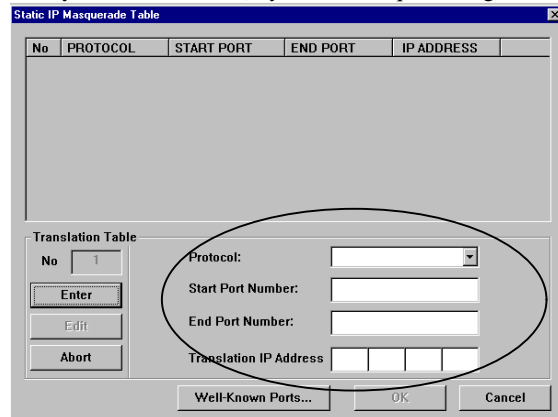
End Port Number:

Translation IP Address:

Well-Known Ports... OK Cancel

Buttons: Add, Edit, Remove

3. Entry field will show. (If you want to quit listing, click the “Abort” button.)



Static IP Masquerade Table

No	PROTOCOL	START PORT	END PORT	IP ADDRESS
----	----------	------------	----------	------------

Translation Table

No:

Protocol:

Start Port Number:

End Port Number:

Translation IP Address:

Well-Known Ports... OK Cancel

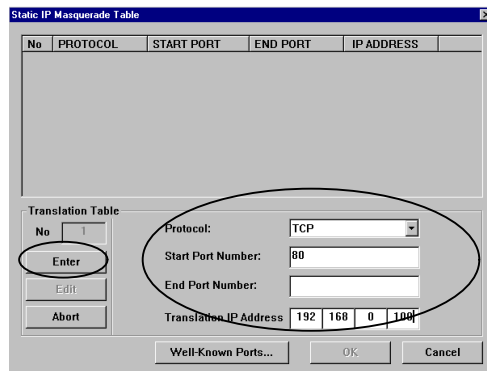
Buttons: Enter, Edit, Abort

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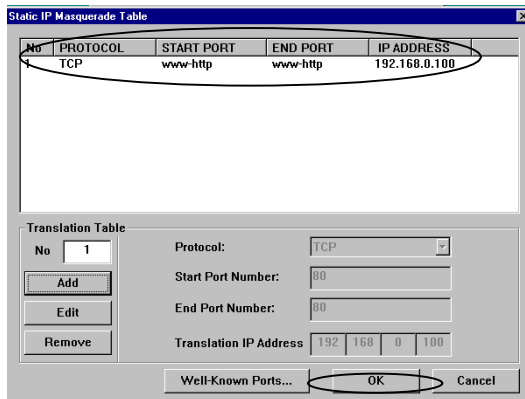
4. Under the “Translation Table” section, click “Protocol”, and choose the type of protocol.
5. Enter the port number in the “Start Port Number” field.
When specifying a range of port numbers, please enter the end of the port number in “End Port Number” field.

*For well-known ports, it is possible to enter it with protocol or service name.
Just click the “Well-known Ports” button and refer to “Well-known Ports: Keyword Table”*

6. Enter the IP address you want to translate in the “Translation IP Address” field.
7. Click the “Enter” button.



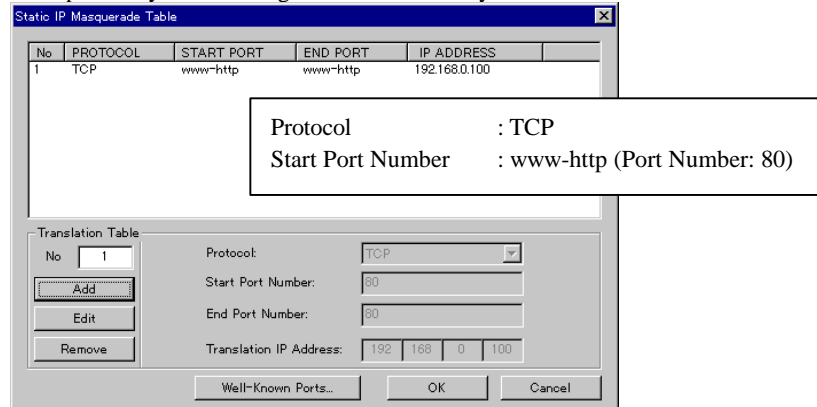
8. Selected entry number will be added on the list. When the settings are finished, click the “OK” button.



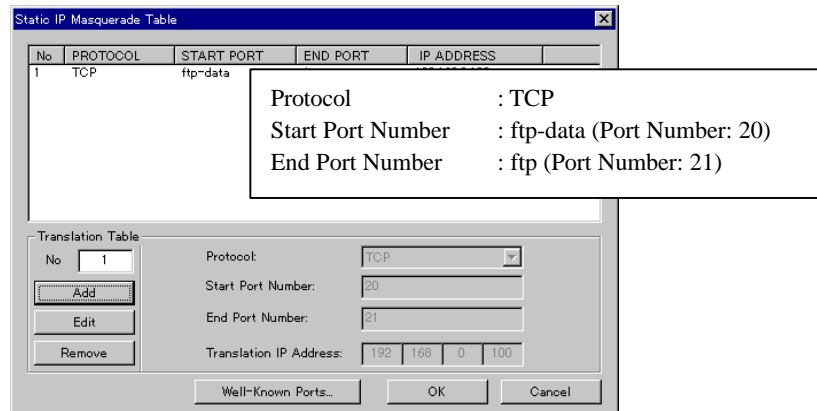
Setting Example

Assume the IP address of target PC is 192.168.0.100. Following field will be shown.

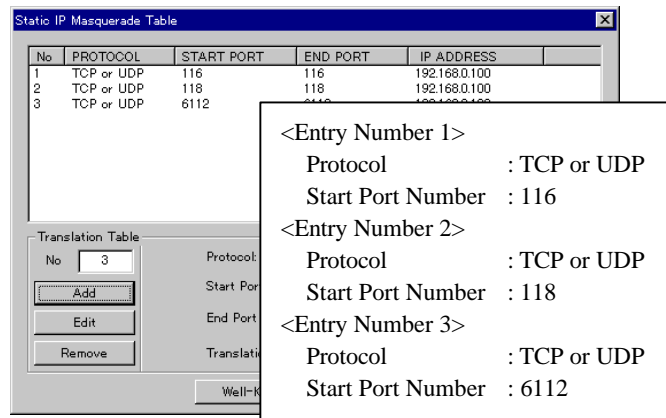
Example 1: If you are setting WWW server into your LAN



Example 2: Starting FTP server into your LAN.

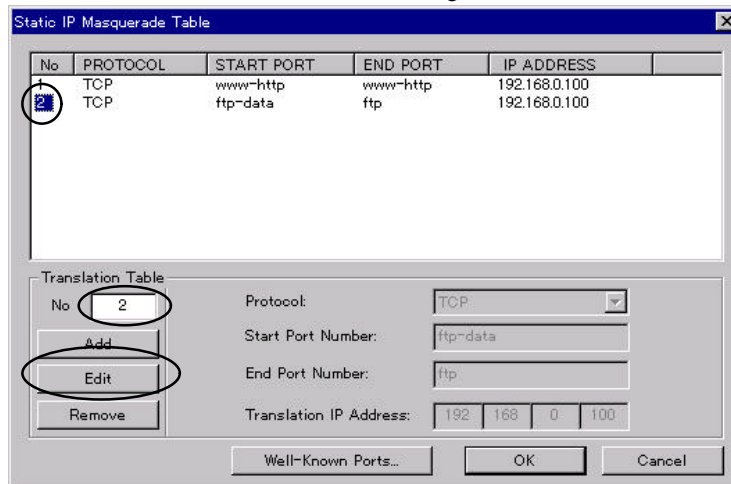


Example 3: When playing DIABLO V1.05 (Network battle game).

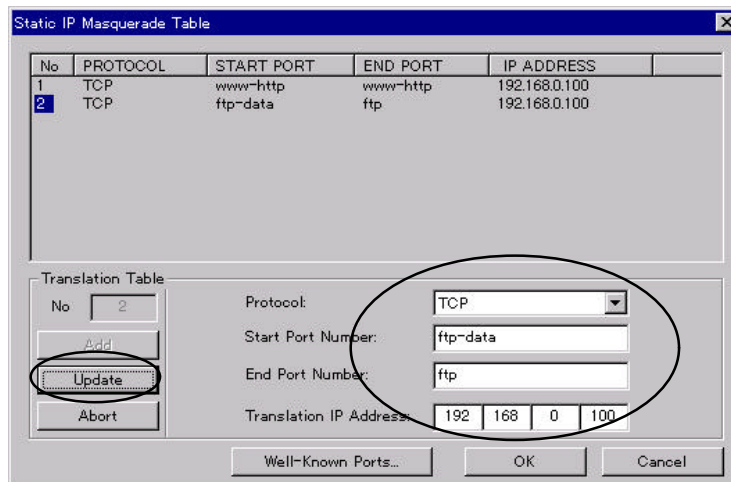


Editing the setting

1. Select the entry number from the list you wish to edit.
Selected entry number will be displayed on “No.” field on “Static IP Masquerade Table”. Click the “Edit” button to make changes.



2. Change the setting value which you want to edit. Once done, click the “Update” button for the changes to take effect.

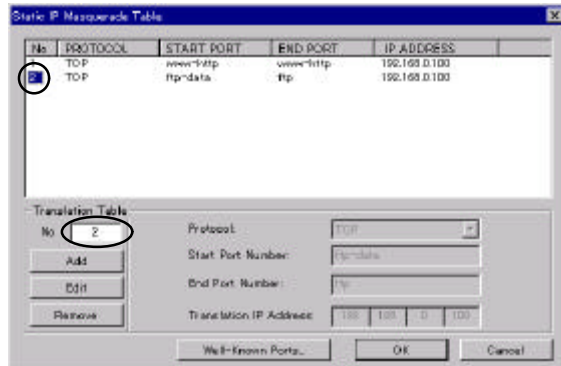


3. The newly changed items will be displayed on the list.

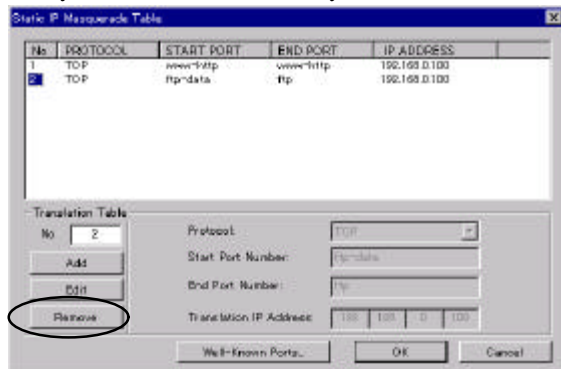
Note: The data information is just an example for your reference.

Remove the settings

1. Select the entry number, which you want to delete from the list and click the number. Selected entry number will be shown on “No” field of “Static IP MasqueradeTable”.

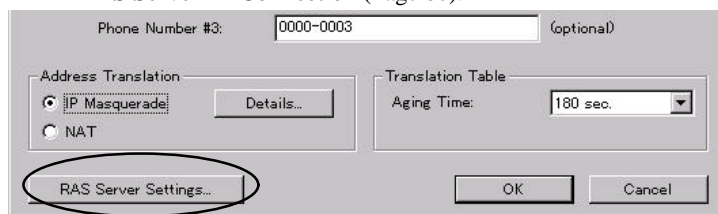


2. Entry number will be deleted if you click the “Remove” button.



Note: The data information is just an example for your reference.

- If you choose “ISP Dial-Up IP Connection” (Page 48), please click the “OK” button and go to section **4.4 Connection Timer** (Page 68).
- If you choose “ISP Dial-Up IP Connection and RAS server IP Connection” (Page 48), please click “RAS Server Settings” and continue to go to section **5.2 RAS Server IP Connection** (Page 80).

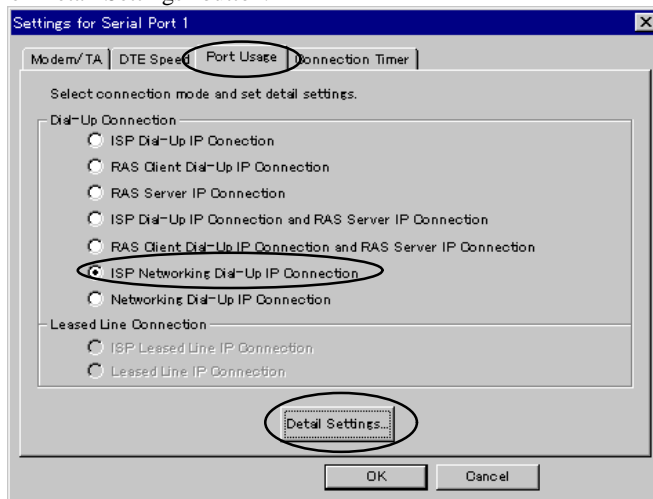


End of 4.1 ISP Dial-Up IP Connection

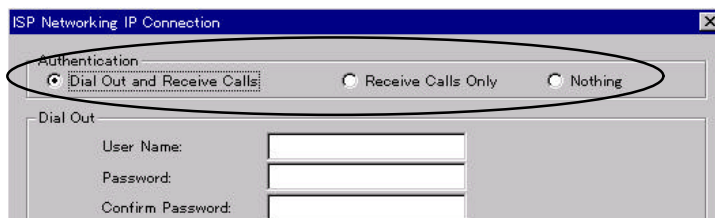
4.2 ISP Networking Dial-Up IP Connection

ISP Networking Dial-Up IP Connection service is one of the functions which is provided by an ISP. To use this function, it is necessary to have an account with a local ISP.

1. After you choosing “ISP Networking Dial-Up IP Connection” in “Port Usage”, click the “Detail Settings” button.

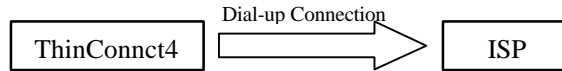


2. In the authentication section, choose your authentication method. In the Dial out section, enter your user name and password.
 - Select your authentication as both dialing outs and receiving calls. Please choose “Dial out and Receive calls”.
 - If you want to make your authentication to receive calls only, please choose “Receive calls only”.
 - If you do not want any authentication, please choose “Nothing”.

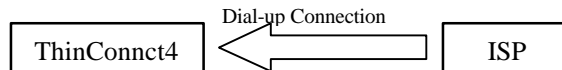


About Authentication

- Dial out and receive calls.

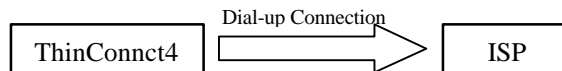


The ISP confirms whether the **Dial-Out** authentication data and the authentication data of the ISP are the same once ThinConnect4 sends it. At the same time, ThinConnect4 confirms whether the authentication data, which the ISP sent and the **Receive Calls** authentication data which ThinConnect4 sent, are the same. Once this confirmation has been completed, it will connect to the ISP.



ThinConnect4 confirms whether the authentication data, which the ISP sent and the **Receive calls** authentication data sent by ThinConnect4, are the same. At the same time, the ISP authenticates whether the **Dial-Out** authentication data, which ThinConnect4 sent with the authentication data sent by the ISP, are the same. If both procedures have been confirmed, ThinConnect4 will start to logon to the ISP.

- Receive calls only.



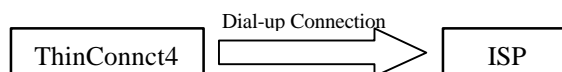
ISP confirms whether the **Dial-Out** authentication data, which ThinConnect4 sent and the authentication data sent by the ISP are identical. If settings are confirmed, it will logon to the ISP.



ThinConnect4 authenticates whether the **Receive calls** authentication data it sent and authentication data sent by ISP are identical. If settings are confirmed, it will logon to the ISP.

- Nothing

Connect without authentication at both sides.



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3. Please enter the authentication information and telephone number to Dial Out.
Enter your user ID you received from ISP in “User Name” field.
Enter the password you received from ISP in “Password” field.
Type your password again in “Confirm Password” field.
Enter phone number you received from ISP in “Dial to” field.

Note: For security reasons, the password will show as “*****” whatever you have typed. If you choose “Nothing” on page 60 item 2, please enter only phone number.

The screenshot shows a dialog box titled "Networking Dial-Up IP Connection". It has three main sections: "Authentication", "Dial Out", and "Receive Calls".
- In the "Authentication" section, three radio buttons are present: "Dial Out and Receive Calls" (selected), "Receive Calls Only", and "Nothing".
- The "Dial Out" section contains four input fields: "User Name" with the text "EXP", "Password" with "*****", "Confirm Password" with "*****", and "Phone Number" with "Dial to: 555-1212".
- The "Receive Calls" section contains three input fields: "User Name" with "EXP", "Password", and "Confirm Password".
- At the bottom, there are three buttons: "Static Routing...", "OK", and "Cancel".
- A large black oval is drawn around the "Dial Out" section fields.

4. Please enter the authentication information to receive calls.
Enter user ID you received from ISP in “User Name” field.
Enter the password you received from ISP in “Password” field.
Type your password again in “Confirm Password” field.

Note:: For security reasons, the password will show as “*****” whatever you have typed. If you choose “Nothing” on page 60 item 2 please click “OK” directly and skip this step.

5. Click the “OK” button and go to **4.4 Connection Timer** (Page 68).

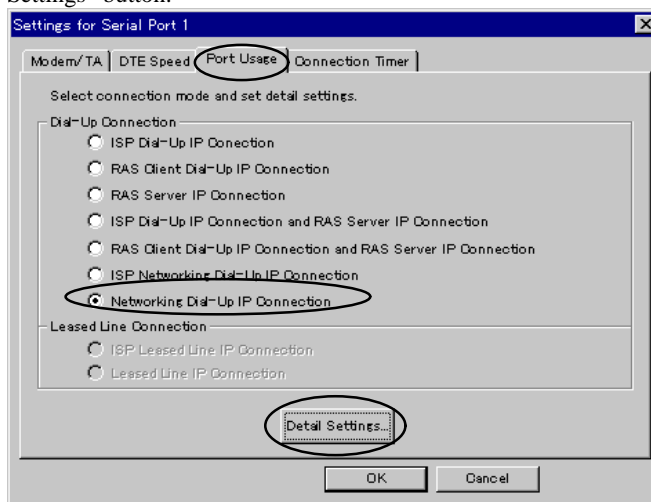
End of 4.2 ISP Networking Dial-Up IP Connection

4.3 Networking Dial-Up IP Connection

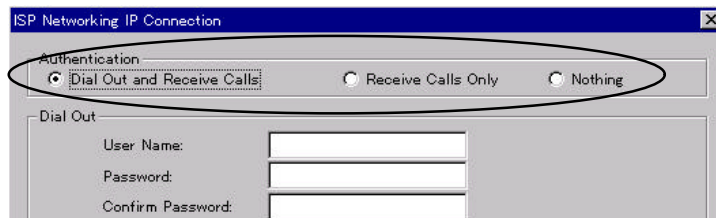
Setup for private Networking Dial-Up IP Connection becomes a similar function of Remote Site Network and Leased Line by connecting both directions dial-up IP for PSTN and ISDN.

4.3.1 Connection Settings

- After you choose “Networking IP Connection” in “Port Usage”, click the “Detail Settings” button.



- In authentication method, please enter your user ID, password and choose your authentication method.
 - If you want to be able to authentication both dial out and receive calls, please choose “Dial out and Receive calls”.
 - If you want to authentication on receive calls only, please choose “Receive calls only”.
 - If you do not want any authentication, please choose “Nothing”.



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3. Please enter the authentication information and telephone number to Dial Out.
 - Enter user ID you received from ISP in “User Name” field.
 - Enter the password you received from ISP in “Password” field.
 - Type your password again in “Confirm Password” field.
 - Enter the phone number you received from ISP in “Dial to” field.

If you choose “Nothing” in page 60 item 2) please enter only the phone number.

The screenshot shows a dialog box titled "Networking Dial-Up IP Connection". It has three main sections: "Authentication", "Dial Out", and "Receive Calls". In the "Authentication" section, the radio button for "Dial Out and Receive Calls" is selected. The "Dial Out" section is circled in black and contains the following fields: "User Name:" with the value "EXP", "Password:" with "*****", "Confirm Password:" with "*****", and "Phone Number" with "Dial to:" and the value "555-1212". The "Receive Calls" section contains "User Name:" with "EXP", "Password:", and "Confirm Password:" fields. At the bottom, there are three buttons: "Static Routing...", "OK", and "Cancel".

4. Please enter the authentication information to receive calls.
 - Enter user ID you received from ISP in “User Name” field.
 - Enter the password you received from ISP in “Password” field.
 - Type your password again in “Confirm Password” field.

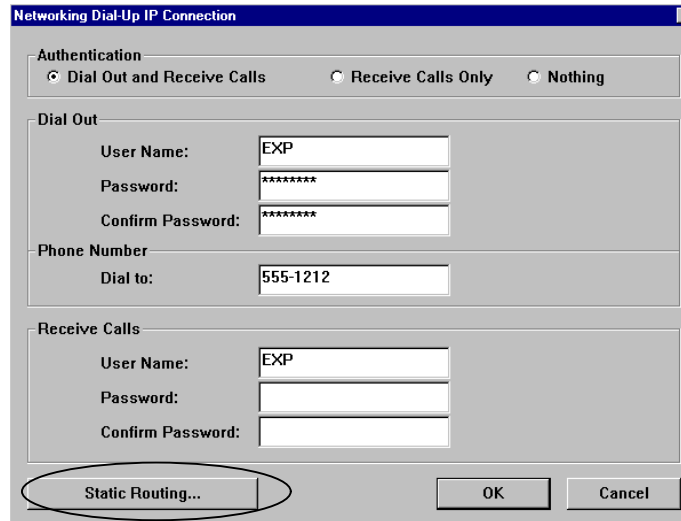
*Remark: For security reasons, the password will show as “*****” whatever you have typed. If you choose “Nothing” in page 60 item 2 please click “OK” and skip this step.*

5. Go to the next step (Next page).

4.3.2 Static Routing Table Settings

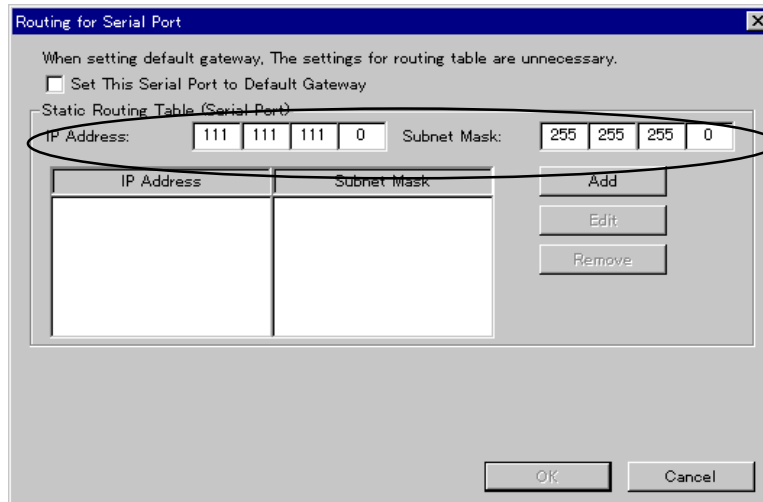
This section contains instructions on how to setup Static Routing table.

1. Click the “Static Routing” button.



The dialog box titled "Networking Dial-Up IP Connection" has three sections: Authentication, Dial Out, and Receive Calls. The Authentication section has radio buttons for "Dial Out and Receive Calls" (selected), "Receive Calls Only", and "Nothing". The Dial Out section has fields for User Name (EXP), Password (*****), Confirm Password (*****), and Dial to (555-1212). The Receive Calls section has fields for User Name (EXP), Password, and Confirm Password. At the bottom, there is a "Static Routing..." button circled in red, along with "OK" and "Cancel" buttons.

2. Enter the “IP Address” and “Subnet Mask” field.



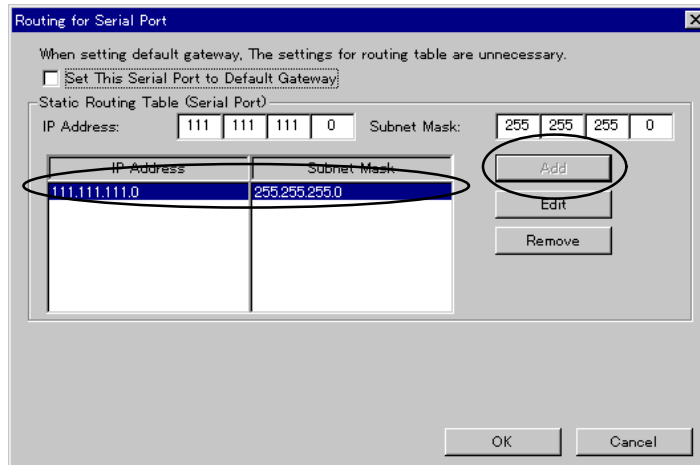
The dialog box titled "Routing for Serial Port" contains a checkbox "Set This Serial Port to Default Gateway" which is unchecked. Below it is a section titled "Static Routing Table (Serial Port)". This section has input fields for "IP Address" (111 111 111 0) and "Subnet Mask" (255 255 255 0), which are circled in red. Below these fields is a table with two columns: "IP Address" and "Subnet Mask". To the right of the table are buttons for "Add", "Edit", and "Remove". At the bottom of the dialog are "OK" and "Cancel" buttons.

IP Address	Subnet Mask

Note: IP address and Subnet Mask will define the network address.

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3. Click the “Add” button to add the setting to list.

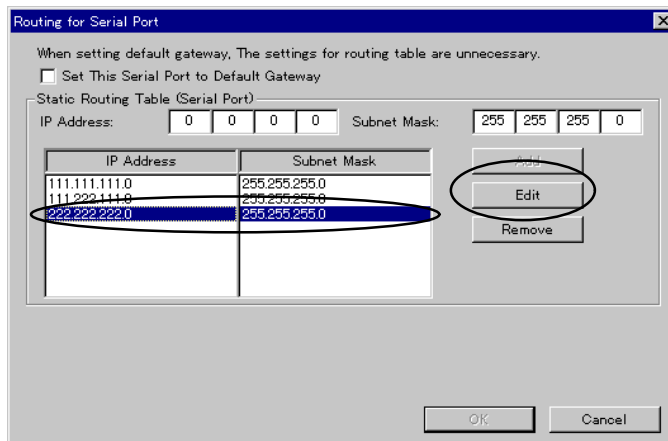


The value in the above window is for reference only. Enter the appropriate setting to meet your LAN environment.

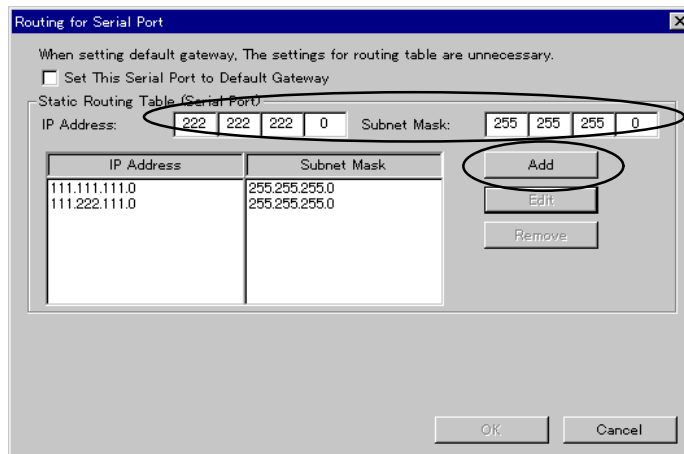
4. Click “OK” after all records are listed.
Note: To edit or delete records, please refer to the steps on the next page.

Edit listed record

1. Click once to highlight the record you wish to edit.
2. Click the “Edit” button and make the change.



3. After you have finished editing, click the “Add” button to save your changes.



4. Click “OK” when finished with setup (Add, Edit, or Delete).

To delete a record

1. Highlight the record you want to edit by clicking on it.
2. Click the “Delete” button to delete the highlighted record.
3. Click “OK” when finished with setup (Add, Edit, or Delete).

End of 4.3 Networking Dial-Up IP Connection

4.4 Connection Timer

This section explains the setup procedures for “Connection Timer”.
Click on the “Connection Timer” Tab.

4.4.1 Automatic Connection

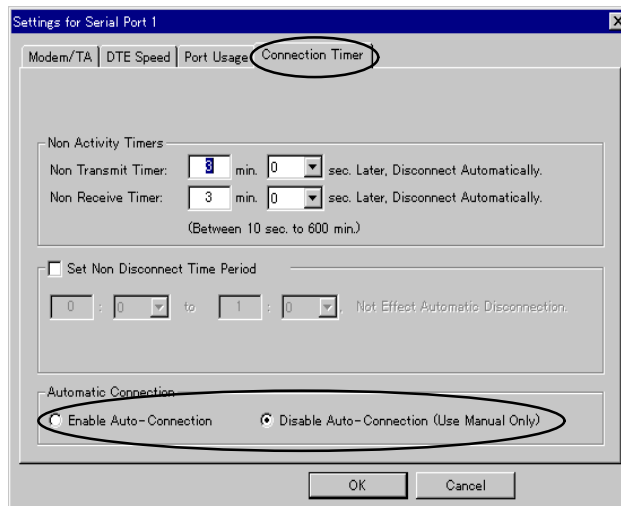
- **Enable Auto-Connection**

Upon starting an Internet application (web browser, E-mail program), ThinConnect4 will automatically start dial-up to ISP.

- **Disable Auto-Connection**

If selected, user will need to start Setup Utility and then click the “Connect” button which corresponds to a serial that is connected to a MODEM/TA.

The default value is “Disable Auto-Connection”.



4.4.2 Automatic disconnection

Setting the automatic disconnection. There are two types of setup available.

- **Non Activity Timers**

ThinConnect4 will automatically disconnect when there is no communication for a certain period of time.

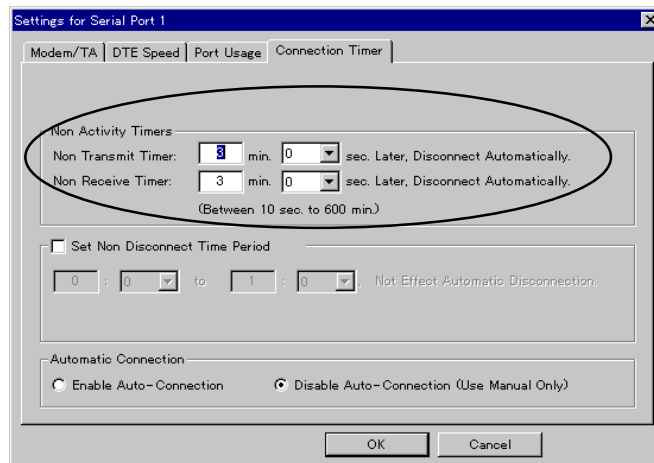
You can setup the “Non Activity Timers” to monitor the transmitting and receiving data separately.

- **Set Non Disconnect Timer Period**

ThinConnect4 will automatically disconnect when the clock reaches the ending time.

Non Activity Timers setup

1. Enter the holding time you want to set (Between 10 seconds to 600 minutes) in “Non Transmit Timer”.
2. Enter the holding time you want to set (Between 10 seconds to 600 minutes) in “Non Receive Timer”.



Note: The default value is 3 minutes.

If you are connecting to a WEB site that is actively showing advertisement or updated information, the Non-Activity-Timer will not function.

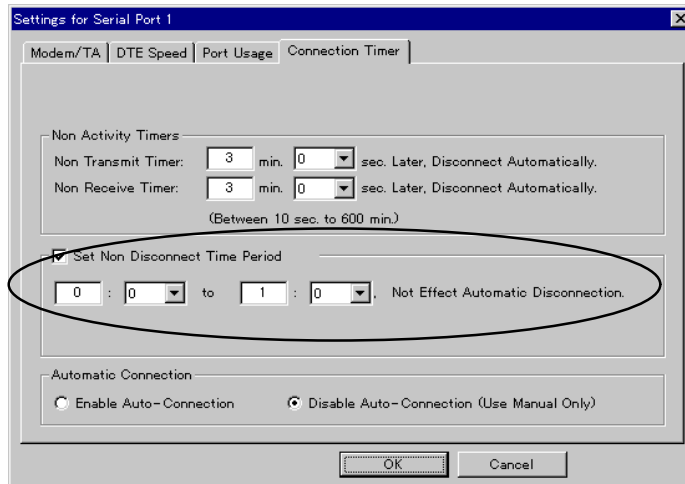
- If you wish to setup the “Set Non Disconnect Timer Period”, continue on to the next page.
- If you do not want to setup “Set Non Disconnect Timer Period”, click “OK” and go to chapter 7 Advanced settings of LAN (Page97).

<70> ThinConnect4

Setting up “Set Non Disconnect Timer Period”

User can stay connected with ISP by specify the time period based on the PC’s time of day clock. The setting will overwrite the “Non Activity Timer”.

1. Check on “Set Non Disconnect Timer Period” check box.
2. Enter starting hour (0 to 23) and minutes.
3. Enter ending hour (0 to 23) and minutes.



Caution:

- Make sure the clock on your PC is correct. When clicking the “Settings” button of the Setup Utility, ThinConnect4 will acquire the current time of your PC and synchronize the internal clock with the PC clock automatically.
- If for some reason the ThinConnect4 power is off, the “Set Non Disconnect Timer Period” function will become invalid. Restart the Setup Utility again so it will read the correct time from your PC.
- When you select “Set Non Disconnect Timer Period”, ThinConnect4 will automatically disconnect when the clock reaches the ending time.

Click the “OK” button to exit this setting.

Go to Chapter 7, Advanced settings of LAN (Page97).

End of 4.3 Connection Timer

Chapter 5 RAS IP Connection Setup

5.1 RAS Client Dial-up IP Connection

- 5.1.1 Connection Settings
- 5.1.2 Call Back Function
- 5.1.3 IP Address Acquiring/Assigning
- 5.1.4 Address Translation
- 5.1.5 Detail Settings of IP Masquerade

5.2 RAS Server IP Connection

- 5.2.1 Connection Types (Setup IP Address)
- 5.2.2 Client Access/Call Back

5.3 Connection Timer

5.4 Windows NT 4.0 Authentication Settings

- 5.4.1 RAS Server Settings
- 5.4.2 Client Settings

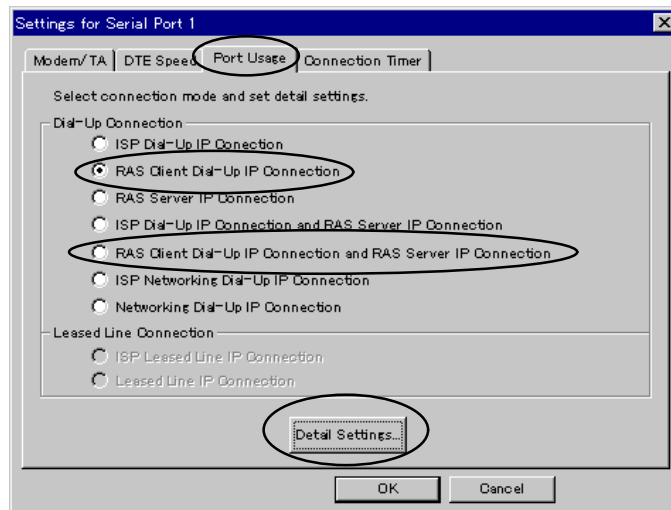
5.1 RAS Client Dial-Up IP Connection

ThinConnect4 (set up as a RAS client) connects to a remote RAS server by using PSTN and ISDN.

5.1.1 Connection Settings

1. Click "Port Usage" tab, then choose "RAS Client Dial-Up IP Connection", and click "Detail Settings" button.

If you want to use RAS Server on the same port, please choose "RAS client Dial-Up IP Connection and RAS server IP Connection" and click the "Detail Settings" button.



Note: The function of the Dial-up relation can be set only to one of the serial ports 1 or 2. For example, if you set the serial port 1 to "ISP Dial-UP IP Connection", you cannot set up either "ISP Dial-UP IP Connection" or "RAS Client Dial-UP IP Connection" on serial port 2. You can use "RAS Server IP Connection", "Networking Dial-Up IP Connection", or "Leased Line IP Connection" without the default gateway settings.

Refer to the possible functional combinations of two serial ports on 3.3.5 Options of serial port (Page 37).

2. Enter the user name on the “User Name” field.
Enter the password on the “Password” field for this user name.

Note: For security reasons, the password will show as **** whatever you have typed. To verify any typing, please enter the password again in the “Confirm Password” field.

Caution: Make sure there is a matching user name and password on the RAS server you have tried to access, otherwise you cannot connect with the server.

The screenshot shows the "RAS Client Dial-Up IP Connection" dialog box. The "User Name:", "Password:", "Confirm Password:", and "Phone Number:" fields are circled in red. The "RAS Client IP Address" section has "Get by RAS Server" selected. The "Address Translation" section has "IP Masquerade" selected. The "Translation Table" section has "Aging Time" set to "180 sec.". The "RAS Server Settings..." button is at the bottom left, and "OK" and "Cancel" buttons are at the bottom right.

3. Enter the RAS Server's phone number in “Phone Number” field.

Caution: Type in the phone number carefully. If the number is incorrect, ThinConnect4 will keep trying to dial this given number.

5.1.2 Call Back Function

This section explains how to set up the call back function. The following are available functions:

- **No Call Back**
No Call back setting. (Page 76)

- **Call Back to “Preset in RAS Server”**
Call Back requests to the telephone number, which has been preset at the RAS server.
(Page 76)

- **Call Back of “Set by RAS Client to”**
Call Back requests the telephone number specified in RAS client.
(Page 76).

Note: The call back function should be enabled on both RAS Server side and RAS Client side. If the settings are different, ThinConnect4 will not connect.

*The Call back function is **not valid** if RAS Server activated with Windows 95-Plus! Dial-Up Server need to be set as “No Call Back” in this section.*

The ThinConnect4 will perform the following steps if ThinConnect4 client settings are different with RAS server setting:

Windows 95 with "Microsoft Plus!" RAS Server

Plus! Server	No Call back	
ThinConnect4 Client	No Call back	Can connect at "No call back"
Preset in RAS Server	Can not connect	
Set by RAS Client	Can not connect	

Windows NT 4.0 with standard RAS Server

NT Server	No Call back	Preset in RAS Server	Set by RAS Client
ThinConnect4 Client	No Call back	Can not connect	"No call back" connection
Preset in RAS Server	Can not connect	Can connect at "Preset in server"	Can not connect
Set by RAS Client	Can not connect	Can connect at "Preset in server"	Can connect at "Set by client"

ThinConnect4 with RAS Server

ThinConnect4 Server	No Call back	Preset in RAS Server	Set by RAS Client
ThinConnect4 Client	No Call back	Can not connect	"No call back" connection
Preset in RAS Server	Can not connect	Can connect at "Preset in server"	Can not connect
Set by RAS Client	Can not connect	Can connect at "Preset in server"	Can connect at "Set by client"

No Call Back

- Leave “Use Call Back” unchecked.

Use Call Back

Preset in RAS Server

Set by RAS Client to

Phone Number:

Call Back of “Preset in RAS Server”

- Check the “Use Call Back” check box.
- Choose the “Preset in RAS Server”.

Use Call Back

Preset in RAS Server

Set by RAS Client to

Phone Number:

Call Back of “Set by RAS Client to”

- Check the “Use Call Back” check box.
- Choose the “Set by RAS Client to”.
- Enter the RAS Client’s phone number in “Phone Number” field.

Use Call Back

Preset in RAS Server

Set by RAS Client to

Phone Number:

Note: The telephone number above is just for reference.

5.1.3 IP Address Acquiring/ Assigning

If you are connecting to a RAS Server, there are two methods of assigning the IP address for ThinConnect4 client.

- **Acquires from RAS Server**
Select “Get by RAS server”. During the connection, ThinConnect4 will allocate the IP address from RAS Server.
- **Assign by Client**
Choose “Preset by RAS Client to” during connection, ThinConnect4 will allocate IP address for RAS Server from RAS Client.

Note: For RAS Server in Windows 95-plus, choose “Preset by RAS Client to”. Make sure the IP Address setting for RAS Server and RAS Client are identical.

The screenshot shows the 'RAS Client Dial-Up IP Connection' dialog box. The 'RAS Client IP Address' section has two radio buttons: 'Get by RAS Server' and 'Preset by RAS Client to'. The 'Preset by RAS Client to' option is selected, and the IP address is set to 192.168.0.254. The 'Phone Number' field is set to 111-11111. The 'Address Translation' section has 'IP Masquerade' selected. The 'Translation Table' section has 'Aging Time' set to 180 sec.

The information above is only for reference. Please enter the appropriate setting to meet your LAN environment.

5.1.4 Address Translation

This section explains the IP address translation setting for ThinConnect4. The ThinConnect4 utilizes two types of address IP Masquerade and NAT.

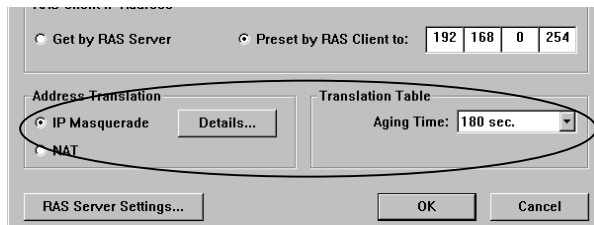
- **IP Masquerade**

Normally, when you sign up with local ISP for the Internet that account is usually valid for only one user. This type of address translation allows you to share a single account with multi-users. The maximum of 256 sessions is available. For the popular web browser and e-mail programs, each PC is considered to occupy 10 sessions. That is, about 20 PCs can run Internet applications at the same time through one single connection. Some application software may not be compatible under IP Masquerade. In this case select NAT (Network Address Translation) instead.

- **NAT (Network Address Translation)**

NAT allows multiple PC connection together, but while one PC is connected to the Internet, others cannot be connected at the same time.

Please refer to **4.1.2 Address Translation** on page **52** to **59** for setup.

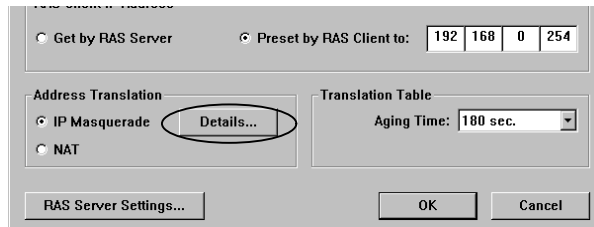


5.1.5 Detail settings of IP Masquerade

This setup is optional you can proceed if necessary.

This setup is the same as the ISP Dial-Up IP Connection.

Please refer to **4.1.3 Detail settings of IP Masquerade** (Page 54).

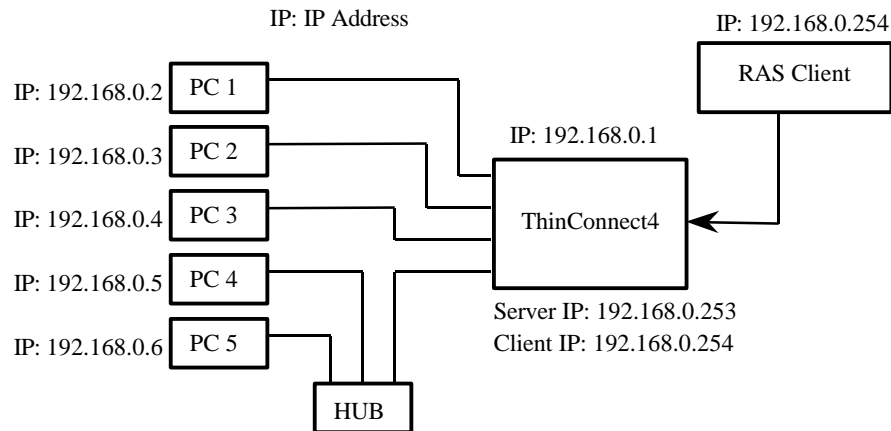


- If you choose “RAS Client Dial-Up IP Connection” in the window on page 72, click “OK” and go to **5.3 Connection Timer** (Page 87).
- If you choose “RAS Client Dial-Up IP Connection and RAS server IP Connection” in the window on page 72, click “RAS Server Settings” and continue to go to **5.2 RAS Server IP Connection** (Next page).

End of 5.1 RAS Client Dial-Up IP Connection

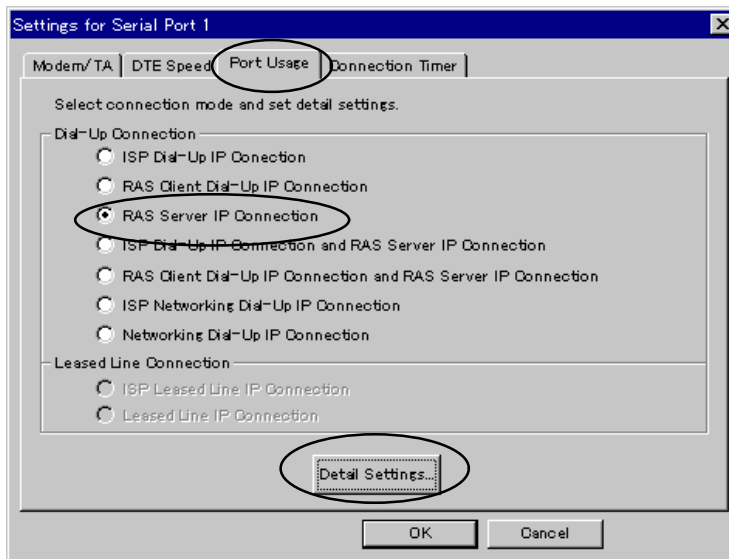
5.2 RAS Server IP Connection

The following figure is a typical RAS Server IP Connection:



5.2.1 Connection Types (Setup IP Address)

1. Click "Port Usage" Tab. Choose the "RAS Server IP Connection" and click "Detail Settings".



2. Enter IP Address in “RAS Server IP Address” and “RAS Client IP Address”.

Do not to overlap another IP Address. But, it is possible to set the same IP Address of ThinConnect4 in “RAS Server IP Address”. If you have selected the “Same as LAN Port”, the ThinConnect4 IP Address will be set in “RAS Server IP Address” fields.

The screenshot shows the 'RAS Server IP Connection' dialog box. At the top, there is a checkbox labeled 'Use DHCP Server on ThinConnect4 to assign IP addresses' which is currently unchecked. Below this, there are two IP address fields: 'RAS Server IP' and 'RAS Client IP'. The 'RAS Server IP' field contains '192 | 168 | 0 | 1' and has a 'Same as LAN Port' button next to it. The 'RAS Client IP' field contains '192 | 168 | 0 | 254'. Below the IP fields, there is a 'User Registration' section with fields for 'User Name', 'Password', and 'Confirm Password'. To the right of these fields are radio buttons for 'Accept Call Back', 'Set by RAS Client', and 'Preset in RAS Server to', with 'Accept Call Back' checked and 'Set by RAS Client' selected. There is also a 'Phone Number' field. Below the registration fields is a table with columns 'User Name', 'Call Back', and 'Phone Number', and buttons 'Add', 'Edit', and 'Remove'. At the bottom, there is a 'Ring Count' field set to '2' (range 1 to 99) and 'OK' and 'Cancel' buttons.

If you wish to have the IP address assigned from DHCP server, check the “Use DHCP on ThinConnect4 to assign IP addresses” check box.

This screenshot is identical to the previous one, but the checkbox 'Use DHCP Server on ThinConnect4 to assign IP addresses' is now checked.

The value in the above window is only for reference. Enter the appropriate setting to meet with your LAN environment.

The RAS Client IP Address used during a connection to RAS Server is assigned by RAS Server. If ThinConnect4 is functioning as a RAS Server, it will set RAS Client to IP Address acquisition mode.

<82> ThinConnect4

5.2.2 Client Access/Call Back

1. Enter the name in “User Name” field.
Enter the password in “Password” field.
Type your password again in “Confirm Password” field.

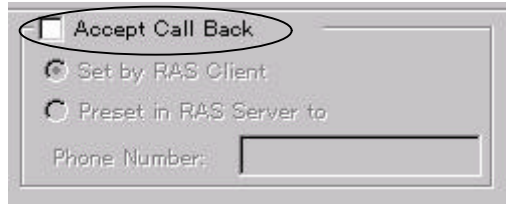
*Remark: For security reasons, the password will show as “*****” whatever you have typed.*

The screenshot shows the 'RAS Server IP Connection' dialog box. The 'User Registration' section is highlighted with a red circle, showing the 'User Name' field containing 'EXP', the 'Password' field containing '*****', and the 'Confirm Password' field containing '*****'. The 'Accept Call Back' section has radio buttons for 'Set by RAS Client' and 'Preset in RAS Server to'. Below this is a table with columns 'User Name', 'Call Back', and 'Phone Number', and buttons 'Add', 'Edit', and 'Remove'. At the bottom, there is a 'Ring Count' field set to 2, and 'OK' and 'Cancel' buttons.

2. Choose your call back setting.
 - **No Call back**
No Call back setting.
 - **Call back for “Set by RAS Client”**
ThinConnect4 connects to the telephone number of the RAS Client specification.
 - **Call Back to “Preset in RAS Server to”**
ThinConnect4 connects to previously registered telephone number.

No Call back

- Uncheck “Accept Call Back” and leave it as it is.



The screenshot shows a dialog box with three radio buttons and a text field. The first radio button, labeled "Accept Call Back", is unselected and circled in red. The second radio button, "Set by RAS Client", is selected. The third radio button, "Preset in RAS Server to", is unselected. Below the radio buttons is a text field labeled "Phone Number:" which is empty.

Call back for “Set by RAS Client”

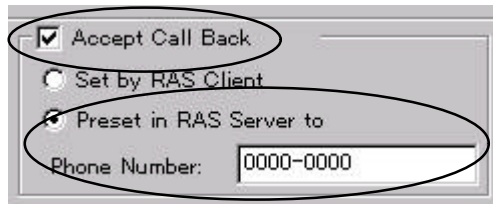
- Check the “Accept Call Back” check box.
- Choose the “Set by RAS Client”.



The screenshot shows the same dialog box as above. The "Accept Call Back" radio button is now selected and circled in red. The "Set by RAS Client" radio button remains selected. The "Preset in RAS Server to" radio button is unselected. The "Phone Number:" field is empty.

Call back to the number “Preset in RAS Server”

- Check the “Accept Call Back” check box.
- Choose the “Preset in RAS Server to”.
 - Enter the RAS Server’s phone number in “Phone Number” field.



The screenshot shows the same dialog box. The "Accept Call Back" radio button is selected and circled in red. The "Set by RAS Client" radio button is unselected. The "Preset in RAS Server to" radio button is selected and circled in red. The "Phone Number:" field contains the text "0000-0000" and is also circled in red.

Note: The telephone number above is just for reference only.
Please enter the actual number you want to used as call back.

Verify callback number you have entered. If the number is not correct, ThinConnect4 will continue to dial the wrong number.

The call back settings should match on both RAS Server side and RAS Client side. If the settings are different, ThinConnect4 will not be able to connect.

<84> ThinConnect4

- When finishing your Call back setting, click the “Add” button. The record will be added in the box.

The screenshot shows the 'RAS Server IP Connection' dialog box. At the top, there are fields for 'RAS Server IP' (192.168.0.1) and 'RAS Client IP' (192.168.0.254). Below that is the 'User Registration' section with fields for 'User Name' (EXP), 'Password', 'Confirm Password', and 'Phone Number' (000-0000). There are radio buttons for 'Accept Call Back', 'Set by RAS Client', and 'Preset in RAS Server to'. A table below contains one record: 'EXP' with 'Call Back' set to 'Preset to' and 'Phone Number' set to '000-0000'. The 'Add' button is circled in red. At the bottom, there is a 'Ring Count' field set to 2 and 'OK' and 'Cancel' buttons.

Note: To edit or remove the listed record, please refer to page 86.

- When all records have been listed, enter the “Ring Count”. ThinConnect4 will answer log in requests after the “Ring Count” has been set (1 to 99, Default is set to 2) when finished with the setting, click the “OK” button.

Note: If you have other telephone devices connected to the same line as the Modem, please choose the “Ring Count” carefully. For telephones, the setting should be higher than 2 (i.e. 15) so you have a chance to pick up the phone before the Modem does.

If the settings between RAS Server and RAS Client are different, the following combination of the setting will take effect.

(For following tables: NT 4.0 = Windows NT 4.0, Win 95 = Windows 95/98)

Windows 95 Dial-Up Connection

		ThinConnect4 Server	
		No Call back	Can connect at "No call back"
Win95 Client	Call back pop up window is "OK"	Can connect at "Preset in server"	Can connect at "Set by client"
	Call back pop up window is "Cancel"	Can not connect	Can connect at "No call back"
	No pop up window		

Windows NT 4.0 Standard Dial-Up Connection

ThinConnect4 Server NT 4.0 Client	No Call back	Preset in RAS Server	Set by RAS Client
Disable PPP LCP extensions (No Call back)	Can connect at "No call back"	Can not connect	Can connect at "No call back"
Enable PPP LCP extensions	Can connect at "No call back"	Can connect at "Preset in server"	Can connect at "Set by client"
Enable PPP LCP extensions ↓ pop up window is "Cancel"	Can connect at "No call back"	Can connect at "Preset in server"	Can connect at "No call back"
Enable PPP LCP extensions ↓ pop up window is "set by client"	Can connect at "No call back"	Can connect at "Preset in server"	Can connect at "Set by client"

ThinConnect4 RAS Client

ThinConnect4 Server ThinConnect4 Client	No Call back	Preset in RAS Server	Set by RAS Client
No Callback	Can connect at "No call back"	Can not connect	Can connect at "No call back"
Preset in RAS Server	Can not connect	Can connect at "Preset in server"	Can not connect
Set by RAS Client	Can not connect	Can connect at "Preset in server"	Can connect at "Set by client"

Edit listed record

1. Highlight the record you want to edit by clicking on it.
2. Click the “Edit” button and edit the information you want to change.

User Name	Call Back	Phone Number
EXP	No Call Back	
Hal	Set by Client	
John	Preset to	555-1212

3. When you have finished editing, click the “Add” button to update your changes. Click “OK” when you have finished setup (Add, Edit, or Delete).

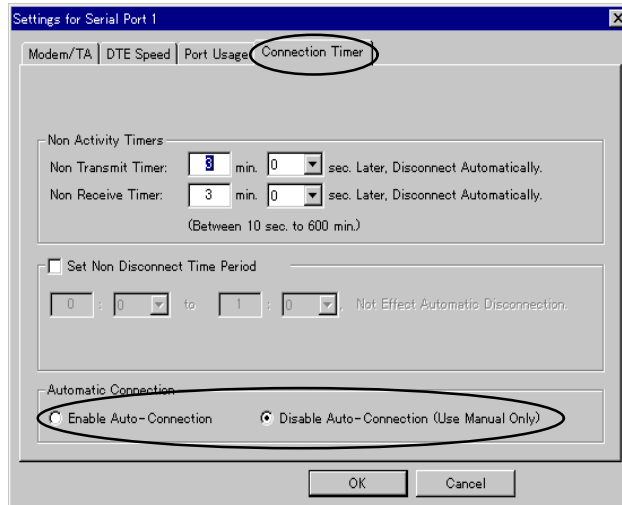
To remove a record

1. Highlight the record you want to remove by clicking on it and click the “Remove” button. Click “OK” to confirm the removal.
2. Click “OK” when you have finished setup (Add, Edit, or Remove).

End of 5.2 RAS Server Setup

5.3 Connection Timer

This setup is the same as in ISP Dial-Up IP Connection. Please refer to **4.4 Connection Timer** (Page 68 to 70).



End of 5.3 Connection Timer

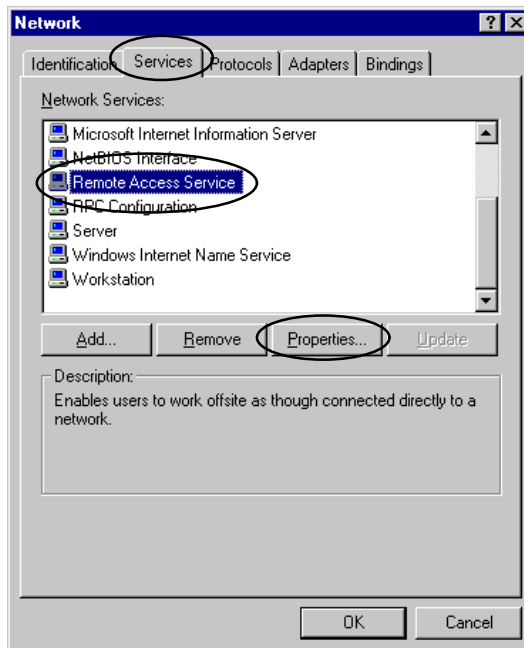
5.4 Windows NT 4.0 Authentication Settings

When connecting to a Windows NT 4.0 system and the ThinConnect4 set up as a RAS client or RAS server of ThinConnect4 from the Windows NT's RAS client, the authentication setting for Windows NT must be set to "Allow/Accept any authentication including clear text".

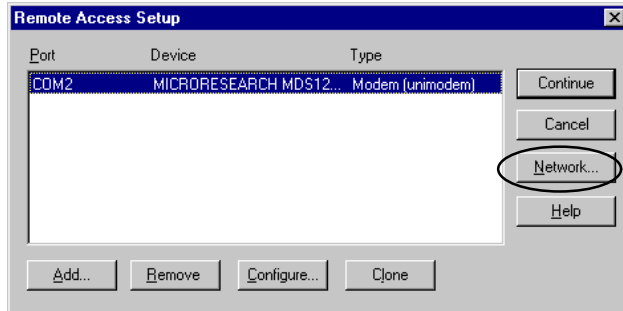
- Windows NT 4.0 RAS Server settings
Go to **5.4.1 RAS Server settings** (next section).
- Windows NT 4.0 RAS Client (Dial-up Network) settings
Go to **5.4.2 RAS Client settings** (Page 90)

5.4.1 RAS Server settings

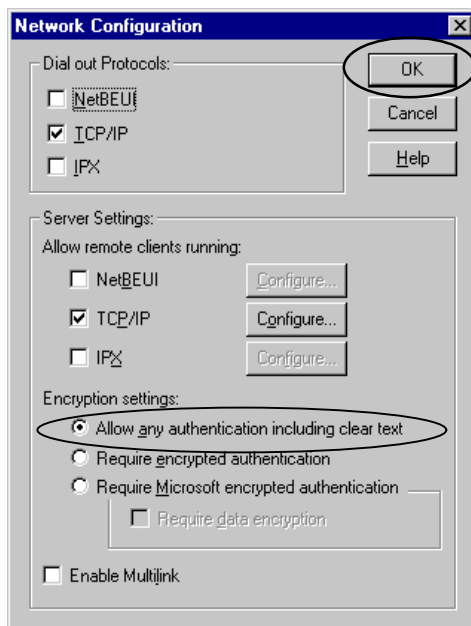
1. Click the "Start" button, choose "Settings", and click the "Control Panel" button.
2. Double-click on the "Network" icon.
3. Click "Services" Tab, choose "Remote Access Service", and click the "Properties" button.



- Click the “Network” button.



- Choose the “Allow any authentication including clear text” button of “Encryption settings” and click the “OK” button.

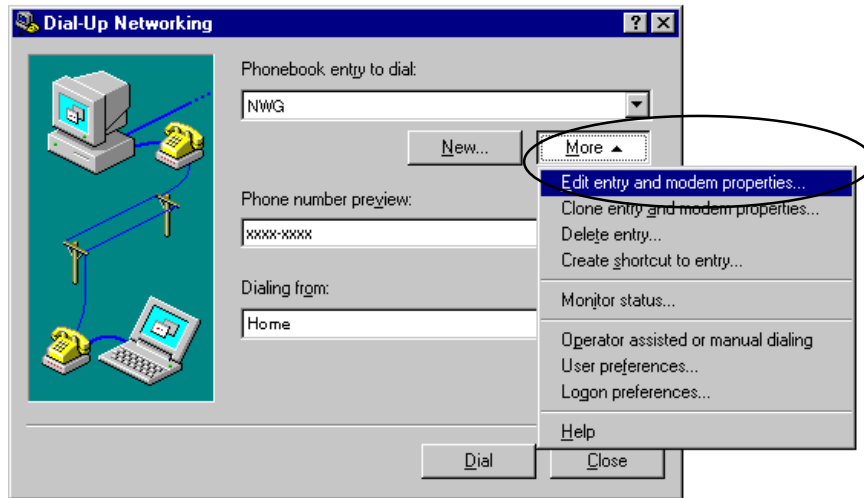


- Click the “Continue” button in “Remote Access Setup” window.
- Click the “Close” button in “Network” window.
- Please follow the instruction of Windows NT 4.0, and reboot your computer.

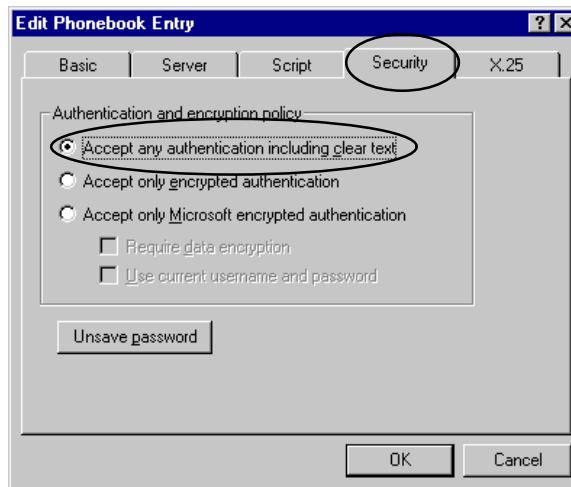
End of 5.4.1 RAS Server settings

5.4.2 Client settings

1. Double-click “My Computer” button, select “Dial-Up Networking”, and double-click.
2. Click the “More” button, choose “Edit entry and modem properties”.



3. Click “Security” tab for “Edit Phonebook Entry” and choose “Accept any authentication including clear text”.



When finished with setting, please Go to Chapter 7 Advanced settings of LAN (Page 97).

End of 5.4.2 Client settings

Chapter 6 Leased Line Setup

6.1 ISP Leased Line IP Connection

6.2 Leased Line IP Connection

6.2.1 Default Gateway Setup

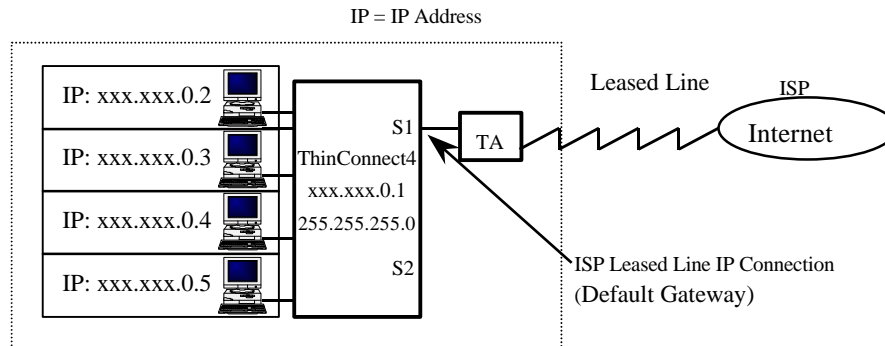
6.2.2 Static Routing Table Setup

6.1 ISP Leased Line IP Connection

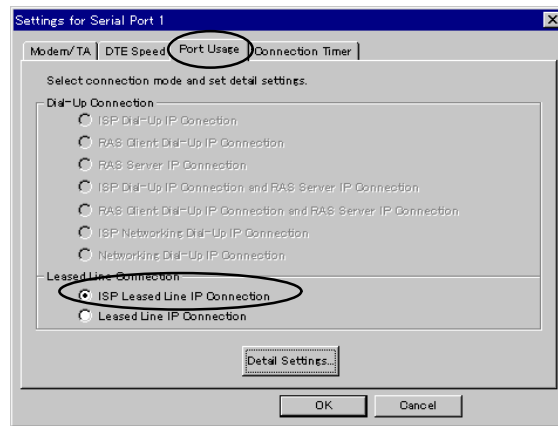
This section explains the setup for **ISP Leased Line IP Connection**.

Choose **ISDN Leased Line** beforehand in “3.3.8 Settings for MODEM/TA connection”.

(Page 40 to 44)



1. Click “Port Usage” Tab.
Choose “ISP Leased line IP Connection”.



2. Click the “OK” button.
3. Configuring “Detail Settings” is not required for “ISP Leased line IP connection”.
You can click “Cancel” to get out of the “Detail Settings” section.

Note: Use TA that matches your Leased Line connection.

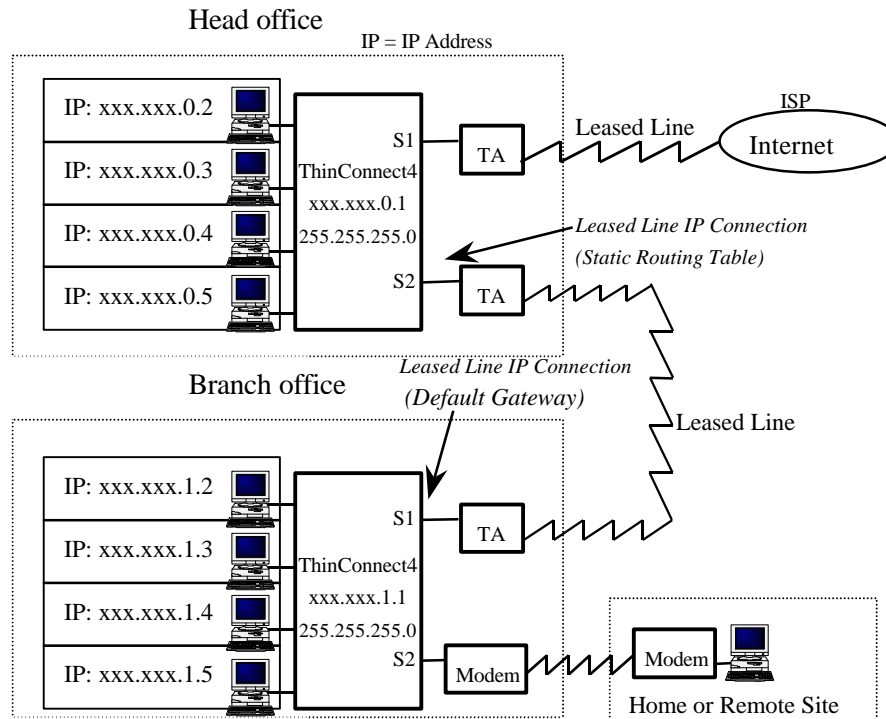
In the “ISP Leased Line IP Connection” setting, the serial port becomes a default gateway.

Please go to Chapter 7 Advanced settings of LAN (Page 97).

End of 6.1 ISP Leased Line IP Connection

6.2 Leased Line IP Connection

This section shows example of a point to point connection.
See the following figure and set Default Gateway and Static Routing Table.



- **Default Gateway and Static Routing**

As shown in the figure above, the “Head office” is set for “Static Routing Table” and the “Branch office” is the side to “Default Gateway”.

Default Gateway sends only packet except the use IP address range (xxx.xxx.1.1 to xxx.xxx.1.255) to the branch office.

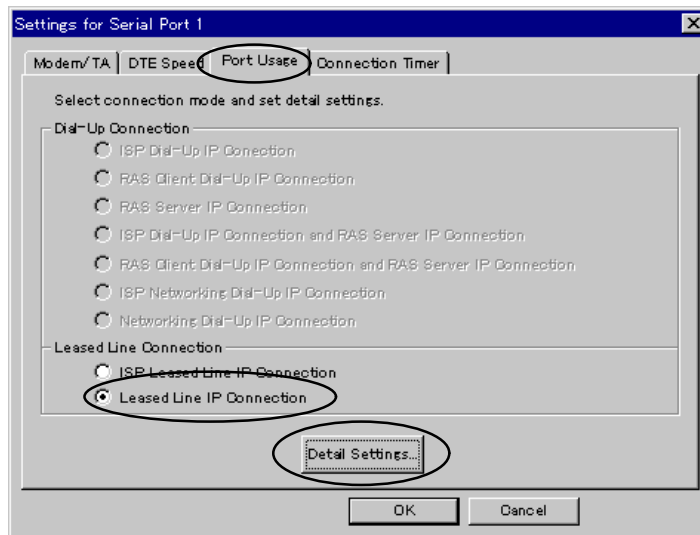
Static Routing Table sends only packet in the IP address range (xxx.xxx.1.1 to xxx.xxx.1.255) which was specified with IP address and Subnet Mask to the branch office.

When the side of the head office doesn't connect with ISP, uses “Static Routing Table” as the side of the branch office.

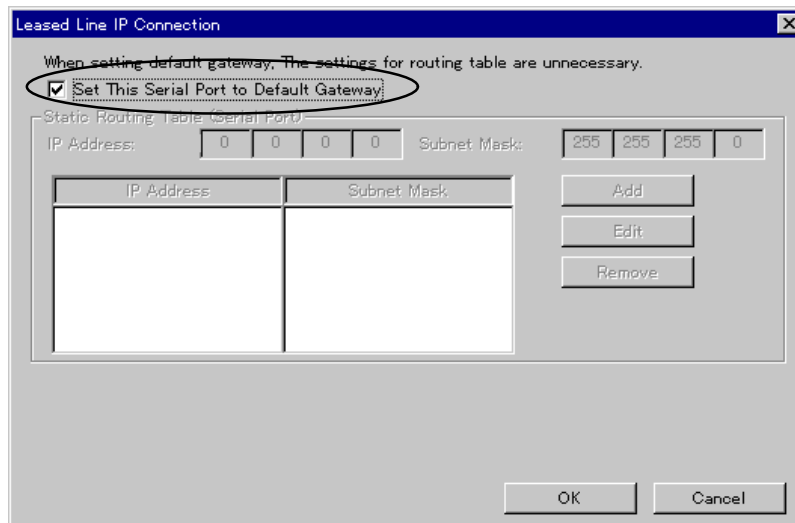
6.2.1 Default Gateway Setup

This section shows you how to setup “Detail Settings”.

1. Click the “Port Usage” Tab.
Choose “Leased Line IP Connection” and click “Detail Settings”.



2. Check the “Default Gateway” check box.



6.2.2 Static Routing Table Setup

This section shows you how to setup Static Routing Table.

1. Enter the IP address and Subnet Mask.

Remark: IP address and Subnet Mask will define the network address.

Leased Line IP Connection

When setting default gateway, The settings for routing table are unnecessary.

Set This Serial Port to Default Gateway

Static Routing Table (Serial Port)

IP Address: 111 111 111 0 Subnet Mask: 255 255 255 0

IP Address	Subnet Mask

Add
Edit
Remove

OK Cancel

2. Click the “Add” button to list the record of the IP address.

Leased Line IP Connection

When setting default gateway, The settings for routing table are unnecessary.

Set This Serial Port to Default Gateway

Static Routing Table (Serial Port)

IP Address: 111 111 111 0 Subnet Mask: 255 255 255 0

IP Address	Subnet Mask
111.111.111.0	255.255.255.0

Add
Edit
Remove

OK Cancel

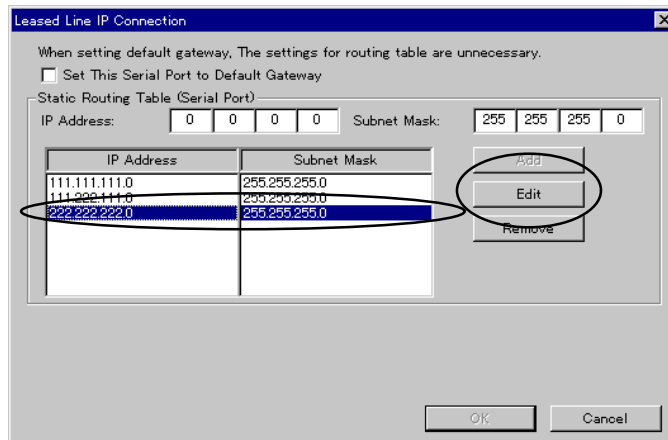
The value in the above window is only for reference. Please enter the appropriate setting to meet your LAN environment.

3. When all records are listed, click the “OK” button

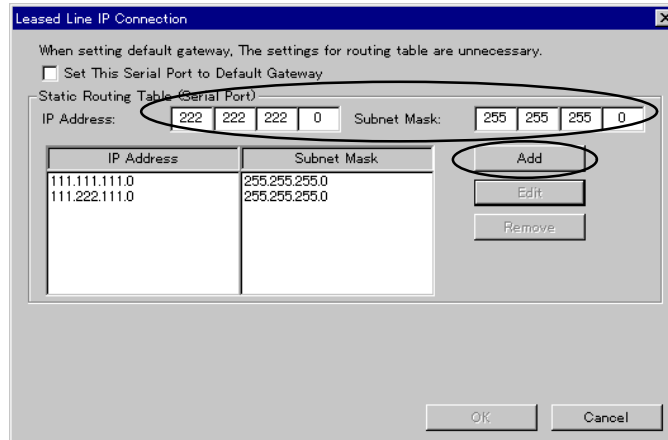
Note: To edit or delete records, please refer the steps on next page.

Edit listed record

1. Highlight the record you want to edit by clicking on it.
2. Click the "Edit" button and edit the record you want to change.



3. When you finish editing, please click "Add" to save your changes.



4. Click the "OK" button when finished the setup (Add, Edit, or Delete).

To delete a record

1. Highlight the record you want to edit by clicking on it.
2. Click the "Delete" button to delete the highlighted record.
3. Click "OK" when finished the setup (Add, Edit, or Delete).

End of 6.2 Local Leased Line Connection

Chapter 7 Advanced LAN Setting

7.1 Firewall - IP Filter Table settings

7.2 Static routing settings

7.3 Syslog settings

7.4 E-Mail sharing settings

- 7.4.1 ThinConnect4 Setup
- 7.4.2 To Setup mailer using E-Mail Sharing function
- 7.4.3 To setup a mailer sending mail to registered user

7.1 Firewall - IP Filter Table setting

Setup the Firewall - IP Filter Table is optional. ThinConnect4 can function without it. The firewall function is a packet filtering gateway process. After the firewall is setup properly, PC resources on LAN will be protected by the IP filtering function that is placed in between LAN IP frame and WAN (Serial Port) IP frame.

Caution: For this type of IP address setting you should have a good knowledge of TCP/IP. Please be very careful in setting up this section because a wrong setup may cause ThinConnect4 to stop working. Unless it is necessary to change the settings, we suggest that you to use the default setting on the next page.

Layer3 Filtering Control

Processing protocol is objected filtering control for IP frame only.
Other layer3 protocol (IPX) will be all closed down.

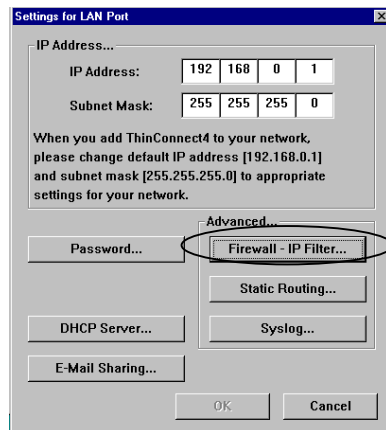
Layer4 Filtering Control

Processing protocol is objected filtering control for ICMP, TCP and UDP.
Other layer4 protocol (EGP, OSPF) will be transparent.

Layer5 Filtering Control

- ICMP Control: No control
- TCP Control: Monitoring port number and flag.
- UDP Control: Monitoring port number.

1. Click the "Firewall - IP Filter Table" button in the "Settings for LAN Port".



Note: Data in the window is an example for your reference. Please enter your proper setting to meet with your LAN requirements.

Firewall Factory default setting

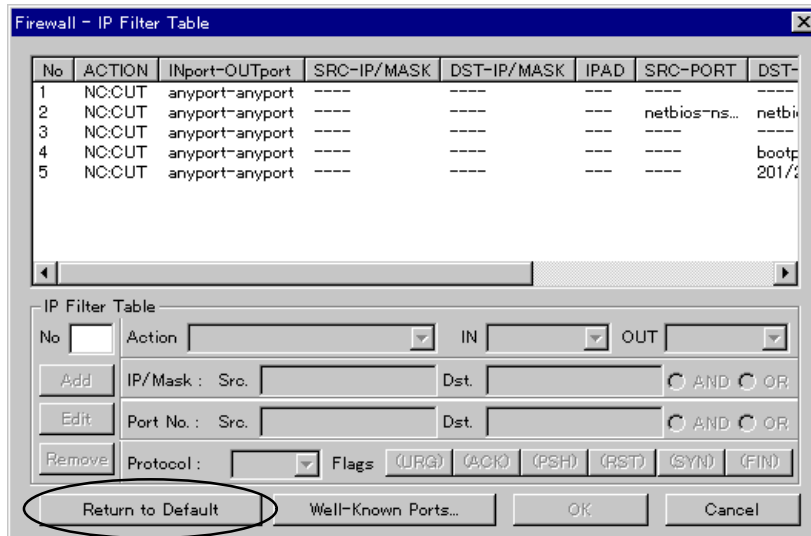
The following items are the ThinConnect4 Firewall default setting.

- **Interdict** automatic connection of circuit by ICMP.
- **Shut out to supply NetBIOS Services to other networks from LAN port.**
(Interdict automatic connection of circuit by Windows startup and finish)
- **Interdict** automatic connection of circuit beside TCP connection (SYN) flag.
(Interdict automatic connection of circuit by the end of application)
- **Interdict** automatic connection of circuit by BOOTP, TFTP.
- **Interdict** automatic connection of circuit by Apple Talk.

Note: The above 5 items is applicable to use on the same LAN.

Caution: *If you change or delete the default value of any items mentioned above, the Firewall will become ineffective. This may cause user unable to use dial-up function, or to make connection with dial-up. Try to correct the setting or set IP filter to the default value.*

Click the “Return to Default” button to reset all the “Firewall - IP Filter Table” to return to the default value.



- **Listing for filter setting** proceed to the next page.
- **To Editing for filter setting** proceed to page **105**.
- **To Removing for filter setting** proceed to page **106**.

<100> ThinConnect4

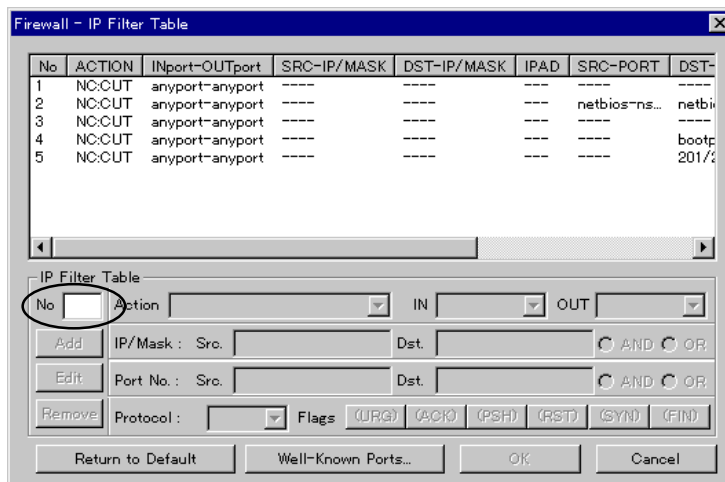
Listing for filter setting

1. Enter a number in the “No” (number) field.

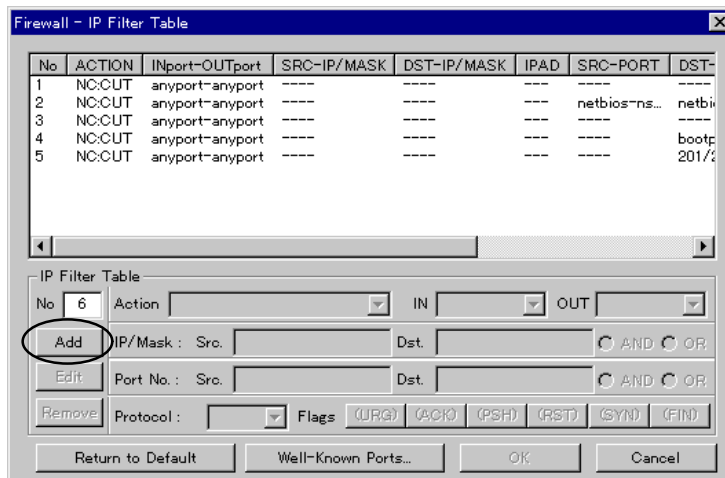
The entry number represents the IP filter processing priority, which number **1** is the highest and number **64** is the lowest. There are five default values which have been predefined for ThinConnect4.

For example: Enter number **6** if you want your setup at a lower priority than default value. Enter number **1** if you can make your setup priority higher than the default value.

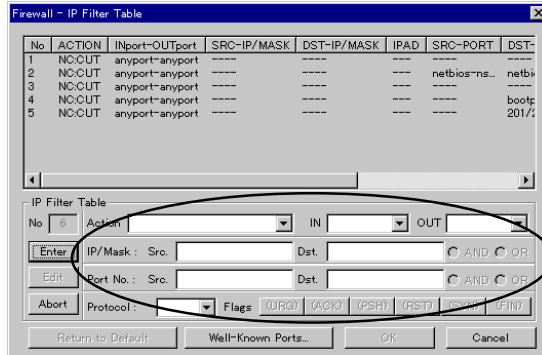
Or any setting between **2** to **5** according to the priority. (Maximum entry 64)



2. Click “Add” button after entering an entry number.



3. Items entry field will show. All the entry functions can be defined here.



4. Item entry filed descriptions.

“Action”

ThinConnect4 IP filtering functions that available for user.

- PASS: According to the settings transparent nominated IP frame.
- CUT: According to the settings blocking-off nominated IP frame.
- NC:CUT: “No Connection cut” Blocking-off only when circuit is disconnected. If circuit is connected, transparent it.
- MON: Monitor (count) the number of nominated IP frame passes through the ThinConnect4.

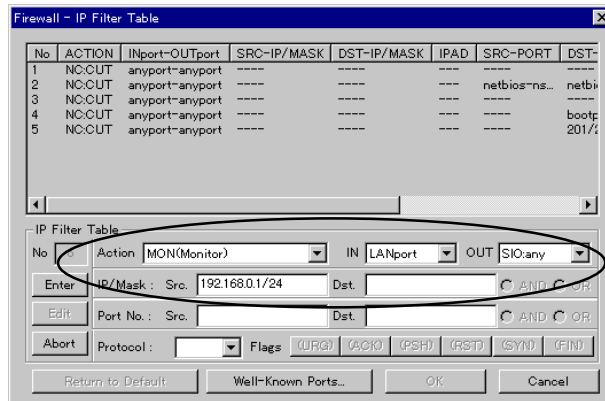
“IN” and “OUT”

“In” shows the setting of ThinConnect4 input port. “Out” shows the ThinConnect4 output port, and set IP frame and the object through ThinConnect4. Always set both “IN” port and “OUT” port. Please choose on the list box of “IN” and “OUT”.

- Anyport: Serial port 1, serial port 2, and LAN port of ThinConnect4.
- SIO:P1: Serial port 1 of ThinConnect4.
- SIO:P2: Serial port 2 of ThinConnect4.
- SIO:any: Serial port 1 and serial port 2 of ThinConnect4.
- LANport: LAN port of ThinConnect4.

Example:

“IN” = SIO: P1 “OUT”=LAN: If the objected IP frame receiving from serial port 1, it will be routed to LAN side.



“IP/Mask: Src.”

Select IP address or Network address from the Source.

Enter IP address/sub net masks bit numbers in the field, if the sub masks bit numbers is omitted, that single IP address will be chosen.

“IP/Mask: Dst.”

Select IP address or Network address from Destination.

Enter the same way as “IP/Mask: Src.” settings.

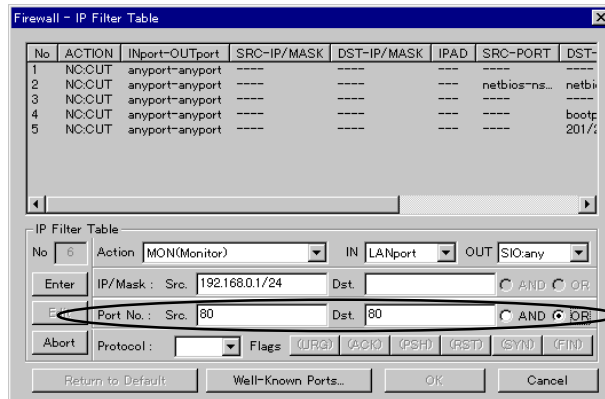
Example:

- When object is **IP Address: 192.168.0.1**, Network Address of **Subnet Mask: 255.255.255.0** → enter **“192.168.0.1/24”**
- When object is **IP Address: 192.168.0.1**, Network Address of **Subnet Mask: 255.255.255.128** → enter **“192.168.0.1/25”**
- When object is **IP Address: 192.168.0.44** of IP Address → enter **“192.168.0.44”**

“IP/Mask: AND/OR”

Active only when both “Src.” and “Dst.” are set.

- “AND”: Objected when both conditions of “Src.” and “Dst.” are met.
- “OR”: Objected when either one condition of “Src” or “Dst.” is met.



“Port No: Src.”

Select protocol port number or service from the Source and enter the “**Port No**” on the field.

“Port No: Dst.”

Select protocol port number or service of the Destination and enter the “**Port No**” on the field.

“Port No: AND/OR”

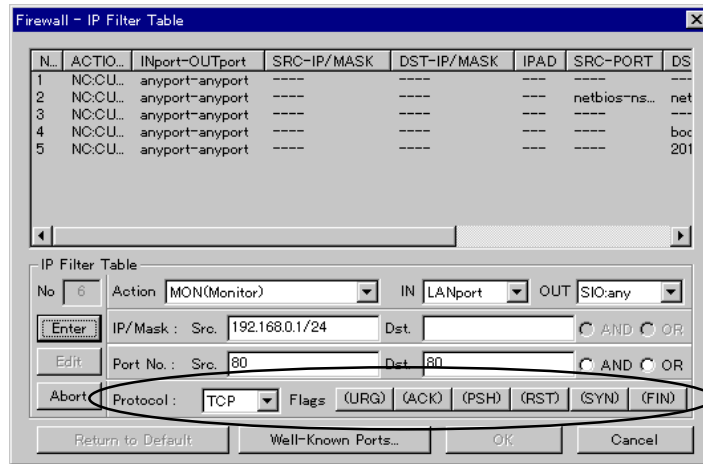
Active only when both “Src.” and “Dst.” are set.

- “AND”: Objected when both conditions of “Src.” and “Dst.” are met.
- “OR”: Objected when either one of conditions of “Src.” and “Dst.” is met.

Note1: For well-known port, it is possible to enter it with protocol or service name. Just click the “Well-known Ports” button of ThinConnect4 and refer to “Well-known Ports: Keyword Table”

Note2: “Src.” and “Dst.” field can set a range by inserting “/” between the source port number and the destination port number.

Example: Objected area, from (201/208) = 201(AT-RMTP) to 208(AT-8).



“Protocol:”

Choose in the list box of “Protocol”.

- Any: Objected for all IP frame.
- ICMP: Objected for ICMP protocol.
- TCP: Objected for TCP protocol.
- UDP: Objected for UDP protocol.

“Flags”

Select one of the six flag types for the objected TCP protocol.

- URG: Flag for urgent.
- ACK: Flag for acknowledgement
- PSH: Flag for push.
- RST: Flag for reset.
- SYN: Flag for synchronization
- FIN: Flag for final.

If you click the "flag name" button, the following indications will display in sequence.

- (XXX): Not objected flag (disregard).
- +XXX: Objected if the flag is on (bit 1).
- -XXX: Objected if the flag is off (bit 0).

XXX each name of flag will be in.

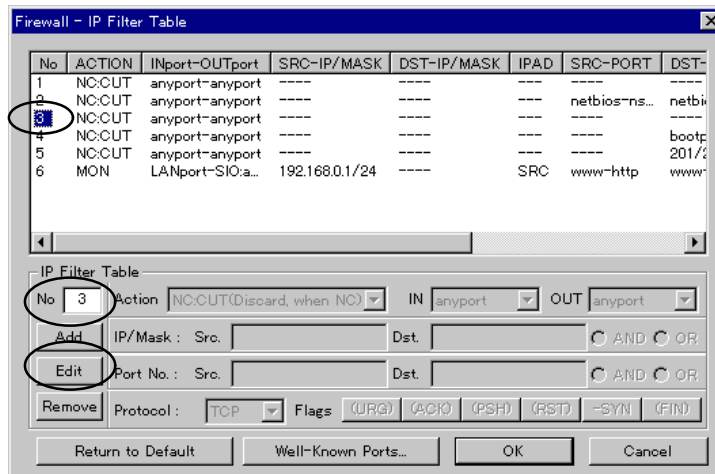
If [+XXX] and [-XXX] are combined and all conditions are met it will object only (AND).

5. Click the “Enter” button after finishing all settings.
The entry number will be added on the list. If your entry number is an already existing number the new entry will be listed after such number.

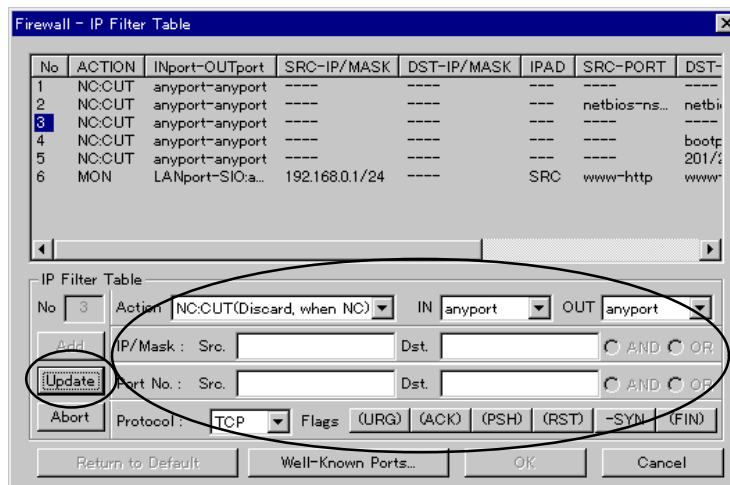
All IP frames that are not objected on entry list will be transparent.

Editing for filter settings

- Select an entry-number from the list and click it.
The entry number will be displayed on “No.” field on “IP Filter Table”
click the “Edit” button.



- Change the setting value that you want to edit, then click the “Update” button.

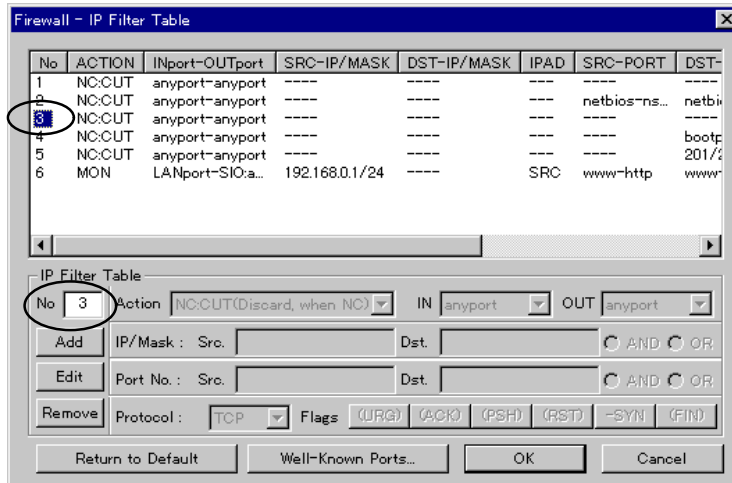


- Check if the ThinConnect4 updated the change.

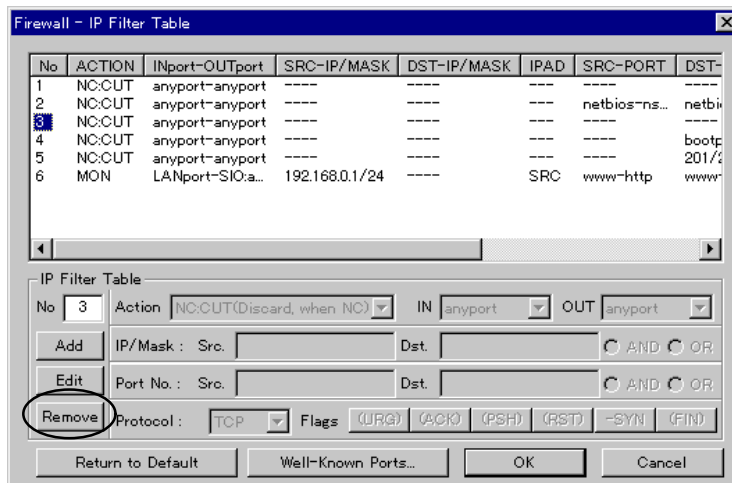
Note: The data information is just an example for your reference.

Remove filter settings

1. Click on an entry number, which you want to delete from the list. The selected entry number will be shown on “No” field of “IP Filter Table”.



2. The entry number will be deleted when you click the “Remove” button.



Note: The data information is just an example for your reference.

End of 7.1 Firewall - IP Filter Table settings

7.2 Static Routing Settings

This setup is optional. It is not necessary for the function of ThinConnect4. With this setting, ThinConnect4 can transfer the received packet to the other router. It sets up the Network and Gateway address.

- **Routing setup according to registered current routing information**
The packet on authorized network address will be transferred to the other router assigned by gateway address.
- **Using default LAN gateway**
The packets on authorized routing information and the other IP addresses within a LAN will be transferred to the IP address (router) assigned by default gateway.

Note: ThinConnect4 can setup one default gateway only. If you choose any of the connection types below, ThinConnect4 serial port becomes the default gateway.

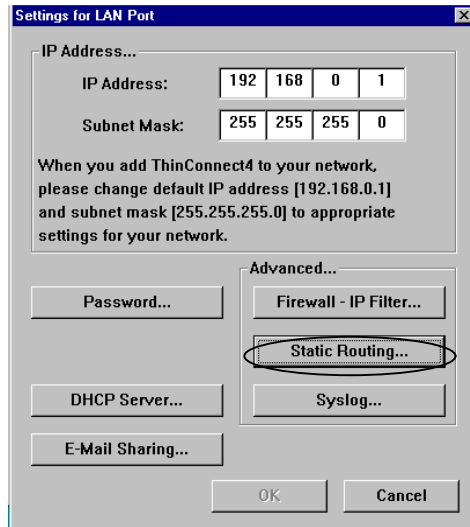
- ISP Dial-Up IP Connection
- RAS Client Dial-Up IP Connection
- ISP Networking Dial-Up IP Connection
- ISP Leased Line IP Connection

If you select the “Use Default Gateway on Your LAN” box, the following function are available:

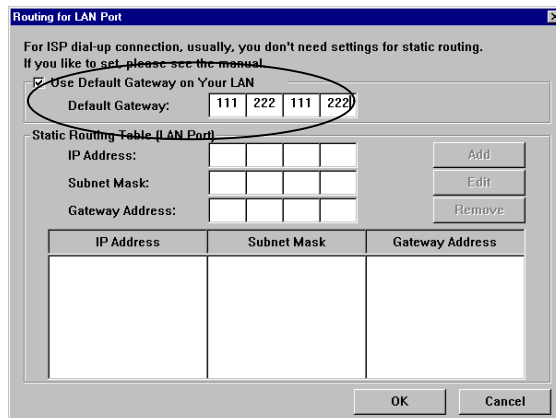
- RAS Server IP Connection
- Networking Dial-Up IP Connection”
- Leased Line Connection (without default gateway)

<108> ThinConnect4

1. Click the “Static Routing” button and the static routing window will pop up.



2. Choose to use default gateway or static routing.
 - To use default gateway, check the “Default Gateway” check box.
 - The setting of “Static Routing table” is a higher priority than “Default Gateway”.



The value in window is an example only. Please enter your proper setting to meet your LAN requirement.

Please refer to *Chapter 10 Examples* (Page 136 to 139)

Listing

1. Enter IP address and Subnet Mask

Note: The Network address will be defined by the combination of IP address and Subnet Mask.

Enter gateway address (router address)

The value in window is just an example.

Please enter your setting to meet with your LAN requirements.

2. Click “Add” to add the data to the list.
3. Click “OK” to confirm all records enter.

Edit the listed information

1. If you want to change a listed record, highlight the item.
2. Click “Edit” and edit the record of settings.
3. Click “Add” to update the change.

Remove the listed record

When removing the listed record, select the content you want to remove by highlighting it. Click “Remove” to remove the record from list.

End of 7.2 Static Routing settings

7.3 Syslog settings

Syslog is a system messages recording utility. This utility will log event and system information (This is an option setting).

Usually system messages can be sent/received through a network by using the UDP Port 514. Most of UNIX host, which records those messages as the system messages are received and recorded by Syslog demon process.

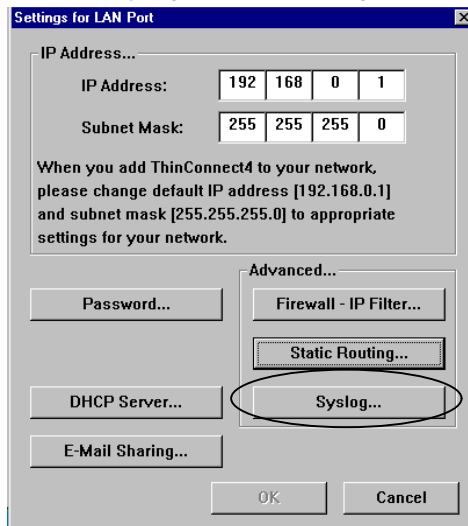
Syslog event/information in ThinConnect4

The ThinConnect4 current firmware has the following event/information logging capability. (Depending on firmware version, some of the functions may not be available)

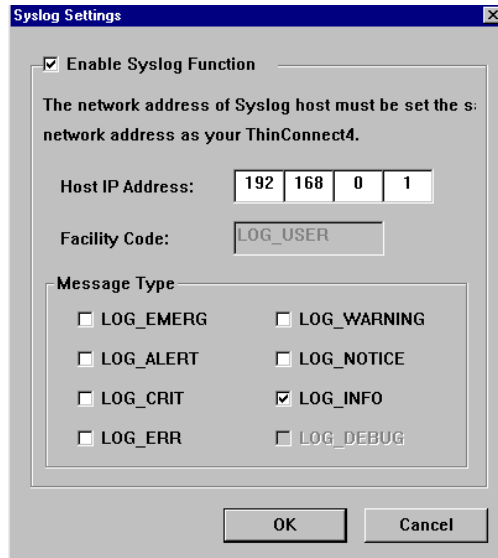
- Record “AT” commands sent to modem/TA on both serial and the response received from Modem/TA.
- Confirm PPP connected sequence.
- Confirm global IP address provided by ISP.
- Record connecting/disconnecting, confirm connecting, disconnecting time and communicating time.
- Others.

Syslog settings

1. Click the “Syslog” button in “Settings for LAN Port” window.



2. Setting screen Syslog.

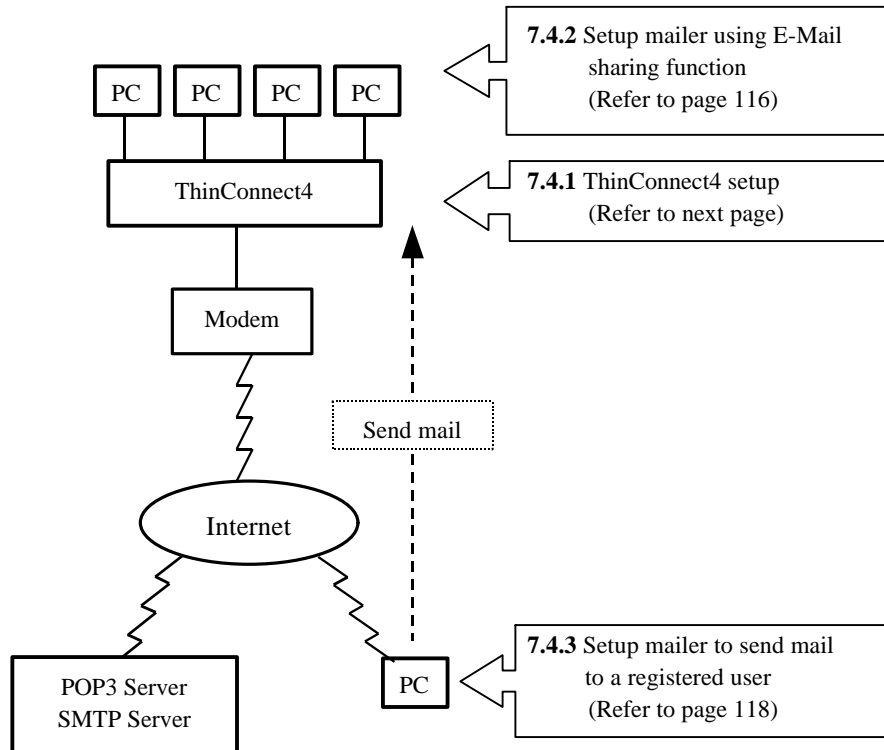
**Setting up items**

- Check box for “Enable Syslog Function”:
Place a check in this box to enable Syslog function.
- “Host IP Address”:
Enter a receivable “Host IP Address” of Syslog. The receivable IP address should be the same as ThinConnect4, which means it must correspond to the LAN side address of the same network. If you enter 255,255,255,255 the Syslog event/information will be broadcasted to the LAN within the same segment of ThinConnect4.
If you use syslog demon corresponding to broadcasting IP, you can receive syslog with multiple PCs at the same time.
- “Facility Code”:
ThinConnect4 always use **LOG_USER** as the facility code and this setting is not changeable.
- “Message Type”
Check the message type check box of each Syslog option.
At present, ThinConnect4 has two messages type available: “LOG_INFO” and “LOG_WARNING”. In the future, more message functions will be added by firmware version upgrade.
Note: At present, Syslog demon program services have not implemented. Contact technical support for detail.

End of 7.3 Syslog settings

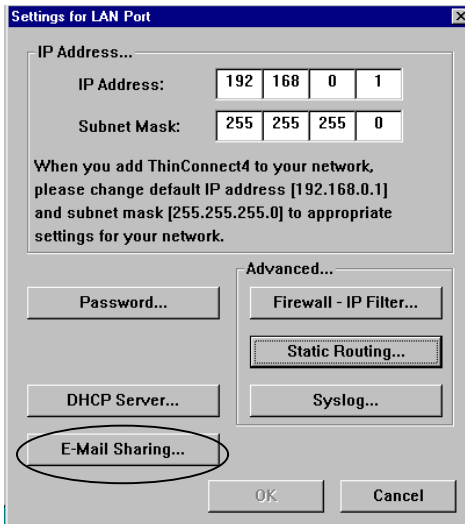
7.4 E-Mail sharing settings

This function allows multiple users to share one E-mail account. The following figure shows typical steps needed to setup the e-mail sharing.

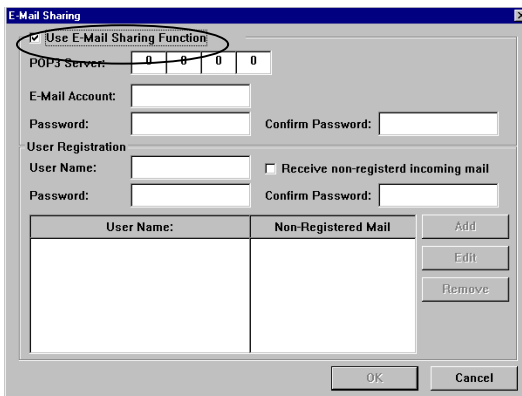


7.4.1 ThinConnect4 Setup

1. Click the “E-Mail Sharing” button.



2. Place a check mark in the “Use E-Mail Sharing function” box.
If you do not use this function, leave it unchecked.



3. Setup a mail server connection
Enter POP3 server IP address onto "POP3 Server" field.
Enter the E-Mail account registered with POP3 Server in "E-Mail Account" field.
Enter a password in the "Password" and "Confirm Password" fields. If you do not have password, leave it empty.

E-Mail Sharing

Use E-Mail Sharing Function

POP3 Server: 222 222 222 222

E-Mail Account: EXP@expnet.com

Password: ***** Confirm Password: *****

User Registration

User Name: Receive non-registered incoming mail

Password: Confirm Password:

User Name:	Non-Registered Mail	
		Add
		Edit
		Remove

OK Cancel

4. Register users who are going to share the e-mail account.
Enter user names in "User Name" field.
Enter password to "Password" and "Confirm Password" fields.
If user corresponds with a non-registered user, then place a check mark on "Receive non-registered incoming mail".

E-Mail Sharing

Use E-Mail Sharing Function

POP3 Server: 222 222 222 222

E-Mail Account: EXP@expnet.com

Password: ***** Confirm Password: *****

User Registration

User Name: John Receive non-registered incoming mail

Password: ***** Confirm Password: *****

User Name:	Non-Registered Mail	
		Add
		Edit
		Remove

OK Cancel

5. Please click the "Add" button. User information will be added to the list.

*Note: For security reason, the password will show as "****" whatever you have typed.
The value in the above window is only for reference.
Please enter the appropriate setting to meet your environment.*

Edit listed record

1. Click on a user you want to change from list.
Selected registered Information will be highlighted.
2. Click the “Edit” button. Selected listed information will be shown on each item box for you edit and change.
3. After you finish editing, click the “Add” button, the information entered will be updated.

Remove listed record

1. Click on a user you want to remove from the list.
Selected registered Information will be highlighted.
2. Click the “Remove” button for it to be deleted from the list.

When you are finished with “Add” “Edit” and/or “Remove”, click the “OK” button.

7.4.2 Setup mailer using E-Mail Sharing function

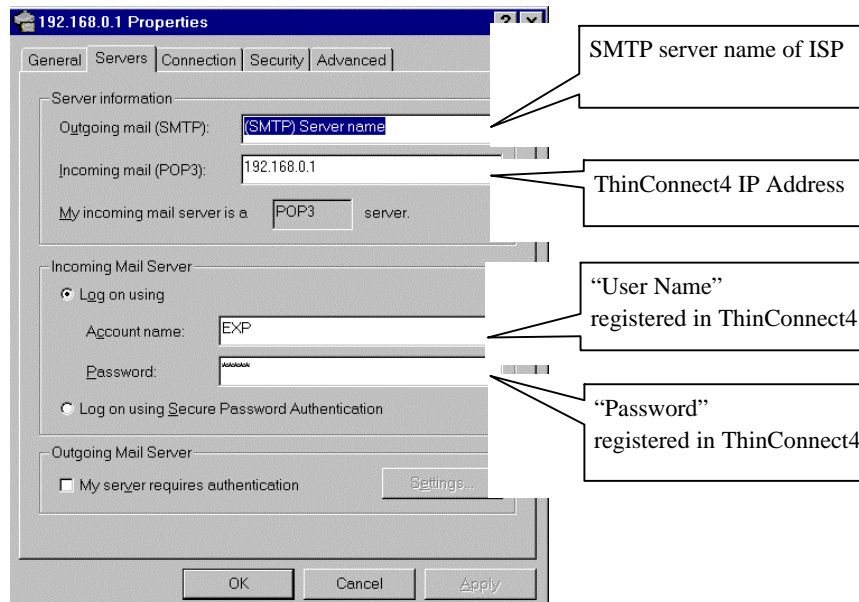
This section describes setup procedures for each individual PC using E-Mail Sharing function featured in the ThinConnect4.

Follow the setup sequence outlines below.

- POP3 (Incoming mail) Server Enter ThinConnect4 IP Address.
- Accounts Enter “User Name”. This is the registered user from Item 4 on page 114.
- Password Enter “Password”. This is password for the registered user from Item 4 on page 114.

Setup example for “Outlook Express”

1. Click “Accounts” in “Tools” menu in the startup window. Click “Mail” tab. Select the account you want to setup and click the “Properties” button.
2. Click the “Server” tab. The window mentioned will be shown. Please enter as follows:



*Remark: The value in the above window is only for reference.
Please enter the appropriate setting to meet your environment*

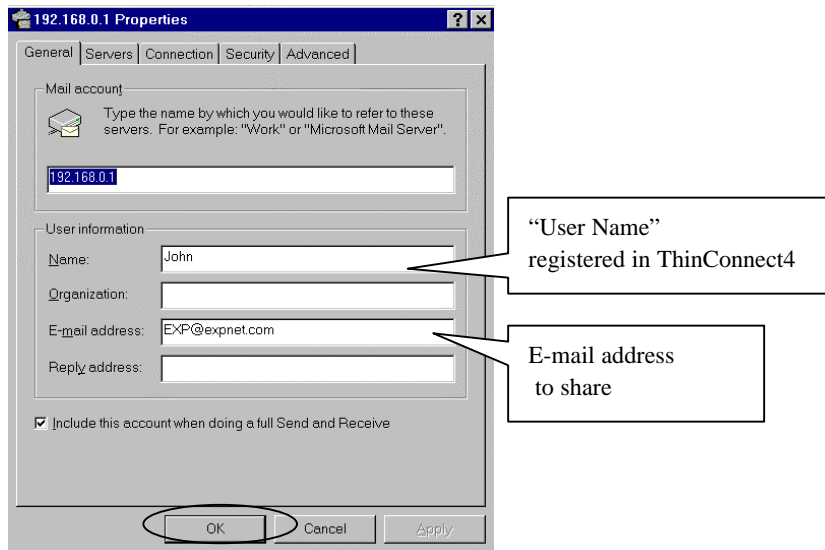
- Click the “General” tab, you will see the “Properties” window.
This section contains the user’s information. It will be used when sending or receiving mail.

Caution: Depending on the mail programs which the sender use, the program may not be able to respond to the replied mail from a registered user correctly. For more information go to 7.4.3 “Setup e-mail program” (Page **120**).

Enter “User Name” which is registered in ThinConnect4 to “Name” field.

Enter the shared E-mail address to “E-mail address” field.

Click the “OK” button.



Remark: The value in the above window is only for reference.
Please enter the appropriate setting to meeth your environment

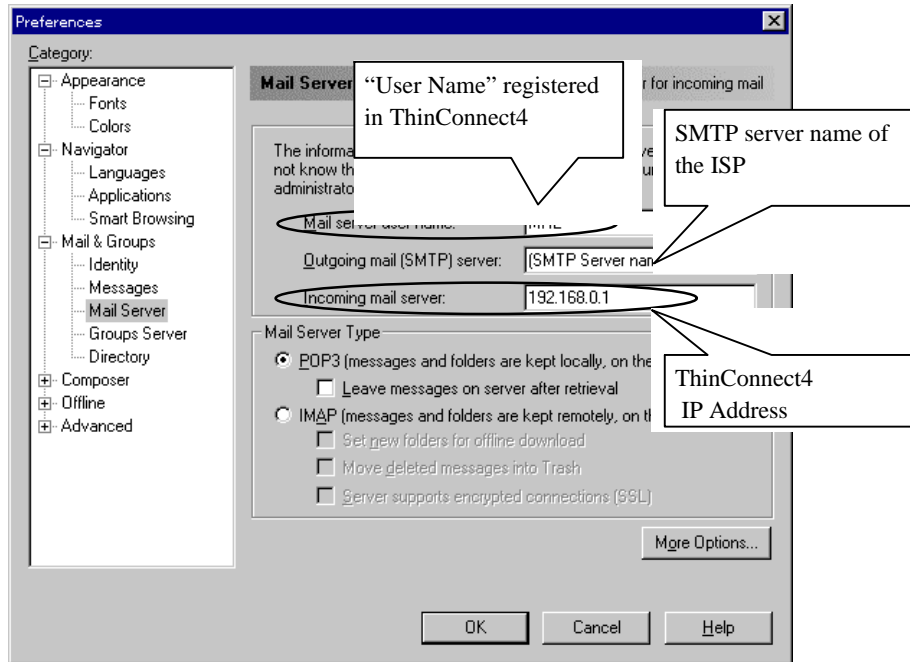
- Close “Internet Accounts”.

Setup for “Netscape Communicator 4.07”

1. Start up “Messenger” and click “Preferences” in the “Edit” Menu.
2. Double click “Mail & Newsgroups”, Click “Mail Server”.

The window below will be displayed.

Enter “User Name” whom you have registered in ThinConnect4 to “Mail server user name” field. Enter ThinConnect4 IP Address to “Incoming mail server:” field.



Remark: The value in the above window is only for reference.

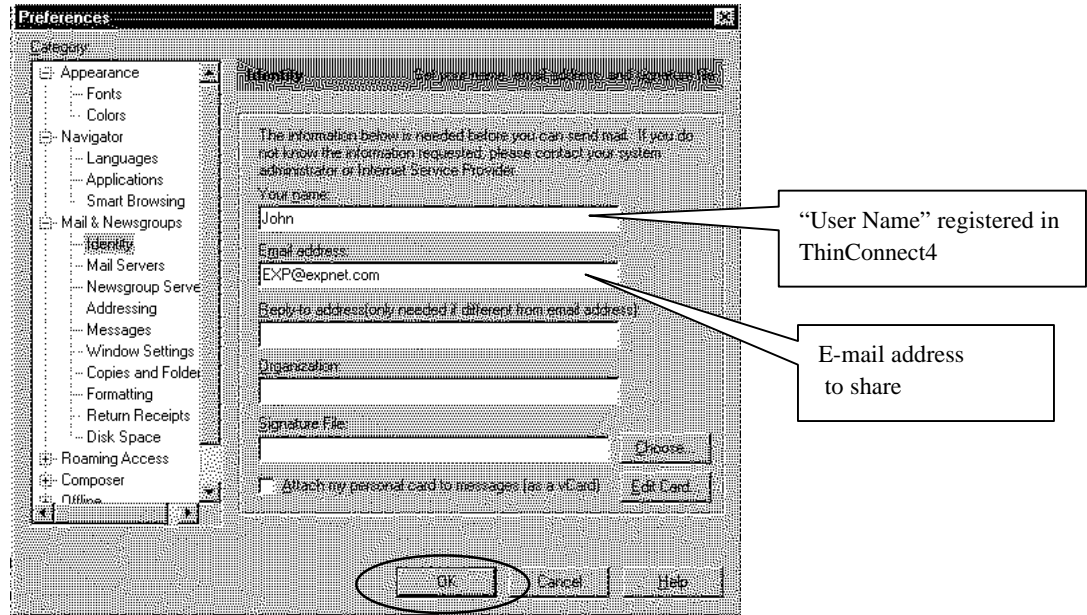
Please enter the appropriate setting to meet your environment.

3. Click on "Identity" and the window will be shown. This is a mail user's information, which will be used to send and receive e-mail

Enter "User Name" that is registered in ThinConnect4 to "Your name:" field.

Enter the share E-mail address to "E-mail address" field.

And click the "OK" button.



Note: The value in the above window is only for reference only.
Please enter the appropriate setting to meet your environment.

Caution: Be careful while choosing to leave mails on the server, do not exceed the server storage quota; otherwise, the new mail may not be noticed.

7.4.3 Setup E-mail program

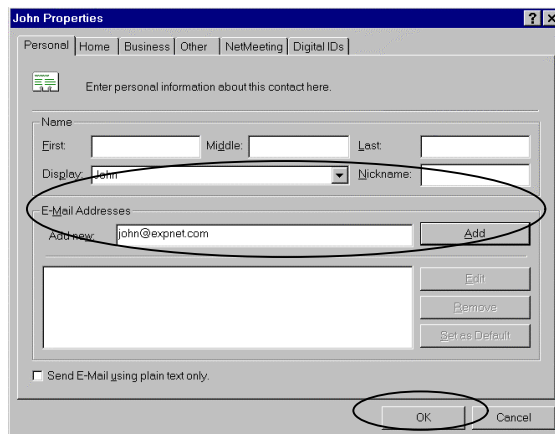
This section describes how to configure e-mail program for sending mail to ThinConnect4 user with the E-mail sharing function. Please ask the sender to set up e-mail program according to following procedures:

In order to send mail to users, who are using an E-Mail sharing function, it is necessary for the e-mail program to have either one of these two conditions or both, otherwise it will not work.

- A program that allows user to enter an address in “User name”<E-mail account> format in the “To” field. For example:
“John”<thinconnect4@expnet.com>
- A program which can set “User name”<E-mail account> in "To" field by “Address book”.

Setup example of “Outlook Express” will be shown in below.

1. Click “Address Book” in “Tools” menu at startup window.
Click the “New Contact” button. The window below will be shown.
Enter the “User Name” registered in ThinConnect4 to "Display" field.
Enter the shared E-Mail address at ThinConnect4 to “Add New” field.
Click the “Add” button.



2. Click the “OK” button and close “Address Book”.

Note1: “John” will be shown in the address field at the time of sending but actually mail will be sent to "John"<thinconnect4@expnet.com>.

*Note2: The value in the above window is only for reference.
Please enter the appropriate setting to meet your environment.*

Notes on sending mail

- Users who are using an E-Mail sharing function can not receive mail which are sent out as "Cc". Please send out as "To".
- If you want to send mail to multiple receivers, you can not include users who are using the E-mail Sharing function. Please send directly to the one who is using E-mail Sharing function.
- The "Messenger" in Netscape Communicator can not set up "User Name"<E-mail Account> address format. The format is not available from the "To" or "Address Book".

End of 7.4 E-mail Sharing Settings

Chapter 8 Final Setup

8.1 Save your settings

8.2 Return to Default

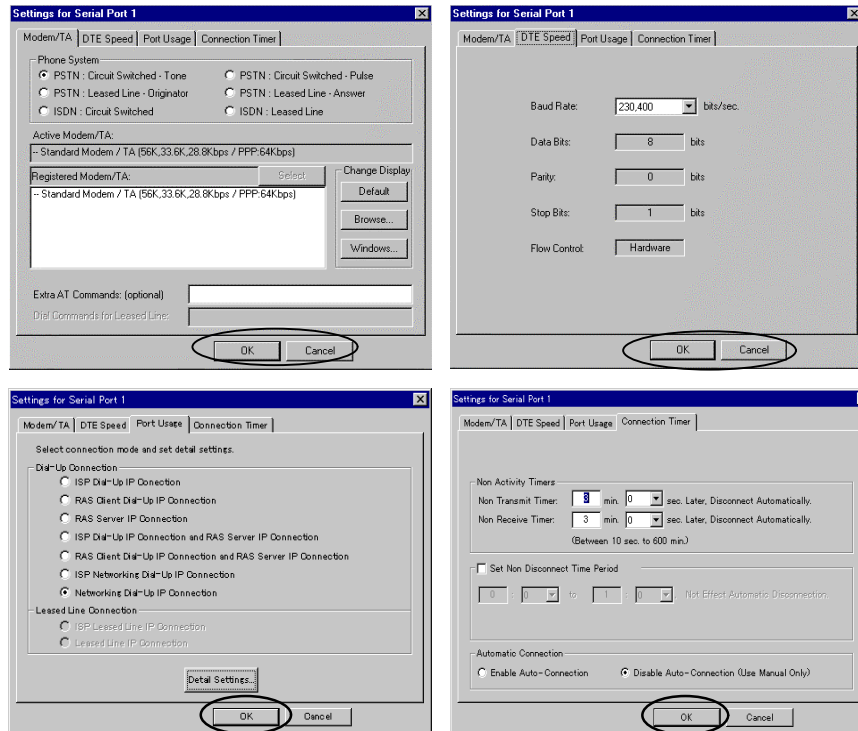
8.2 To Copy Serial Port Settings

8.1 Save your settings

To make sure ThinConnect4 configuration will take effect, this section instructs you how to save your settings correctly.

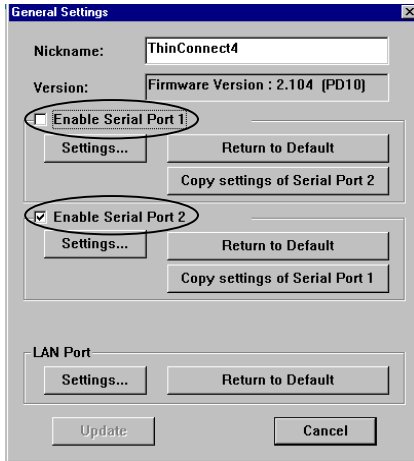
1. Basic setups

Click “OK” in the window at “Setting for Serial port 1 (or 2)” setup if you want to confirm your settings. Otherwise Click “Cancel” if you do not want to save any changes.



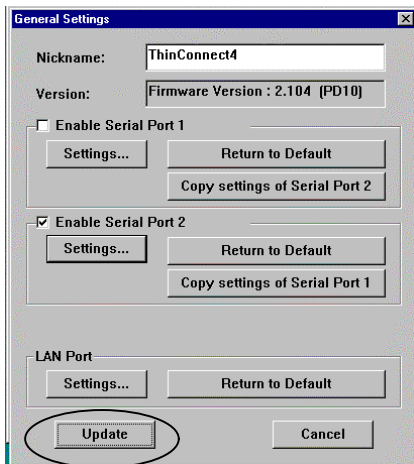
<124> ThinConnect4

2. Enable the serial ports by enabling their check boxes.

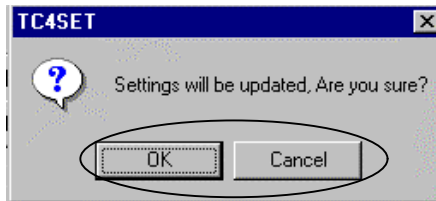


Note: Click on "Update" to make the change immediately. Or, you can click "Close" when ending the Setup Utility.

3. To update your change, click the "Update" button. If you want to leave the previous Setup condition, click the "Cancel" button.

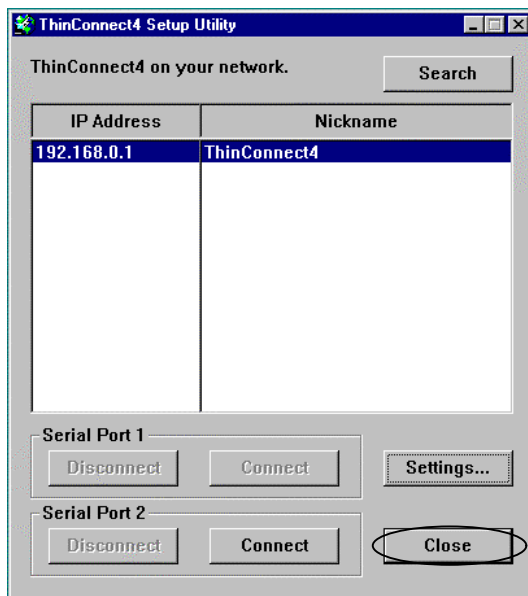


4. When this window pops up, you can click "OK" to update the settings made to ThinConnect4. Otherwise, click "Cancel".



Note: When you click "OK", the ThinConnect4 will automatically restart again. All current communications will be disconnected. In case the ThinConnect4 connects with a Leased Line, ThinConnect4 will start to reconnect immediately soon after it restarts.

5. Click the "Close" button.



Please go to Chapter 9 Connect/ Disconnect Telephone Network (Page 128)

End of 8.1 Save your settings

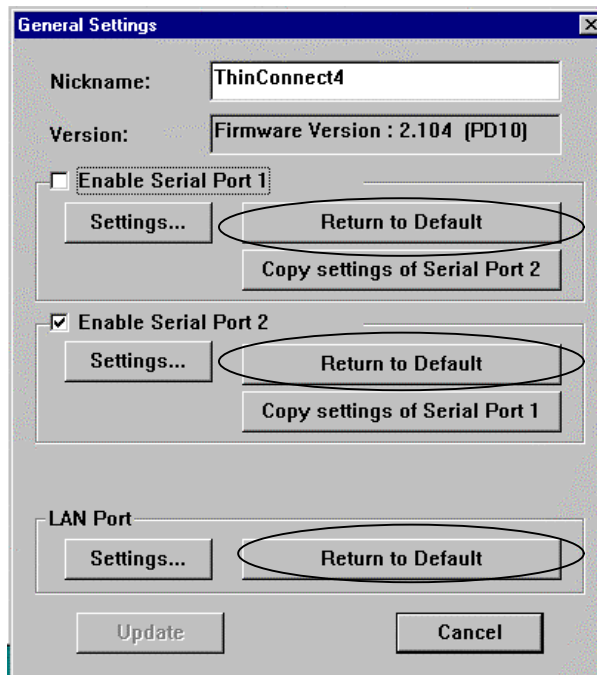
8.2 Return to Default

This section instructs you how to load the factory default values.

1. Refer **3.3.1 Start ThinConnect4 Setup Utility** (Page 25) to start up Setup Utility.
2. To load factory default value to serial port 1, click the “Return to default” button in serial port 1.

To load factory default value to serial port 2, click the “Return to default” button in serial port 2.

To load factory default value to LAN port, click the “Return to default” button in LAN port.

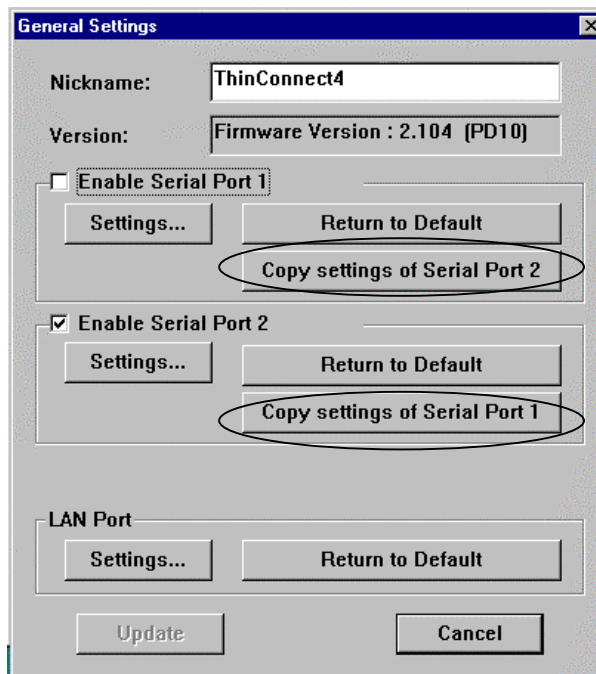


End of 8.2 Return to Default

8.3 Copy Serial Port Settings

If you have successfully setup a serial port and want to duplicate all settings to the other port, ThinConnect4 has this function for you.

1. If you want to copy settings of Serial port 2 to serial port 1.
Please click “Copy settings of serial port 2” button on “Enable Serial Port 1” field.
2. If you want to copy settings of Serial port 1 to serial port 2.
Please click the “Copy settings of Serial port 1” button on “Enable serial port 2” field.



Note: The Copy setting function will overwrite any previous setting. If the serial port has been enabled before Copy setting, it will become disable. For example, at the time the check mark is on the “Enable Serial Port 1” and you click the “copy settings of serial port 2” button, Serial port 2 settings will overwrite on serial port 1 and “Enable Serial Port 1” the check mark will disappear from serial port 1.

End of 8.3 To Copy Serial Port Settings

Chapter 9 Connect / Disconnect Telephone Network

9.1 Applications

- 9.1.1 Web browser
- 9.1.2 E-mail program

9.2 Connection Types

9.3 Disconnect the network

- 9.3.1 PSTN and ISDN
- 9.3.2 Leased Line

9.1 Application

This section explains Internet application (Web browser and E-Mail software) setting to use with ThinConnect4.

Note: When using an analog Modem and with auto Dial-up connection, it may take a long time to connect the ISP. A time-out error may happen after you start an application such as Web browser, E-Mail software or FTP client software. In this case, please restart that application software again.

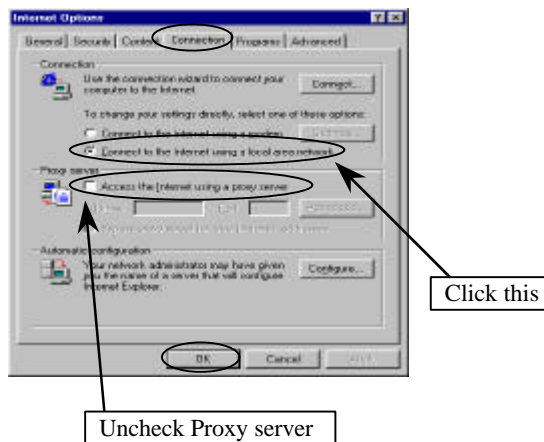
9.1.1 Web browser

Setting up a web browser:

- LAN Connection. (Do not setup as dial up connection)
- Do not use Proxy Server

Internet Explorer 4.01

1. Double-click “My Computer” -> “Control Panel” -> “Internet”
2. Click the “Connection” Tab.



3. Click the “OK” button.

9.1.2 E-mail program

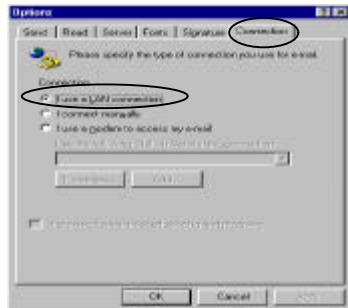
Set up an e-mail application:

- LAN Connection. (Do not setup as dial up connection)
- Do not check the mail frequently

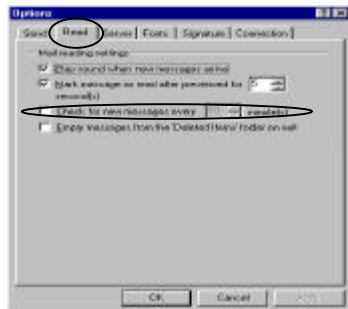
Note: When using ISP Dial-Up IP Connection function and other similar Dial-up, try to avoid using the automatic e-mail retrieval feature in the E-Mail software. You should be aware the program will dial-up regularly and it may add telephone charges every call to ISP.

Internet Mail 3.0

1. Choose "View" from menu, select "option", and click "Connection" Tab to get window shown below. Choose "I use a LAN connection".



2. Click "Read" Tab. Uncheck "Check for new messages every".



Set up to checking new message interval.

In case you choose "Check for new messages every X minute", (Substitute "X" with number of the minute interval of your choice) the ThinConnect4 will start internal timer after ThinConnect4 disconnects by the "Non Activity Timers" function.

End of 9.1 Applications

9.2 Connection Types

This section describes different kinds of public telephone network connection.

- **Auto connection**

When a user starts an Internet application such as Web browser, E-mail etc, the ThinConnect4 will connect automatically to ISP.

The dial-up network screen will not be shown. ThinConnect4 will use its configuration based on the ISP information you have provided to connect to the Internet.

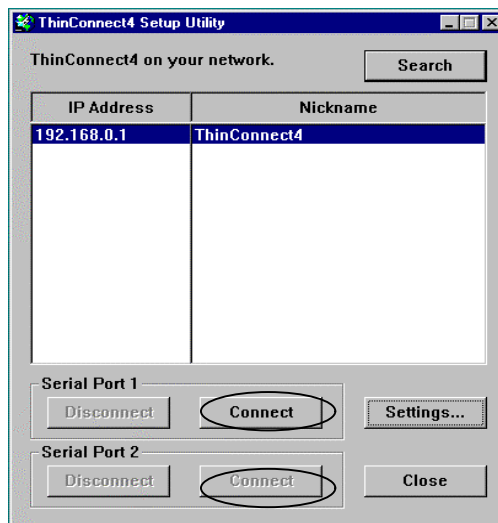
Make sure to check the “Enable Auto-Connection” function box.

See **4.4.1 Automatic Connection** (Page 68).

Note: PING and NetBIOS program cannot initiate an Auto- Connection

- **Manual connection**

Highlight a serial port that you wish to connect from the list by clicking on it. Click the “Connect” button on serial port 1 (or 2).



- **Leased line connection**

Switch on TA, and then switch on ThinConnect4.

After powering on ThinConnect4, it will connect automatically.

Please refer to **9.3.1 PSTN and ISDN** for Disconnecting (Next page).

End of 9.2 Connection Types

9.3 Disconnect the network

This section shows various methods of disconnecting from the network..

9.3.1 PSTN and ISDN

- **Automatic Disconnection**

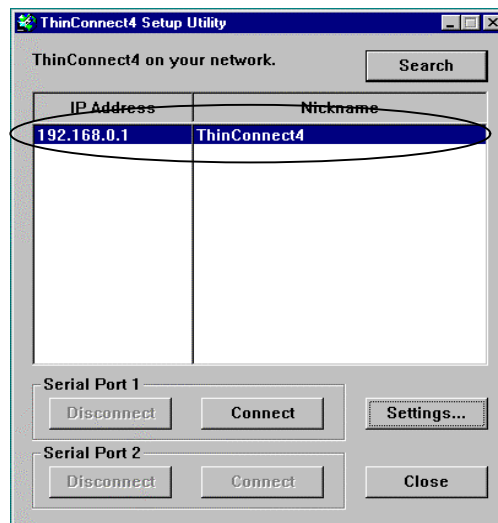
There are two kinds of automatic disconnection. (See detail set up **4.4.2 Automatic disconnection**, Page 69).

1. The line can be disconnected by the “Non Activity Timers” function of ThinConnect4.
2. The line can be disconnected by the “Set Non Disconnect Timer Period” function of ThinConnect4.

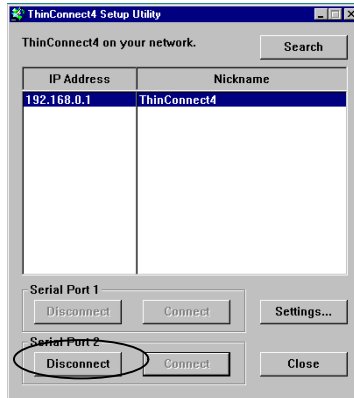
- **Manual Disconnection**

By using the ThinConnect4 Setup Utility, you can disconnect the line directly.

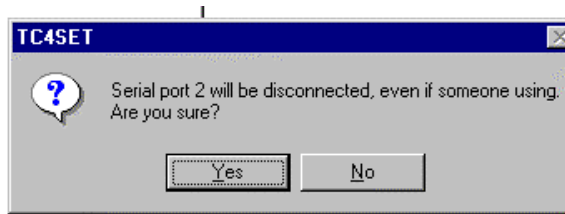
1. Choose a ThinConnect4 to disconnect from the list. The highlighted one will be available for disconnection operation.



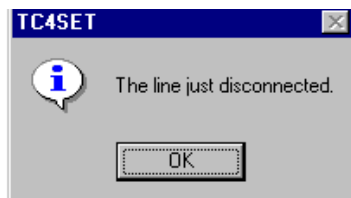
- Click the “Disconnect” button corresponded to the Serial ports (1 or 2) you wish to disconnect.



- Click the “Yes” button to disconnect. Click the “No” button to resume.



- Click the “OK” button to complete the task.



Go to next page

<134> ThinConnect4

5. If the following screen is displayed, most of the time is because of the equipment is malfunctioned.

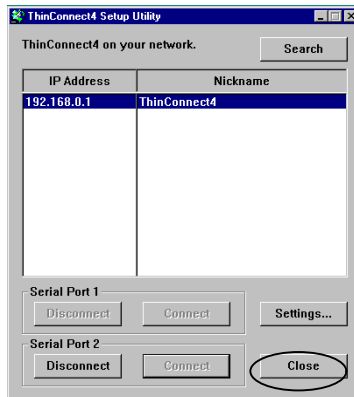
Click the "OK" button to clear the box..



The following could be the a reason to cause the error:

- MODEM/TA's malfunction
- ThinConnect4 malfunctioned
- Abnormal Cable (LAN and Serial) connect or disconnect.

6. Click the "Close" button to end Setup Utility



Note: Your ISP's non-activity timer can also disconnect ThinConnect4.

End of 9.3.1 PSTN and ISDN

9.3.2 Leased Line

Basically, you can not disconnect a leased line, however, you can switch off the TA's power supply if you want to disconnect the Leased line.

To connect the leased line again, please refer to **9.2 Connection Types** (Page 131)

End of 9.3 Disconnect the network

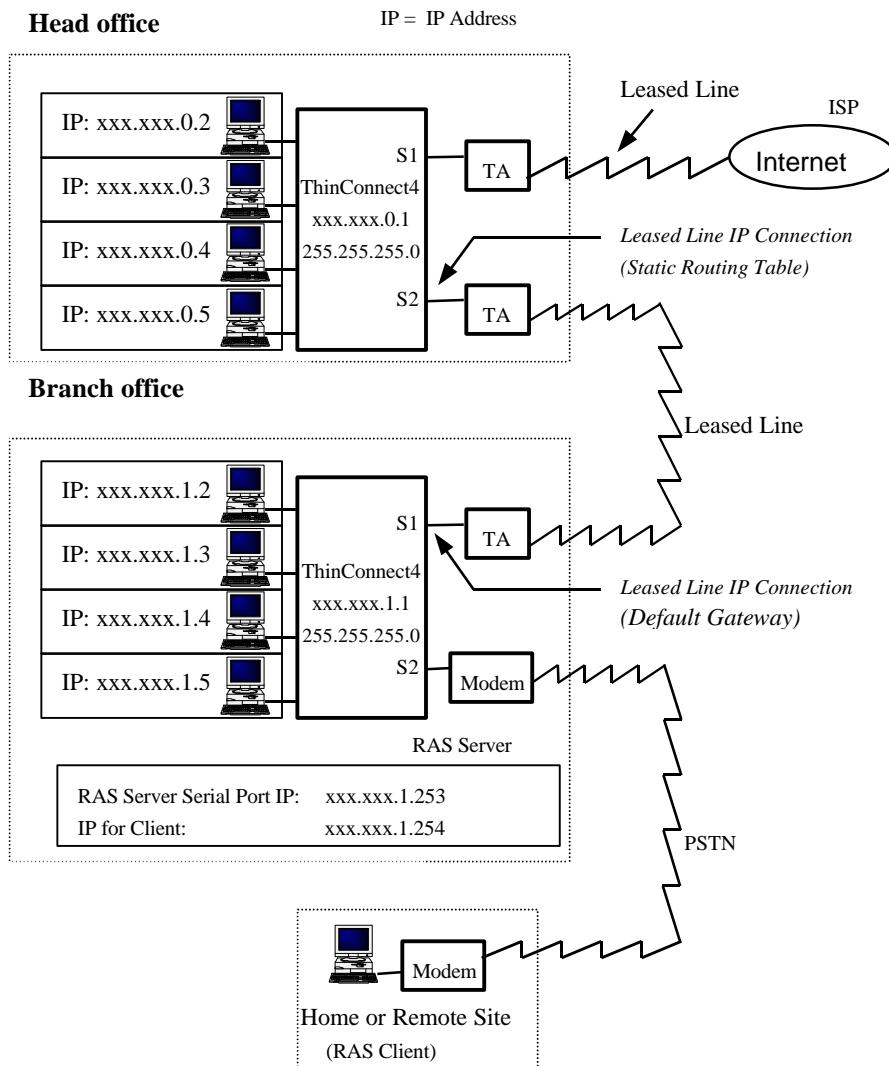
Chapter 10 Examples

- 10.1** An example of the ISP <-> Head office <-> Branch office leased line connection
- 10.2** An example with ISDN

10.1 An example of ISP <-> Head office <-> Branch office leased line connection

With the configuration like the following illustration, a user can access the Internet via company head office from branch office and from home. Of course, user can access the Internet from the head office.

The IP address and static routing setting is shown on the next page.



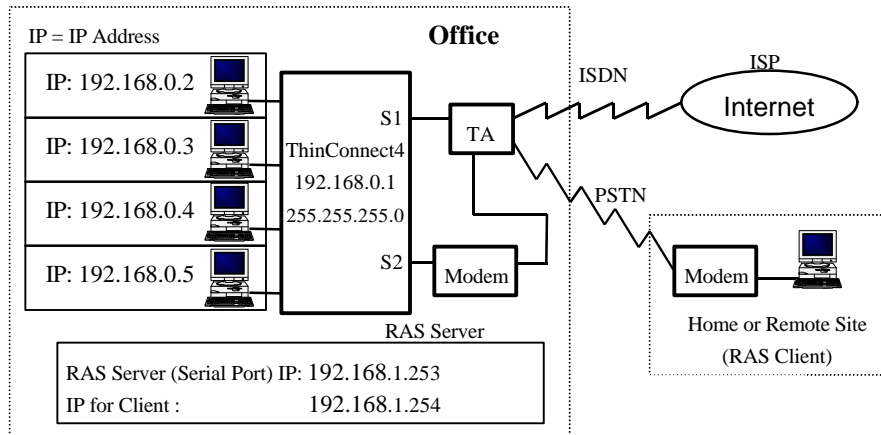
<138> ThinConnect4

- **IP and Router settings in Head office**
 - Setting of IP for ThinConnect4
IP address: xxx.xxx.0.1
Subnet Mask: 255.255.255.0
 - S1 (Serial port 1)
Connection Type: ISP Leased Line IP Connection
 - S2 (Serial port 2)
Connection Type: Leased Line IP Connection
Static Routing Table:
IP address: xxx.xxx.1.0
Subnet Mask: 255.255.255.0
 - PCs
IP address: xxx.xxx.0.2 to xxx.xxx.0.254 (avoid duplication)
Subnet Mask: 255.255.255.0
Default gateway:xxx.xxx.0.1
- **IP and Router settings in Branch office**
 - ThinConnect4
IP address: xxx.xxx.1.1
Subnet Mask: 255.255.255.0
 - S1 (Serial port 1)
Connection Type: Leased Line IP Connection
This serial port is on default gateway setting
 - S2 (Serial port 2)
Connection Type: RAS Server
Serial port IP address: xxx.xxx.1.253
Client IP address: xxx.xxx.1.254
 - PCs
IP address: xxx.xxx.1.2 to xxx.xxx.1.252 (avoid duplication)
Subnet Masking: 255.255.255.0
Default gateway: xxx.xxx.1.1
- **IP address for RAS Client (Windows 95 setting) at home or remote site.**
 - In Dial-up networking -> Property -> Server Type -> TCP/IP, select "Server assign IP address"
 - In Control Panel -> Network -> TCP/IP -> Dial up adapter ->Property, choose get IP automatically.

End of 10.1 An example of ISP <-> Head office <-> Branch office leased line connection

10.2 An example with ISDN

The following figure shows RAS Server MODEM connection via the TA analog port. The IP address and RAS Server are set up as shown.



- **IP and Routing settings in Company**
 - Set up the IP address for ThinConnect4 itself
IP address: 192.168.0.1
Subnet Mask: 255.255.255.0
 - S1 (Serial port 1)
Connection Type: ISP Dial-Up IP Connection
 - S2 (Serial port 2)
Connection Type: RAS Server
Serial port IP address: 192.168.0.253
Client IP address: 192.168.0.254
 - PCs
IP address: 192.168.0.2 to 192.168.0.252 (unique for each user)
Subnet Masking: 255.255.255.0
Default gateway: 192.168.0.1
- **IP address for RAS Client (Windows 95 setting) at home or remote site.**
 - In Dial-up networking -> Property -> Server Type -> TCP/IP, select Server assign IP address
 - In Control Panel -> Network -> TCP/IP -> Dial up adapter ->Property, choose get IP automatically.

End of 10.2 An example with ISDN

Chapter 11 Reference Information

11.1 Product Specifications

11.1 Product Specifications

- **Hardware Specification**

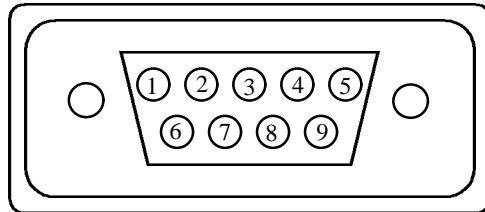
Category	Item	Specifications
Serial Port	Port No.	2 ports
	Interface	V.24/V.28 (RS-232C)
	Connector Type	9pin D-sub (S1) / 25pin D-sub (S2)
	DTE	1.2 /2.4 /4.8 /7.2 /9.6 /14.4 /19.2 /28.8 /38.4 57.6 /115.2 /230.4 /460.8 (Kbps)
	Flow Control	Hardware Control (RTS/CTS)
LAN Port	Port No.	4 ports
	Interface	IEEE802.3/ISO8802-3 CSMA/CD 10BASE-T
	Connector Type	RJ-45
Power	AC Adapter	INPUT : AC 100/120/230/240V 50/60 Hz
		OUTPUT: AC 9V 1000 mA
Outlook	Dimension	131 (W) x 191 (D) x 29 (H) mm
	Net Weight	400g
Environment	Operating Temperature	0 to 40C
	Operating humidity	25 to 85%

- **Serial Port Connector**

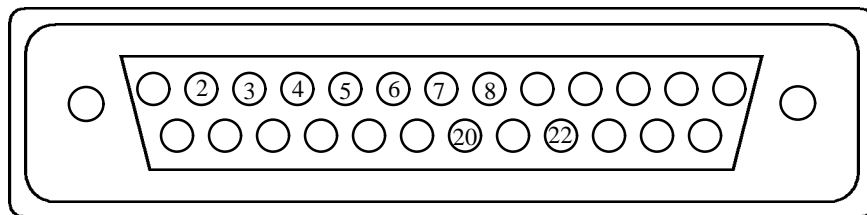
- Pin assignment

Signal	Serial Port 1 9pin D-Sub	Serial Port 2 25pin D-Sub
DCD	1	8
RXD	2	3
TXD	3	2
DTR	4	20
GND	5	7
DSR	6	6
RTS	7	4
CTS	8	5
RI	9	22

- Connector pin assignment:



Serial Port 1: 9pin D-Sub



Serial Port 2: 25pin D-Sub

End of 11.1 Product Specifications

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