# CN2610 Dual-LAN Async Server User's Manual

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# **CN2610 Async Server User's Manual**

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# **Table of Contents**

Chapter 1	Introduction	1-1
-	Product Features	
	Hardware	
	Software	
	Package Checklist	1-2
	Front Panel	1-3
	Rear Panel	1-3
	Bottom Label	1-3
Chapter 2	Getting Started	2-1
	Hardware Installation	
	Desktop	
	Rackmount	
	Wiring Requirements	
	Connecting CN2610-8/16's Power	
	Connecting to the Network	
	Connecting to a Serial Device	
	Connecting to the Console Port	
	Accessing the Console Utility	
	Configuration Checklist	
	Accessing the Console from a Telnet Terminal	
	Accessing the Console from a Console Terminal	
	Configuring CN2610—The Server Menu	
	Server Configuration—Info.	
	Server Configuration—LAN	
	Server Configuration—Adv	
	Server Configuration—Host_table	
	Server Configuration—Route_table	
	Server Configuration—User_table	
	Save Restart	
<b>0 1 1</b>		
Chapter 3	Knowing Your Application Windows Real COM (NT Real COM)	
	Linux Real TTY/Unix Fixed TTY (NT Real COM)	
	Device Control (Device Control)	
	UDP Communication (Raw UDP)	
	Dual-host Redundant Data Acquisition System (DRDAS)	
	Console Management (Reverse Terminal)	
	Terminal Access (Terminal)	
	Multi-host TTY (Multi-host TTY)	
	Dial-in/Out-of-Band Management (Dialin/out)	
	Network Printer (Printer)	
	Multiplexor Access (Multiplex)	
Chapter 4	Setting Up Windows Real COM/Linux Real TTY/Unix Fixed	TTY4-1
	Accessing the Console Utility	
	Selecting the Application	
	Configuring ASPP Mode	

	Configuring the Serial Ports	
	Save Restart	
	Setting up Hosts	
	Setting up Windows XP/2003 Hosts	
	Setting up Windows 2000 Hosts	
	Setting up Windows 2000 Hosts	
Chapter 5	Setting Up Device Control	
	Accessing the Console Utility Selecting the Application	
	<b>S</b> 11	
	Configuring ASPP Mode Configuring RAW Mode	
	Configuring RAW Mode	
	Save	
	Restart	
	ASPP Library Introduction	
	ASPP Examples for Unix	
	ASPP Examples for Windows	
•••••	·	
Chapter 6	Setting Up Raw UDP	
	Accessing the Console Utility	
	Selecting the Application.	
	Configuring RAW UDP Mode	
	Configuring the Serial Ports	
	Save Restart	
		0-7
Chapter 7	Setting Up the Dual-host Redundant Data Acquisition System	
	Configuring Port Operation Mode – Port Menu [Mode]	
	DRDAS Mode	
	Configuring Port Connection Settings—Port Menu [Line]	
	Save	
	Restart	
Chapter 8	Setting Up Reverse Terminal	
	Accessing the Console Utility	
	Selecting the Application	
	Configuring RTELNET Mode	
	Configuring the Serial Ports	
	Save	
	Restart	8-7
Chapter 9	Setting Up Terminal	
	Accessing the Console Utility	
	Selecting the Application	
	Configuring TERM_ASC Mode	
	Configuring TERM_BIN Mode	
	Configuring the Serial Ports	
	Save	
	Restart	
Chapter 10	Setting Up Multi-host TTY	10-1

	Accessing the Console Utility	
	Selecting the Application	10-3
	Configuring FIXTTY Mode	
	Configuring the Serial Ports	
	Save	
	Restart	
	Setting up Hosts	
	Installing and Compiling Fixed TTY Driver	
	Fixed TTY driver for Different Applications	
	Using Fixed TTY driver	
Chapter 11	Setting Up Dialin/out	
	Accessing the Console Utility	
	Selecting the Application	
	Configuring PPPD/PPP Mode	
	Configuring SLIPD/SLIP Mode	11-6
	Configuring Dynamic Mode	
	Configuring the Serial Ports	
	Configuring Modem Initialization	11-14
	Optional Welcome Message	
	Configuring Optional Local User Information	11-15
	Save	11-16
	Restart	11-17
Chapter 12	Setting Up Printer	
	Accessing the Console Utility	
	Selecting the Application	
	Configuring RAW PRN Mode	
	Configuring LPD PRN Mode	
	Configuring the Serial Ports	
	Save	
	Restart	
	Setting up Unix Hosts	
	Setting up a SCO Unix Host	
	Setting up a SOLARIS X86 Host	
	Setting up a LINUX Host	
	Setting up Windows Hosts	12-12
	Setting up a Windows NT Host	
	Setting up a Windows 2000 Host	
Chapter 13	Setting Up Multiplex	
	Accessing the Console Utility	
	Selecting the Application	
	Configuring the "Host" CN2610	
	Configuring the "Device" CN2610	
	Configuring the Serial Ports	
	Save Restart	
Chapter 14	Setting Up Routing Accessing the Console Utility	
	What is RIP?	
	Configuring RIP	

	Configuring the Static Routing Table	
	Static Routing Examples	
	Configuring Routes to the Internet	
	Configuring Routes to the Internet and Intranet	
	Configuring Multiple-Point Routes	
	Save	
	Restart	
Chapter 15	Administrative Utilities	15-1
•	Ping	
	Monitor	
	Line	
	Network	
	Async	
	Routing	
	PPP-Trace	
	Diagnostic	
	Upgrade	
	Upgrading with the Windows Utility	
	Console Terminal Upgrade	
	Upgrading through the Serial Console	
	Remote RCP Upgrade	
	Export	
	Console Terminal Export	
	Remote RCP Export	
	Import	
	Console Terminal Import	
	Remote RCP Import	
	Default	
Appendix A	Troubleshooting	
	Console Terminal Problems	
	Configuring Dual Ethernet Ports	
	Terminal Port Problems	
	Saving CN2610's Parameters	
	ASPP Port Problems	
	SLIP/PPP Connection Problems	
	RADIUS Problems	
Appendix B	RADIUS Server	B-1
	What is RADIUS?	
	Definition	
	Client/Server Architecture	
	Setting up CN2610	
	Setting up the RADIUS Server IP Address	
	Setting up Port Configuration	
	Setting up UNIX Hosts	
	Installing the RADIUS Execution File	
	RADIUS Server Configuration	
	Basic/Extended Permission Group Setting	
	Setting up Windows NT Hosts	
	Setting up Windows 2000 Hosts	

	Setting up Windows 2003 Hosts	B-16
Appendix C	SNMP Agent with MIB II	C-1
Appendix D	Pin Assignments and Cable Wiring	D-1
	Pin Assignments	
	10/100BaseTX Port Pin Assignment	D-2
	Console Port Pin Assignment	
	Async RS-232 Port Pin Assignment	D-2
	Cable Wiring	D-2
	10/100BaseTX Port Cable Wiring	
	Async RS-232 Port Cable Wiring	D-3
	DB9 and DB25 Connector Pin Assignments	D-4
Appendix E	LCM Display	E-1
Appendix F	Service Information	F-1
••	MOXA Internet Services	
	Problem Report Form	
	Product Return Procedure	F-4

# **1** Introduction

Welcome to Moxa CN2610 Dual LAN Async Server. Models are available with 8 or 16 asynchronous RS-232 ports, and all models come with two 10/100 Mbps Ethernet LAN ports. CN2610 Dual LAN Async Server is used to connect terminals, modems, printers, and other asynchronous serial devices to LAN hosts. CN2610 complies with TCP/IP and IEEE 802.3 specifications using standard Ethernet 10/100BaseT and twisted pair 10/100BaseTX cable as the data transmission medium.

The following topics are covered in this chapter:

- Product Features
  - ➢ Hardware
  - > Software
- Package Checklist
- **General Front Panel**
- **General** Rear Panel
- **D** Bottom Label

# **Product Features**

# Hardware

- Dual LAN ports (auto-detecting 10/100 Mbps Ethernet)
- Surge protection for each serial port
- 4 MB RAM, 2 MB Flash ROM
- Tx/Rx LED for each serial port
- System Status LEDs
- Ethernet Status LEDs
- 8 or 16 RJ45 RS-232 serial ports, with up to 921.6 Kbps transmission speed

# Software

- ASCII/Binary terminal modes with up to 8 Telnet and Rlogin sessions
- Point to Point Protocol (PPP and PPPD)
- Serial Line Internet Protocols (SLIP and SLIPD)
- Dynamic auto-recognition of Terminal, SLIP, or PPP
- Dial-on-demand, Dial-out
- Remote serial or parallel printing (RLP)
- CN2610 Async Server Proprietary Protocol (ASPP) for TCP/IP socket programming
- RAW mode for transparent data transmission
- Reverse Telnet
- SNMP Agent for network management
- Network protocols: TCP/IP, UDP, ICMP, NetBEUI, DHCP
- Application protocols: Telnet, Rlogin, Rtelnet, RAW TCP, RAW UDP, RCP, WINS, DRDAS<sup>TM</sup>, LPD, DNS, Multi-Host
- Security protocols: RADIUS, Dial-back, PAP, CHAP, Local user/password
- Real COM port driver for Windows 95/98/ME/NT/2000/XP/2003
- Fixed TTY for SCO UNIX 3.2.x, SCO Open Server5, UnixWare 2.1.x (SVR 4.2), MITUX (SVR 4.2), SCO UnixWare 7, Linux 2.2.x, Linux 2.4.x, Linux 2.6.x
- Static Routing, RIP I/II protocols
- Windows-like administrative CONSOLE utility from a fixed console port, or by Telnet from a networked host
- Password protection and extensive user verification functions
- Easy firmware upgrade via Flash ROM

# Package Checklist

CN2610 Dual LAN Async Server products are shipped with the following items:

- CN2610 Dual-LAN Async Server
- AC power cord
- Documentation and Software CD-ROM
- Quick Installation Guide (English and Simplified Chinese versions)
- RJ45 Loopback Tester
- Product Warranty Booklet
- Rackmount Kit (includes 2 brackets and 8 screws)
- Desktop Kit (includes 4 pads)

# **Front Panel**



Feature	Descripti	on	
Reset Button		Press the Reset button for 5 seconds to load factory defaults. CN2610 will beep twice when the configuration has been reset.	
Push Buttons	Used for	Used for configuring the IP address and other parameters.	
Ready LED	Red	Indicates that CN2610 is receiving power	
Ready LED	Green	Indicates that CN2610's OS is ready	
Serial Tx	Green	Indicates serial port transmission	
Serial Rx	Yellow	Indicates serial port reception	

# **Rear Panel**

Power Input	RS-232	Console Port	Serial	Ports
			Serial ports	

Power On/Off Switch 10/100BaseT Ethernet Ports

Socket / Port	Description
AC Power Input	CN2610-8 and CN2610-16: Automatic detection of 100-240V, 47-63 Hz AC power supply
Power On/Off Switch	I indicates power on; O indicates power off (AC models only)
Console	8-pin RJ45 RS-232 port for console terminal connection
LAN 1	8-pin RJ45 auto-detectable 10/100 Mbps UTP port
LAN 2	8-pin RJ45 auto-detectable 10/100 Mbps UTP port
Serial Ports	8 or 16 8-pin RJ45 ports for DCE modem-type connections

# **Bottom Label**

The server's serial number and MAC address are printed on a label fixed to the bottom of the server. CN2610 has 2 LAN ports, each with its own MAC address. The MAC address is the unique hardware Ethernet address used to identify a network hardware product. Write each of the two MAC addresses in the space provided below for future reference.

LAN 1 MAC address:\_\_

LAN 2 MAC address:\_\_\_

# **2** Getting Started

This chapter includes instructions on where and how to install CN2610 Dual LAN Async Server. Both basic and advanced software configuration instructions are given.

The following topics are covered in this chapter:

#### □ Hardware Installation

- Desktop
- Rackmount
- Wiring Requirements
- ➤ Connecting CN2610-8/16's Power
- Connecting to the Network
- Connecting to a Serial Device
- Connecting to the Console Port

#### □ Accessing the Console Utility

- Configuration Checklist
- Accessing the Console from a Telnet Terminal
- Accessing the Console from a Console Terminal

#### □ Configuring CN2610—The Server Menu

- Server Configuration—Info.
- Server Configuration—LAN
- Server Configuration—Adv
- Server Configuration—Host\_table
- Server Configuration—Route\_table
- Server Configuration—User\_table
- □ Save
- **D** Restart

# **Hardware Installation**

# Desktop

Place your CN2610 on a clean, flat, well-ventilated desktop. For better ventilation, attach the 4 pads from the desktop kit to the bottom of the unit, and leave some space between the CN2610 and other equipment. Do not place equipment or objects on top of the unit, as this might damage the server.

		Pads
	0	01/
Bottom of CN2610	<del>  </del>	X
	0	3

# Rackmount

CN2610 is designed to be mounted on a standard 19-inch rack. Use the enclosed pair of L-shaped metal brackets and screws to fasten your CN2610 to the rack cabinet. Each L-shaped bracket has 6 holes, leaving two outer or inner holes available for other uses. You have two options. You can lock either the front or rear panel of the CN2610 to the front of the rack. Locking the front panel is shown in the following figure.



## Wiring Requirements



# ATTENTION

#### Safety First!

Be sure to disconnect the power cord before installing and/or wiring your CN2610.

#### Wiring Caution!

Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.

If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

#### **Temperature Caution!**

Be careful when handling CN2610. When plugged in, CN2610's internal components generate heat, and consequently the board may feel hot to the touch.

You should also observe the following common wiring rules:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
  NOTE: Do not run signal or communication wiring and power wiring in the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separate.
- Where necessary, it is strongly advised that you label wiring to all devices in the system.

### Connecting CN2610-8/16's Power

Connect CN2610's 100-240 VAC power line to its AC connector. If the power is properly supplied, the "Ready" LED will show a solid red color until the system is ready, at which time the color changes to green.

# Connecting to the Network

Connect one end of the Ethernet cable to CN2610's 10/100M Ethernet port and the other end of the cable to the Ethernet network. There are 2 LED indicators located on the top left and right corners of the Ethernet connector. If the cable is properly connected, CN2610 will indicate a valid connection to the Ethernet in the following ways:



The top right corner LED indicator maintains a solid green color when the cable is properly connected to a 100 Mbps Ethernet network.

The top left corner LED indicator maintains a solid orange color when the cable is properly connected to a 10 Mbps Ethernet network.

## Connecting to a Serial Device

Use appropriately wired serial data cables to connect serial devices to CN2610's serial ports.

# Connecting to the Console Port

A console is a combination of keyboard and monitor that is used to configure settings and monitor the status of your system. The console port can be used if a network is unavailable, or you do not know CN2610's IP address. To connect to the console port, use a PC running UNIX, or a PC with terminal emulation software (e.g., HyperTerminal or PComm by Moxa; parameter settings are: baudrate = 115200 bps, parity check = None, data bits = 8, stop bits = 1, terminal type = VT100). Use an RJ45-to-DB25 or RJ45-to-DB9 cable to connect the terminal to the console port.

# Accessing the Console Utility

The Console Utility is the main application used to set up the server, configure the ports, and run utilities (ping, diagnosis, monitor, and upgrade). There are two ways to access the Console Utility—with terminal emulation from a console terminal, or with Telnet from a network terminal.

**NOTE** If your network is already set up, telnet over the network to CN2610's IP address to access the Console Utility. If your network environment is not set up, use Moxa PComm Terminal to establish a direct serial console connection.

# **Configuration Checklist**

You will need the following information to configure CN2610. Check with your network administrator if you do not know all of the required information.

Name	
Location	
LAN1 IP address	
LAN1 IP netmask	
LAN1 default gateway IP address	
LAN2 IP address	
LAN2 IP netmask	
LAN2 default gateway IP address	
Domain server 1 IP address	
Domain server 2 IP address	
WINS server IP address	
Console password	

Basic CN2610 Information:

# Accessing the Console from a Telnet Terminal

Connect CN2610 to your LAN and then turn on the power. Use the Moxa Windows Utility to find CN2610's IP address, and then telnet to the IP address to enter the CN2610 console.

#### CN2610 Windows Utility

The CN2610 Utility is a convenient Windows utility that can be used to find both the name and IP address of your CN2610. Once you know the IP address, you can telnet CN2610 over the network

to complete the configuration process and to gather information about all servers on the network.

1. Run **upgrade.exe**, located in the \Software\Firmware\ folder on the CN2610 Documentation and Software CD, or run **NPort Tool** → **Firmware Utility** from the Start menu.



2. The CN2610 Utility will search for all CN2610s on the network.

Search all NPort Servers	x
Please wait while system is searching all available NPort Servers	
Cancel	

3. The CN2610 Utility lists all available servers on the network. Note that servers in grey are password protected. Double click the server's name, or click **1** from the menu bar to see the server settings.

NPort Server firmware upgrade utility						
Server Tool Help						
<b>1</b> ≤ 2 = ± ?						
fGeneral Info.	Model	IP Address	Serial No	MAC address	Firmware Ver.	
CN2510-8_5631	CN2510-8	192.168.127.254	5631	00:90:E8:00:56:31	2.0	

4. The server's general information is shown in the **NPort Server General Info.** window. If necessary, change the settings, and then click **OK** to accept the change.

NPort Server Genera	al Info. 🔀
You may change Se NPort Server.	erver Name or IP Address for selected
Server Name:	CN2510-8_5631
IP Address:	192.168.127.254
Model:	CN2510-8
Serial No:	5631
MAC address:	00:90:E8:00:56:31
Firmware Version:	2.0
	Cancel

5. If you can't find the server in the list, double-check the server's power and network

connections, and then use search if to try locating the server again.

#### **Using Telnet**

1. Telnet over the network to the server's IP address.

Run	? ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

<b>Telnet 192.168.127.254</b>	
Async Server CN2610-8 Console terminal type (1: ansi/vt100, 2:	vt52) : 1

3. CN2610's MAIN MENU will open, as shown below.

CN2610-8 CN2610-8_19 V2.0	IN MENU
[Server] Port seTting sAve Utility Restart Exit Examine/modify async server node/table configuration	
Enter: select ESC: previous menu	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

# Accessing the Console from a Console Terminal

If you do not know the CN2610's IP address, or it is not possible to use Telnet, you can use a direct console connection to enter the CN2610 console. Use a terminal emulation program for the console PC, such as HyperTerminal or Moxa PComm Terminal Emulator.

1. If you are using Windows 9x/ME/NT, run **PComm26.exe** from the Win9xNT directory. If you are using Windows 2000/XP/2003, run **PComm2K.exe**, as shown in the figure below, from the Win2kXP2003directory.



2. Click **Next** to Continue.

🙀 PComm Lite 2000/XP Ver 1.2			
Welcome to the PComm 1.2 Setup Wizard	n Lite 2000/X	P Ver	
The installer will guide you through the your computer.	e steps required to ins	tall PComm Lite 20	00/XP Ver 1.2 on
Click "Next" to continue.			
WARNING: This computer program is Unauthorized duplication or distributio civil or criminal penalties, and will be p	n of this program, or a	iny portion of it, ma	y result in severe
	Cancel	Previous	Next

3. Select the I Agree option and then click Next.

🛃 PComm Lite 2000/XP Ver 1.2	:		
License Agreement			
Please take a moment to read th Agree", then "Next". Otherwise o		. If you accept the terms be	low, click ''l
End User License Ag Before installing t Moxa's End User Pro read through this 1 do not agree to the software.	he PComm Lite, duct License Ag icense agreemer	greement. Please nt carefully. If	
Subject to the foll Technologies Co., L non-exclusive licen	td. (Moxa) gran	ts to you (User)	a
O I Do Not Agree	● Agree		
	<u>C</u> ancel	Previous	<u>N</u> ext

4. Select a directory in which to install the CN2610 Utility, and then click Next.

📸 PComm Lite 2000/XP Ver 1.2			
Select Installation Folde	);		
The installer will install PComm Lite 20 To install in this folder, click "Next". To below or click "Browse".		-	lder, enter one
Eolder: F:\Program Files\PCom			<u>B</u> rowse
Volume			Disk 🔺
			51 65 ▼
			<u>D</u> isk Cost
	Cancel	<u>P</u> revious	Next

5. Click **Next** to continue.

7 PComm Lite 2000/XP Ver 1.2	_ <b>_</b> ×
Confirm Installation	
The installer is ready to install PComm Lite 2000/XP Ver 1.2 on your compu	iter.
Click "Next" to start the installation.	
Cancel Previous	Next

6. Wait while the PComm Lite software is installed.

🔂 PComm Lite 2000/XP Ver 1.2	
Installing PComm Lite 2000/XP Ver 1.2	
PComm Lite 2000/XP Ver 1.2 is being installed.	
Please wait	
	Previous <u>N</u> ext

7. Click Close.

🔁 PComm Lite 2000/XP Ver 1.2	
Installation Complete	
PComm Lite 2000/XP Ver 1.2 has been sucessfully installed.	
Click "Close" to exit.	
<u>C</u> ancel <u>P</u> revious	

8. When the installation is complete, select **Start** → **Programs** → **PComm Terminal Emulator** to run PComm Terminal Emulator.

<b>G</b>	PComm Lite 2000(XP) Ver 1.2	• 🧼	Library Programming Guide
		۲	Library Reference
		<u> </u>	PComm Diagnostic
		_j®	PComm Monitor
		<b>1</b>	PComm Terminal Emulator

9. Use an RJ45 to DB25 female cable to connect to the CN2610 console port. Start PComm Terminal, and then click the left-most icon to open a new connection.



 Click the Communication Parameter tab, select the COM port (COM2 in this example) for console connection, 115200 for Baudrate, 8 for Data Bits, None for Parity, and 1 for Stop Bits.

Property	×
Communication Parameter	er Terminal File Transfer Capturing
COM Options	
Baud Rate :	115200 🔻
Data Bits :	8
Parity :	None
Stop Bits :	1
Flow Control	Output State DTR I ON O OFF RTS I ON O OFF
	OK Cancel

11. Click the **Terminal** tab and select **VT100** for terminal type. Press **Enter** to confirm.

Property	×
Communication Parameter	Terminal File Transfer Capturing
Terminal Type :	VT100
Dumb Terminal Option : Transmit	
🗖 Local Echo	
Send 'Enter' Key As:	CR-LF
Receive	
CR Translation :	No Changed 💌
LF Translation :	No Changed 💌
	OK Cancel

12. Type 1 to select **ansi/VT100** terminal type, and then press **Enter** to open the **MAIN MENU**.

- PComm Terminal Emulator COM1,115200,None,8,1,VT100

   Profile Edit Port Manager Window Help

   Image: Profile Edit Port Manager Window
- 13. The MAIN MENU is shown below. (NOTE: Click Edit → Font to choose a different font for the MAIN MENU.)

Event Terminal Emulator - COM1,115200,None,8,1,¥T100
Profile <u>E</u> dit <u>P</u> ort Manager <u>W</u> indow <u>H</u> elp
COM1,115200,None,8,1,¥T100
CN2510-8 CN2510-8_5631 V2.0
DTR [Server] Port seTting sAve Utility Restart Exit RTS Examine/modify async server node/table configuration
Enter: select ESC: previous menu

# Configuring CN2610—The Server Menu

In this section, we describe both basic and advanced configuration tasks. We use the Telnet interface to illustrate (the Serial Console interface is the same).

# Server Configuration—Info.

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN	MENU
	g sAve Utility Restart Exit server node/table configuration		
Examine/modily async	server hode/table configuration		
Enter: select ESC:	previous menu		

2. From the SERVER MENU, select Info., and then press Enter.

CN2610-8	CN2610-8_19	V2.0		SERVER	MENU
[Info.] Lan Adv. Host Examine/modify async s			Quit		
Enter: select ESC: p	revious menu				

3. The Info. page contains input/display fields for name, location, serial number, Domain server 1/2 IP address, WINS function disable, WINS server IP address, and Console password. Each item is described in detail below.

CN2610-8	CN2610-8_19 V	2.0	
[Info.] Lan Adv. Host_tab Examine/modify async server	—	= ~	
ESC: back to menu Enter:	select		
Async server name Async server location Async server serial numb	[	c I	
Domain server 1 IP addre Domain server 2 IP addre WINS function disable WINS server IP address	ss[ [no]	1 ] ]	
Console password	]	J	

**Async server name**—CN2610 uses this name to identify itself when requested by an SNMP station or UNIX host. Use an ASCII string with maximum length of 40 characters for the name. Spaces are allowed.

Async server location—CN2610 reports this location to the SNMP station when requested. Use an ASCII string with maximum length of 44 characters for the location. Spaces are allowed.

Async server serial number—Each CN2610 Async Server is assigned a unique serial number before it leaves the factory. The serial number cannot be changed.

**Domain server 1/2 IP address**—A Domain Name Server is a network host that translates host names to IP addresses. Hosts use the Domain Name Server to request the IP address that corresponds to a particular url (such as <u>www.moxa.com</u>). Input the IP address of the primary Domain Name Server in the **Domain server 1 IP address** field, and the IP address of the secondary Domain Name Server in the **Domain server 2 IP address** field. When CN2610 receives a connection request, CN2610 first checks the host table defined on the Host\_table page. If a matching entry cannot be found, CN2610 sends a query to the Domain Name Server.

WINS function disable—Enable or disable the WINS server. The default setting is "enable."

**WINS server IP address**—If a WINS Server is connected to the network, use this field to record the WINS Server's IP address. TCP/IP uses IP addresses to identify hosts, but users often use symbolic names, such as computer names. The WINS (Windows Internet Naming Service) Server, which uses NetBIOS over TCP/IP, contains a dynamic database to map computer names to IP addresses.

**Console password**—If you specify a password, write it down for safe keeping. If you forget the password, you will need to use the reset password button to reset it. Only use the console password when absolutely necessary.

**NOTE** Write your console password in a safe place before setting the password.

### Server Configuration—LAN

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.



2. From the SERVER MENU, select Lan, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	SERVER	MENU
	r. Host_table Route_table User_table Quit sync server basic configuration		
Enter: select H	SC: previous menu		

3. The Lan page contains input/display fields for DHCP (client), Async server IP address, Async server IP netmask, Default gateway IP address, Ethernet speed, and Ethernet address. Each item is described in detail below.



#### Ethernet LAN port 1 or 2:

**DHCP** (client)—When DHCP is enabled, CN2610 will request an available IP address and Netmask over the network from the DHCP Server, and the DHCP Server will assign an available IP address and Netmask to CN2610 LAN1. If an IP address is not available, CN2610 LAN1 will use the current IP address, but will continue sending requests to the DHCP Server.

**Async server IP address**—This field MUST contain an IP address unique to the network. The IP address is written using the notation "ddd.ddd.ddd.ddd," in which each "ddd" is a nonnegative decimal number strictly less than 256 (i.e., an 8-bit integer). The default value is 192.168.127.254.

**Async server IP netmask**—A netmask is used to isolate a group of computers to the same subnet. When a packet is sent out over the network, the CN2610 will use the netmask to

determine if the destination TCP/IP host is on the same subnet. If the address is on the same subnet, a connection is established directly from the CN2610. Otherwise, the connection is established through the "default gateway." If this field is left 'Blank' the netmask will depend on the default IP address class (which depends on the IP address itself). The netmask is 255.0.0.0 for class A, 255.255.0.0 for class B, and 255.255.255.0 for class C.

**Default gateway IP address**—This field contains the IP address of a router on the local network. The default gateway is used when a packet is sent to an IP address that is not on the subnet specified in CN2610's local routing table.

**Ethernet speed**—If the Ethernet port is active, the Ethernet speed will be set automatically to 10BaseT or 100BaseT. This field cannot be modified.

**Ethernet address**—This field contains the hardware Ethernet address. This field cannot be modified.

## Server Configuration—Adv.

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.



2. From the SERVER MENU, select Adv., and then press Enter.

CN2610-8	CN2610-8_19 V2.0	SERVER MENU
	.] Host_table Route_table User_table Quit async server basic configuration	
Enter: select	ESC: previous menu	

3. The Adv. page contains input/display fields for RADIUS server IP, RADIUS key, UDP port, Enable RADIUS accounting, SNMP community name, SNMP trap server IP address, Ethernet IP forwarding, Routing protocol, TCP retransmission timeout, and SIO data transfer timeout. Each item is described in detail below.

CN2610-8 CN261	10-8_19 V2.0	
Info. Lan [Adv.] Host_table Ro Examine/modify async server advan		
ESC: back to menu Enter: select	t	
Radius server IP RADIUS key UDP port (1:1645 2:1812) Enable RADIUS accounting		]
SNMP community name SNMP trap server IP address	[public ] [	]
Ethernet IP forwarding Routing protocol	[no ] [None ]	
TCP retransmission timeout SIO data transfer timeout	[ ] (range: 50 - 60000 ms) [ ] (range: 0 - 1000 ms)	

**RADIUS server IP**—The IP address of the RADIUS (Remote Authentication Dial-In User Service) server is used to authenticate remote dial-in users connecting from an ISP (Internet Service Provider). Leave this field blank if you do not have a RADIUS server on your network.

Windows NT includes RADIUS software. For UNIX-based platforms, refer to Appendix B for information about setting up a RADIUS server.

*NOTE: The RADIUS server and CN2610 SHOULD be able to communicate with each other. To verify this, check to see if you can ping from each server to the other.* 

RADIUS server IP—This is the IP address of the RADIUS server.

**RADIUS key**—This is a shared key used by the RADIUS protocol. If you have a RADIUS server, you will need to enter the password in this field.

**UDP port (1:1645 2:1812)**—There are two choices for RADIUS UDP port numbers. The early deployment of RADIUS was done using port number 1645, but later on, this conflicted with the RFC standard. The officially assigned port number for RADIUS is now 1812. We recommend, however, that you use the old RADIUS server UDP port number of 1645, since many companies still use it.

**Enable RADIUS accounting**—The default for this field is **no**. If your RADIUS Server offers this function, set it to **yes**.

**SNMP community name**—The SNMP community name can be used to guarantee minimal security for SNMP communication. Only SNMP stations with the same community name can access SNMP agents (such as Async Server). Choose a community name with no more than 16 ASCII characters. The default name is "public."

**SNMP trap server IP address**—This field specifies the IP address of the SNMP trap server. CN2610 will report to the SNMP trap server each time it restarts. You may leave this field blank if SNMP is not needed.

**Ethernet IP forwarding**—CN2610 can forward packets between different segments of a TCP/IP network. When enabled, CN2610 will use its Ethernet routing ability to identify which incoming packets should be forwarded.

**Routing protocol**—CN2610 supports RIP (Routing Information Protocol) versions 1 and 2, a widely used protocol specifying how routers exchange routing table information. When RIP is activated, routers (or CN2610s) periodically exchange entire routing tables.

**TCP retransmission timeout**—This is the amount of time CN2610 waits to retransmit after a transmission failure occurs.

**SIO data transfer timeout**—This is the amount of time (in milliseconds) CN2610 waits to send serial data to the Ethernet. Use a shorter timeout to improve efficiency.

# Server Configuration—Host\_table

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN	MENU
	ng sAve Utility Restart Exit		
Examine/modily asynd	c server node/table configuration		
Enter: select ESC:	previous menu		

2. From the SERVER MENU, select Host\_table, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	SERVER N	MENU
	[Host_table] Route_table User_table Quit async server basic configuration		
Enter: select	ESC: previous menu		

3. The Host\_table contains frequently accessed host names and their corresponding IP addresses. Adding entries to this table gives you the advantage of being able to refer to a host by name, instead of by IP address. The host table can hold up to 16 [Host name] / [Host IP address] entries. The Host\_table page contains input/display fields for Entry, Host name, and Host IP address.

CN2610-8 CN2610-8_19 V2.0					
Info. Lan Adv. [Host_table] Route_table User_table Quit Examine/modify the host table					
ESC: back to	menu Enter: select				
Entry	Host name	Host IP a	address		
01	[	] [	]		
02	[	] [	]		
03	[	] [	]		
04	[	] [	]		
05	[	] [	]		
06	[	] [	]		
07	[	] [	]		
08	[	] [	]		

Server Configuration—Route\_table

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.

[Server] Port seTting sAve Utility Restart Exit Examine/modify async server node/table configuration	MAIN MENU	CN2610-8
Enter: select ESC: previous menu		Enter: select ESC:

2. From the SERVER MENU, select Route\_table, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	SERVER N	MENU
Info. Lan Adv. Host_table Examine/modify async server	[Route_table] User_table Quit basic configuration		
Enter: select ESC: previou	is menu		

3. The **Route\_table** specifies routing parameters. The **Route\_table** page contains input/display fields for **Entry**, **Gateway**, **Destination**, **Netmask**, and **Metric**. Each item is described in detail below.

#### **Getting Started**

#### CN2610 User's Manual

CN2610-8		CN2610-8	_19 V2.0	
	Adv. [Host_ta lify the routir		table] User_table	Quit
ESC: back t	o menu Enter	: select		
Entry	Gateway	Destina	ation Netmask	Metric
01	[	][	][	] [01]
02	[	][	][	] [01]
03	[	][	][	] [01]
04	[	][	][	] [01]
05	[	][	][	] [01]
06	[	][	][	] [01]
07	[	][	][	] [01]
08	[	][	][	] [01]

Gateway—The gateway IP address or interface source IP address to which data packets are sent.

Destination—The IP address of a host or network to which the route connects.

Netmask—The netmask of the destination network.

**Metric**—The number of hops from source to destination. Refer to Chapter 14 for routing settings.

# Server Configuration—User\_table

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN	MENU
[Server] Port seTting sAve Examine/modify async server	-		
Enter: select ESC: previo	us menu		

2. From the SERVER MENU, select User\_table, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	SERVER MENU
Info. Lan Adv. Host_tabl Examine/modify async serve		.e] Quit
Enter: select ESC: previo	ous menu	

3. The User\_table is used for local authentication for dial-in/out access. The CN2610 User Table, which holds information for up to 64 users, is useful if you do not have an external RADIUS server for authentication. The User\_table page contains input/display fields for Entry, User name, Password, and Phone number.

#### **CN2610 User's Manual**

#### **Getting Started**

CN2610-8		CN2610-8_19	72.0	
	Adv. Host_tab dify the user/pa		User_table] Quit	
ESC: back	to menu Enter:	select		
Entry	User name	Password	Phone nu	umber
01	[	] [	] [	]
02	[	] [	] [	]
03	[	] [	] [	]
04	[	] [	] [	]
05	[	] [	] [	]
06	[	] [	] [	]
07	[	] [	] [	]
08	[	] [	] [	]

# Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

Info. Lan Adv. Host_table Route_table [User_table] Quit Examine/modify async server basic configuration Enter: select ESC: previous menu	CN2610-8	CN2610-8_19 V2.0	MAIN MENU	J
++ Warning !!! You had modified the configuration without saving. Would you save it now ?				
Warning !!! You had modified the configuration without saving. Would you save it now ?	Enter: select	ESC: previous menu		
Warning !!! You had modified the configuration without saving. Would you save it now ?				
++		Warning !!!   You had modified the configuration without saving.   Would you save it now ?	-+	

You may also save all settings from the MAIN MENU by selecting sAve.

CN2610-8	CN2610-8_19 V2.0
	ng <mark>[sAve]</mark> Utility Restart Exit guration to Flash ROM
ESC: back to menu	Enter: select
	++  Enter to updated, other key to cancel  ++

# Restart

1. From the MAIN MENU, select Restart.

CN2610-8	CN2610-8_19 V2.0	MAIN	MENU
	sAve Utility [Restart] Exit stem or selected async ports		
Enter: select ESC:	previous menu		

2. Select System and then press Enter to restart the system and terminate the Telnet session.

# **Getting Started**

### CN2610 User's Manual

CN2610-8	CN2610-8_19 V2.0
	Port Quit the Async Server
ESC: back	to menu Enter: select
+     Res   +	Warning !!! 

# **Knowing Your Application**

This chapter discusses a variety of applications for CN2610 Async Server. Refer to the diagrams in each section to see which application most closely matches your own. Determining which application you should choose will save time configuring both the hardware and software.

CN2610 is an Async Server that can support simultaneously different operation modes for different serial ports. The examples in this chapter explain each operation mode in detail. You can create a wide variety of applications by using different combinations of operation modes on the same Async Server.

NOTE: Each section title consists of an application name that uses terminology common to our industry, followed in parentheses by the application name used in CN2610's console utility. For example, the CN2610 application that corresponds to Linux Real TTY/Unix Fixed TTY is NT Real COM mode.

The following topics are covered in this chapter:

- □ Windows Real COM (NT Real COM)
- Linux Real TTY/Unix Fixed TTY (NT Real COM)
- **Device Control (Device Control)**
- **UDP** Communication (Raw UDP)
- **Dual-host Redundant Data Acquisition System (DRDAS)**
- **Console Management (Reverse Terminal)**
- **Terminal Access (Terminal)**
- □ Multi-host TTY (Multi-host TTY)
- Dial-in/Out-of-Band Management (Dialin/out)
- **Network Printer (Printer)**
- □ Multiplexor Access (Multiplex)

# Windows Real COM (NT Real COM)



Moxa provides CN2610 COM port drivers for all Windows operating systems. The COM port driver serves a dual purpose—(1) convert serial data into Ethernet packets, (2) convert Ethernet packets into serial data—as outlined in the following table:

	PC → CN2610 → Serial Device		Serial Device $\rightarrow$ CN2610 $\rightarrow$ PC
1.	The PC generates RS-232 serial COM	1.	A serial device connected to CN2610 starts
	commands.		transmitting serial data.
2.	The COM port driver converts the	2.	CN2610 converts the data into one or more
	commands into Ethernet packets.		Ethernet packets.
3.	The packets are sent over the network to	3.	The packets are sent over the network to
	CN2610's Ethernet port.		the PC host's Ethernet port.
4.	CN2610 converts the Ethernet packets	4.	The COM port driver converts the
	back into RS-232 serial format.		Ethernet packets back into RS-232 serial
5.	The commands are delivered to serial		format.
	device(s) connected to CN2610's serial	5.	The serial data is processed by the program
	port(s).		that controls the serial device.

You can enhance your applications greatly by using CN2610 to access serial devices over an Ethernet network, and since CN2610 and the COM driver handle all protocol conversion tasks, you won't need to modify the software currently in use. In fact, multiple PCs can access the serial ports of one CN2610, as shown in the figure.

Refer to Chapter 4 for detailed information and configuration instructions.

# Linux Real TTY/Unix Fixed TTY (NT Real COM)



Real TTY drivers that control Moxa CN2610 Async Server's serial ports are provided for Linux environments. This means that CN2610 Async Server can be used with existing Linux-based applications that use multiport serial boards, since the host PC will recognize CN2610's COM ports as real TTY ports. You can enhance your applications by using CN2610 to access serial devices over an Ethernet network, but without needing to modify the software currently in use.

Moxa also provides Fixed TTY port drivers for Unix environments. However, the Linux Real TTY and Windows Real COM port drivers provide better control over serial port data transmission, since you can control modem signals such as DTR, DSR, RTS, and CTS. The Unix Fixed TTY driver provides software reception and transmission through CN2610's serial ports, but does not allow you to control the DTR, DSR, RTS, and CTS modem signals.

Refer to Chapter 4 for detailed information and configuration instructions.

# **Device Control (Device Control)**



The CN2610 Device Control application allows you to choose between two different operation modes: ASPP and RAW.

**ASPP Mode**—For applications that require setting up communication parameters or controlling modem signals (DTR, RTS, Break, etc.), take advantage of Moxa's ASPP lib to simplify your programming tasks. ASPP takes care of the more basic protocol-level programming tasks, and allows you to concentrate your energy on higher level, application-specific tasks.

**RAW Mode**—To control device data transmission directly, set CN2610 for TCP RAW mode. Device control applications can use standard Linux/Unix Socket programming in Linux/Unix environments, or WinSock programming in Windows environments. Standard socket programming allows you to focus on pure data transmission, without needing to write code for controlling serial ports or modem signals. ASPP can also be used to communicate with CN2610.

Linux/Unix socket programming and Windows WinSock programming both use IP as the communication agent between hosts and devices. RAW mode is a good solution for handling pure serial data communications applications that do not require setting up communication parameters (baudrate, parity, etc.).

Refer to Chapter 5 for detailed information and configuration instructions.

# **UDP Communication (Raw UDP)**



UDP is a non connection-oriented data transmission protocol that has the advantages of efficient, high-speed, high-volume data transmission. Since UDP does not use TCP's handshaking procedure, it does not re-assemble and retransmit packets when data is missing. This means that data integrity is sacrificed for higher transmission speed. UDP provides a very powerful transmission method when data needs to be transmitted quickly over the network, and upper-level application software is given the responsibility of verifying the accuracy of the data.

UDP can also use broadcasting or multicasting technologies to handle point to multi-point transmissions. UDP is an ideal transmission method for serial devices that must transmit data to a group of devices or PCs.

Refer to Chapter 6 for detailed information and configuration instructions.



# Dual-host Redundant Data Acquisition System (DRDAS)

**Remote Terminal Unit (RTU)** 

The DRDAS operation mode provides a highly redundant network structure that takes advantage of CN2610's dual LAN ports, dual IP addresses, and dual MAC addresses. DRDAS uses a backup PC that is set up to take over when the primary PC fails.

CN2610's dual-host redundant configuration sends serial data to 4 IP addresses on the network. Users select a Primary IP and 3 Secondary IPs. When the Primary IP fails, the backup IPs take over by using the switching library (refer to Chapter 7 for more details).

With this kind of redundant setup, if one of the secondary IPs tries to send commands to the serial device, the commands are discarded by the CN2610, since only the Primary IP is allowed to conduct bi-directional transmission. The backup IPs are only allowed to receive data from the CN2610.


**Remote Terminal Unit (RTU)** 

This type of highly redundant setup is implemented with two CN2610s, as shown above in the structure diagram. All aspects of the system are backed up, including the PC hosts, the networks, and the CN2610s. The entire system will continue operating in the following situations:

- 1. When the Primary PC and LAN A fail at the same time (the backup PC and LAN B will take over).
- 2. When the Primary PC and the Primary CN2610 fail at the same time (the backup PC and the backup CN2610 will take over).
- 3. When LAN A and the Primary CN2610 fail at the same time (LAN B and the backup CN2610 will take over).
- **NOTE** The RS-232 connector on the Remote Terminal Unit (RTU) shown above must be setup with an RS-232 to RS-422/485 converter, such as the MOXA TCC-100I, to convert RS-232 signals to RS-485 signals. The connectors on the two CN2610s will also need to use converters, such as the MOXA TCC-100I. In this way, users can take advantage of RS-485's multi-drop feature to share data with the secondary CN2610.

Refer to Chapter 7 for detailed information and configuration instructions.



# **Console Management (Reverse Terminal)**

The Reverse Terminal application, which uses Rtelnet mode, is used with routers, switches, and UPS equipment for console management applications. Rtelnet mode is similar to RAW mode, in that after booting up it listens to one specific TCP port for network hosts to initiate a connection. RAW mode, however, does not provide a Telnet conversion function. If the serial devices connected to CN2610 need to use the CR/LF conversion function, then Rtelnet mode must be used. CN2610's Rtelnet mode is also used widely for device management applications in telecommunication control rooms, since remote hosts can make use of Local User Table or RADIUS identity verification methods.

Refer to Chapter 8 for detailed information and configuration instructions.

# **Terminal Access (Terminal)**



CN2610's Terminal Access application is used to connect terminals to Unix or Windows Servers over a network. The terminals connect to CN2610's serial ports at a remote site, with terminal commands transmitted over the network via CN2610's Ethernet port. The Terminal Access application allows you to use fast keys used in many terminal applications, and switching sessions on the same terminal. CN2610 supports ASCII terminal and Binary terminal, with up to 8 simultaneous sessions for each port.

Refer to Chapter 9 for detailed information and configuration instructions.

# Multi-host TTY (Multi-host TTY)



The Multi-host TTY application is ideal for connecting over a network to multiple Unix hosts from several sessions simultaneously. When communication begins, the networked Unix server must first enable Moxattyd to activate the TTY port's mapping function. Moxattyd will initiate the connection with the CN2610, and the CN2610 will listen to the connection requests issued by various Moxattyd over different TCP ports.

Once the connection is established, the Terminal server can use hot keys to switch sessions, allowing one terminal to control different Unix hosts.

Refer to Chapter 10 for detailed information and configuration instructions.

# **Dial-in/Out-of-Band Management (Dialin/out)**



Moxa CN2610 Async Server provides dial-up/dial-out access for ISPs and enterprises that need a remote access solution. When a user at a remote site uses a PPP dial-up connection to access CN2610, CN2610 plays the role of dial-up server, but also ensures the user has legal access to the network by verifying the user's identity with its Local User Table or RADIUS.

CN2610 supports PPP, SLIP, and Terminal modes for dial-up/dial-out access. Regardless of which OS is used, you will always be able to use standard PPP dial-up to establish a connection. CN2610 can also act as an Async router to connect serial ports to a WAN connection. Routing protocols (including static, RIP I, and RIP II) can be adjusted to route different WAN connections.

Refer to Chapter 11 for detailed information and configuration instructions.

# **Network Printer (Printer)**



CN2610 Async Server's printing program (running under UNIX) provides an excellent solution for banking and stock exchange services with huge printing demands. Use a Windows or Unix host's network printer function via RAW mode, and assign a specific IP address and TCP port number to specify the printer's location. You can also connect to the printer via LPD mode when LPD protocol is needed to operate the printer.

Refer to Chapter 12 for detailed information and configuration instructions.

# **Multiplexor Access (Multiplex)**



If are using a multiport serial board installed in a UNIX host, but wish to extend the device control range without dismantling the host, you can accomplish this with CN2610. Multiplex and De-multiplex solutions use CN2610's RTelnet and terminal modes, eliminating the need to modify existing software. CN2610 acts like a converter by extending the communication distance. CN2610s work in pairs over the network to overcome the short communication distance limitation imposed by serial connections.

See Chapter 13 for detailed configuration instructions.

NOTE: This mode does not allow copying the status of control signals to devices at a remote site.

4

# Setting Up Windows Real COM/Linux Real TTY/Unix Fixed TTY

CN2610 Async Server supports Real COM/TTY drivers for Windows and Linux, allowing CN2610's serial ports to be recognized as Real COM ports by the Windows operating system, or Real TTY ports by Linux operating systems. CN2610 Async Server can be used for a variety of applications to make the serial ports accessible over an Ethernet, but without the need to modify existing serial transmission software. The Real COM driver provided by Moxa lets users treat networked serial ports the same as local serial ports.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- **Generation** Selecting the Application
- **Configuring ASPP Mode**
- **Configuring the Serial Ports**
- □ Save
- **Restart**
- **Given Setting up Hosts** 
  - Setting up Windows XP/2003 Hosts
  - Setting up Windows 2000 Hosts
  - Setting up Windows 95/98/ME/NT Hosts

# Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254
Async Server CN2610-8
Console terminal type (1: ansi/vt100, 2: vt52) : 1

3. CN2610's MAIN MENU will open, as shown below.



Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

# **Selecting the Application**

Open **Port Menu**  $\rightarrow$  **Mode** to configure the **NT Real COM** application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN2610	CN2610-8 CN2610-8_19 V2.0								
	[Mode] Line mOdem Welcome_MSG Quit								
Exami	ne/modify the	operation mo	de of	async ports					
ESC:	back to menu	Enter: sele	ect						
Port	Application	Mode		Description/more setting					
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					
06	NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					
07	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]					

4. Use the Up/Down arrow keys to select NT Real COM, and then press Enter.

CN2610	CN2610-8 CN2610-8_19 V2.0							
[Mode]	[Mode] Line mOdem Welcome_MSG Quit							
Exami	Examine/modify the operation mode of async ports							
ESC:	ESC: back to menu Enter: select							
Port	Application	+	+ption/more setting					
01	[NT Real COM	]  Disable	Server Proprietary Protocol]					
02	[NT Real COM	]  Dialin/out	Server Proprietary Protocol]					
03	[NT Real COM	]   Terminal	Server Proprietary Protocol]					
04	[NT Real COM	]  Reverse Terminal	Server Proprietary Protocol]					
05	[NT Real COM	]  Device Control	Server Proprietary Protocol]					
06	[NT Real COM	]  Multiplex	Server Proprietary Protocol]					
07	[NT Real COM	]  Printer	Server Proprietary Protocol]					
08	[NT Real COM	]  Multi-Host TTY	Server Proprietary Protocol]					
		] NT Real COM						
		]  Raw UDP						
		]+	+					

5. **ASPP** mode is selected by default, since it is the only mode associated with the **NT Real COM** application.

CN261	N2610-8 CN2610-8_19 V2.0							
	[Mode] Line mOdem Welcome_MSG Quit							
Exami	ine/modify the	operatio	n mode o	f as	sync por	ts		
ESC:	back to menu	Enter:	select					
Port	Application	Ν	lode		Descrip	tion/mo	ore setting	
01	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
02	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
03	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
04	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
05	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
06	NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
07	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]
08	[NT Real COM	] [.	ASPP	]	[Async	Server	Proprietary	Protocol]

# **Configuring ASPP Mode**

Follow these steps to configure ports for ASPP mode:

1. Move the cursor to the **Description/more setting** column and press **Enter**.

CN7261	n_ 0		CN1261	0_0_1	9 V2.0			
CNZOI	N2610-8 CN2610-8_19 V2.0							
[Mode	[Mode] Line mOdem Welcome MSG Ouit							
-			- ~					
Exam.	ine/modify the	operati	.on mode	ora	isync ports			
ECC.	back to menu	Enter:	select					
ESC:	back to menu	Encer:	Serect					
	- · · ·							
Port	Application		Mode		Description/more setting			
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
06	[NT Real COM	]	[ASPP	]	Async Server Proprietary Protocol			
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
8 0	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			

2. The pop-up selector contains input/display fields for **TCP data port**, **TCP command port**, and **TCP alive check time**. Each item is described in detail below the figure.

CN2610	N2610-8 CN2610-8_19 V2.0								
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports								
ESC:	back to menu	Enter: select							
Port	Application	Mod++							
01	[NT Real COM	] [AS   TCP data port : [950]  ]							
02	[NT Real COM	] [AS   TCP command port : [966]  ]							
03	[NT Real COM	] [AS  TCP alive check time : [0 ] minutes  ]							
04	[NT Real COM	] [AS++							
05	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]							
06	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]							

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Setting	Value	Notes		Necessity
TCP data port	950 – 965	The host uses this port number to determine which serial device to send data to. <b>These values are fixed, and</b> <b>cannot be changed by the user.</b>		Required
		<u>Serial Port</u> 01 02 03  16	<u>TCP Port No.</u> 950 951 952  965	
TCP command port	966 – 981	The host uses this port number to determine which device to send commands to. <b>These values are fixed</b> , and cannot be changed by the user.		Required
		<u>Serial Port</u> 01 02 03  16	<u>TCP Port No.</u> 966 967 968  981	
TCP alive check time	0 – 99 min.	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.		Optional

3. Press ESC to return to the PORT MENU.

# **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	Melcome_MSG Quit ynchronous port configuration	
Enter: select ES	C: previous menu	

3. The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

CN261	0-8			CN2610-8_19	/2.0			
			-	_MSG Quit				
Exami	ine/modify	asyno	chronous	s port configura	tion			
ESC:	back to m	lenu	Enter:	select				
Port	Speed	Bits	Stop	Parity FIFO	RTS/CTS	XON/XOFF	Discon.	ctrl
01	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
02	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
03	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
04	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
05	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
06	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
07	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
08	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]

Setting	Value	Notes	
Speed	50 bps to 921.6 Kbps	Transmission rate	
Bits	5, 6, 7, 8	Data bits	
Stop	1, 1.5, 2	Stop bits	
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space	
FIFO	Yes, No	First In First Out Device	
RTS/CTS	Yes, No	Hardware Flow Control	
XON/XOFF	Yes, No	Software Flow Control	
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.	
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.	
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.	

4. Press **ESC** to return to the **PORT MENU**.

# Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_19 V2.0	SERVER	MENU
	. Host_table Route_table [User_table] Quit async server basic configuration		
Enter: select	ESC: previous menu		
	+	+	
	Warning !!!	1	
	You had modified the configuration without saving.		
	Would you save it now ?		
	'Y: yes 'N': no		
	+	-+	

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.

#### Windows Real COM/Linux Real TTY/Unix Fixed TTY



# Restart

1. From the MAIN MENU, select Restart.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	ing sAve Utility <mark>[Restart]</mark> Exi system or selected async ports	t
Enter: select ES	C: previous menu	

2. Select **System** and then press **Enter** to restart the system and terminate the Telnet session.

CN2610-	8 CN2610-8_19 V2.0
	a] Port Quit rt the Async Server
ESC: ba	ack to menu Enter: select
+-	t
	Warning !!!
	Restart system will disconnect all ports and clear all status value
	' Enter: continue ESC: cancel
+-	+

# **Setting up Hosts**

After using CN2610 Console Utility to set up Async Server's ports for the NT Real COM application (ASPP mode), you will need to install port drivers on every computer used to access CN2610's ports. In this section we explain how to set up Windows hosts

# Setting up Windows XP/2003 Hosts

In this section, we use Windows XP to illustrate the installation procedure. The installation procedure for Windows 2003 machines is identical.

# Installing a Server

- 1. Unzip the Windows XP/2003 driver file, located on the CN2610 CD ROM, to your hard disk.
- 2. Run the Windows Add Hardware Wizard, located in the Control Panel.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



3. When the Welcome to the Add Hardware Wizard window opens, click Next to continue.



4. Wait patiently while the Wizard searches for servers connected to the network.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



5. The next window to open will ask you if the hardware is connected. Select **Yes**, **I have already connected the hardware**, and click **Next** to continue.

Hardware Wizard Is the hardware connected?			EXT T
Have you already connected this hardw		er?	
Yes, I have already connected th	e hardware		
$\bigcirc$ No, I have not added the hardwa	re yet		

6. Select Add a new hardware device, and then click Next to continue.

Add Hardware Wizard	
The following hardware is already installed on your computer	
From the list below, select an installed hardware device, then click Next to check properties or troubleshoot a problem you might be having.	
To add hardware not shown in the list, click "Add a new hardware device."	
Installed hardware:	
MOXA Communication Port 5 (COM7)	▲
MOXA Communication Port 6 (COM8)	
MOXA Communication Port 7 (COM9)	
JMOXA Communication Port 8 (COM10)	
🐲 Intel(r) Pentium(r)III processor	
Add a new hardware device	<b>-</b>
,	_
	1
< <u>B</u> ack <u>N</u> ext>	Cancel

7. Select **Install the hardware that I manually select from a list (Advanced)** to install the hardware, and then click **Next** to continue.

lardware Wizard he wizard can help you install other hard <del>w</del> are
The wizard can search for other hardware and automatically install it for you. Or, if you know exactly which hardware model you want to install, you can select it from a list.
What do you want the wizard to do?
O Search for and install the hardware automatically (Recommended)
Install the hardware that I manually select from a list (Advanced)
< Back Next > Cancel

8. The window that opens next will ask you to select the type of hardware you are installing. Select **Multi-port serial adapters**, and then click **Next** to continue.

Add Hardware Wizard			
From the list below, select the type of h	ardware you ar	e installing	
If you do not see the hardware category yo	u want, click Sho	w All Devices.	
Common <u>h</u> ardware types:			
Sector 1394 Bus host controllers			<b>_</b>
Imaging devices			
🔊 Infrared devices			
b Modems			
Multi-port serial adapters			
Network adapters			
🔯 NT Apm/Legacy Support			
PCMCIA adapters			-1
PCMCIA and Elash memory devices			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

9. The window that opens next will ask you to select the device driver you want to install for this hardware. Click **Have Disk...** to install from the CD.

Add Hardware Wizard				
Select the device driver you	want to install for this hardware.			
	nd model of your hardware device and then click Next. If you he driver you want to install, click Have Disk.			
Manufacturer Digi International Moxa Technologies Co., Ltd Moxa Technologies Inc.	Model MOXA C104 Series (ISA Bus) Version: 1.9.0.0 [2004/7. MOXA C104H/PCI Series (PCI Bus) Version: 1.8.0.0 [2 MOXA C104H/PCI Series (PCI Bus) Version: 1.8.0.0 [2 MOXA C114HL Series (ISA Bus) Version: 1.8.0.0 [2004]			
Image: This driver is not digitally signed!       Have Disk         Tell me why driver signing is important       Have Disk				
	< <u>B</u> ack <u>N</u> ext > Cancel			

10. Locate and then select the driver file **NPSERVER.INF**. Click **Open** to proceed with the installation.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Locate File					? ×
Look jn:	C WinXP		•	G 🕫 😕 🖽	•
My Recent Documents Desktop My Documents	NPortTool				
My Computer My Network Places	File <u>n</u> ame:	NPSERVER	78.1.0	_	<u>O</u> pen
	Files of type:	Setup Information	(*.inf)	~	Cancel

11. Select the correct CN2610 model, and then click Next to continue.

Add Hardware Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Model
MOXA Async Server CN2516
MOXA Async Server CN2610-16
MOXA Async Server CN2610-8
M0XA DE-309-16/CN2116
This driver is not digitally signed!       Have Disk         Tell me why driver signing is important
< <u>B</u> ack <u>N</u> ext > Cancel

12. The Wizard will start installing the driver, and automatically search the network for copies of the CN2610 model you selected in the previous step.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



13. Although the next window to open states that the software hasn't passed Windows Logo testing, you can rest assured that this driver has already been tested and been shown that it can support this Windows OS. Click **Continue Anyway** to proceed.

Hardware	Installation
1	The software you are installing for this hardware: MOXA Async Server CN2610-8 has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
	Continue Anyway

14. Wait patiently while the driver is installed.

Copying Files	×
6	$\triangleright$
npofg.dll To F:\WINXP\System32	
	Cancel

15. You can select the CN2610 that was located automatically, or select **Manually Enter the IP** address of NPort Server / Async Server and then enter the IP address of a different server. Click Next to finish installing the CN2610 driver.

MOXA NF	Port Server	Installatio	n				
			Async Serve Async Server is	-			
•	<u>S</u> elect existing	NPort Serve	ers / Async Serv	vers on the L/	AN		
	Model	Serial No	IP Address				
	CN2510-8	5631	192.168.127.2	54			
						Sca	an <u>Ag</u> ain
ON	Manually Ente	r the IP addr	ess of NPort Se	rver / Asvnc	Server		
				< <u>B</u> ack		ext >	Cancel

16. The next window reports that the driver was installed, and port drivers will be installed next. Click **Next** to continue.

allation complete o install Port driver	
	 Cancel
	 < <u>B</u> ack

17. Click **Finish** to complete the installation of the server driver. This will automatically trigger the port installation procedure.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



# **Installing Ports**

1. After the CN2610 server driver has been installed, Windows will notify you that new hardware has been found. Select **Install from a list or specific location (Advanced)**, and then click **Next** to continue.



2. Select Include this location in the search, and then click Next to continue.

Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable <u>m</u> edia (floppy, CD-ROM)
Include this location in the search:
F:\WinXP Browse
○ Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< <u>B</u> ack <u>N</u> ext > Cancel

3. Although the next window to open states that the software hasn't passed Windows Logo testing, you can rest assured that this driver has already been tested and been shown that it can support this Windows OS. Click **Continue Anyway** to proceed.

Hardware	Installation
1	The software you are installing for this hardware: Moxa Port 0 has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
	Continue Anyway

4. The driver for Moxa Port 0 will be installed.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



5. After Moxa Port 0 is installed, steps 1 to 4 will be repeated 7 or 15 times, depending on whether you are installing drivers for the 8-port or 16-port CN2610.

Found New Hardware Wizard						
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Moxa Port 0					
Click Finish to close the wizard.						
	< <u>B</u> ack. <b>Finish</b> Cancel					

6. After the installation is complete, you can check **Ports (COM & LPT)** under **Device Manager** to verify that all of the ports were installed successfully.

#### Windows Real COM/Linux Real TTY/Unix Fixed TTY



# Configuring CN2610 in a Windows XP/2003 Environment

After the CN2610 driver is installed, you will be given the option to proceed directly with the configuration of CN2610. You may also configure CN2610 at a later time. In this section we explain how to configure Real COM Mapping.

1. Click **Device Manager** → **Multiport serial adapters**, right click the CN2610 you would like to configure, and select **Properties**.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



2. Click the **Configuration** tab.

MOXA Asy	nc Server CN251	0-8 Properties		? ×	
General	Configuration Dri	ver			
MOXA Async Server CN2510-8					
	Device type:	Multi-port serial	adapters		
	Manufacturer:	Moxa Technolo	ogies Co., Ltd		
	Location:	Unknown			
Device status This device is working properly. If you are having problems with this device, click Troubleshoot to start the troubleshooter.					
<u>D</u> evice	usage: is device (enable)				
1026.01	is device (enable)				
			ОК	Cancel	

3. Click Settings to configure CN2610's Basic Configuration, Password, and Access Control.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

MOXA Async Server CN2510-8 Properties	? ×
General Configuration Driver	
NPort Server / Async Server Status Model: CN2510-8 IP Address: 192.168.127.254 Settings	
Port Status COM Number: COM13COM20	
Ports Setting	
OK	Cancel

4. On the **Basic Configuration** page, modify **Server Name**, **IP Address**, **Netmask**, and **Gateway**. Check the **DHCP** checkbox if the network parameters will be assigned automatically by a DHCP server.

Property Sheet	×
Basic Configuration Password	Access Control
Model Name: CN2510-8	
Serial Number 5631	
<u>S</u> erver Name	CN2510-8_5631
IP Address	192 . 168 . 127 . 254
Net <u>m</u> ask	255 . 255 . 255 . 0
<u>G</u> ateway	· · ·
	OK Cancel

5. On the Password page, add a password or change the existing password. Check the **Remember Password** checkbox to remember the password on this computer.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Property Sheet	×
Basic Configuration Password Access Control	
Change Password	
Current Password:	
New Password:	
Confirm Password:	
Eemember Password	
OK Cancel	

6. The Access Control page allows you to set up access rights for each of the CN2610's ports. Access right is assigned by IP address. In the example shown here, the "netmask" of 255.255.255 limits access to the listed IP address (192.168.6.16). To allow access to a group of IP addresses, adjust the "netmask" accordingly.

To allow any IP address to access a port, delete all IP addresses assigned to that port.

Property Sheet	×
Basic Configuration Password Access Control	(
View access control list by	
⊡ CN2510-8_5631(192.168.127.254) ⊡ 192.168.127.100 255.255.255.255	Add <u>I</u> P
	Add <u>P</u> ort
	<u>R</u> emove
	Modify
Tip: Delete All IP Address to Grant All.	
OK	Cancel

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

7. Click **Modify** to save all **Property Sheet** settings and return to the **Properties** / **Configuration** page.

MOXA Asyı	nc Server CN	2510-8 Properties	? ×
General	Configuration	Driver	
_ NPort	:Server / Asyn	c Server Status	
Мо	idel: CN	2510-8	
IP /	Address: 192	.168.127.254	
		Settings	
Port 9	itatus		
COM	1 Number:	COM13COM20	
		Ports Setting	
		ОК	Cancel

8. Click **Ports Setting** to configure the data transmission mode and FIFO for each COM port.

MOXA As	ync Serve	r CN2510-8	B Properties		? ×
General	Configura	tion Driver			
_ NPc	ort Server / .	Async Serve	er Status		
м	lodel:	CN2510-8			
IF	Address:	192.168.12	27.254		
			[		
			<u>S</u> etting	IS	
_ Port	Status				
CO	IM Number:		COM13COM	20	
			Ports Sel	tting	
				OK	Cancel

9. Check the box(es) next to the port(s) you would like to modify, and then click **Modify Setting**.

Port	Number	Tx Mode	FIFO
	COM13	Hi-Performance	Enable
<b>⊡</b> 2	COM14	Hi-Performance	Enable
<b>2</b> 3	COM15	Hi-Performance	Enable
	COM16	Hi-Performance	Enable
<b>⊠</b> 5	COM17	Hi-Performance	Enable
<b>⊡</b> 6	COM18	Hi-Performance	Enable
☑7 ☑8	COM19 COM20	Hi-Performance Hi-Performance	Enable Enable
	001120		Endolo
			Modify Setting

10. Modify the settings that need to be changed, and then click **OK**.

Change Port Setting	×
Port Number	
COM13 🔽	Auto Enumerating COM <u>N</u> umber
Transmission Mode	FIFO
− © <u>H</u> i-Performance	● <u>E</u> nable
C <u>C</u> lassical	O <u>D</u> isable
☑ Set The Change to All P <u>o</u> rts	☑ Set The Change to <u>A</u> ll Ports
	OK Cancel

# Setting up Windows 2000 Hosts

In this section, we explain how to set up a host in a Windows 2000 environment.

# Installing a Server

- 1. Unzip the Windows 2000 driver file, located on the CN2610 CD ROM, to your hard disk.
- 2. Run the Windows Add Hardware Wizard, located in the Control Panel.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



3. When the Welcome to the Add Hardware Wizard window opens, click Next to continue.

Add/Remove Hardware Wizard	d
	Welcome to the Add/Remove Hardware Wizard This wizard helps you add, remove, unplug, and troubleshoot your hardware.
	To continue, click Next.
	< <u>B</u> ack [ <u>N</u> ext>] Cancel

4. In the Choose a Hardware Task window, select Add/Troubleshoot a device, and then click Next to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Add/Remove Hardware Wizard		
Choose a Hardware Task Which hardware task do you want to perform?		
Select the hardware task you want to perform, and then click Next.		
<ul> <li>Add/Troubleshoot a device</li> <li>Choose this option if you are adding a new device to your computer or are having problems getting a device working.</li> </ul>		
Uninstall/Unplug a device Choose this option to uninstall a device or to prepare the computer to unplug a device.		
< <u>B</u> ack <u>N</u> ext > Cancel		

5. In the **Choose a Hardware Device** window, select **Add a new device**, and then click **Next** to continue.

Add/Remove Hardware Wizard	
Choose a Hardware Device Which hardware device do you want to troubleshoot?	2
The following hardware is already installed on your computer. If you are having problems with one of these devices, select the device, and then click Next. If you are attempting to add a device and it is not shown below, select Add a new device, and then click Next.	
Devices	
Add a new device	
ACPI Fixed Feature Button           Programmable interrupt controller	
Direct memory access controller	
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard      Finiter Port (I PT1)	
< <u>B</u> ack <u>N</u> ext > Cancel	

6. In the **Find New Hardware** window, select **No, I want to select the hardware from a list**, and then click **Next** to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Add/Remove Hardware Wizard
Find New Hardware Windows can also detect hardware that is not Plug and Play compatible.
When Windows detects new hardware, it checks the current settings for the device and installs the correct driver.
Do you want Windows to search for your new hardware?
$\mathbb{C}$ Yes, search for new hardware
No, I want to select the hardware from a list
< <u>B</u> ack <u>N</u> ext > Cancel

7. In the **Hardware Type** window, select **Multi-port serial adapters** from the **Hardware types** list, and then click **Next** to continue.

Add/Remove Hardware Wizard			
Hardware Type What type of hardware do you want to install	?		
Select the type of hardware you want to insta <u>H</u> ardware types:	JII.		
<ul> <li>Imaging devices</li> <li>Infrared devices</li> <li>Infrared devices</li> <li>Memory technology driver</li> <li>Modems</li> <li>Multi-port serial adapters</li> <li>Network adapters</li> <li>Other devices</li> <li>PCMCIA adapters</li> <li>Ports (CDM &amp; LPT)</li> </ul>			•
[	< <u>B</u> ack	<u>N</u> ext >	Cancel

8. Click Have Disk to install from the CD, and then click Next to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Add/Remove Hardware Wizard			
Select a Device Driver Which driver do you want to i	install for this device?		
	nd model of your hardware device and then click Next. If you he driver you want to install, click Have Disk.		
<u>M</u> anufacturers:	Models:		
Comtrol Corporation Digi International Equinox Systems Inc. Moxa Technologies Co., Ltd Specialix International Ltd. Stallion Technologies	MOXA NPort Server Lite DE-301 MOXA NPort Server Lite DE-302 MOXA NPort Server Lite DE-304 MOXA NPort Server Lite DE-331 MOXA NPort Server Lite DE-332 MOXA NPort Server Lite DE-334 MOXA NPort Server Lite DE-333		
	<u>H</u> ave Disk		
	< <u>B</u> ack <u>N</u> ext > Cancel		

9. After locating the **win2k** folder, select the driver file **NPSERVER.INF**, and then click **Open**.

Locate File				? ×
Look jn:	🔁 Win2K		- 🗕 🖆 🎫	
<b>S</b> History	NPortTool			
Desktop				
My Documents				
My Computer				
	File <u>n</u> ame:	NPSERVER		<u>O</u> pen
My Network P	Files of <u>type</u> :	Setup Information (*.inf)	7	Cancel

10. Select the correct CN2610 model, and then click Next to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Add/Remove Hardware Wizard				
	Device Driver h driver do you want to install for this devi	ce?		
	lect the manufacturer and model of your h ve a disk that contains the driver you war			k Next. If you
MOXA Asyr MOXA Asyr MOXA Asyr MOXA Asyr MOXA Asyr	nc Server CN2504 nc Server CN2508 nc Server CN2510-16 nc Server CN2510-8 nc Server CN2516 nc Server CN2510-16 nc Server CN2610-8			▲ ▼ <u>H</u> ave Disk
		< <u>B</u> ack	<u>N</u> ext >	Cancel

11. The Wizard will start installing the Server driver, and automatically search the network for copies of the CN2610 model you selected in the previous step.

Add/Remove Hardware Wizard					
Start Hardware Installation Windows is ready to install drivers for your new hardware.					
MOXA Async Server CN2510-8					
Windows will use default settings to install the software for this hardware device. To install the software for your new hardware, click Next.					
< <u>Back</u> Can	cel				

12. Although the next window to open states that the software hasn't passed Windows Logo testing, you can rest assured that this driver has already been tested and been shown that it can support this Windows OS. Click **Continue Anyway** to proceed.

Digital Signature Not Fou	nd	×		
Add/Remove Hardware		ias not		
Hardware Install       Windows is installing drivers for your new hardware.         Window MOXA Async Server CN2510-8         Installing software necessary to support your hardware				
	Configuration			
	Please Wait			
	< Back Next >	Cancel		

13. You can select the CN2610 that was located automatically, or select **Manually Enter the IP** address of NPort Server / Async Server and then enter the IP address of a different server. Click Next to finish installing CN2610 driver.
# Windows Real COM/Linux Real TTY/Unix Fixed TTY

MOXA NPort Server I	10XA NPort Server Installation				
	Select the NPort Server / Async Server you want to install Which the NPort Server / Async Server is that you want to install?				
Select existing I	NPort Servers / Async Servers on the LAN				
Model	Serial No IP Address				
CN2510-8	5631 192.168.127.254				
		Scan <u>Ag</u> ain			
C <u>M</u> anually Enter	the IP address of NPort Server / Async Serv	ver			
	< <u>B</u> ack	Next > Cancel			

14. The next window reports that the driver was installed, and port drivers will be installed next. Click **Next** to continue.

MOXA NP	MOXA NPort Server Installation				
		<b>ync Servers installat</b> nc Server is ready to in:		d	
Sys	ver driver installat tem will install por ort Server / Async				
	Model:	CN2510-8			
	Name:	CN2510-8_5631			
	IP Address:	192.168.127.254			
			< <u>B</u> ack	Next >	Cancel

# **Installing Ports**

1. The ports will be installed automatically. Click **Finish** to conclude the installation procedure.

#### Windows Real COM/Linux Real TTY/Unix Fixed TTY



2. After the installation is complete, you can check **Ports (COM & LPT)** under **Device Manager** to verify that all of the ports were installed successfully.



# Configuring CN2610 in a Windows 2000 Environment

After the CN2610 driver is installed, you will be given the option to proceed directly with the configuration of CN2610. You may also configure CN2610 at a later time. In this section we explain how to configure Real COM Mapping.

1. Click **Device Manager** → **Multiport serial adapters**, right click the CN2610 you would like

to configure, and select Properties.



2. Click the **Configuration** tab.

MOXA Asy	10XA Async Server CN2510-8 Properties				
General	General Configuration Driver				
»()	MOXA Async Server CN2510-8				
	Device type:	Multi-port serial	adapters		
	Manufacturer:	Moxa Technolo	gies Co., Ltd		
	Location:	Unknown			
Device status This device is working properly. If you are having problems with this device, click Troubleshooter to start the troubleshooter.					
Device usage:					
Use this device (enable)				<u> </u>	
			ОК	Cancel	

3. Click Settings to configure CN2610's Basic Configuration, Password, and Access Control.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

MOXA Async Server CN2	510-8 Properties	? ×
General Configuration	Driver	
NPort Server / Async Model: CN2 IP Address: 192.	510-8 168.127.254	
	Settings	
Port Status		
COM Number:	COM27COM34	
	Ports Setting	
	ОК	Cancel

4. On the **Basic Configuration** page, modify **Server Name**, **IP Address**, **Netmask**, and **Gateway**. Check the **DHCP** checkbox if the network parameters are assigned automatically by a DHCP server.

P	roperty Sheet		×
	Basic Configuration Password	Access Control	
	Model Name: CN2510-8		
	Serial Number 5631		
	<u>S</u> erver Name	CN2510-8_5631	
	IP Address	192 . 168 . 127 . 254	
	Net <u>m</u> ask	255 . 255 . 255 . 0	
	<u>G</u> ateway	· · ·	
		OK Cancel	

5. On the Password page, add a password or change the existing password. Check the **Remember Password** checkbox to remember the password on this computer.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Property Sheet	×
Basic Configuration Password Access Control	
Change Password	
Current Password:	
New Password:	
Confirm Password:	
Remember Password	
OK Cance	

6. The Access Control page allows you to set up access rights for each of the CN2610's ports. Access right is assigned by IP address. In the example shown here, the "netmask" of 255.255.255 limits access to the listed IP address (192.168.6.16). To allow access to a group of IP addresses, adjust the "netmask" accordingly. To allow *any* IP address to access a port, delete all IP addresses assigned to that port. Click **Modify** to make changes.

Property Sheet	×
Basic Configuration   Password   Access Control	
View access control list by	
⊡ · CN2510-8_5631(192.168.127.254) ⊕ 192.168.127.100 255.255.255.255	Add [P
	Add Port
	Remove
	<u>M</u> odify
Tip: Delete All IP Address to Grant All.	
OK	Cancel

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

7. And then click **OK** to return to the **Access Control** page.

Property Sheet	×
Basic Configuration Password Access Control	
View access control list by IP Address	×
C C C C C C C C C C C C C C C C C C C	
Tip: Delete All IP Address to Grant All.	
ОК	Cancel

8. Click **OK** to return to the Configuration page.

Property Sheet	×
Basic Configuration Password Access Control	
View access control list by	
<ul> <li>□- CN2510-8_5631(192.168.127.254)</li> <li>□- 192.168.127.100</li> <li>255.255.255.255</li> </ul>	Add [P
	Add Port
	Remove
	Modify
Tip: Delete All IP Address to Grant All.	
ОК	Cancel

9. Click **Ports Setting** to configure the data transmission mode and FIFO for each COM port.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

MOXA Async Server CN2510-8 Properties	<u>?</u> ×
General Configuration Driver	
NPort Server / Async Server Status Model: CN2510-8 IP Address: 192.168.127.254 Settings	
Port Status COM Number: COM27COM34	
Ports Setting	
OK	Cancel

10. Check the box(es) next to the port(s) you would like to modify, and then click **Modify Setting**.

Po	rt Configuratio	n			×
	-Port Setting				_
	-				
	Port	Number	Tx Mode	FIFO	
		COM27	Hi-Performance	Enable	
	2	COM28	Hi-Performance	Enable	
	3	COM29	Hi-Performance	Enable	
	4	COM30	Hi-Performance	Enable	
	5	COM31	Hi-Performance	Enable	
	6	COM32	Hi-Performance	Enable	
	7	COM33	Hi-Performance	Enable	
	8	COM34	Hi-Performance	Enable	
				Modify Setting	
					1
			OK	Cancel	

11. Modify the settings that need to be changed, and then click **OK**.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

Change Port Setting Port Number COM3	Auto Enumerating COM <u>N</u> umber
Transmission <u>M</u> ode <ul> <li> <u>H</u>i-Performance         </li> <u>C</u>lassical  </ul> <li>             Set The Change to All Ports         </li>	EIFO
	OK Cancel

# Setting up Windows 95/98/ME/NT Hosts

In this section, we explain how to set up a host in a Windows 95/98/ME/NT environment. You will first install the **NPort Pro Manager** program, and then use this utility to configure the server. We use Windows NT to illustrate the installation procedure.

# Installing a Server

- 1. Unzip the Windows 95/98/ME/NT driver file, located on the CN2610 CD ROM, to your hard disk.
- 2. Locate and run the **Setup.exe** file.



3. The setup program is used for both CN2500 and NPort Server Pro products, so you will see a **Welcome to NPort Server Pro** window. Click **Next** to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



4. Select Custom mode, and then click Next to continue.

Setup Wizard	×
Select your type	e of installation:
C Single-Host	Provides "single host to multiple NPort Server Pro" operation mode.
C Multi-Host	Provides "Multiple host to multiple NPort Server Pro" operation mode.
Custom	Provides "Multiple host to multiple NPort Server Pro" operation mode and "inter-network" connection.
	< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel

5. Select a **Destination Directory** and then click **Next** to continue.

Select	t Destination Directory	×
	ease select the directory where the NPort Server Pro files a to be installed.	
D	:\Program Files\NPort	
	< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel	

6. Click Next to finish installing NPort Pro Manager.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



7. After the driver is installed, **NPort Pro Manager** and the **Add Server Wizard** will start running automatically. Select **Yes**, and then click **Next** to continue.

📲 NPort Pro Manager - Custom	
<u>S</u> erver <u>P</u> ort <u>H</u> elp	
╘╧╧╱╝╧╧╸	
Add Server Wizard	×
Welcome to <i>Difference</i> Welcome to <i>Difference</i> <i>Difference</i> Welcome to <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference</i> <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference <i>Difference </i></i></i></i></i></i></i></i></i></i></i></i>	You may add a new server now. Make sure you have connected the NPort Server Pro to the network, and then plug in the power cord before continuing. Do you want to run Add Server Wizard now? ves No. I will run Add Server wizard later.
	< <u>₿</u> ack. <u>N</u> ext > Cancel
Ready	

8. Select one of the server's in the list, or select **No**, **I will define the server myself** if the correct server is not listed. Click **Next** to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



9. If necessary, enter a different IP address in the **Server IP address** box, and then click **Next** to continue.

Add Server Wizard	×
Welcome to <i>Description</i> Server Pro	NPort Server IP address Enter a desired IP address below or click Next to use the current one. Server IP address: <b>192:168.127.254</b>
www.moxa.com	
	< <u>B</u> ack <u>N</u> ext > Cancel

10. Select the COM number for CN2610's port 1. The rest of the ports will be mapped automatically. Click **Next** to continue.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY



11. For added security, set a password for the CN2610. Check the **Auto-Saved** box to save the password on your computer. Click **Next** to continue.

Add Server Wizard	×		
Welcome to <i>NPort</i> Server Pro	Set Server Password Your system has no password protection. It is strongly recommended that you set up a password to prevent misuse of the selected server.		
	Confirm Password:		
www.moxa.com			
	< <u>B</u> ack <u>N</u> ext> Cancel		

12. Check the new server settings to make sure they are correct, and then click Finish.

#### Windows Real COM/Linux Real TTY/Unix Fixed TTY



13. The server and ports will be displayed in the **NPort Server Manager** window. Click the **Save** icon in the upper left corner to save the settings before exiting the program.

📹 NPort Pro Manager - Custom	
<u>S</u> erver <u>P</u> ort <u>H</u> elp	
■ ■ NPort Server     □	
Ready	11.

# Configuring CN2610 in a Windows 95/98/ME/NT Environment

After the CN2610 driver is installed, you can proceed directly with the configuration of CN2610, or configure CN2610 at a later time. In this section we explain how to configure Real COM Mapping.

 Start the Manger by clicking on Start → Properties → NPort Server → NPort Server Manager, and then click the server you would like to configure. The ports will be shown in the right pane of the window.

# Windows Real COM/Linux Real TTY/Unix Fixed TTY

- 🖷 NPort Pro Manager Custom \_ 🗆 × Port <u>H</u>elp Server <u>fr</u> 2 ıĽ. 2 ж Ŷ NPort Server СОМ Status Port <del>, CN2510-8\_5631(CN2510-8) 🖙 完 完 完 🗠 🔫 🔫 🔫 🔫 🔫 🔫</del> 000000000 COM3 Available 1 2 3 4 5 6 7 8 COM4 Available COM5 Available COM6 Available COM7 Available COM8 Available СОМ9 Available COM10 Available Ready
- 2. Right click the CN2610 you wish to configure, click the right mouse button, and then select **Server Properties**.

🖷 NPort Pro Manager - Custom				_ 🗆 🗵
<u>S</u> erver <u>P</u> ort <u>H</u> elp				
	2			
E = NPort Server	Port	СОМ	Status	
	<u>₽</u> 1	COM3	Available	
<u>D</u> elete Server	2 2 2 3	COM4 COM5	Available Available	
Server <u>P</u> roperties	5 4	COM5 COM6	Available	
<u>B</u> eplace Server	D 5	COM7	Available	
Upgrade Firmware	1234 5678	COM8	Available	
	0 7 0 8	COM9 COM10	Available Available	
	<b>*</b>	COMIO	Araliabic	
Ready				//.

3. On the **General** page, you can see the server's **Serial No.**, and modify **Server Name**, **Server IP**, and **Netmask**. Select the **Enable** option (to the right of DHCP)if the network parameters are assigned automatically by a DHCP server.

Server Properties		X
General Password Transr	nission Access Cont	trol Advanced
Server Info		
Serial No :	5631	
Server Name :	CN2510-8_5631	
Server IP	192.168.127.254	
Netmask :	255.255.255.0	
DHCP :	O Enable	O Disable
		OK Cancel

4. On the **Password** page, set up a password for this CN2610 for added security. Check the **Auto Save Password on this computer** box if you want your computer to remember the password.

S	erver Pr	operties				×
	General	Password	Transmission	Access Control Advance	ed	1
	🔽 <u>A</u> uto	Save Passw	vord on this con	nputer		
	Chang	e Password-				
	Cur	rent Server F	assword :			
	Net	w Password :				
	Cor	nfirm New Pa	ssword :			
-						
					OK	Cancel

5. The Access Control page allows you to set up access rights for each of the CN2610's ports. Access right is assigned by IP address.

Server Properties	×
General Password Transmission Access Control Ac	dvanced
View access control list by : Port	
□- CN2510-8_5631(192.168.127.254)	Add IP
⊡ Port 1	
ian - Port 2 ian - Port 3	Add Port
⊕ Port 5	
	<u>B</u> emove
i Port 8	Modify
	OK Cancel

6. The Transmission page lets you to select a Transmission Mode and Tx FIFO for each port.

Server Properties				
General Pa Port No. 2 3 4 5		Access Cr Transmission Mode Hi-Performance Hi-Performance Hi-Performance Hi-Performance Hi-Performance	Tx FIFO Enable Enable Enable Enable Enable Enable Enable	
6 7 8	СОМ8 СОМ9 СОМ10	Hi-Performance Hi-Performance Hi-Performance	Enable Enable Enable	FIFO © Enable © Disable
				OK Cancel

7. The Access Control page is used to modify access rights to the server.

Server Properties	x
General Password Transmission Access Control Ac	dvanced
View access control list by : Port	
□- CN2510-8_5631(192.168.127.254)	Add IP
⊡ Port 1 	
For 2	Add Port
⊕ Port 4	
⊕ Port 5	Remove
ini - Port 6 ini - Port 7	125/03/15
er for 7 ⊕ Port 8	Modify
	OK Cancel

8. The **Advanced** page allows you to add routes to CN2610. However, since CN2610 has a column to set the Default Gateway, you can ignore this configuration.

Server Properties				×
General Password	Transmission Ac	cess Control	Advanced	
			-	
Enter the IP addr	ess and Gateway fo	r your data to r	route to.	
Destination	Gateway	Netmask	Metric	
				Add
				Hemove
				Temove
				Modify
•				
				Conset
			04	Cancel

# **Setting Up Device Control**

Device Control applications use standard Linux/Unix Socket programming for Linux/Unix systems, or WinSock programming for Windows systems, to control device data transmission directly. With CN2610 configured for RAW mode, you can focus on pure data transmission, without using serial port control or serial modem control signals. You can also use ASPP mode, provided exclusively by Moxa, to communicate with CN2610.

For both Linux/Unix Socket programming and Windows WinSock programming, IP is used to communicate between hosts and devices. At the end of the chapter, we give examples that explain how ASPP is used in a UNIX/Windows environment.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- □ Selecting the Application
- **Configuring ASPP Mode**
- **Configuring RAW Mode**
- **Configuring the Serial Ports**
- □ Save
- **Restart**
- □ ASPP Library Introduction
- □ ASPP Examples for Unix
- □ ASPP Examples for Windows

# Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

3. CN2610's MAIN MENU will open, as shown below.

📕 Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

# **Selecting the Application**

Open Port Menu  $\rightarrow$  Mode to configure the Device Control application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN2610	-8		CN2610-8	_19 V2.0
[Mode]	Line mOdem	Welcome_M	ISG Quit	
Exami	ne/modify the	operation	n mode of	async ports
ESC:	back to menu	Enter: s	select	
Port	Application	M	ode	Description/more setting
01	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
06	NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
07	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]

4. Use the Up/Down arrow keys to select Device Control, and then press Enter.

CN2610	0-8	CN2610-8_19 V2.	0
[Mode]	Line mOdem	Welcome_MSG Quit	
Exami	ne/modify the	operation mode of async p	orts
ESC:	back to menu	Enter: select	
Port	Application	+	+ption/more setting
01	[NT Real COM	]  Disable	Server Proprietary Protocol]
01	[NT Real COM	]  Dialin/out	Server Proprietary Protocol]
03	[NT Real COM	]  Terminal	Server Proprietary Protocol]
04	[NT Real COM	] <u>Reverse Terminal</u>	Server Proprietary Protocol]
05	[NT Real COM	] Device Control	Server Proprietary Protocol]
06	[NT Real COM	] Multiplex	Server Proprietary Protocol]
07	[NT Real COM	]  Printer	Server Proprietary Protocol]
08	[NT Real COM	] Multi-Host TTY	Server Proprietary Protocol]
		] NT Real COM	
		] Raw UDP	
		]+	+

5. **ASPP** mode is selected by default.

CN2610	-8		CN261	L0-8_1	9 V2.0
[Mode]	Line mOdem W	elcom	e MSG (	 Duit	
	ne/modify the or			•	sync ports
ESC:	back to menu E	nter:	select	t	
Deret	Num I dana kalana		N] -		De navinski en la even mekkin n
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	Device Control	. ]	[ASPP	]	[Async Server Proprietary Protocol]
07	[NT Real COM	1	ASPP	1	[Async Server Proprietary Protoco]]

After configuring a port for the Device Control application, you will need to choose between one of two operation modes: **ASPP** and **RAW**. ASPP mode, which was developed by Moxa, provides an easy-to-use TCP/IP socket programming library and other useful functions. Choosing RAW mode gives you more freedom to define your own applications for serial data transmitted and received over the Ethernet. If you select RAW mode, you will need to use standard TCP/IP socket programming techniques.

# **Configuring ASPP Mode**

Moxa ASPP is a TCP/IP socket programming library. If you are using Moxa ASPP to create your programs, configure CN2610's serial ports for ASPP mode, and copy the ASPP library to the server. ASPP programming functions and examples are introduced at the end of this chapter.

Each physical ASPP port is divided into two logical ports. One is called the **command port**, and the other is called the **data port**. The command port is used to issue commands across the network to set the transmission line's configuration parameters, such as baudrate, data bits, flow control condition, etc. The data port is used for normal data transmission tasks, such as retrieving data from the serial device.

Follow these steps to configure ports for ASPP mode:

1. Move the cursor to the Mode column for the port and press Enter.

CN2610	)-8	CN26	510-8_1	.9 V2.0		
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports					
				sync ports		
ESC:	back to menu En	cer: sele	ct			
Port	Application	Mode		Description/more setting		
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]		
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]		
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]		
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]		
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]		
06	[Device Control	] [ASPP	]	[Async Server Proprietary Protocol]		
07	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]		

2. Use the arrow keys to highlight ASPP, and then press Enter.

CN2610	0-8	CN2610	0-8_19 V2.0
[Mode] Exami	Line mOdem We ne/modify the ope	- ~	
	back to menu En		
Port	Application	Mode	Description/more setting
01 02	[NT Real COM [NT Real COM	] [ASPP ] [ASPP	] [Async Server Proprietary Protocol] ] [Async Server Proprietary Protocol]
03 04	[NT Real COM [NT Real COM	] [ASPP ] [ASPP	] [Async Server Proprietary Protocol] ]+rver Proprietary Protocol]
05 06	[NT Real COM [Device Control		ASPP         Iver Proprietary Protocol]           I RAW         Iver Proprietary Protocol]
07 08	[NT Real COM [NT Real COM	] [ASPP ] [ASPP	]++rver Proprietary Protocol] ] [Async Server Proprietary Protocol]

3. Move the cursor to the Description/more setting column and press Enter.

CN2610	-8		CN261	0-8_1	9 V2.0
-	Line mOdem Wel	-	- ~		
Exami	ne/modify the ope	eratic	n mode	of a	sync ports
ESC:	back to menu En	ter:	select		
Port	Application	I	Mode		Description/more setting
01	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]
06	[Device Control	] [	ASPP	]	Async Server Proprietary Protocol
07	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]

4. The pop-up selector contains input/display fields for **TCP data port**, **TCP command port**, and **TCP alive check time**. Each item is described in detail below the figure.

CN2610	0-8	CN2610-8_19 V2.0
-	Line mOdem Wel	— ~
Exami	.ne/modify the ope	ration mode of async ports
ESC:	back to menu Ent	er: select
Port	Application	Mod++
01	[NT Real COM	] [AS  TCP data port : [950]  ]
02	[NT Real COM	] [AS  TCP command port : [966]  ]
03	[NT Real COM	] [AS  TCP alive check time : [0 ] minutes  ]
04	[NT Real COM	] [AS++]
05	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]
06	[Device Control	] [ASPP ] [Async Server Proprietary Protocol]
07	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]

# **Setting Up Device Control**

Setting	Value	Notes	Necessity
TCP data port	950 – 965	The host uses this value to determine which serial device to send data to.These values are fixed, and cannot be changed by the user.Serial PortTCP Port No.01950029510395216965	Required
TCP command port	966 – 981	10903The host uses this Port value to determine which device to send commands to. These values are fixed, and cannot be changed by the user.Serial PortTCP Port No.01966029670396816981	Required
TCP alive check time	0 – 99 min.	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

5. Press **Esc** to return to the **PORT MENU**.

# **Configuring RAW Mode**

RAW mode is used for standard TCP/IP socket programs. RAW mode provides a transparent communication link between the network socket program and the corresponding serial port.

1. Move the cursor to the Mode column for the port and press Enter.

				-	•
CN2610	0-8		CN261	10-8_1	.9 V2.0
[Mode] Exami	Line mOdem Wel .ne/modify the ope:			~	async ports
ESC:	back to menu Ent	er:	selec	t	
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	[Device Control	]	ASPP	]	[Async Server Proprietary Protocol]
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

2. Use the arrow keys to highlight **RAW**, and then press **Enter**.

CN261(	0-8		CN261	0-8_1	9 V2.0			
-	Line mOdem Wel .ne/modify the ope		- ~					
					asyne por			
ESC:	back to menu En	ter:	select	:				
Port	Application	]	Mode		Descrip	tion/mo	ore setting	
01	[NT Real COM	] [	ASPP	]	[Async	Server	Proprietary	Protocol]
02	[NT Real COM	] [	ASPP	]	[Async	Server	Proprietary	Protocol]
03	[NT Real COM	] [	ASPP	]	[Async	Server	Proprietary	Protocol]
04	[NT Real COM	] [	ASPP	]+-		-+rver	Proprietary	Protocol]
05	[NT Real COM	] [	ASPP	] .	ASPP	rver	Proprietary	Protocol]
06	[Device Control	] [	ASPP	] [	RAW	rver	Proprietary	Protocol]
07	[NT Real COM	] [	ASPP	]+-		-+rver	Proprietary	Protocol]

3. Move the cursor to the **Description/more setting** column, and then press **Enter**. The pop-up selector contains input/display fields for **TCP port**, **Source IP address**, **Destination IP addr**, **Inactivity time**, and **TCP alive check time**. Each item is described in detail below the figure.

CN261	0-8	CN2610-8_19 V2.0	
-	Line mOdem Weld ine/modify the oper	come_MSG Quit ation mode of async ports	
ESC:	back to menu Ent	er: select	
Port 01 02 03 05 06 07 08	INT Real COM [NT Real COM [NT Real COM [NT Real COM [Device Control	Mod+ ] [AS  TCP port ] [AS  Source IP address ] [AS  Destination IP addr ] [AS  Inactivity time ] [RA  TCP alive check time ] [AS+ ] [ASPP ] [Async Server P	: [4001 ]  ] : [ ]  ] : [ ]  ] : [0 ] minutes  ] : [0 ] minutes  ] +]

Setting	Value	Notes	Necessity
TCP port	number	Each of CN2610's serial ports is mapped to a TCP port. You may modify these port numbers, but to avoid conflicts among TCP port numbers for other serial ports, we strongly suggest using the default values: 4001 for port 1, 4002 for port 2, etc.	Optional
Source IP address	IP address for the port	Specify an IP address for this port for application purposes. If left blank, CN2610 will use its own IP address, in which case you will need to specify different TCP port numbers for different serial ports.	Optional
Destination IP addr	IP address	The host with this IP address will have exclusive access to this port. If left blank, all hosts on the network will have access to this port.	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

4. Press Esc to return to the PORT MENU.

# **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select Line, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
Mode [Line] mOdem W Examine/modify asynch	Velcome_MSG Quit Nonous port configuration	
Enter: select ESC:	previous menu	

3. The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

```
CN2610-8
                                CN2610-8 19
                                               V2.0
Mode [Line] mOdem Welcome_MSG Quit
 Examine/modify asynchronous port configuration
ESC: back to menu Enter: select
                                                 RTS/CTS
                                                           XON/XOFF
                                                                        Discon. ctrl
 Port
       Speed
                 Bits
                       Stop
                                Parity
                                         FIFO
                 [8]
[8]
      [115200]
 01
                       [1]
                                                 [yes]
                                                                        [None
                                [None ]
                                         [yes]
                                                           [no ]
      [115200]
                            1
                                [None
                                         [yes]
                                                 [yes]
                                                                1
                                                                        [None
       [115200]
                 [8]
                                [None
                                         [yes]
                                                 [yes]
                                                                        [None
  04
      [115200]
                 [8]
                                [None
                                         [yes]
                                                 [yes]
                                                                        [None
                                                                ]
      [115200]
                 [8]
                                         [yes]
  05
                                [None
                                                 [yes]
                                                           [no
                                                                        [None
                                       1
                                                                1
  06
       [115200
                 [8]
                                [None
                                         [yes
                                                 [yes]
                                                            [no
                                                                        [None
```

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press ESC to return to the PORT MENU.

# Save

When exiting the SERVER MENU, you will be prompted to save settings. Press Y to save.

	CN2610-8_19	V2.0	SERVER	MENU
	Host_table Route_table sync server basic configu		Quit	
Enter: select E	SC: previous menu			
	!! Warning You had modified the conf Would you save it now ? 'Y: yes	figuration wit	hout saving.     	

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.



# Restart

1. From the MAIN MENU, select Restart.



2. Select **System** and then press **Enter** to restart the system and terminate the Telnet session.



# **ASPP Library Introduction**

The CN2610 Documentation and Software CD contains example programs that illustrate how to control an ASPP port. After uncompressing the file **ASPP.tar.z**, the folder **\aspp\as.h** will contain several basic subroutines.

The following subroutines are used to control an ASPP port:

- 1. sio\_init()—start ASPP Library
- 2. sio\_open(ipaddr, p)—open a serial port
- 3. sio\_close(fd)—close a serial port
- 4. sio\_ioctl(fd, baud, mode)—configure a serial port's baudrate, parity, etc.
- 5. sio\_baud(fd, baud, mode)—configure serial port's baudrate
- 6. sio\_flowctrl(fd, mode)—configure hardware and/or software flow control
- 7. sio\_lctrl(fd, mode)—line control
- 8. sio\_lstatus(fd)—check line status
- 9. sio\_flush(fd, func)—clear input/output buffer
- 10. sio\_write(fd, buf, len)—write data
- 11. sio\_read(fd, buf, len)—read data
- 12. sio\_break(fd, time)—send break signals
- 13. sio\_oqueue(fd)—check how much data is in the output buffer
- 14. sio\_iqueue(fd)—check how much data is in the input buffer

# ASPP Examples for Unix

In general, controlling devices attached to ASPP ports involves using the following procedures:

- 1. Create a socket for the command port, and then connect to the port.
- 2. Configure the port's serial parameters, such as baudrate, via the command port.
- 3. Create a socket for the data port, and then connect to the port.
- 4. Transfer data via the data port.

This example program continually sends the string "1234567890" to CN2610's ASPP port and then reads back data when the program ends.

#### Settings:

Target port: parity = None, data bits = 8, stop bit = 1, software (XON/XOFF) flow control, no hardware (RTS/CTS).

Syntax: # ./example ConsoleServerName [port(1) [Baud(9600)]]

For example:

# ./example CN2610 1 19200

Program sends "1234567890" to port 1 at 19200 bps baudrate and reads back any data on it. Environment: SCO UNIX. If you're using another system, modify by including the file name and other variables.

# **ASPP Examples for Windows**

1. Program testing environment:



- 2. This program works like a dumb terminal. It sends all characters pressed on the keyboard to a remote connection, and then echoes the data to the screen.
- 3. This program sends '\r' as '\r\n' and '\n' as '\r\n'.
- 4. All CN2610 ASPP functions are defined in the file as.h.
- 5. The program works on Windows 9x/NT/2000/XP/2003 as a dumb terminal. After completing the connection to CN2610, the serial port will send all characters pressed on the keyboard to the remote connection, and then echo the data to the screen. Then, the program will send '12345' to Async Server's port 1 at 19200 bps baudrate and read back any data on it.

# Setting Up Raw UDP

UDP is a non connection-oriented data transmission method. By circumventing TCP's handshaking process, UDP gains the advantages of fast transmission speed, and high transmission efficiency. The disadvantage is that UDP is unable to guarantee data integrity, since UDP does not re-assemble out-of-order packets, or retransmit packets when data is missing. UDP is an ideal transmission method if you need fast data transmission, and upper-layer application software is given the task of checking data for transmission errors.

CN2610's UDP mode supports 4 configurable groups of IP addresses, allowing data to be broadcast over the network to one or more groups of IP addresses.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- **Generation** Selecting the Application
- **Configuring RAW UDP Mode**
- **Configuring the Serial Ports**
- □ Save
- **Restart**

# Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

3. CN2610's MAIN MENU will open, as shown below.

📕 Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

# **Selecting the Application**

Open **Port Menu**  $\rightarrow$  **Mode** to configure the **Raw UDP** application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN2610	)-8	CN2	2610-8_	19 V2.0				
[Mode]	[Mode] Line mOdem Welcome_MSG Quit							
Exami	.ne/modify the	operation mo	ode of	async ports				
ESC:	back to menu	Enter: sele	ect					
Port	Application	Mode		Description/more setting				
01	[NT Real COM	] [ASPI	> ]	[Async Server Proprietary Protocol]				
02	[NT Real COM	] [ASPI	> ]	[Async Server Proprietary Protocol]				
03	[NT Real COM	] [ASPI	> ]	[Async Server Proprietary Protocol]				
04	[NT Real COM	] [ASPI	> ]	[Async Server Proprietary Protocol]				
05	[NT Real COM	] [ASPI	> ]	[Async Server Proprietary Protocol]				
06	NT Real COM	] [ASPI	? ]	[Async Server Proprietary Protocol]				
07	[NT Real COM	] [ASPI	> ]	[Async Server Proprietary Protocol]				

4. Use the Up/Down arrow keys to select Raw UDP, and then press Enter.

CN2610	0-8	CN2610-8_19 V2.	. 0
-		Welcome_MSG Quit	
Exami	.ne/modify the	operation mode of async p	orts
ESC:	back to menu	Enter: select	
Port	Application	+	+ption/more setting
01	[NT Real COM	]  Disable	Server Proprietary Protocol]
02	[NT Real COM	] Dialin/out	Server Proprietary Protocol]
03	[NT Real COM	] Terminal	Server Proprietary Protocol]
04	[NT Real COM	]  Reverse Terminal	Server Proprietary Protocol]
05	[NT Real COM	]  Device Control	Server Proprietary Protocol]
06	[NT Real COM	]  Multiplex	Server Proprietary Protocol]
07	[NT Real COM	]  Printer	Server Proprietary Protocol]
08	[NT Real COM	]  Multi-Host TTY	Server Proprietary Protocol]
		]  NT Real COM	
		]   DRDAS	
		Raw UDP	
		]+	+

5. The only operation mode associated with this application is **RAW UDP**, which is selected automatically in the Mode column.

CN261(	)-8	CN	2610-8_	19 V2.0
-	Line mOdem .ne/modify the	—	~	async ports
	back to menu	-	ect	
ESC:	back to menu	Enter: sel	ect	
Port	Application	Mode	9	Description/more setting
01	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]
06	Raw UDP	] [RAW	UDP ]	[Pure raw data (UDP) mode ]
07	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]

# **Configuring RAW UDP Mode**

1. Move the cursor to the **Description/more setting** column, and then press **Enter**.

CN2610	-8		CN2610	-8_	19 V2.0		
	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports						
	back to menu						
Port	Application		Mode		Description/more setting		
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
06	[Raw UDP	]	[RAW UDP	]	[Pure raw data (UDP) mode ]		
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		

2. The pop-up selector contains input/display fields for serial to LAN and LAN to serial parameters, Local Listen Port, Delimiter 1 (Hex), Delimiter 2 (Hex), and Force transmit (ms). Each item is described in detail below the figure.

+ 	Begin	End	Port	+
(serial to LAN)				į
Dest. IP addr 1	[	][	][	1 İ
Dest. IP addr 2	[	][	][	] [
Dest. IP addr 3	[	][	][	] [
Dest. IP addr 4	[	][	][	] [
(LAN to serial)				
Src. IP addr 1	[	][	]	
Src. IP addr 2	[	][	][	] [
Src. IP addr 3	[	][	][	] [
Src. IP addr 4	[	][	][	]
Local Listen Port		: [	]	
Delimiter 1 (Hex)		:[]		
Delimiter 2 (Hex)		:[]		
Force transmit (m	ເຮ )	: [	]	
+				+

# Setting Up Raw UDP

Setting	Value	Notes	Necessity
Dest. IP address 1/2/3/4	Begin: x.x.x.x End: y.y.y.y Port: 1 to 65	<ul> <li>Defines 1 to 4 groups of IP addresses. UDP packets will be sent through UDP port <b>Port</b></li> <li>to the range of IP addresses from the <b>Begin</b> IP address to the <b>End</b> IP address.</li> </ul>	1: Required (2, 3, 4 are Optional)
Src. IP address 1/2/3/4	Begin: x.x.x.x End: y.y.y.y Port: 1-6553	<ul> <li>Defines IP addresses that will be allowed to transmit UDP packets to CN2610's</li> <li>Ethernet port. UDP packets from IP addresses in the range from Begin IP address to End IP address will be accepted through UDP port Port.</li> </ul>	1: Required (2, 3, 4 are Optional)
Local Listen Port	1-65535	The UDP port that CN2610 listens to and that other devices must use to contact CN2610. The default is <i>blank</i> . Be sure to choose a Local Listen Port number that does not conflict with the Local Listen Port for CN2610's other serial ports.	Required
Delimiter 1/2 <hex></hex>	00-FF	Once the CN2610 receives delimiters through its serial port (or the amount of data received exceeds 1K), it immediately packs all data currently in its buffer and sends it out the CN2610's Ethernet port. Note: Delimiter 2 is optional. If left blank, then Delimiter 1 alone trips clearing of the buffer.	Optional
Force transmit <ms></ms>	0-65535	0: Disable this function. 1 to 65535: Forces the CN2610 to try to pack serial data received during the specified time into the same data frame via UDP mode.	Optional
	least as large as baudrate. For e stop bit, and no a character is 1 ( 10 bits / 1200 Therefore, you The Force Tran 10 ms. If you want to s attached to CN less than the Fo	rce Transmit timeout depends on the application, but the time required to transmit one character, for the s kample, assume that the serial port is set to 1200 bps, ne for parity. In this case, the total number of bits req bits and the time required to transfer one character is bits/s ) * 1000 ms/s = 8.3 ms. should set the Force Transmit timeout to be greater the smit timeout is specified in milliseconds and must be end a series of characters in the same packet, the serie 2610 should send that series of characters during a tir rce Transmit timeout, and the total length of data mu CN2610's internal buffer size. The serial communic port.	pecified 8 data bits, 1 juired to send is nan 8.3 ms. larger than al device ne interval st be less

3. Press ESC to return to PORT MENU

# **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select Line, and then press Enter.



 The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

CN261	0-8			CN2610-8_19	V2.0			
			-	_MSG Quit s port configura	tion			
		-						
ESC:	back to m	lenu	Enter:	select				
Port	Speed	Bits	Stop	Parity FIFO	RTS/CTS	XON/XOFF	Discon.	ctrl
01	[115200]	[8]	[1]	[None] [yes]	[yes]	[no ]	[None	]
02	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
03	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
04	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
05	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
06	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
07	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
08	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press **ESC** to return to the **PORT MENU**.

# Save

When exiting the SERVER MENU, you will be prompted to save settings. Press Y to save.

# Setting Up Raw UDP

CN2610-8		CN2610-8_19	V2.0	SE	RVER	MENU
Info. Lan Adv Examine/modify				Quit		
Enter: select	ESC: previo	ous menu				
	+				+	
		Warning !! ified the conf ave it now ?	iguration wit	hout saving.		
	 +	`Y: yes 	`N': no		+	

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.

CN2610-8	CN2610	)-8_19 V2.0		MAIN MENU
	seTting <mark>[sAv</mark> configuration	e] Utility Restart to Flash ROM	Exit	
ESC: back to	menu Enter:	select		
	+  Enter +	to updated, other ke	y to cancel  +	

# Restart

1. From the MAIN MENU, select Restart.

CN2610-8	CN2610-8_19 V2.0	MAIN	MENU
5	sAve Utility [Restart] Exit stem or selected async ports		
Enter: select ESC:	previous menu		

2. Select System and then press Enter to restart the system and terminate the Telnet session.

	n] Port art the A	~						
		sync-serve	er					
ESC: ba	ack to me	nu Enter	: selec	t				
+-								+
	Restart	system wi '		nnect all	ning !!! ports and ESC: ca	clear all ncel	status	value   

7

# Setting Up the Dual-host Redundant Data Acquisition System

This chapter includes information about how to set up a CN2610 Async Server, that allows the redundant terminal on the redundant Ethernet network to access CN2610' serial ports. The DRDAS mode realizes a highly redundant structure.

This chapter introduces the APIs for the following functions:

- **Configuring Port Operation Mode Port Menu [Mode]** 
  - DRDAS Mode
- **Configuring Port Connection Setting Port Menu [Line]**
- □ Save
- □ Restart
### **Configuring Port Operation Mode – Port Menu [Mode]**

Open Port Menu→Mode to install DRDAS mode and application parameters.

1. To enter the CN2610 **MAIN MENU**, use either Telnet from a network terminal, or connect directly to the CN2610 Async Server using a console terminal. Select **ansi/vt100**, and then press **Enter**. Refer to chapter 2 for more details about how to enter the **MAIN MENU**.

Run	? ×
<u>;</u>	Type the name of a program, folder, or document, and Windows will open it for you.
<u>O</u> pen:	telnet 192.168.205.21
	Run in Separate Memory Space
	OK Cancel <u>B</u> rowse
Async Se	erver CN2610-8
Console	terminal type (1: ansi/vt100, 2: vt52) : 1

2. The table below is the **MAIN MENU** of the CN2610 Async Server. Before you begin, familiarize yourself with the cursor movement functions before starting the configuration process.

	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Enter next menu	[Enter] Key
Return to previous menu	[Esc] Key
Fast Key	Capital letter of the word

If you have problems using the arrow keys to move the cursor in a Windows 9x or NT environment, click the **Terminal** menu, choose **Preferences**, and then select **VT100 Arrows** in the **Terminal Preferences** window. Click **OK** to go back to the **MAIN MENU**.

🚮 Telnet - 192.168.	2.180		
<u>Connect</u> <u>E</u> dit <u>T</u> ermi	nal <u>H</u> elp		
Star	erences t Logging b Logging 1 type (1: ans	i/vt100, 2: v	t52) : 1
Terminal Preference	8	×	
Terminal Options     Local <u>E</u> cho <u>B</u> linking Cursor     Bjock Cursor	Emulation C VT-52 VT-100/ANSI	OK Cancel	
✓ VT100 Arrows	Eonts	<u>H</u> elp	

3. From the MAIN MENU, use the arrow keys to select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

4. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem We Examine/modify the or	elcome_MSG Quit peration mode of async ports	
Enter: select ESC:	previous menu	

5. In **Mode**, use the arrow keys to move the cursor to the application corresponding to serial ports. Here we use Port 6 as an example.

CN2610	-8		CN2610	-8_1	9 V2.0	
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports					
ESC:	back to menu	Enter:	select			
Port	Application		Mode		Description/more setting	
01	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
02	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
03	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
04	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
05	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
06	NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
07	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	
08	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]	

6. Press **Enter** to open the application window. Use up/down arrow keys to select DRDAS, and then press **Enter** to confirm using DRDAS.

CN2610	0-8		CN2610-8_19 V2	.0	
[Mode]	l Line mOdem	Welcome			
Exami	ne/modify the	operati	on mode of async p	ports	
ESC:	back to menu	Enter	select		
Port	Application	+		+ption/more setting	
01	[DRDAS	] [	Disable	PC redundant data mode	e ]
02	[DRDAS	jį	Dialin/out	PC redundant data mode	e ]
03	[DRDAS	][	Terminal	PC redundant data mode	e ]
04	[DRDAS	] [	Reverse Terminal	PC redundant data mode	e ]
05	[DRDAS	] [	Device Control	PC redundant data mode	e ]
06	[DRDAS	] [	Multiplex	PC redundant data mode	e ]
07	[DRDAS	] [	Printer	PC redundant data mode	e ]
08	[DRDAS	]	Multi-Host TTY	PC redundant data mode	e ]
09	[DRDAS	]	NT Real COM	PC redundant data mode	e ]
10	[DRDAS	] [	DRDAS	PC redundant data mode	e ]
11	[DRDAS	]	Raw UDP	PC redundant data mode	e ]
12	[DRDAS	]+		+PC redundant data mod	e ]

7. Repeat Step 6 to configure port settings. For example, you can perform the following steps to configure Port 1 to Port 8 for the **DRDAS** application.

#### Setting Up DRDAS

#### CN2610 User's Manual

CN2610	)-8		CN261	0-8_	_19 V2.0	
	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports					
		-			async ports	
ESC:	back to menu	Enter:	select			
Port	Application		Mode		Description/more setting	
01	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
02	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
03	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
04	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
05	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
06	DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
07	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	
08	[DRDAS	]	[DRDAS	]	[Dual-PC redundant data mode ]	

#### **DRDAS Mode**

DRDAS mode supports a dual-host redundant application structure on the redundant network.

1. Move the cursor to the **Description/more setting** column, and then press **Enter** to open the settings window. Each serial port has its own TCP data port number and TCP command port number.

+		+
TCP data port	: [955]	
TCP command port	: [971]	
Primary IP addr	: [	] ]
Backup 1 IP addr	: [	] ]
Backup 2 IP addr	: [	] [
Backup 3 IP addr	: [	] [
TCP alive check time	: [0 ] minutes	
+		+

2. Every CN2610 port has the ability to connect to 4 different IP addresses at the same time. Primary IP addr has to be configured as the IP address of the primary host controlling the serial port, and Backup n IP addr has to be configured as the IP address of the redundant host. When the primary host disconnects for an unknown reason, CN2610 will use the switching library to let backup IPs take over. In this way, CN2610's control ability and the data flow will be transferred to the backup host, realizing a highly redundant system. In the mean time, the primary host's dual Ethernet ports and those of the backup host will receive the same uploaded serial data. In the specified period of time, if one of the secondary IPs tries to send commands to the serial device, the commands will be discarded once they reach the CN2610, since the Primary IP is the only IP address that can conduct by-directional transmission. The backup IPs can only receive data from the CN2610, but cannot send commands to the serial device.

+		+
TCP data port	: [955]	
TCP command port	: [971]	İ
Primary IP addr	: [	] [
Backup 1 IP addr	: [	] [
Backup 2 IP addr	: [	]
Backup 3 IP addr	: [	]
TCP alive check time	: [0 ] minutes	
+		+

Setting	Value	Notes	Necessity
TCP data port	number	Via the data port, users can retrieve data through the async line.	Yes
TCP command port	number	Via the command port, users can issue commands across the network to set the line's configuration parameters, such as baudrate, data bits, flow control condition, etc.	Yes
Primary IP addr	IP address	The primary host's IP address. If left blank, then every host on the network cannot access the serial port.	Yes
Backup 1 IP addr	IP address	Backup host's IP address	Optional
Backup 2 IP addr	IP address	Backup host's IP address	Optional
Backup 3 IP addr	IP address	ess Backup host's IP address	
TCP alive check time	0-99 minute	Specifies the time slice for checking whether the TCP connection is alive. If there is no response, CN2610 will reset the port and disconnect the original connection.	Optional

3. Press Esc to return to PORT MENU.

### **Configuring Port Connection Settings—Port Menu [Line]**

In PORT MENU [Line], you can set the line settings for the particular type of device being used.

1. From the MAIN MENU, use the arrow keys to select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
Mode <mark>[Line]</mark> mOdem Examine/modify asyn	Welcome_MSG Quit nchronous port configuration	
Enter: select ESC	: previous menu	

3. Specify the relevant settings.

CN2610					J2.0			
				_MSG Quit s port configura	tion			
ESC:	back to m	nenu	Enter:	select				
Port	Speed	Bits	Stop	Parity FIFO	RTS/CTS	XON/XOFF	Discon.	ctrl
01	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
02	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
03	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
04	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
05	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
06	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
07	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
08	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
09	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
10	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
11	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
12	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
13	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
14	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
15	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
16	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]

Setting	Value	Notes
Speed	50 to 921.6 Kbps	Transmission speed
Bits	5/6/7/8	Data bit
Stop	1/1.5/2	Stop bit
Parity	None/Even/Odd/Mark/Space	Parity check
FIFO	Yes/No	FIFO setting. Default is Yes
RTS/CTS	Yes/No	Hardware flow control
XON/XOFF	Yes/No	Software flow control
Discon. Ctrl	None/DSR off/DCD off	Inactive for these modes

- 4. Repeat the above steps to set all lines.
- 5. Press **Esc** to return to **PORT MENU**.

### Save

1. Press **Y** to save previous settings when exiting **PORT MENU**.

#### Setting Up DRDAS

#### **CN2610 User's Manual**

CN2610-8	CN2610-8_19 V2.0
	n Welcome_MSG Quit e operation mode of async ports
ESC: back to menu	
+	
	Warning !!! If any field changed in this menu,
	use [Restart] [System] to take effect   Press any key to continue.
+	+

2. You may also save later. From the MAIN MENU, select sAve to save all changed settings, and then press Enter to confirm.



### Restart

1. Return to MAIN MENU and select Restart.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	sAve Utility <mark>[Restart]</mark> Exit em or selected async ports	
Enter: select ESC: p	revious menu	

2. Select **System**, and then press **Enter** to continue.

#### Setting Up DRDAS

#### CN2610 User's Manual



3. The system will restart and the Telnet/Console session will terminate. Enter the **MAIN MENU** again to check whether the settings have been changed.

## **Setting Up Reverse Terminal**

In this chapter, we show how to use CN2610 to connect terminals to a computer over an Ethernet network.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- **Generation** Selecting the Application
- **Configuring RTELNET Mode**
- **Configuring the Serial Ports**
- □ Save
- **Restart**

### Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>? ×</u>
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254	
Async Server CN2610-8 Console terminal type (1: ansi/vt100,	2: vt52) : 1

3. CN2610's MAIN MENU will open, as shown below.

Telnet 192.168.127.254					
CN2610-8	CN2610-8_19 V2.0	MAIN MENU			
	seTting sAve Utility Restart Exit async server node/table configuration				
Enter: select	ESC: previous menu				
	-				

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

### **Selecting the Application**

Open Port Menu  $\rightarrow$  Mode to configure the Reverse Terminal application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN261	0-8		CN2610	)-8_	19 V2.0
-	Line mOdem ine/modify the				async ports
ESC:	back to menu	Enter:	select		
Port 01	Application [NT Real COM		Mode [ASPP	]	Description/more setting [Async Server Proprietary Protocol]
02 03	[NT Real COM [NT Real COM		[ASPP [ASPP	]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]
04	[NT Real COM [NT Real COM	ĵ	[ASPP [ASPP	]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]
06	NT Real COM	j	[ASPP	]	[Async Server Proprietary Protocol]
07 08	[NT Real COM [NT Real COM	]	[ASPP [ASPP	] ]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]

4. Use up/down arrow keys to select **Reverse Terminal**, and then press **Enter**.

CN261	0-8	CN2610-8_19 V2.	0
[Mode]	] Line mOdem	Welcome_MSG Quit	
Exami	ine/modify the	operation mode of async p	orts
ESC:	back to menu	Enter: select	
Port	Application	+	+ption/more setting
01	[NT Real COM		Server Proprietary Protocol]
02	[NT Real COM	] Dialin/out	Server Proprietary Protocol]
03	[NT Real COM	] Terminal	Server Proprietary Protocol]
04	[NT Real COM	] Reverse Terminal	Server Proprietary Protocol]
05	[NT Real COM	]  Device Control	Server Proprietary Protocol]
06	[NT Real COM	]  Multiplex	Server Proprietary Protocol]
07	[NT Real COM	]  Printer	Server Proprietary Protocol]
08	[NT Real COM	]  Multi-Host TTY	Server Proprietary Protocol]
		]  NT Real COM	
		]  DRDAS	
		]  Raw UDP	
		]+	+

5. The only operation mode associated with this application is **Reverse Terminal** mode, which is selected automatically in the Mode column. **RTELNET** mode allows Ethernet hosts to access serial hosts attached to CN2610's serial ports, which is the reverse direction provided by CN2610's terminal application.

CN2610	)-8	CN2610-8_19	V2.0
-	Line mOdem Welc	- ~	
Exami	ne/modify the oper	ation mode of asy	mc ports
ESC:	back to menu Ente	er: select	
Port	Application	Mode D	Description/more setting
01	[NT Real COM	] [ASPP ] [	Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP ] [	Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP ] [	Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP ] [	Async Server Proprietary Protocol]
05	[NT Real COM	] [ASPP ] [	Async Server Proprietary Protocol]
06	Reverse Terminal	] [RTELNET ] [	Reverse Telnet mode ]
07	[NT Real COM	] [ASPP ] [	Async Server Proprietary Protocol]

### **Configuring RTELNET Mode**

Reverse Telnet, or RTELNET, supports the Telnet program used by Ethernet hosts to login to serial hosts. Ethernet hosts recognize serial ports by the specified source IP address, or by the TCP port number followed by CN2610's IP address.

1. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	-8	CN262	10-8_1	9 V2.0
	Line mOdem Welc			
Examı	ne/modify the oper	ation mode	e of a	sync ports
ESC:	back to menu Ente	er: selec	t	
Port	Application	Mode		Description/more setting
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
06	[Reverse Terminal	] [RTELNI	ET ]	Reverse Telnet mode
07	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]

 The pop-up selector contains input/display fields for TCP port, Source IP address, Destination IP addr, Inactivity time, Map keys <CR-LF> to, Authentication type, and TCP alive check time. Each item is described in detail below the figure.

+	 	+
TCP port	[4006 ]	
Source IP address	[	] [
Destination IP addr	[	] [
Inactivity time	[0 ] minutes	
Map keys <cr-lf> to</cr-lf>	[CR-LF]	
Authentication type	[none ]	
TCP alive check time	[0 ] minutes	
+		+

#### Setting Up Reverse Terminal

Setting	Value	Notes	Necessity
TCP port	number	Each of CN2610's serial ports is mapped to a TCP port. To avoid conflicts with the TCP port numbers for CN251's other serial ports, use the default values: 4001 for port 1, 4002 for port 2, etc.	Optional
Source IP address	IP address for the port	Specify an IP address for this port for application purposes. If left blank, CN2610 will use its own IP address, in which case you will need to specify different TCP port numbers for different serial ports.	Optional
Destination IP addr	IP address	Assign a host IP address on the LAN for exclusive port access. If left blank, all hosts on the network will have access to this port.	Optional
Map Keys <cr-lf> to</cr-lf>	CR/LF/CR-LF	When you enter the string <cr-lf>, CN2610 will determine whether to send <cr>, <lf>, or <cr-lf>.</cr-lf></lf></cr></cr-lf>	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Authentication type	None/local /server	None:Authentication is not required.local:Check the ID stored in theUser_table (defined under the SERVERMENU).Server:Check the ID with the externalRADIUS server.Refer to Appendix C forRADIUS installation information.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

3. Press Esc to return to PORT MENU.

### **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	Odem Welcome_MSG Quit asynchronous port configuration	
Enter: select	ESC: previous menu	

3. The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

CN261	0-8			CN2610-8_19	V2.0			
				_MSG Quit s port configur	ation			
ESC:	back to m	lenu	Enter:	select				
Port	Speed	Bits	Stop	Parity FIFO	RTS/CTS	XON/XOFF	Discon.	ctrl
01	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
02	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
03	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
04	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
05	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
06	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
07	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
08	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press **ESC** to return to the **Port Menu**.

#### Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_1	9 V2.0	SERVER MENU
	. Host_table Route_tabl async server basic conf		Quit
Enter: select	ESC: previous menu		
	Warning   You had modified the c   Would you save it now   `Y: yes	onfiguration wit	thout saving.     

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.



### Restart

1. From the MAIN MENU, select Restart.

CN2610-8 CN2610-8_1	9 V2.0 MAIN MENU	
Server Port seTting sAve Uti Restart the whole system or sel	· · ·	
Enter: select ESC: previous m	enu	

2. Select **System** and then press **Enter** to restart the system and terminate the Telnet session.



# **9** Setting Up Terminal

In this chapter, we describe the steps you should follow to configure Moxa CN2610 as a Terminal Server. CN2610 provides Telnet and Rlogin protocols for terminals to establish connections with UNIX hosts. Two terminal modes are supported—ASCII terminal with up to 8 simultaneous sessions, and Binary terminal with one session for one user. Terminals can be connected directly to one of CN2610's RS-232 ports, or connected from a remote site by using external modems.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- □ Selecting the Application
- **Configuring TERM\_ASC Mode**
- **Configuring TERM\_BIN Mode**
- **Configuring the Serial Ports**
- □ Save
- **Restart**

### Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254	
Async Server CN2610-8 Console terminal type (1: ansi/vt100, 2: vt52) :	: 1

3. CN2610's MAIN MENU will open, as shown below.

📕 Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

### **Selecting the Application**

Open **Port Menu**  $\rightarrow$  **Mode** to configure the **Terminal** application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
Server [Port] seTting s Examine/modify async ser	-	xit
Enter: select ESC: prev	ious menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN2610	-8			CN261(	)-8_	19 V2.0
[Mode] Exami				e_MSG Qu on mode		async ports
ESC:	back to i	nenu	Enter:	select		
Port	Applicat	ion		Mode		Description/more setting
01	[NT Real	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real	LCOM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real	LCOM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real	L COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	NT Real	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
07	[NT Rea]	L COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real	L COM	]	[ASPP	]	[Async Server Proprietary Protocol]

4. Use the up/down arrow keys to select **Terminal**, and then press **Enter**.

CN261	0-8		CN2610-8_19 V2	. 0
-	] Line mOdem		- ~	
Exami	ine/modify the	operatio	on mode of async p	orts
			<b>_</b>	
ESC:	back to menu	Enter:	select	
Port	Application	+-		+ption/more setting
01	[NT Real COM	]	Disable	Server Proprietary Protocol]
02	[NT Real COM	] [	Dialin/out	Server Proprietary Protocol]
03	[NT Real COM	] [	Terminal	Server Proprietary Protocol]
04	[NT Real COM	] [	Reverse Terminal	Server Proprietary Protocol]
05	[NT Real COM	] [	Device Control	Server Proprietary Protocol]
06	[NT Real COM	] [	Multiplex	Server Proprietary Protocol]
07	[NT Real COM	11	Printer	Server Proprietary Protocol]
08	[NT Real COM	1 i	Multi-Host TTY	Server Proprietary Protocol]
		i	NT Real COM	
		ii	DRDAS	
		ii	Raw UDP	
		1+-		+

5. **TERM\_ASC** mode is selected by default.

CN2610	0-8	CN	2610-8_1	9 V2.0						
[Mode]	Line mOdem Welc	ome_MSG	; Quit							
Examir	ne/modify the opera	tion mc	de of as	ync ports						
FCC - 1	oack to menu Ente	: sele	at							
EDC. 1	back to menu Ente	. BEIG								
Port	Application	Mode	2	Description/more setting						
01	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]						
02	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]						
03	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]						
04	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]						
05	[NT Real COM	] [ASP	P ]	[Async Server Proprietary Protocol]						
06	[Terminal	] [TER	M_ASC ]	[ASCII Termianl mode (8 sessions) ]						
07	[NT Real COM	] [ASP	P 1	[Async Server Proprietary Protocol]						

After configuring a port for the Terminal application, you will need to choose between one of two operation modes: **TERM\_ASC** and **TERM\_BIN**. The default mode, **TERM\_ASC** (short for Terminal ASCII), supports 8 terminal sessions. The other option, **TERM\_BIN** (short for Terminal Binary) only supports 1 session.

### Configuring TERM\_ASC Mode

**TERM\_ASC** supports 8 terminal sessions for each terminal. Hot keys are used to switch between different sessions.

1. Move the cursor to the Mode column for the port and press Enter.

CN2610	9-8		CN26	510-8_1	9 V2.0				
-	[Mode] Line mOdem Welcome_MSG Quit								
Examir	e/modify the o	operati	on mode	e of as	sync ports				
ESC: b	ack to menu	Enter:	selec	t					
Port	Application		Mode		Description/more setting				
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
06	[Terminal	]	TERM	ASC	[ASCII Termianl mode (8 sessions) ]				
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				

2. Use the arrow keys to highlight TERM\_ASC, and then press Enter.

CN261	0-8	CN2610-8_19 V2.0	
[Mode	] Line mOdem	Welcome_MSG Quit	
Exam:	ine/modify the	operation mode of async ports	
ESC:	back to menu	Enter: select	
Port	Application	Mode Description/more setting	
01	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
02	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
03	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
04	[NT Real COM	] [ASPP ]++rver Proprietary Protocol]	
05	[NT Real COM	] [ASPP ]   TERM_ASC   rver Proprietary Protocol]	
06	[Terminal	] [TERM_ASC]   TERM_BIN  rminal mode (8 sessions) ]	
07	[NT Real COM	] [ASPP ]++rver Proprietary Protocol]	
08	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	

3. Move the cursor to the **Description/more setting** column and press **Enter**.

CN2610	)-8		CN2610-	-8_2	19 V2.0				
	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports								
Exami	ne/moally the	operatio	on mode c	)L č	async ports				
ESC:	back to menu	Enter:	select						
Port	Application		Mode		Description/more setting				
01	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				
02	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				
03	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				
04	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				
05	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				
06	[Terminal	] [	TERM_ASC	2]	ASCII Terminal mode (8 sessions)				
07	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				
08	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]				

4. The pop-up selector contains input/display fields for Key Mapping, Auto-link protocol, Link by input IP, Auto-login prompt, Terminal type, Inactivity time, Authentication type, and TCP alive check time. Each item is described in detail below the figure.



Setting	Value	Notes	Necessity					
Key Mapping								
Max. Sessions	1-8	Configure the max. number of sessions	Optional					
Change Session	^T	Hot key for changing sessions	Optional					
Quit	^E	Hot key for quitting a session	Optional					
Erase-line		Hot key for erase-line	Optional					
Break		Hot key for sending Telnet break signal	Optional					
Interrupt		Hot key for program termination	Optional					
Auto-link protocol	None/Telnet/ Rlogin	None:Do not connect to the host automatically.Telnet:Connects to the host automatically by Telnet.Rlogin:Connects to the host automatically by Rlogin.	Optional					

#### **Setting Up Terminal**

Setting	Value	Notes	Necessity
Telnet TCP port	23	Enter a number or leave the space blank. If not specified, then by default, port 23 is used. If you want to use Telnet without a TCP port number, set this option to 23.	Optional
Primary host IP	IP address or the name defined in the [Host] table	If specified, designates a 'permanent' host to which the terminal will always be connected.	Optional
Link by input IP	Enable/ Disable	For users to enter the connection IP address manually.	Optional
Secondary host IP	IP address or the name defined in the [Host] table.	If specified, designates a secondary 'permanent' host to which the terminal will be connected.	Optional
Auto-login prompt	ogin:	Send ID information when this prompt is received.	Optional
Password prompt	assword:	Send Password information when this prompt is received	Optional
Login user name		Login ID	Optional
Login password		Login Password	Optional
Terminal type	ansi	Terminal type for outgoing connection	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Authentication type	None/local/ server	None:Authentication is not required.local:Check the ID stored in theUser_table (defined under the SERVERMENU).Server:Check the ID with theexternal RADIUS server. Refer toAppendix C for RADIUS installationinformation.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

5. Press Esc to return to the PORT MENU.

### **Configuring TERM\_BIN Mode**

**TERM\_BIN** (Terminal Binary) mode is used as an application protocol. For example, it can be used to transfer files with XMODEM or ZMODEM. You are only allowed to open one terminal session at a time when in Terminal Binary mode.

1. Move the cursor to the **Mode** column for the port and press **Enter**.

CN2610	)-8	CN2610-8_	19 V2.0
-	Line mOdem Welco	- ~	
Examir	ne/modify the operat	ion mode of a	async ports
ESC: 1	oack to menu Enter	select	
Port	Application	Mode	Description/more setting
01		] [ASPP ]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]
06	[Terminal	TERM_ASC	[ASCII Termianl mode (8 sessions) ]
07	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]

2. Use the arrow keys to highlight **TERM\_BIN**, and then press **Enter**.

CN261(	0-8	CN2610-8_19 V2.0						
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports							
Brand								
ESC:	back to menu	Enter: select						
Port	Application	Mode Description/more setting						
01	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]						
02	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]						
03	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]						
04	[NT Real COM	] [ASPP ]++rver Proprietary Protocol]						
05	[NT Real COM	] [ASPP ]  TERM_ASC  rver Proprietary Protocol]						
06	[Terminal	] [TERM_ASC]   TERM_BIN  rminal mode (8 sessions) ]						
07	[NT Real COM	] [ASPP ]++rver Proprietary Protocol]						
08	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]						

3. Move the cursor to the **Description/more setting** column and press **Enter**.

CN261	0-8		CN2610	-8_	19 V2.0
[Mode]	Line mOdem	Welcome	_MSG Qu	it	
Exami	ine/modify the	operati	on mode	of	async ports
Rad	ha ala da mana	<b>B</b>			
ESC:	back to menu	Enter:	select		
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	[Terminal	]	[TERM_BI	N ]	Binary Terminal mode (1 session)
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

4. The pop-up selector contains input/display fields for **Quit key**, **Auto-link protocol**, **Link by input IP**, **Auto-login prompt**, **Terminal type**, **Inactivity time**, **Authentication type**, and **TCP alive check time**. Each item is described in detail below the figure.

	 		+
Quit key	[^E]		
Auto-link protocol	[none ]		
Telnet TCP port	[23]		
Primary host IP	[	]	
Link by input IP	[Disable]		
Secondary host IP	[	]	
Auto-login prompt	[ogin:	]	
Password prompt	[assword:	]	
Login user name	[	]	
Login password	[	]	
Terminal type	[ansi ]		
Inactivity time	[0 ] minutes		
Authentication type	[local ]		
TCP alive check time	[0 ] minutes		
			-+

Setting	Value	Notes	Necessity
Quit Key	^E	Defines the Quit key used to disconnect the link between the current terminal session and the remote host. It may be left blank for binary communication.	Optional
Auto-link protocol	None/Telnet/ Rlogin	None:Do not connect to the host automatically.Telnet:Connects to the host automatically by Telnet.Rlogin:Connects to the host automatically by Rlogin.	Optional
Telnet TCP port	23	Enter a number or leave the space blank. If not specified, then by default, port 23 is used. If you want to use Telnet without a TCP port number, set this option to 23.	Optional
Primary host IP	IP address or the name defined in the [Host] table	If specified, designates a 'permanent' host to which the terminal will always be connected.	Optional
Link by input IP	Enable/ Disable	For users to enter the connection IP address manually.	Optional
Secondary host IP	IP address or the name defined in the [Host] table.	If specified, designates a secondary 'permanent' host to which the terminal will be connected.	Optional
Auto-login prompt	ogin:	Send ID information when this prompt is received.	Optional
Password prompt	assword:	Send Password information when this prompt is received	Optional
Login user name		Login ID	Optional
Login password		Login Password	Optional
Terminal type	ansi	Terminal type for outgoing connection	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional

#### **Setting Up Terminal**

Setting	Value	Notes	Necessity
Authentication type	None/local/ server	None: Authentication is not required. local: Check the ID stored in the User_table (defined under the SERVER MENU). Server: Check the ID with the external RADIUS server. Refer to Appendix C for RADIUS installation information.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

5. Press **Esc** to return to the **PORT MENU**.

### **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	dem Welcome_MSG Quit asynchronous port configuration	
Enter: select	ESC: previous menu	

 The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

CN2610-8		CN2610-8_19	V2.0					
Mode [Line] mOdem Welcome_MSG Quit Examine/modify asynchronous port configuration								
ESC: back to m	enu Enter:	select						
Port Speed 01 [115200] 02 [115200] 03 [115200] 04 [115200] 05 [115200] 06 [115200] 07 [115200]	Bits Stop [8] [1] [8] [1] [8] [1] [8] [1] [8] [1] [8] [1] [8] [1] [8] [1]	Parity FIFO [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes]	RTS/CTS [yes] [yes] [yes] [yes] [yes] [yes] [yes]	XON/XOFF [no ] [no ] [no ] [no ] [no ] [no ]	Discon. [None [None [None [None [None [None [None	ctrl ] ] ] ] ] ]		

#### **Setting Up Terminal**

Setting	Value	Notes	
Speed	50 bps to 921.6 Kbps	Transmission rate	
Bits	5, 6, 7, 8	Data bits	
Stop	1, 1.5, 2	Stop bits	
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space	
FIFO	Yes, No	First In First Out Device	
RTS/CTS	Yes, No	Hardware Flow Control	
XON/XOFF	Yes, No	Software Flow Control	
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.	
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.	
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.	

4. Press ESC to return to the PORT MENU.

### Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_19	V2.0	S	ERVER	MENU
	. Host_table Route_table async server basic configu:		Quit		
Enter: select	ESC: previous menu				
				·+	
	Warning !!	!			
	You had modified the conf.   Would you save it now ?	iguration wit	hout saving.		
	`Y: yes	`N': no		j	

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting [SAve] Utility Restart Exit configuration to Flash ROM	
ESC: back to	menu Enter: select	
	++  Enter to updated, other key to cancel  ++	

### Restart

1. From the MAIN MENU, select Restart.



2. Select System and then press Enter to restart the system and terminate the Telnet session.

CN2610-8		CN261	0-8_19	V2.0				
	Port Qui the Async						 	
ESC: back	to menu	Enter:	select					
+							 <b>+</b>	
				Warnir				
Re	start syst	` E:	nter: con	tinue -	ESC: ca	ancel		
+							+	

## Setting Up Multi-host TTY

The Multi-host TTY application is the ideal transmission method for communicating with multiple Unix hosts over the network via several simultaneous sessions.

When the communication starts, a Unix server connected to the network must first activate Moxattyd to use the TTY port's mapping function. Moxattyd will initiate the connection with the CN2610, and the CN2610 will listen on different TCP ports for connection requests from various Moxattyd.

Once a connection is established, the Terminal server can use hot keys to switch sessions. In this way, one terminal can control different Unix hosts.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- **Given Selecting the Application**
- **Configuring FIXTTY Mode**
- **Configuring the Serial Ports**
- □ Save
- **Restart**
- **Given Setting up Hosts** 
  - ▶ Installing and Compiling Fixed TTY Driver
  - Fixed TTY Driver for Different Applications
  - Using Fixed TTY Driver

### Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254	
Async Server CN2610-8 Console terminal type (1: ansi/vt100, 2: vt52) :	: 1

3. CN2610's MAIN MENU will open, as shown below.

📕 Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

### **Selecting the Application**

Open **Port Menu**  $\rightarrow$  **Mode** to configure the **Multi-host TTY** application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN261	0-8			CN2610	)-8_	19 V2.0
[Mode] Exami						async ports
ESC:	back to me	nu E	Inter:	select		
Port	Applicatio	on		Mode		Description/more setting
01	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
07	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real (	COM	]	[ASPP	]	[Async Server Proprietary Protocol]

4. Use the up/down arrow keys to select Multi-Host TTY, and then press Enter.

CN261	0-8	CN2610-8_	19 V2.0						
[Mode	[Mode] Line mOdem Welcome_MSG Quit								
Exam	ine/modify the	operation mode of a	async ports						
ESC:	back to menu	Enter: select							
Port	Application	+	+ption/more setting						
01	[NT Real COM	]  Disable	Server Proprietary Protocol]						
02	[NT Real COM	] Dialin/out	Server Proprietary Protocol]						
03	[NT Real COM	]  Terminal	Server Proprietary Protocol]						
04	[NT Real COM	] Reverse Te	rminal   Server Proprietary Protocol]						
05	[NT Real COM	]  Device Con	crol   Server Proprietary Protocol]						
06	[NT Real COM	]  Multiplex	Server Proprietary Protocol]						
07	[NT Real COM	]  Printer	Server Proprietary Protocol]						
8 0	[NT Real COM	] Multi-Host	TTY   Server Proprietary Protocol]						
		]  NT Real CO	4						
		]   DRDAS							
		]  Raw UDP							
		]+	+						

5. The only operation mode associated with this application is **FIXTTY** mode, which is selected automatically in the Mode column.

CN261	0-8		CN261	0-8_1	9 V2.0
-	Line mOdem N ine/modify the c		- ~		sync ports
ESC:	back to menu	Enter:	select		
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	Multi-Host TI	'Y ]	[FIXTTY	]	[Unix fixtty driver mode ]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

### **Configuring FIXTTY Mode**

1. Move cursor to the **Description/more setting** column and then press **Enter**.

CN2610	0-8	CN2610	-8_	_19 V2.0
[Mode]	Line mOdem Wel	come_MSG Qu	it	
Exami	ne/modify the ope	ration mode	of	async ports
ESC.	back to menu Ent	er. select		
EBC.	Dack CO menu Mit	Ser. Berecc		
Port	Application	Mode		Description/more setting
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
06	[Multi-Host TTY	] [FIXTTY	]	Unix fixtty driver mode
07	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]

2. The pop-up selector contains input/display fields for Max. Sessions, Terminal model no., Inactivity time, TCP alive check time, and also Session parameters. Each item is described in detail below the figure.

+			+
Max. Ses	sions	: [ 8 ]	
Terminal	model no.	: [VT100 ]	
Inactivi	ty time	: [0 ] minutes	i
TCP aliv	e check ti	me : [0 ] minutes	l l
Session	Hot key	TCP port Remote IP address	i
1	[^A]	[4001 ] [	j į
2	[^B]	[5001 ] [	j į
3	[^E]	[6001 ] [	j į
4	[^F]	[7001 ] [	j į
5	[^T]	[8001 ] [	j į
6	[^U]	[9001 ] [	]
7	[^V]	[10001 ] [	] [
8	[^W]	[11001 ] [	]
+			+

#### Setting Up Multi-Host TTY

Setting	Value	Notes	Necessity
Max. Sessions	1-8	Select the maximum number of simultaneous sessions that will be allowed for this serial port.	Optional
Terminal mode no.	Star NT-560+, NL-5000A, VT100	CN2610 provides 3 modes that depend on the connection mode supported by the terminal.	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional
Session Hot Key TCP port Remote IP		Configure the <b>Hot key</b> , <b>TCP port</b> , and <b>Remote IP address</b> for each session.	

3. Press **Esc** to return to the **PORT MENU**.

### **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	Tting sAve Utility Restart Exit nc server ports configuration	
Enter: select ES	C: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	Odem Welcome_MSG Quit asynchronous port configuration	
Enter: select	ESC: previous menu	

3. The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

CN261	0-8			CN2610-8_19	V2.0			
				_MSG Quit				
Exam	ine/modify	r asyn	chronous	s port configur	ation			
ESC:	back to m	nenu	Enter:	select				
Port	Speed	Bits	Stop	Parity FIFO	RTS/CTS	XON/XOFF	Discon.	ctrl
01	[115200]	[8]	[1]	[None] [yes]	[yes]	[no ]	[None	]
02	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
03	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
04	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
05	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
06	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
07	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
08	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press **ESC** to return to the **PORT MENU**.

### Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_19 V2.0	SERVER MENU
	. Host_table Route_table [User_tab async server basic configuration	ole] Quit
Enter: select	ESC: previous menu	
	<b>.</b>	
	Warning !!!	+
	You had modified the configuration	without saving.
	Would you save it now ?	
	'Y: yes 'N': no	
	+	+

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.



### Restart

1. From the MAIN MENU, select Restart.

CN2610-8	CN2610-8_19	V2.0	MAIN	MENU
	eTting sAve Util: le system or sele			
Enter: select	ESC: previous me	nu		

2. Select **System** and then press **Enter** to restart the system and terminate the Telnet session.

CN2610	-8		CN261	0-8_19	V2.0					
	-	rt Qui Async	t Server							
ESC: b	ack to	menu	Enter:	select						
						ing !!!	 		+	
	Resta:	rt syst		disconne			all s	tatus	value	
			` Ei	nter: cor						
+							 		+	

### **Setting up Hosts**

Installing and Compiling Fixed TTY Driver

#### Installing and Compiling

1. Create a directory for Fixed TTY driver (e.g. /user/etc) as shown below:

#mkdir /usr/etc
#cd /usr/etc

2. Extract code from the tar-formatted file moxattyd.tar as follows:

#tar xvf moxattyd.tar

3. After the extraction is complete, locate the following files:

moxattyd.c	program source code
moxattyd.cf	configuration file
Makefile	
README.TXT	description file for Fixed TTY driver
VERSION.TXT	driver version

4. Compile and link documents:

```
SCO OpenServer: # make scoSCO UnixWare: # make svr5UnixWare 2.1.x, SVR 4.2: # make svr42
```

#### **Configuring tty Redirection**

The following example illustrates how to map and redirect a tty device to a MOXA CN2610 serial port. Use **vi** or any other text editor to add or modify entries in the file moxattyd.cf. There are three columns: **Device Name**, **CN2610 IP address**, and **TCP port number** in the entry for the file moxattyd.cf.

Device Name	CN2610 IP address	TCP Port number
ttyp1	192.168.1.1	4001
ttyp2	192.168.1.1	4002
ttyp3	192.168.1.1	4003
ttyp4	192.168.1.1	4004

- **NOTE** 1. Device Names for SCO OpenServer are ttyp[n], for SCO UnixWare, SVR4.2 are pts/[n]. The value of n should be equal or larger than 11 to prevent from conflicting with the device names of functional keys in some UNIX systems.
  - 2. Default TCP port numbers are from 4001 to 4016 for the 16-port CN2610. If necessary, you can customize the TCP port numbers. However, the numbers you use MUST be the same as those defined in MOXA CN2610.

#### Adding Fixed TTY driver to system booting procedures

To include Fixed TTY driver in the booting system, add the moxattyd daemon process to the /etc/inittab file. The following example illustrates how to add the full path name for moxattyd to the entries of /etc/inittab.

ts:2:respawn:/usr/etc/moxattyd/moxattyd -t 1

**NOTE** The option "-t 1" means the reconnection time is 1 minute after turning CN2610 on or off.

#### Fixed TTY Driver for Different Applications

This section illustrates how to use Fixed TTY driver with a number of different applications.

#### **Terminal Access**

To use terminal access, the process getty must be activated when the system boots up. To do this, add the following entries to the file /etc/inittab. For instance,.

```
ts1:234:respawn:/etc/getty ttyp1
ts2:234:respawn:/etc/getty ttyp2
ts3:234:respawn:/etc/getty ttyp3
ts4:234:respawn:/etc/getty ttyp4
```

**NOTE** ttyp1 to ttyp4 device names are mapped to port 1 to port 4 on MOXA CN2610.

#### Transparent Printer Access

It's not necessary to add additional entries to /etc/inittab for printer access, as mentioned in the section on terminal access. Since Fixed TTY driver is a fixed pseudo tty, you can easily connect a serial printer to a Moxa CN2510 serial port to execute printing commands.

The following example is for SCO OpenServer:

Command	Description
/usr/lib/lpadmin -pLaser1 -v/dev/ttyp1	set printer name as Laser1 and use ttyp1
/usr/lib/accept Laser1	accept printer Laser1
enable Laser1	enable printer Laser1
lp -dLaser1 file_name	print file to Laser1

#### **Other Applications**

As mentioned earlier, the system setup depends on which application you are using. Since Fixed TTY driver is a fixed pseudo tty, no additional setup is required to enable your applications to open tty devices.

#### Using Fixed TTY Driver

#### Starting Fixed TTY driver

Once you have completed the above settings, you can start. Follow the steps given below to ensure that driver is running correctly.

See if the entries added to moxattyd.cf are correct.

Run init q or reboot your system to start the moxattyd daemon. If you see that moxattyd is running on your system, then Fixed TTY driver has been successfully started.

#### Stopping Fixed TTY driver

If for any reason you need to stop the moxattyd daemon, the two methods listed below allow you to stop the moxattyd daemon process

- 1. Remove entries related to moxattyd daemon in /etc/inittab and execute init q or reboot your system, or
- 2. Replace respawn with off in entries related to moxattyd daemon in /etc/inittab, and execute init q or reboot your system.

For instance, 'ts:2:off:/usr/etc/moxattyd/moxattyd'.

# **11** Setting Up Dialin/out

In this chapter, we describe the steps required to configure Moxa CN2610 as a Dial-in/out Access Server. Dial-in Access allows remote users to access the LAN, whereas Dial-out Access allows LAN hosts to establish connections to other sites.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- □ Selecting the Application
- **Configuring PPPD/PPP Mode**
- **Configuring SLIPD/SLIP Mode**
- **Configuring Dynamic Mode**
- **Configuring the Serial Ports**
- **Configuring Modem Initialization**
- **Optional Welcome Message**
- **Configuring Optional Local User Information**
- □ Save
- **Restart**

### Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×		
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.		
Open:	telnet 192.168.127.254		
	OK Cancel <u>B</u> rowse		

2. Type 1 to choose ansi/vt100, and then press Enter.

	Telnet 192.168.127.	254
Async Server CN2610-8 Console terminal type (1: ansi/vt100, 2: vt52) : 1	-	(1: ansi/vt100, 2: vt52) : 1

3. CN2610's MAIN MENU will open, as shown below.

📕 Telnet 192.	168.127.254			
CN2610-8	CN2610-8_19 V2.0	MAIN MENU		
[Server] Port seTting sAve Utility Restart Exit Examine/modify async server node/table configuration				
Enter: select	ESC: previous menu			

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word
### **Selecting the Application**

Open **Port Menu**  $\rightarrow$  **Mode** to configure the **Dial-up/out** application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN261	0-8		CN2610	)-8_	19 V2.0
-	Line mOdem ine/modify the				async ports
ESC:	back to menu	Enter:	select		
Port 01	Application [NT Real COM		Mode [ASPP	]	Description/more setting [Async Server Proprietary Protocol]
02 03	[NT Real COM [NT Real COM		[ASPP [ASPP	]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]
04	[NT Real COM [NT Real COM	j	[ASPP [ASPP	]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]
06	NT Real COM	j	[ASPP	]	[Async Server Proprietary Protocol]
07 08	[NT Real COM [NT Real COM	]	[ASPP [ASPP	] ]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]

4. Use the up/down arrow keys to select **Dialin/out** mode, and then press **Enter**.

CN2610	CN2610-8 CN2610-8_19 V2.0						
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports						
Exami	ine/mourry the	operaci					
ESC:	back to menu	Enter	select				
Port	Application	+		-ption/more setting			
01	[NT Real COM	] [	Disable	Server Proprietary Protocol]			
02	[NT Real COM	] [	Dialin/out	Server Proprietary Protocol]			
03	[NT Real COM	] [	Terminal	Server Proprietary Protocol]			
04	[NT Real COM	] [	Reverse Terminal	Server Proprietary Protocol]			
05	[NT Real COM	] [	Device Control	Server Proprietary Protocol]			
06	[NT Real COM	] [	Multiplex	Server Proprietary Protocol]			
07	[NT Real COM	] [	Printer	Server Proprietary Protocol]			
08	[NT Real COM	] [	Multi-Host TTY	Server Proprietary Protocol]			

5. The Dialin/out application supports five operation modes: **DYNAMIC**, **PPP**, **PPPD**, **SLIP**, **SLIPD**. DYNAMIC mode is selected by default.

CN2610	-8		CN2610	-8_1	.9 V2.0
	Line mOdem ne/modify the	-	- ~		syme ports
	· •	-		JL C	
ESC:	back to menu	Enter:	select		
Port	Application		Mode		Description/more setting
01	[NT Real COM	] [	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [	[ASPP	]	[Async Server Proprietary Protocol]
06	Dialin/out	] [	DYNAMIC	]	[Auto Term/SLIP/PPP identification]
07	[NT Real COM	] [	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real COM	] [	ASPP	]	[Async Server Proprietary Protocol]

# **Configuring PPPD/PPP Mode**

PPPD (PPP on demand) is used for dial-in services, since it provides PPP services only when receiving a request from a remote PC. PPP provides standard PPP services for both dial-in and dial-out.

1. Move the cursor to the **Mode** column for the port and then press **Enter**.

CN2610	-8		CN2610	-8_	19 V2.0
[Mode]	Line mOdem	Welcome	MSG Qu	it.	
Exami	ne/modify the	operati	on mode	of	async ports
ESC:	back to menu	Enter:	select		
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	[Dialin/out	]	DYNAMIC	: ]	[Auto Term/SLIP/PPP identification]
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

2. Select **PPPD** for dial-in services only, or **PPP** for both dial-in/out services.

CN2610	) – 8		CN2610	-8_	_19 V2.0	)	
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports						
	· •	-	select	_			
				+		+	
Port	Application		Mode		DYNAMIC	on/more setting	
01	[NT Real COM	]	[ASPP	וֹנ	PPP	rver Proprietary Protocol]	
02	[NT Real COM	]	[ASPP	] į	PPPD	rver Proprietary Protocol]	
03	[NT Real COM	]	[ASPP	зİ	SLIP	rver Proprietary Protocol]	
04	[NT Real COM	]	[ASPP	зİ	SLIPD	rver Proprietary Protocol]	
05	[NT Real COM	]	[ASPP	]+		+rver Proprietary Protocol]	
06	[Dialin/out	]	[DYNAMIC	]	[Auto	Term/SLIP/PPP identification]	
07	[NT Real COM	]	[ASPP	]	[Async	Server Proprietary Protocol]	
08	[NT Real COM	]	[ASPP	]	[Async	Server Proprietary Protocol]	

3. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	CN2610-8 CN2610-8_19 V2.0						
[Mode]	Line mOdem ne/modify the			~	ama porta		
	· •	-			sync ports		
ESC:	back to menu	Enter:	selec	t			
Port	Application		Mode		Description/more setting		
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
06	[Dialin/out	]	[PPP	]	Point-to-Point Protocol		
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		

4. The pop-up selector contains input/display fields for **Destination IP addr**, **Source IP address**, **IP netmask**, **TCP/IP compression**, **Inactivity time**, **Link quality report**, **Outgoing PAP ID**, **PAP password**, and **Incoming PAP check**. Each item is described in detail below the figure.

+	 		+
Destination IP addr	[	]	
Source IP address	[	]	Í
IP netmask	[	]	1
TCP/IP compression	[no ]		
Inactivity time	[0 ] minutes		
Link quality report	[no ]		1
Outgoing PAP ID	[	]	
PAP password	[	]	
Incoming PAP check	[none ]		
+			+

Setting	Value	Notes	Necessity
Destination IP addr	IP address for the remote Dial-in / Dial-out user	Assign an IP address for the remote user.	Required
Source IP address	IP address for the port	CN2610 will automatically assign an IP address for the port. We recommend leaving this space blank.	Optional
IP netmask	IP netmask	CN2610 automatically assigns the netmask 255.255.255.255. We recommend leaving this space blank.	Optional
TCP/IP compression	Yes/No	Depends on whether the remote user's application requests compression.	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Link quality report	Yes/No	If you are using software to collect Link quality information, choose YES.	Optional
Outgoing PAP ID	ID	Dial out user/account ID information	Optional
PAP password	Password	Dial out user/account password	Optional

Setting	Value	Notes	Necessity
Incoming PAP check	None/local/server	None: Authentication is not required. local: Check the ID stored in the User_table (defined under the SERVER MENU). You will need to configure the user's information later in this chapter. Server: Check the ID with the external RADIUS server. Refer to Appendix C for RADIUS installation information.	Optional

5. Press Esc to return to the PORT MENU.

# **Configuring SLIPD/SLIP Mode**

Moxa CN2610 supports SLIP (Serial Line Internet Protocol), and SLIPD (for Dial-in services only).

1. Move the cursor to the **Mode** column for the port and then press **Enter**.

CN2610	-8		CN261	0-8_	19 V2.0
	Line mOdem				
Exami	ne/modify the	operati	on mode	OI	async ports
ESC:	back to menu	Enter:	select		
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	[Dialin/out	]	DYNAMI	C	[Auto Term/SLIP/PPP identification]
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

2. Select SLIPD for dial-in services only, or SLIP for both dial-in/out services.

CN261	0-8		CN2610	-8_	_19 V2.0			
	[Mode] Line mOdem Welcome_MSG Quit							
Exami	ine/modify the	operati	on mode	of	async port	:5		
ESC:	back to menu	Enter:	select					
				+		+		
Port	Application		Mode		DYNAMIC	on/more setting		
01	[NT Real COM	]	[ASPP	]	PPP	rver Proprietary Protocol]		
02	[NT Real COM	]	[ASPP	] [	PPPD	rver Proprietary Protocol]		
03	[NT Real COM	]	[ASPP	] [	SLIP	rver Proprietary Protocol]		
04	[NT Real COM	]	[ASPP	] [	SLIPD	rver Proprietary Protocol]		
05	[NT Real COM	]	[ASPP	]+		+ rver Proprietary Protocol]		
06	[Dialin/out	]	[DYNAMIC	]	[Auto Te	rm/SLIP/PPP identification]		
07	[NT Real COM	]	[ASPP	]	[Async S	erver Proprietary Protocol]		
08	[NT Real COM	]	[ASPP	]	[Async S	erver Proprietary Protocol]		

3. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	-8		CN261	0-8_1	9 V2.0		
	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports						
Exami	ne/modily the	operati	.on mode	UL a	Sync ports		
ESC:	back to menu	Enter:	select	:			
Port	Application		Mode		Description/more setting		
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
06	[Dialin/out	]	[SLIP	]	Serial Line Internet Protocol		
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		

4. The pop-up selector contains input/display fields for **Destination IP addr**, **Source IP address**, **IP netmask**, **TCP/IP compression**, **Inactivity time**, **Link quality report**, **Outgoing PAP ID**, **PAP password**, and **Incoming PAP check**. Each item is described in detail below the figure.

+			+
Destination IP addr	[	]	
Source IP address	[	]	Í
IP netmask	[	]	Í
TCP/IP compression	[no ]		Í
Inactivity time	[0 ] minutes		İ
Link quality report	[no ]		Í
Outgoing PAP ID	[	]	Í
PAP password	[	]	Í
Incoming PAP check	[none ]		
+	 		+

Setting	Value	Notes	Necessity
Destination IP addr	IP address for the remote Dial-in / Dial-out user	Assign an IP address for the remote user.	Required
Source IP address	IP address for the port	CN2610 will automatically assign an IP address for the port. We recommend leaving this space blank.	Optional
IP netmask	IP netmask	CN2610 automatically assigns the netmask 255.255.255.255. We recommend leaving this space blank.	Optional
TCP/IP compression	Yes/No	Depends on whether the remote user's application requests compression.	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Link quality report	Yes/No	If you are using software to collect Link quality information, choose YES.	Optional
Outgoing PAP ID	ID	Dial out user/account ID information	Optional
PAP password	Password	Dial out user/account password	Optional

Setting	Value	Notes	Necessity
Incoming PAP check	None/local/server	None: Authentication is not required. local: Check the ID stored in the User_table (defined under the SERVER MENU). You will need to configure the user's information later in this chapter. Server: Check the ID with the external RADIUS server. Refer to Appendix C for RADIUS installation information.	Optional

5. Press Esc to return to the PORT MENU.

# **Configuring Dynamic Mode**

Dynamic mode integrates PPPD, SLIPD, and Terminal dial-in services. Dynamic mode automatically detects which remote connection mode is being used, and provides corresponding services. You can further enable/disable PPP/SLIP/Terminal services by using the **Description/more setting** pop-ups.

1. Move the cursor to the **Mode** column for the port and then press **Enter**.

CN2610	-8		CN2610	-8_2	19 V2.0		
[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports							
ESC:	back to menu	Enter:	select				
Port 01 02	Application [NT Real COM [NT Real COM	]	Mode [ASPP [ASPP	]	Description/more setting [Async Server Proprietary Protocol] [Async Server Proprietary Protocol]		
02 03 04	[NT Real COM [NT Real COM [NT Real COM	j	[ASPP [ASPP [ASPP	]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol] [Async Server Proprietary Protocol]		
05 06	[NT Real COM [Dialin/out	j	[ASPP [DYNAMIC	]	[Async Server Proprietary Protocol] [Auto Term/SLIP/PPP identification]		
07 08	[NT Real COM [NT Real COM		[ASPP [ASPP	]	[Async Server Proprietary Protocol] [Async Server Proprietary Protocol]		

2. Select DYNAMIC for dial-in/out services.

CN261	0-8		CN2610	-8_	19 V2.0	
[Mode Exami	] Line mOdem ine/modify the				async poi	rts
ESC:	back to menu	Enter:	select			
				+		+
Port	Application		Mode		DYNAMIC	on/more setting
01	[NT Real COM	]	[ASPP	jİ	PPP	rver Proprietary Protocol]
02	[NT Real COM	]	[ASPP	зi	PPPD	rver Proprietary Protocol]
03	[NT Real COM	]	[ASPP	jį	SLIP	rver Proprietary Protocol]
04	[NT Real COM	]	[ASPP	зi	SLIPD	rver Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]+		-+rver Proprietary Protocol]
06	[Dialin/out	]	[DYNAMIC	]	[Auto ]	[erm/SLIP/PPP identification]
07	[NT Real COM	]	[ASPP	]	[Async	Server Proprietary Protocol]
08	[NT Real COM	]	[ASPP	]	[Async	Server Proprietary Protocol]

3. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	-8		CN2610	-8_1	.9 V2.0		
	[Mode] Line mOdem Welcome_MSG Quit						
Examı	ne/modify the	operati	on mode	oi a	async ports		
ESC:	back to menu	Enter:	select				
Port	Application		Mode		Description/more setting		
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
06	[Dialin/out	]	[DYNAMIC	]	Auto Term/SLIP/PPP identification		
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]		

4. The pop-up selector contains input/display fields for **TERM\_BIN mode**, **PPPD mode**, and **SLIPD mode**. Each item is described in detail below the figure.

+			+
	Enable	Detail setting	
TERM_BIN mode	[yes]	[Term parameters	]
PPPD mode	[yes]	[PPP parameters	] [
SLIPD mode	[yes]	[SLIP parameters	]
Authentication type		[local ]	
+			+

Setting	Value	Notes	Necessity
TERM_BIN mode	yes/no	Select <b>yes</b> to enable a Binary Terminal connection	Optional
PPPD mode	yes/no	Select yes to enable a PPPD connection	Optional
SLIPD mode	yes/no	Select <b>yes</b> to enable a SLIPD Terminal connection	Optional
Authentication type	None/ local/ server	<ul> <li>None: Authentication is not required.</li> <li>local: Check the ID stored in the User_table (defined under the SERVER MENU).</li> <li>Server: Check the ID with the external RADIUS server. Refer to Appendix C for RADIUS installation information.</li> </ul>	Optional

5. To configure the **TERM\_BIN** mode parameters, move the cursor to the Detail setting column to highlight **Description/more setting**, and then press **Enter**.

TERM_BIN mode PPPD mode SLIPD mode	Enable [yes] [yes] [yes]	Detail setting [ <mark>Term parameters</mark> [PPP parameters [SLIP parameters	
Authentication	type	[none ]	

6. The pop-up selector contains input/display fields for **Quit key**, **Auto-link protocol**, **Link by input IP**, **Auto-login prompt**, **Terminal type**, **Inactivity time**, **Authentication type**, and **TCP alive check time**. Each item is described in detail below the figure.

			-+
Quit key	[^E]		
Auto-link protocol	[none ]		
Telnet TCP port	[23]		
Primary host IP	[	]	
Link by input IP	[Disable]		
Secondary host IP	[	]	
Auto-login prompt	[ogin:	]	
Password prompt	[assword:	]	
Login user name	[	]	
Login password	[	]	
Terminal type	[ansi ]		
Inactivity time	[0 ] minutes		
Authentication type	[none ]		
TCP alive check time	[0 ] minutes		
			-+

Setting	Value	Notes	Necessity
Quit Key	^E	Defines the Quit key used to disconnect the link between the current terminal session and the remote host. It may be left blank for binary communication.	Optional
Auto-link protocol	None/Telnet/ Rlogin	None:Do not connect to the host automatically.Telnet:Connects to the host automatically by Telnet.Rlogin:Connects to the host automatically by Rlogin.	Optional
Telnet TCP port	23	Enter a number or leave the space blank. If not specified, then by default, port 23 is used. If you want to use Telnet without a TCP port number, set this option to 23.	Optional
Primary host IP	IP address or the name defined in the [Host] table	If specified, designates a 'permanent' host to which the terminal will always be connected.	Optional
Link by input IP	Enable/ Disable	For users to enter the connection IP address manually.	Optional
Secondary host IP	IP address or the name defined in the [Host] table.	If specified, designates a secondary 'permanent' host to which the terminal will be connected.	Optional
Auto-login prompt	ogin:	Send ID information when this prompt is received.	Optional
Password prompt	assword:	Send Password information when this prompt is received	Optional
Login user name		Login ID	Optional
Login password		Login Password	Optional
Terminal type	ansi	Terminal type for outgoing connection	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional

#### Setting Up Dial-in/Out

Setting	Value	Notes	Necessity
Authentication type	None/local/ server	<ul> <li>None: Authentication is not required.</li> <li>local: Check the ID stored in the</li> <li>User_table (defined under the SERVER</li> <li>MENU).</li> <li>Server: Check the ID with the</li> <li>external RADIUS server. Refer to</li> <li>Appendix C for RADIUS installation</li> <li>information.</li> </ul>	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

7. To configure the **PPPD** mode parameters, move the cursor to the Detail setting column to highlight **PPP parameters**, and then press **Enter**.



8. The pop-up selector contains input/display fields for **Destination IP addr**, **Source IP address**, **IP netmask**, **TCP/IP compression**, **Inactivity time**, **Link quality report**, **Outgoing PAP ID**, and, **PAP password**. Each item is described in detail below the figure.

+		+
Destination IP address	: [	]
Source IP address	: [	] ]
IP netmask	: [	] ]
TCP/IP compression	: [no ]	
Inactivity time	: [O ] minut	ces
Link quality report	: [no ]	
Outgoing PAP ID	: [	] ]
PAP password	: [	]
+		+

Setting	Value	Notes	Necessity
Destination IP addr	IP address for the remote Dial-in / Dial-out user	You need to assign an IP address for the remote user.	Required
Source IP address	IP address for the port	CN2610 will automatically assign an IP address for the port. We recommend leaving this space blank.	Optional
IP netmask	IP netmask	CN2610 automatically assigns the netmask 255.255.255.255. We recommend leaving this space blank.	Optional
TCP/IP compression	Yes/No	Depends on whether the remote user's application requests compression.	Optional

#### Setting Up Dial-in/Out

### CN2610 User's Manual

Setting	Value	Notes	Necessity
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Link quality report	Yes/No	If you are using software to collect Link quality information, choose YES.	Optional
Outgoing PAP ID	ID	Dial out user/account ID information	Optional
PAP password	Password	Dial out user/account password	Optional

9. To configure the **SLIPD** mode parameters, move the cursor to the Detail setting column to highlight **SLIP parameters**, and then press **Enter**.

+			+	
	Enable	Detail setting		
TERM_BIN mode	[yes]	[Term parameters	] ]	
PPPD mode	[yes]	[PPP parameters	] ]	
SLIPD mode	[yes]	SLIP parameters	] [	
Authentication	type	[none ]	İ	
+			+	

 The pop-up selector contains input/display fields for Destination IP addr, Source IP address, IP netmask, TCP/IP compression, and Inactivity time. Each item is described in detail below the figure.

+		+
Destination IP address	: [	]
Source IP address	: [	] [
IP netmask	: [	] ]
TCP/IP compression	: [no ]	ĺ
Inactivity time	: [0 ] minutes	l l
+		+

Setting	Value	Notes	Necessity
Destination IP addr	IP address for the remote Dial-in / Dial-out user	You need to assign an IP address for the remote user.	Required
Source IP address	IP address for the port	CN2610 will automatically assign an IP address for the port. We recommend leaving this space blank.	Optional
IP netmask	IP netmask	CN2610 automatically assigns the Op netmask 255.255.255. We recommend leaving this space blank.	
TCP/IP compression	Yes/No	Depends on whether the remote user's application requests compression.	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional

11. Press Esc to return to the PORT MENU.

# **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

Mode [Line] mOdem Welcome_MSG Quit Examine/modify asynchronous port configuration	CN2610-8	CN2610-8_19 V2.0	PORT MENU
Enter: select ESC: previous menu	Enter: select	ESC: previous menu	

3. The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

Mode [Line]       mOdem       Welcome_MSG       Quit         Examine/modify       asynchronous       port       configuration         ESC:       back to menu       Enter:       select         Port       Speed       Bits       Stop       Parity       FIFO       RTS/CTS       XON/XOFF       Discon         01       [115200]       [8]       [ 1 ]       [None ]       [yes]       [no ]       [None         02       [115200]       [8]       [ 1 ]       [None ]       [yes]       [no ]       [None         03       [115200]       [8]       [ 1 ]       [None ]       [yes]       [no ]       [None         04       [115200]       [8]       [ 1 ]       [None ]       [yes]       [no ]       [None				72.0	CN2610-8_19			0-8	CN261
Port         Speed         Bits         Stop         Parity         FIFO         RTS/CTS         XON/XOFF         Discon           01         [115200]         [8]         [1]         [None]         [yes]         [yos]         [no]         [None           02         [115200]         [8]         [1]         [None]         [yes]         [yos]         [no]         [None           03         [115200]         [8]         [1]         [None]         [yes]         [yos]         [no]         [None				tion	- ~				
01       [115200]       [8]       [1]       [None]       [yes]       [no]       [None]         02       [115200]       [8]       [1]       [None]       [yes]       [yes]       [no]       [None]         03       [115200]       [8]       [1]       [None]       [yes]       [yes]       [no]       [None]					select	Enter:	ienu	back to m	ESC:
05       [115200]       [8]       [1]       [None]       [yes]       [no]       [None         06       [115200]       [8]       [1]       [None]       [yes]       [yes]       [no]       [None         07       [115200]       [8]       [1]       [None]       [yes]       [yes]       [no]       [None	n. ctrl ] ] ] ] ] ] ]	[None [None [None [None [None [None	[no ] [no ] [no ] [no ] [no ] [no ]	[yes] [yes] [yes] [yes] [yes] [yes]	[None] [yes] [None] [yes] [None] [yes] [None] [yes] [None] [yes] [None] [yes]	[ 1 ] [ 1 ] [ 1 ] [ 1 ] [ 1 ] [ 1 ] [ 1 ]	[8] [8] [8] [8] [8] [8]	[115200] [115200] [115200] [115200] [115200] [115200] [115200]	01 02 03 04 05 06

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press ESC to return to the PORT MENU.

### **Configuring Modem Initialization**

Open **Port Menu**  $\rightarrow$  **Modem** to configure modem dial-out initialization and dial-out phone numbers.

1. From the MAIN MENU, use the arrow keys to select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN	MENU
	seTting sAve Utility Restart Exit sync server ports configuration		
Enter: select	ESC: previous menu		

2. From the PORT MENU, select mOdem, and then press Enter.



3. The **Modem** page has input/display fields for **Enable**, **Initialize**, **Dialup**, and **Phone number** for each serial port. Each item is described in detail below the figure.

CN2610-8		CN2610-8_	19 V2.0			PORT MENU
-	mOdem] Welcome_M lization and dia	~	ting			
ESC: back to	menu Enter: se	lect				
Port Enabl  01 [yes]  02 [no]+- 03 [no] 04 [no] 05 [no] 06 [no] 07 [no] 08 [no]	<b>yes</b>   + [AT	) ) ) ) ) ) ) ]	Dial Up [ATD [ATD [ATD [ATD [ATD [ATD [ATD [ATD	] ] ] ] ] ]	Phone Number [ [ [ [ [ [ [	] ] ] ] ] ]

Setting	Value	Notes
Enable	yes/no	Enable modem settings
Initialize	String	Set the modem initial string. E.g., AT&S0 =1 for auto-answer.
Dial Up	String	Dial-up AT command
Phone Number	Number	Set the number you use to dial out

#### **NOTE** The **Dial Up** and **Phone Number** settings are only valid under PPP/SLIP mode.

4. Press Esc to return to the PORT MENU.

### **Optional Welcome Message**

Open **Port Menu** → **Welcome\_MSG** to set up a welcome message to greet dial-in users.

1. From the MAIN MENU, use the arrow keys to select Port, and then press Enter.



2. From the PORT MENU, select Welcome\_MSG, and then press Enter.

CN2610-8_19 V2.0	
Mode Line mOdem [Welcome_MSG] Quit Edit the hello message for Terminal port	
ESC: back to menu Enter: select	++
	no
vvvvvvvvvvvvvvvvvvvvvvvvvvEnable hello message : [ no	yes vvvvvvvvvvvv
<<< Moxa Async Server >>>	++

- 3. Select **yes** to edit the welcome message.
- 4. Press Esc to return to the PORT MENU.

### **Configuring Optional Local User Information**

Open Server Menu  $\rightarrow$  User\_Table, to configure local user authentication information. If you set Incoming PAP check or Authentication type as Local instead of Server, you will need to configure the User\_table for user authentication. The User\_table page is also used to activate the call-back function.

1. From the MAIN MENU, use the arrow keys to select Server, and then press Enter.

CN2610-8	CN2610-8_19 V2.0 MAIN	MENU
[Server] Port seTting sAve Examine/modify async server	-	
Enter: select ESC: previou	s menu	

2. From the SERVER MENU, select User\_table, and then press Enter.

CN2610-8	CN2610-8_19	9 V2.0	SERVER MENU
	. Host_table Route_tabl the user/password table	e <mark>[User_table]</mark> Qu	lit
Enter: select	ESC: previous menu		

3. The User\_table page has input fields for User name, Password, and Phone Number, for each serial port. Input a Phone Number to activate the automatic call back function. Note that CN2610 can store information for up to 64 users.

#### Setting Up Dial-in/Out

CN2610-8			CN2610-8_19	V2.0				
	Lan Adv. Host_ /modify the use	-	—	[User	_table]	Quit		
ESC: ba	ck to menu En	ter:	select					
Entry	User name		Password		Phone	Number		
01	[	]	[	]	[		]	
02	[	]	[	]	[		]	
03	[	]	[	]	[		]	
04	[	]	[	]	[		]	
05	[	]	[	]	[		]	

4. Press Esc to return to the MAIN MENU.

### Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_19 V2.0 SERVER MENU
	. Host_table Route_table [User_table] Quit async server basic configuration
Enter: select	ESC: previous menu
	++
	Warning !!!
	You had modified the configuration without saving.
	Would you save it now ?
	'Y: yes 'N': no
	++

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.



### Restart

1. From the MAIN MENU, select Restart.



2. Select System and then press Enter to restart the system and terminate the Telnet session.

CN2610	0-8		CN261	0-8_19	V2.0	
[Syste Rest	-	~	uit nc Server			
ESC: b	back	to menu	Enter:	select	:	
+	+ <b></b>				+ Warning !!!	
	Res	tart sv	stem will	disconr	nect all ports and clear all status value	
					continue ESC: cancel	
+	+				+	

# **12** Setting Up Printer

In this chapter, we describe how to set up Moxa CN2610 as a printer server. Up to 16 serial printers can be connected simultaneously to one CN2610. At the end of the chapter, the settings needed for one-port parallel printing is illustrated for both UNIX and Windows systems.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- □ Selecting the Application
- **Configuring RAW PRN Mode**
- **Configuring LPD PRN Mode**
- **Configuring the Serial Ports**
- □ Save
- □ Restart
- **Getting up Unix Hosts** 
  - Setting up a SCO Unix Host
  - Setting up a SOLARIS X86 Host
  - Setting up a LINUX Host
- □ Setting up Windows Hosts
  - Setting up a Windows NT Host
  - Setting up a Windows 2000 Host

# Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
-	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254	
Async Server CN2610-8 Console terminal type (1: ansi/vt100,	2: vt52) : 1

3. CN2610's MAIN MENU will open, as shown below.

Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	
	-	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

### **Selecting the Application**

Open **Port Menu**  $\rightarrow$  **Mode** to set up the **Printer** application.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
[Mode] Line mOdem Examine/modify the	Welcome_MSG Quit operation mode of async ports	
Enter: select ESC	: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We use Port 6 to illustrate.

CN2610	-8		CN2610-8	_19 V2.0
[Mode]	Line mOdem	Welcome_M	ISG Quit	
Exami	ne/modify the	operation	n mode of	async ports
ESC:	back to menu	Enter: s	select	
Port	Application	M	ode	Description/more setting
01	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
06	NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]
07	[NT Real COM	] [A	SPP ]	[Async Server Proprietary Protocol]

4. Use the up/down arrow keys to select **Printer**, and then press **Enter** to confirm.

CN2610	0-8		CN2610-8_19 V2	.0	
[Mode]			- ~		
Exami	ne/modify the	operati	on mode of async p	ports	
ESC:	back to menu	Enter:	select		
Port 01 02 03 04 05 06 07 08	Application [Dialin/out [Dialin/out [Dialin/out [Dialin/out [Dialin/out [Dialin/out [Dialin/out [Dialin/out	)  ]  ]  ]  ]  ]  ]	Disable Dialin/out Terminal Reverse Terminal Device Control Multiplex Printer Multi-Host TTY NT Real COM DRDAS	Term/SLIP/PPP Term/SLIP/PPP Term/SLIP/PPP Term/SLIP/PPP Term/SLIP/PPP Term/SLIP/PPP	tting identification] identification] identification] identification] identification] identification] identification] identification]
		]+	Raw UDP 	-+	

5. The Dialin/out application supports two operation modes: **RAW PRN** and **LPD PRN**. RAW PRN mode is selected by default.

CN2610	0-8	CN261	0-8_	19 V2.0
-		Welcome_MSG Q <sup>-</sup> operation mode		async ports
	back to menu	Enter: select		
Port	Application	Mode		Description/more setting
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
06	Printer	] [RAW PR	N ]	[Raw serial port printer mode ]
07	[NT Real COM	] [ASPP	1	[Async Server Proprietary Protoco]]

# **Configuring RAW PRN Mode**

1. Move the cursor to the **Mode** column for the port and then press **Enter**.

CN261	0-8	CN2610-8_19 V2.0	
[Mode]	] Line mOdem	elcome_MSG Quit	
Exami	ne/modify the	peration mode of async ports	
ESC:	back to menu	Inter: select	
Port	Application	Mode Description/more setting	
01	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
02	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
03	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
04	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
05	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	
06	[Printer	] [ <mark>RAW PRN</mark> ] [Raw serial port printer mode ]	
07	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]	

2. Select **RAW PRN**, and then press **Enter**.

CN2610	0-8	CN2610-8_19 V2.0
-		Welcome_MSG Quit operation mode of async ports
ESC:	back to menu	Enter: select
Port 01 02	Application [NT Real COM [NT Real COM	ModeDescription/more setting] [ASPP] [Async Server Proprietary Protocol]] [ASPP] [Async Server Proprietary Protocol]
03 04 05	[NT Real COM [NT Real COM [NT Real COM	] [ASPP ] [Async Server Proprietary Protocol] ] [ASPP ]++rver Proprietary Protocol] ] [ASPP ]  RAW PRN  rver Proprietary Protocol]
06 07 08	[Printer [NT Real COM [NT Real COM	] [RAW PRN ]  LPD PRN  al port printer mode ] ] [ASPP ]++rver Proprietary Protocol] ] [ASPP ] [Async Server Proprietary Protocol]

3. Move the cursor to the **Description/more setting** column, and then press **Enter**.

CN261(	0-8	CN261	0-8_	_19 V2.0
-		Welcome_MSG Qu operation mode		asyma porta
Exami	ine/modily the	operation mode	OL	
ESC:	back to menu	Enter: select		
Port	Application	Mode		Description/more setting
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]
06	[Printer	] [RAW PRI	N ]	Raw serial port printer mode
07	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]

4. The pop-up selector contains input/display fields for **Group**, **TCP Pcort number**, and **TCP alive check time**. Each item is described in detail below the figure.

+		+
Group		[Group01]
TCP port number		[2048]
TCP alive check ti	lme:	[0 ] minutes
+		+

Setting	Value	Notes	Necessity
Group	Group 01-16	Groups printers attached to different ports. Printers in the same group will share the printing load for printing requests to that group of printers. E.g., setting CN2610's serial ports 1, 3, and 6 for Group01 will allow the printers attached to these three ports to act essentially as one printer.	Optional
TCP port number	2048-2063	The host uses this value to determine which Group the printer attached to this serial port belongs to. These values are fixed, and cannot be changed by the user.GroupTCP Port No.012048022049032050162063	Fixed
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

#### 5. Press Esc to return to the PORT MENU.

# **Configuring LPD PRN Mode**

1. Move the cursor to the Mode column for the port and then press Enter.

_		-	· · ·		
CN2610	0-8	CN2610-8_	19 V2.0		
[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports					
ESC:	back to menu	Enter: select			
Port	Application	Mode	Description/more setting		
01	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]		
02	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]		
03	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]		
04	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]		
05	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]		
06	[Printer	] [RAW PRN ]	[Raw serial port printer mode ]		
07	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]		

2. Select LPD PRN, and then press Enter.

CN261	0-8	CN2610-8_19 V2.0
[Mode]	] Line mOdem	Welcome_MSG Quit
Exami	ine/modify the	operation mode of async ports
ESC:	back to menu	Enter: select
Port	Application	Mode Description/more setting
01	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]
02	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]
03	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]
04	[NT Real COM	] [ASPP ]++rver Proprietary Protocol]
05	[NT Real COM	] [ASPP ]   RAW PRN   rver Proprietary Protocol]
06	[Printer	] [RAW PRN ] <mark>LPD PRN</mark> al port printer mode ]
07	[NT Real COM	] [ASPP ]++rver Proprietary Protocol]
08	[NT Real COM	] [ASPP ] [Async Server Proprietary Protocol]

3. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	-8	CN2610	-8_3	19 V2.0	
[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports					
Exam	me/modily the	operación mode	OL (	async ports	
ESC:	back to menu	Enter: select			
Port	Application	Mode		Description/more setting	
01	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]	
02	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]	
03	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]	
04	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]	
05	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]	
06	[Printer	] [LPD PRN	]	LPD serial port printer mode	
07	[NT Real COM	] [ASPP	]	[Async Server Proprietary Protocol]	

4. The pop-up selector contains input/display fields for **Queue name <RAW>**, **Queue name** <**ASCII>**, **Append Form Feed**, and **TCP alive check time**. Each item is described in detail below the figure.

+			+
Queue name <raw></raw>		[	]
Queue name <ascii></ascii>		[	] [
Append Form Feed		[Disable]	Ì
TCP alive check time	:	[0 ] minu	
+			+

#### **Setting Up Printer**

Setting	Value	Notes	Necessity
Queue name (RAW)	Text	Specify print queue's name (in RAW mode)	Fixed
Queue name (ASCII)	Text	Specify print queue's name (in ASCII mode)	Fixed
Append Form Feed	Enable/ Disable	Specify paging	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

# **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select **Line**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	Melcome_MSG Quit Anchronous port configuration	
Enter: select ES	C: previous menu	

 The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

CN2610-8		CN2610-8_19	V2.0			
Mode [Line] mOdem Welcome_MSG Quit Examine/modify asynchronous port configuration						
ESC: back to m	enu Enter:	select				
Port Speed 01 [115200] 02 [115200] 03 [115200] 04 [115200] 05 [115200] 06 [115200] 07 [115200] 08 [115200]	Bits Stop [8] [1] [8] [1] [8] [1] [8] [1] [8] [1] [8] [1] [8] [1] [8] [1]	Parity FIFO [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes] [None ] [yes]	RTS/CTS [yes] [yes] [yes] [yes] [yes] [yes] [yes] [yes]	XON/XOFF [no ] [no ] [no ] [no ] [no ] [no ] [no ]	Discon. [None [None [None [None [None [None [None	ctrl ] ] ] ] ] ]

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits

### **Setting Up Printer**

Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press **ESC** to return to the **PORT MENU**.

### Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_	_19 V2.0	SERVER MENU
	. Host_table Route_ta async server basic con		Quit
Enter: select	ESC: previous menu		
	Warnin		+
	You had modified the	9	hout saving.
	Would you save it now	?	
	-	`N'∶ no	
	+		+

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	ng <mark>[sAve]</mark> Utility Restart Exit guration to Flash ROM	
ESC: back to menu	Enter: select	
	Enter to updated, other key to cancel	
	TT	

### Restart

1. From the MAIN MENU, select Restart.



2. Select **System** and then press **Enter** to restart the system and terminate the Telnet session.

CN2610-8 CN2610-8_19 V2.0	
[System] Port Quit Restart the Async Server	
ESC: back to menu Enter: select	
+	+
Warning !!!	
Restart system will disconnect all ports and clear all s	status value   
+	+

### **Setting up Unix Hosts**

UNIX uses the RLP program for remote parallel printing. For serial printing, Moxa provides the asprint utility program, which consists of two files, asprint.c and asprint.mak. First uncompress printer.tar.Z to the \printer directory, and then locate the files asprint.c and asprint.mak. To compile and link, you may need to modify the source file asprint.c. For instance, in SCO UNIX you must link to the libnls.a library, in Solaris to libnsl.a, and in Venix to the libnsl\_s.a.

### Setting up a SCO Unix Host

Steps	SCO UNIX Command	Description
Uncompress all programs	#tar /dev/fd0 ./	
Uncompress printer.tar.Z to ./printer	#tar xvf printer.tar.Z	
compile/link	#make -f sco_unix.mak	
make printer node	#mknod /dev/iop1 p	Create a unique pipe name for each printer group. Since there are 16 groups of TCP port numbers (from 2048 to 2063), you need to create 16 respective pipe names. For example: iop1, iop2, iop3, etc.
set it to printer	#chown lp /dev/iop1	Change the pipe owner to 1p

Steps	SCO UNIX Command	Description
set rw	#chmod 600 /dev/iop1	Change access permission to 600 or rw
set printer name	#/usr/lib/lpadmin -pLaser1 -v/dev/iop1	Redirect the printer spooler to write to pipe 'iop1'. Assumes the printer name is Laser1.
execute asprint for Group 01	#/asprint /dev/iop1 'CN2610 IP address' 2048 &	Start 'asprint' utility to read from pipe 'iop1' and write to the CN2610 printer port.
		'/dev/iop1': the device name the spooler is writing to.
		'CN2610': the host name of the CN2610 as defined in /etc/hosts, or its IP address.
		'2048': the TCP port number (Group01) of the printer port on the CN2610.
accept printer Laser1	#/usr/lib/accept Laser1	Set Laser 1 to accept print request.
enable Laser1	#enable printer Laser1	enable Laser1
print file to Laser1	#lp -dLaser1 file_name	send print job to the CN2610
Repeat		Repeat the above steps to set up another printer. For printers in the same group, it is not necessary to repeat every step.

# Setting up a SOLARIS X86 Host

Steps	SCO UNIX Command	Description
Set free the occupied Floppy disk	#/etc/init.d/volmgt stop	
Uncompress all programs	#tar /dev/fd0 ./	
Uncompress printer.tar.Z to ./printer	#tar xvf printer.tar.Z	
compile/link	#make -f sco_unix.mak	
make printer node	#mknod /dev/iop1 p	Create a unique pipe name for each printer group. Since there are 16 groups of TCP port numbers (from 2048 to 2063), you need to create 16 respective pipe names. For example: iop1, iop2, iop3, etc.
set it to printer	#chown lp /dev/iop1	Change the pipe owner to 1p
set rw	#chmod 600 /dev/iop1	Change access permission to 600 or rw
set printer name	#/usr/lib/lpadmin -pLaser1 -v/dev/iop1	Redirect the printer spooler to write to pipe 'iop1'. Assumes the printer name is Laser1.

### **Setting Up Printer**

Steps	SCO UNIX Command	Description
execute asprint for Group 01	#/asprint /dev/iop1 'CN2610 IP address' 2048 &	Start 'asprint' utility to read from pipe 'iop1' and write to the CN2610 printer port.
		'/dev/iop1': the device name the spooler is writing to.
		'CN2610': the host name of the CN2610 as defined in /etc/hosts, or its IP address.
		'2048': the TCP port number (Group01) of the printer port on the CN2610.
accept printer Laser1	#/usr/lib/accept Laser1	Set Laser 1 to accept print request.
enable Laser1	#enable printer Laser1	enable Laser1
print file to Laser1	#lp -dLaser1 file_name	send print job to the CN2610
Repeat		Repeat the above steps to set up another printer. For printers in the same group, it is not necessary to repeat every step.

# Setting up a LINUX Host

Steps	SCO UNIX Command	Description
Uncompress all programs	#tar /dev/fd0 ./	
Uncompress printer.tar.Z to ./printer	#tar xvf printer.tar.Z	
compile/link	#make -f sco_unix.mak	
make printer node	#mknod /dev/iop1 p	Create a unique pipe name for each printer group. Since there are 16 groups of TCP port numbers (from 2048 to 2063), you need to create 16 respective pipe names. For example: iop1, iop2, iop3, etc.
set it to printer	#chown lp /dev/iop1	Change the pipe owner to 1p
set rw	#chmod 600 /dev/iop1	Change access permission to 600 or rw
set printer name	#/usr/lib/lpadmin -pLaser1 -v/dev/iop1	Redirect the printer spooler to write to pipe 'iop1'. Assumes the printer name is Laser1.
	add one line to /etc/printcap file	
	Laser1:lp=/dev/iop1,sd=/ usr/spool/Laser1	
make spool directory	#mkdir /usr/spool/Laser1	1.

Steps	SCO UNIX Command	Description
execute asprint for Group 01	#/asprint /dev/iop1 'CN2610 IP address' 2048 &	Start 'asprint' utility to read from pipe 'iop1' and write to the CN2610 printer port.
		'/dev/iop1': the device name the spooler is writing to.
		'CN2610': the host name of the CN2610 as defined in /etc/hosts, or its IP address.
		'2048': the TCP port number (Group01) of the printer port on the CN2610.
accept printer Laser1	#lpr -PLaser1 file_name.txt	Set Laser 1 to accept print request.
Repeat		Repeat the above steps to set up another printer. For printers in the same group, it is not necessary to repeat every step.

# **Setting up Windows Hosts**

Windows uses the LPD/LPR application to access printers. Moxa provides LPD PRN mode for serial printing. In this section, we explain how to install a LPD/LPR printer in a Windows NT/2000 environment to access a serial printer connected to a CN2610 Async Server.

### Setting up a Windows NT Host

- 1. First, you need to add TCP/IP printing service to your Windows NT.
- 2. Go to Start → Settings → Control Panel → Network. Click the Services tab, and then select Add.



3. Select Microsoft TCP/IP Printing, and then click OK to continue.



- 4. Insert the Windows NT installation CD to your computer's CD driver.
- 5. After the Microsoft TCP/IP Printing service is added, reboot your computer.



- 6. At this point, you can start configuring your LPR/LPD Printer.
- 7. Click **Start**  $\rightarrow$  **Settings**  $\rightarrow$  **Printers**.



8. Click Add Printer to start the Add Printer Wizard.



9. Select My Computer, and then click Next to continue.



10. In the window that opens next, click Add Port.

	Available ports:	Description	Printer	
	LPT1 LPT2 LPT3 COM1 COM2 COM3	Local Port Local Port Local Port Local Port Local Port Local Port		
×	Add Port	- I	Configure P	ort

11. Select LPR Port. Click New Port....

Printer Ports	? >
Available Printer Ports:	
Digital Network Port Lexmark DLC Network Port Lexmark TCP/IP Network Port Local Port	
LPR Port	
	New Monitor
New	Port Cancel

12. Enter CN2610's IP Address, and then enter the Print Queue's name. Click OK to continue.

Add LPR compatible printer		×
Name or address of server providing lpd:	192.168.1.5	ОК
Name of printer or print queue on that server:	ascii_3_d	Cancel
		<u>H</u> elp
		·

13. Select **logical printer port** for the LPR port you just added. The LPF port should be the IP address of the port.



14. Select the printer's manufacturer and model name. Click Next to continue.

💓 🛛 installation disk	acturer and model of your printer. If your printer came with an . click Have Disk. If your printer is not listed, consult your ntation for a compatible printer.
₫anufacturers; Diconix Digital Epson Fujitsu GCC	Printers: Generic / Text Only Generic IBM Graphics 9pin Generic IBM Graphics 9pin wide
Generic Restelher	Have Disk

15. Enter the printer's name, and select **yes** if you wish to set this printer as the default printer. Click **Next** to continue.



16. Select **Shared** when prompted with questions asking if the printer is to be shared or not, and then enter the name of the shared printer.

Indicate whether this printer will be shared with other network users. If you choose sharing give this printer share name.
C Shared    Not shared
Share Name:
Select the operating systems of all computers that will printing to this printer.

17. Print a test page to verify that the printer is configured correctly, and then click **OK** to finish.

### Setting up a Windows 2000 Host

1. Click Start  $\rightarrow$  Settings  $\rightarrow$  Printers.



- 2. Click Add Printer to start and Add Printer Wizard.
- 3. A Welcome message will appear. Click Next to continue.



4. Select Local printer, and click Next to continue.

Local or Network Printer Is the printer attached to your computer?			
If the printer is directly attached to your co another computer, or directly to the netwo			ched to
Local printer			
Automatically detect and install my	Plug and Play printer		
C Network printer			
		Next >	Cancel

5. Select **Create a new port:**, and then select **LPR Port** from the drop down list. Click **Next** to continue.

Select the Printe Computers com	r Port municate with printers I	hrough ports.	Ś
Select the port new port.		use. If the port is not listed,	, you can create a
Port	Description	Printer	
LPT1: LPT2: LPT3: COM1: COM2: COM3:	Printer Port Printer Port Printer Port Serial Port Serial Port Serial Port		_
		1: port to communicate with	a local printer.
Create a ne	335920350 - C		
Туре:	LPR Port	LPR Port	
	Local Port	inting Devices	-
	LPR Port		

6. Enter CN2610's IP Address, and then enter the Print Queue's name. Click **OK** to continue.

Add LPR compatible printer		
Name or address of server providing lpd:	192.168.1.1	ОК
Name of printer or print queue on that server:	ascii_4	Cancel
	,	<u>H</u> elp

7. Select the printer's manufacturer and model name. Click Next to continue.

dd Printer Wizard	and the second second second second second second second second second second second second second second second
Add Printer Wiza The manufactu	ard urer and model determine which printer to use.
	nanufacturer and model of your printer. If your printer came with an installation lave Disk. If your printer is not listed, consult your printer documentation for a printer. Printers:
Diconix Digital Epson Fujitsu GCC Generic Gesteber	Generic / Text Only     Generic IBM Graphics 9pin     Generic IBM Graphics 9pin wide     MS Publisher Color Printer     MS Publisher Imagesetter
	<u>W</u> indows Update <u>H</u> ave Disk
	<u> &lt; B</u> ack <u>N</u> ext > Cancel

8. Enter the printer's name, and select yes if you wish to set this printer as the default printer. Click **Next** to continue.

### **Setting Up Printer**

ame Your Printer	/
You must assign a name for this printer.	2
Supply a name for this printer. Some pro combinations of more than 31 character	grams do not support server and printer name rs.
<u>P</u> rinter name:	
Your Name here	
Do you want your Windows-based prog	rams to use this printer as the default printer?
C Yes	
• N <u>o</u>	

9. Select **Shared** when prompted with questions asking if the printer is to be shared or not, and then enter the name of the shared printer. Click **Next** to continue.

Printer Sharing You can share	this printer with other netw	vork users.		
	er you want this printer to	be available to othe	r users. If you shar	e this
printer, you mu	st provide a share name.			
C Do not sha	re this printer			
Share as:	YourName			
			2	

10. You will need to reboot Windows 2000 to enable the printer you just added. When asked if you want to print a test page, select **No**. Click **Next** to continue.

Print Test Page To confirm that the printer is	nstalled prop	perly, you can p	rint a test page.	
Do you want to print a test pa	ige?			
C Yes				

 If you want to print a test page, reboot Windows 2000, select this printer, and click Print Test Page.

Device Se	ttings Prin	ter Commands   Fo	ont Selection
General	Sharing	Ports Advanced	Security
<u>م</u>	Generic / Text Only		
Location:	⊺est Cube		
Comment:	Test printer		
Model: G	ieneric / Text Only		
- Features			
Color: No		Paper available:	
Double-side	ed: No	Letter	<u></u>
Staple: No			
Speed: Uni	known		
Maximum re	esolution: 600 dpi		¥
	Printing	Preferences	<u>I</u> est Page

# **13** Setting Up Multiplex

In this chapter, we describe how to configure Moxa CN2610 as a Multiplexor and De-Multiplexor. Using the Multiplexor/De-Multiplexor application requires two Async Servers—one attached to a host with a multi-port serial board and several serial lines, and the other connected to external devices. In this way, the original host can use a TCP/IP connection to control serial devices from a remote location.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- **Given Selecting the Application**
- **Configuring the "Host" CN2610**
- **Configuring the "Device" CN2610**
- **Configuring the Serial Ports**
- □ Save
- **Restart**
# Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254	
Async Server CN2610-8 Console terminal type (1: ansi/vt100, 2: vt52) :	: 1

3. CN2610's MAIN MENU will open, as shown below.

📕 Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

# **Selecting the Application**

The Multiplex application uses two Async Servers. One of the servers (called the "host" CN2610) is attached to a host with a multi-port serial board and mutiple serial lines. The other server (called the "device" CN2610) is connected to external serial devices. In this way, one host can use a TCP/IP connection to control multiple serial devices from a remote location. We use ports 5, 6, 7, and 8 on both CN2610's to illustrate.



**NOTE** Configure the "Host" CN2610's serial ports for RTELNET mode, and configure the "Device" CN2610's serial ports for TERM\_BIN mode.

### Configuring the "Host" CN2610

Open **Port Menu**  $\rightarrow$  **Mode** to select the **Multiplex** application.

1. From the MAIN MENU, select Port, and then press Enter.



2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	lem Welcome_MSG Quit the operation mode of async ports	
Enter: select	ESC: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We first use Port 6 to illustrate.

CN2610	-8		CN261(	)-8_	_19 V2.0			
	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports							
Exami	ne/modily the	operati	on mode	OL	async ports			
ESC:	back to menu	Enter:	select					
Port	Application		Mode		Description/more setting			
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
06	NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]			

4. Use the up/down arrow keys to select Multiplex, and then press Enter.

CN2610	CN2610-8 CN2610-8_19 V2.0								
-	[Mode] Line mOdem Welcome_MSG Quit								
Exami	.ne/modify the	operation mode of async p	orts						
ESC:	back to menu	Enter: select							
Port	Application	+	+ption/more setting						
01	[NT Real COM	]  Disable	Server Proprietary Protocol]						
02	[NT Real COM	] Dialin/out	Server Proprietary Protocol]						
03	[NT Real COM	]  Terminal	Server Proprietary Protocol]						
04	[NT Real COM	]  Reverse Terminal	Server Proprietary Protocol]						
05	[NT Real COM	]  Device Control	Server Proprietary Protocol]						
06	[NT Real COM	] Multiplex	Server Proprietary Protocol]						
07	[NT Real COM	]  Printer	Server Proprietary Protocol]						
08	[NT Real COM	]  Multi-Host TTY	Server Proprietary Protocol]						
		] NT Real COM							
		]  Raw UDP							
		]+	+						

5. The Multiplex application supports two operation modes: **RTELNET** and **TERM\_BIN**. RTELNET mode is selected by default. For the "Host" CN2610, use **RTELNET** mode.

#### **Setting Up Multiplexor**

CN261	0-8		CN2610	-8_	19 V2.0
[Mode]					
Exami	ne/modify the	operati	on mode	OL I	async ports
ESC:	back to menu	Enter:	select		
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	Multiplex	]	[RTELNET	]	[Reverse Telnet mode ]
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

**NOTE** Reverse Telnet, or RTELNET, supports the Telnet program used by Ethernet hosts to login to serial hosts. Ethernet hosts recognize serial ports by the specified source IP address, or by the TCP port number followed by CN2610's IP address.

6. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	-8		CN2610	-8_2	19 V2.0
[Mode]	Line mOdem	Welcome	e_MSG Qui	it	
Exami	ne/modify the	operati	on mode	of a	async ports
ESC:	back to menu	Enter:	select		
					- · · · · · · · · · · · · · · · · · · ·
Port	Application		Mode		Description/more setting
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
06	[Multiplex	]	[RTELNET	]	Reverse Telnet mode
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]

 The pop-up selector contains input/display fields for TCP port, Source IP address, Destination IP addr, Inactivity time, Map keys <CR-LF> to, Authentication type, and TCP alive check time. Each item is described in detail below the figure.

+		+
TCP port	[4006 ]	
Source IP address	[	]
Destination IP addr	[	]
Inactivity time	[0 ] minutes	
Map keys <cr-lf> to</cr-lf>	[CR-LF]	
Authentication type	[none ]	
TCP alive check time	[0 ] minutes	
+	 	+

#### Setting Up Multiplexor

Setting	Value	Notes	Necessity
TCP port	number	Each of CN2610's serial ports is mapped to a TCP port. To avoid conflicts with the TCP port numbers for CN251's other serial ports, use the default values: 4001 for port 1, 4002 for port 2, etc.	Optional
Source IP address	IP address for the port	Specify an IP address for this port for application purposes. If left blank, CN2610 will use its own IP address, in which case you will need to specify different TCP port numbers for different serial ports.	Optional
Destination IP addr	IP address	Assign a host IP address on the LAN for exclusive port access. If left blank, all hosts on the network will have access to this port.	Optional
Map Keys <cr-lf> to</cr-lf>	CR/LF/CR-LF	When you enter the string <cr-lf>, CN2610 will determine whether to send <cr>, <lf>, or <cr-lf>.</cr-lf></lf></cr></cr-lf>	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Authentication type	None/local /server	None:Authentication is not required.local:Check the ID stored in theUser_table (defined under the SERVERMENU).Server:Check the ID with the externalRADIUS server.Refer to Appendix C forRADIUS installation information.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

8. Repeat the previous steps for ports 5, 7, and 8.

CN2610	-8		CN2610	-8_2	19 V2.0	
[Mode]			- ~			
Exami	ne/modify the	operati	lon mode	oi a	async ports	
ESC:	back to menu	Enter:	select			
Port	Application		Mode		Description/more setting	
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary	Protocol]
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary	Protocol]
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary	Protocol]
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary	Protocol]
05	[Multiplex	]	[RTELNET	]	[Reverse Telnet mode	]
06	[Multiplex	]	[RTELNET	]	[Reverse Telnet mode	]
07	[Multiplex	]	[RTELNET	]	[Reverse Telnet mode	]
08	Multiplex	]	RTELNET	]	Reverse Telnet mode	]

# Configuring the "Device" CN2610

1. From the **MAIN MENU**, select **Port**, and then press **Enter**.



2. From the **PORT MENU**, select **Mode**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	PORT MENU
	n Welcome_MSG Quit e operation mode of async ports	
Enter: select ES	C: previous menu	

3. The **Mode** page has pop-up selection lists for **Application**, **Mode**, and **Description/more setting** for each serial port. Use the arrow keys to move the cursor to the **Application** column for the port to be configured, and then press **Enter**. We first use Port 6 to illustrate.

CN261	0-8		CN2610	)-8_	_19 V2.0					
[Mode] Line mOdem Welcome_MSG Quit										
Exami	Examine/modify the operation mode of async ports									
ESC:	back to menu	Enter:	select							
Port	Application		Mode		Description/more setting					
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
06	NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					

4. Use the up/down arrow keys to select Multiplex, and then press Enter to confirm.

CN261	CN2610-8 CN2610-8_19 V2.0										
-	[Mode] Line mOdem Welcome_MSG Quit										
Examine/modify the operation mode of async ports											
ESC: back to menu Enter: select											
Port	Applicat	ion	+ -		+	ption/mo	ore setting				
01	[NT Real	COM	][	Disable		Server	Proprietary	Protocol]			
02	[NT Real	COM	][	Dialin/out		Server	Proprietary	Protocol]			
03	[NT Real	COM	][	Terminal		Server	Proprietary	Protocol]			
04	[NT Real	COM	] [	Reverse Termina	al	Server	Proprietary	Protocol]			
05	[NT Real	COM	] [	Device Control		Server	Proprietary	Protocol]			
06	[NT Real	COM	] [	Multiplex		Server	Proprietary	Protocol]			
07	[NT Real	COM	] [	Printer		Server	Proprietary	Protocol]			
08	[NT Real	COM	] [	Multi-Host TTY		Server	Proprietary	Protocol]			
			][	NT Real COM							
			] [	Raw UDP							
			]+		+						

5. The Multiplex application supports two operation modes: **RTELNET** and **TERM\_BIN**. RTELNET mode is selected by default. For the "Device" CN2610, select **TERM\_BIN** mode.

CN261(	0-8		CN2610	)-8_1	L9 V2.0						
-	[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports										
ESC:	ESC: back to menu Enter: select										
Port	Application		Mode		Description/more setting						
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
06	Multiplex	]	[RTELNEI	]	[Reverse Telnet mode ]						
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						

6. Move the cursor to the Mode column for the port and then press Enter.

CN261	0-8		CN2610	)-8_	19 V2.0					
[Mode] Line mOdem Welcome_MSG Quit										
Exami	Examine/modify the operation mode of async ports									
ESC:	back to menu	Enter:	select							
					<b>-</b>					
Port	Application		Mode		Description/more setting					
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
06	[Multiplex	]	[RTELNET	: ]	[Reverse Telnet mode ]					
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]					

7. Use the arrow keys to highlight **TERM\_BIN**, and then press **Enter**.

CN261	0-8		CN2610	-8_19 V2.0						
-	[Mode] Line mOdem Welcome_MSG Quit									
Exami	Examine/modify the operation mode of async ports									
ESC:	back to menu	Enter:	select							
Port 01 02 03 04 05 06 07	Application [NT Real COM [NT Real COM [NT Real COM [NT Real COM [Multiplex [NT Real COM	] ] ] ]	Mode [ASPP [ASPP [ASPP [ASPP [ASPP [RTELNET [ASPP	Description/more setting           [Async Server Proprietary Protocol]           [Async Server Proprietary Protocol]           [Async Server Proprietary Protocol]           !						
08	[NI Real COM [NT Real COM	]	[ASPP [ASPP	] [Async Server Proprietary Protocol]						

8. The next step is to configure the TERM\_BIN parameters.

CN2610	) – 8		CN2610	-8_	19 V2.0						
	[Mode] Line mOdem Welcome_MSG Quit										
Exami	Examine/modify the operation mode of async ports										
ESC:	back to menu	Enter:	select								
Port	Application		Mode		Description/more setting						
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
06	[Multiplex	]	TERM_BI	N	[Binary Terminal mode (1 session) ]						
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]						

**NOTE** Terminal Binary, or TERM\_BIN mode, supports automatic link to Ethernet hosts for Terminal or Telnet users by redirecting Telnet requests to the specified Ethernet host. Below we describe how to set auto-link host and login ID information. Auto-linking one TERM\_BIN port to a port in RTELNET mode provides a transparent link through the network.

9. Move the cursor to the Description/more setting column, and then press Enter.

CN2610	-8		CN261	0-8_	19 V2.0				
[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports									
ESC:	back to menu	Enter:	select						
Port	Application		Mode		Description/more setting				
01	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
02	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
03	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
04	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
05	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
06	[Multiplex	]	[TERM_B	IN]	Binary Terminal mode (1 session)				
07	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				
08	[NT Real COM	]	[ASPP	]	[Async Server Proprietary Protocol]				

10. The pop-up selector contains input/display fields for **Quit key**, **Auto-link protocol**, **Link by input IP**, **Auto-login prompt**, **Terminal type**, **Inactivity time**, **Authentication type**, and **TCP alive check time**. Each item is described in detail below the figure.

+		
Quit key	[^E]	
Auto-link protocol	[none ]	
Telnet TCP port	[23]	
Primary host IP	[	]
Link by input IP	[Disable]	
Secondary host IP	[	]
Auto-login prompt	[ogin:	]
Password prompt	[assword:	]
Login user name	[	]
Login password	[	]
Terminal type	[ansi ]	
Inactivity time	[0 ] minutes	
Authentication type	[local ]	
TCP alive check time	[0 ] minutes	
+		

#### Setting Up Multiplexor

Setting	Value	Notes	Necessity
Quit Key	^E	Defines the Quit key used to disconnect the link between the current terminal session and the remote host. It may be left blank for binary communication.	Optional
Auto-link protocol	None/Telnet/ Rlogin	<ul> <li>None: Do not connect to the host automatically.</li> <li>Telnet: Connects to the host automatically by Telnet.</li> <li>Rlogin: Connects to the host automatically by Rlogin.</li> </ul>	Optional
Telnet TCP port	23	Enter a number or leave the space blank. If not specified, then by default, port 23 is used. If you want to use Telnet without a TCP port number, set this option to 23.	Optional
Primary host IP	IP address or the name defined in the [Host] table	If specified, designates a 'permanent' host to which the terminal will always be connected.	Optional
Link by input IP	Enable/ Disable	For users to enter the connection IP address manually.	Optional
Secondary host IP	IP address or the name defined in the [Host] table.	If specified, designates a secondary 'permanent' host to which the terminal will be connected.	Optional
Auto-login prompt	ogin:	Send ID information when this prompt is received.	Optional
Password prompt	assword:	Send Password information when this prompt is received	Optional
Login user name		Login ID	Optional
Login password		Login Password	Optional
Terminal type	ansi	Terminal type for outgoing connection	Optional
Inactivity time	0-99 minutes	Idle time before the port is disconnected automatically. If set to 0 minutes, the port will not disconnect.	Optional
Authentication type	None/local/ server	None:Authentication is not required.local:Check the ID stored in theUser_table (defined under the SERVERMENU).Server:Check the ID with theexternal RADIUS server. Refer toAppendix C for RADIUS installationinformation.	Optional
TCP alive check time	0-99 minutes	The time period CN2610 waits before checking if the TCP connection is alive or not. If no response is received, CN2610 will reset the port and terminate the connection.	Optional

11. Repeat the previous steps for ports 5, 7, and 8.

CN261	CN2610-8 CN2610-8_19 V2.0									
[Mode] Line mOdem Welcome_MSG Quit										
Examine/modify the operation mode of async ports										
ESC:	ESC: back to menu Enter: select									
Port	Application	Mode	Description/more setting							
01	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]							
02	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]							
03	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]							
04	[NT Real COM	] [ASPP ]	[Async Server Proprietary Protocol]							
05	[Multiplex	] [TERM_BIN]	[Binary Terminal mode (1 session) ]							
06	[Multiplex	] [TERM_BIN]	[Binary Terminal mode (1 session) ]							
07	[Multiplex	] [TERM_BIN]	[Binary Terminal mode (1 session) ]							
08	[Multiplex	TERM BIN	[Binary Terminal mode (1 session) ]							

# **Configuring the Serial Ports**

Open **Port Menu**  $\rightarrow$  **Line** to configure serial port settings.

1. From the MAIN MENU, select Port, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server ports configuration	
	asyne server ports configuration	
Enter: select	ESC: previous menu	

2. From the **PORT MENU**, select Line, and then press Enter.



 The Line page has pop-up selection lists for Port, Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon. ctrl for each serial port. Each item is described in detail below the figure.

CN261	0-8			CN2610-8_19	V2.0			
	Mode [Line] mOdem Welcome_MSG Quit Examine/modify asynchronous port configuration							
ESC:	back to m	lenu	Enter:	select				
Port	Speed	Bits	Stop	Parity FIFO	RTS/CTS	XON/XOFF	Discon.	ctrl
01	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
02	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
03	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
04	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
05	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
06	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
07	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]
08	[115200]	[8]	[1]	[None ] [yes]	[yes]	[no ]	[None	]

#### **Setting Up Multiplexor**

Setting	Value	Notes
Speed	50 bps to 921.6 Kbps	Transmission rate
Bits	5, 6, 7, 8	Data bits
Stop	1, 1.5, 2	Stop bits
Parity	None, Even, Odd, Mark, Space	Odd, Even, Mark, Space
FIFO	Yes, No	First In First Out Device
RTS/CTS	Yes, No	Hardware Flow Control
XON/XOFF	Yes, No	Software Flow Control
Discon. Ctrl	None	<b>DSR off</b> or <b>DCD off</b> will not be interpreted as a disconnection.
	DSR off	<b>DSR off</b> will be interpreted as a disconnection.
	DCD off	<b>DCD off</b> will be interpreted as a disconnection.

4. Press **ESC** to return to the **PORT MENU**.

# Save

When exiting the SERVER MENU, you will be prompted to save settings. Press Y to save.

CN2610-8		CN2610-8_19	V2.0		SERVER	MENU
Info. Lan Adv Examine/modify				Quit		
Enter: select	ESC: previo	ous menu				
	+				+	
	   You had mod	Warning !!	! figuration wit		g.     	
	+				+	

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.

CN2610-8	CN2610	-8_19 V2.	0		MAIN	MENU
	seTting [sAv configuration			Exit		
ESC: back to	menu Enter:	select				
	+  Enter +	to updated,	other key	to cancel		

# Restart

1. From the MAIN MENU, select Restart.



2. Select System and then press Enter to restart the system and terminate the Telnet session.

CN2610	0-8		CN261	0-8_19	V2.0	
[Syste Rest	-	~	uit nc Server			
ESC: b	back	to menu	Enter:	select	:	
+	+ <b></b>				+ Warning !!!	
	Res	tart sv	stem will	disconr	nect all ports and clear all status value	
					continue ESC: cancel	
+	+				+	

# **14** Setting Up Routing

Routing is the main process used by Internet hosts to deliver packets. The Internet uses a hop-by-hop routing model, which means that each host or router that handles a packet examines the Destination Address in the IP header, computes the next hop that will bring the packet one step closer to its destination, and then delivers the packet to the next hop, where the process is repeated.

Two things are needed to make this work: (1) Routing tables must match destination addresses with next hops, and (2) routing protocols must determine the contents of these tables.

CN2610 provides easy-to-use routing functions that support both static routing tables and dynamic RIP1/RIP2 routing protocols. This chapter illustrates how to configure static routing tables and dynamic RIP1/RIP2 protocols. A few routing examples are also given to illustrate some basic routing concepts.

The following topics are covered in this chapter:

- □ Accessing the Console Utility
- □ What is RIP?
- **Configuring RIP**
- **Configuring the Static Routing Table**
- **Gamma** Static Routing Examples
  - Configuring Routes to the Internet
  - Configuring Routes to the Internet and Intranet
  - Configuring Multiple-Point Routes
- □ Save
- **D** Restart

# Accessing the Console Utility

- **NOTE** In this section, we show how to access CN2610's console utility by Telnet over the network. For information on using the console port, see the section "Accessing the Console Utility" in Chapter 2.
  - 1. Telnet over the network to the server's IP address.

Run	<u>?</u> ×
-	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	telnet 192.168.127.254
	OK Cancel <u>B</u> rowse

2. Type 1 to choose ansi/vt100, and then press Enter.

Telnet 192.168.127.254	
Async Server CN2610-8	$2 \cdot x + F(2) + 1$
Console terminal type (1: ansi/vt100,	2: vt52) : 1

3. CN2610's MAIN MENU will open, as shown below.

📑 Telnet 192.	168.127.254	
CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	seTting sAve Utility Restart Exit async server node/table configuration	
Enter: select	ESC: previous menu	
	-	

Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

### What is RIP?

RIP (Routing Information Protocol) is a protocol used widely to manage routing information within a self-contained network, such as a corporate LAN (Local Area Network) or an interconnected group of such LANs.

By using RIP, a gateway host with a router can send its entire routing table, which lists all the other hosts it knows about, to its closest neighbor host every 30 seconds. The neighbor host in turn will pass this information on to its closest neighbor, and so on, until all hosts within the network have the same routing path information. This state is known as network convergence. RIP uses a hop count as a way of determining network distance. (Other protocols use more sophisticated algorithms that also include timing.) After receiving a packet headed for a specific destination, a network host with a router uses the routing table information to determine the next host to route the packet to.

RIP is considered an effective solution for small homogeneous networks. For larger, more complicated networks, transmitting the entire routing table every 30 seconds can bog down the network with a lot of extra traffic.

RIP 2 is an extension of RIP. Its purpose is to expand the amount of useful information contained in RIP packets, and to add security elements. RIP version 2 recently became the standard version of RIP, and the original RIP is no longer in use.

# **Configuring RIP**

Open Server Menu → Adv. to configure Dynamic routing.

1. From the MAIN MENU, select Server, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU	
[Server] Port seTting sAve Examine/modify async server :	-		
Enter: select ESC: previous	menu		

2. From the SERVER MENU, select Adv., and then press Enter.

CN2610-8	CN2610-8_19	V2.0	SERVE	ER MENU
Info. Lan [Adv.] Host_ta Examine/modify async serve:			Quit	
Enter: select ESC: previo	us menu			

3. Use the Up/Down arrow keys to move the cursor to the **Routing protocol** pop-up selector. Press **Enter** to see the options. Select **RIP-1** or **RIP-2**. The RIP setting is only for sending packets. For receiving packets, CN2610 supports both RIP-1 and RIP-2.

CN2610-8 CN261	10-8_19 V2.0	
Info. Lan <mark>[Adv.]</mark> Host_table R Examine/modify async server advan		
ESC: back to menu Enter: select	t	
RADIUS server IP RADIUS key UDP port <1:1645 2:1812> Enable RADIUS accounting		]
SNMP community name SNMP trap server IP address	[public [	] ]
Ethernet IP forwarding Routing protocol	[no ]   <u>None</u>   [None ] RIP-1     RIP-2	
TCP retransmission timeout SIO data transfer timeout	[ ]++: 50 - 60000 ms) [ ] (range: 0 - 1000 ms)	

4. Press Esc to return to the MAIN MENU.

# **Configuring the Static Routing Table**

Although RIP-1 and RIP-2 periodically update routing tables between different routers, you still need to add routing entries in the routing table for routes only directed to you.

Open Server Menu  $\rightarrow$  Route\_table to configure the static routing table.

1. From the MAIN MENU, select Server, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
	g sAve Utility Restart Exit server node/table configuration	
Enter: select ESC: p	previous menu	

2. From the SERVER MENU, select Route\_table and then press Enter.

Info. Lan Adv. Host_table <mark>[Route_table]</mark> User_table Quit Examine/modify the routing table	
Enter: select ESC: previous menu	

3. Use the tab and arrow keys to move the cursor to configure **Gateway**, **Destination**, **Netmask**, and **Metric**. Each item is described in detail below the figure.

CN2610-8		CN2610-8_19	V2.0	
	Adv. Host_tab odify the routing	le <mark>[Route_table]</mark> g table	User_table	Quit
ESC: back	to menu Enter:	select		
Entry	Gateway	Destination	Netmask	Metric
01	[	][	][	] [01]
02	]	][	][	] [01]
03	]	][	][	] [01]
04	]	] [	][	] [01]

#### **Setting Up Routing**

Setting	Value	Notes	Necessity
Entry	01-32	A maximum of 32 entries are allowed.	Fixed
Gateway	XXX.XXX.XXX.XXX	The IP address of the next-hop router.	Required
Destination	xxx.xxx.xxx.xxx	The host IP address or network address of the route's destination.	Required
Netmask	XXX.XXX.XXX.XXX	The destination network's netmask.	Required
Metric	1-15	The number of hops from the source destination.	Required

4. Press **Esc** to return to the **MAIN MENU**.

# **Static Routing Examples**

Configuring Routes to the Internet



For this example, the Notebook PC dials in to the CN2610 to request a connection to Internet host 210.48.96.9 (for example), which is not on local network 203.67.6. This causes CN2610 to act as a router and send the datagram to the default next-hop router, 203.67.6.254. In this case we should add the default gateway IP address (203.67.6.254) to the routing table, as shown in the following figure, to handle hops to any destination beyond the local network (203.67.6).

CN2610-8		CN2610-8_	19 V2.0		
	an Adv. Host_t modify the rout		able] User_tab	ole Qu	it
ESC: bac	k to menu Ent	er: select			
Entry 01 02 03	Gateway [203.67.6.254 [ [	Destinatior ] [0.0.0.0 ] [ ] [		] ] ]	Metric [01] [01] [01]

# Configuring Routes to the Internet and Intranet



For this example, in addition to sending requests to the Internet, dial-in users can make requests to Intranet hosts 202.65.66.4 or 202.65.66.5, which are on network 202.65.66 (located outside network 203.67.6). In this case, add a route entry for the next-hop router, 203.67.6.252, that delivers requests to network 202.65.66. The metric hop in this case is 2 route hops.

CN2610-8		CN2610-8_19 V2.0	
	n Adv. Host_t modify the rout	able [Route_table] User_table Quit ing table	
ESC: back	to menu Ent	er: select	
Entry	Gateway	Destination Netmask Me	etric
01	[203.67.6.254		[01]
02		] [203.65.66.0 ] [255.255.255.0 ]	[01]
03	[	][]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]	[01]

### **Configuring Multiple-Point Routes**



For multi-location enterprises, CN2610 can be placed in different branch offices and used as both a multi-point router and remote access server. When hosts (e.g., the Web/FTP and E-mail/News servers shown in the figure) send requests to hosts on another network, such as 202.6.6 or 201.2.2, CN2610 delivers the request to the remote end CN2610, 202.6.6.254 or 201.2.2.254, as the next-hop router. Requests to Internet hosts are still sent through router 203.67.6.254 as the next-hop router.

For this example, assume that the PPP source and destination IPs of modems 1, 2, 3, and 4 are:

	Source IP	Destination IP		Source IP	Destination IP
Modem 1	203.67.6.250	202.6.6.250	Modem 3	202.6.6.250	203.67.6.250
Modem 2	203.67.6.249	201.2.2.249	Modem 4	201.2.2.249	203.67.6.249

In this case, you will need to add three entries to the routing table, as shown below.

CN2610-8			CN2610-8_1	9	V2.0		
	an Adv. Host_t modify the rout			ole	] User_table	Qu:	it
ESC: back	k to menu Ent	er	: select				
Entry	Gateway		Destination		Netmask		Metric
01	[203.67.6.254	]	[0.0.0.0	]	[0.0.0.0	]	[01]
02	[203.67.6.250	]	[202.6.6.0	]	[255.255.255.0	]	[01]
03	[203.67.6.249	]	[201.2.2.0	]	[255.255.255.0	]	[01]
04	[	]	[	]	[	]	[01]

### Save

When exiting the **SERVER MENU**, you will be prompted to save settings. Press **Y** to save.

CN2610-8	CN2610-8_19	V2.0	SERVER	MENU
	. Host_table Route_table async server basic config		Quit	
Enter: select	ESC: previous menu			
	Warning ! You had modified the con Would you save it now ? 'Y: yes	figuration wit	hout saving.	

You may also save all settings from the **MAIN MENU** by selecting **sAve** and then pressing **Enter**. Press **Enter** again to save, and any other key to cancel.



### Restart

1. From the MAIN MENU, select Restart.

CN2610-8		CN2610-8_19 V2.0	MAIN	MENU
	5	sAve Utility [Restart] Exit stem or selected async ports		
Enter:	select ESC:	previous menu		
Enter:	select ESC:	previous menu		

2. Select System and then press Enter to restart the system and terminate the Telnet session.

CN26	10-8		CN261	0-8_19	V2.0						
	-	Port Qu the Asyn	iit c Server								
ESC:	back	to menu	Enter:	select							
	+									++	
	_					ning !!!					
	Rea	start sys				. ports an		all	status	value	
			` E	nter: c	ontinue	ESC: (	cancel				
	+									+	

# **Administrative Utilities**

In this chapter, we show how to use CN2610 administrative utilities, which include **Ping** (to see if a LAN host is still active), and how to get information with **Monitor**  $\rightarrow$  **Line**, **Monitor**  $\rightarrow$  **Network**, **Monitor**  $\rightarrow$  **Async**, **Monitor**  $\rightarrow$  **Routing**, and **Monitor**  $\rightarrow$  **PPP-Trace**.

The following topics are covered in this chapter:

#### **D** Ping

#### □ Monitor

- ➤ Line
- > Network
- Async
- Routing
- > PPP-Trace

#### **Diagnostic**

#### **Upgrade**

- Upgrading with the Windows Utility
- Console Terminal Upgrade
- Upgrading through the Serial Console
- Remote RCP Upgrade
- **Export** 
  - Console Terminal Export
  - Remote RCP Export
- □ Import
  - Console Terminal Import
  - Remote RCP Import
- **Default**

### Ping

Ping is used to test network hardware connectivity and whether a network host is active.

1. From the MAIN MENU, select Utility, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
Server Port seTtin Async server utilit	g sAve <mark>[Utility]</mark> Restart Exit ies	
EEnter: select ESC:	previous menu	

2. From the UTILITY MENU, select Ping, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	UTILITY MENU
[Ping] Monitor Ping a host	Diagnostic Upgrade Quit	
Enter: select	ESC: previous menu	

3. Enter the target host IP address or target host name, and then press Enter.

CN2610-8	CN2610-8_19 V2.0
[Ping] Monitor Diagnos <sup>;</sup> Ping a host	tic Upgrade Quit
ESC: back to menu Ent	er: select
64 bytes from 192.168.1.	a bytes 3: icmp_seq=0. time=0 ms 3: icmp_seq=1. time=0 ms 3: icmp_seq=2. time=0 ms

4. Press **Esc** to return to **Ping**.

# **Monitor**

The **Monitor** utility allows you to monitor serial line status (**Line**), network status (**Network**), serial transmission flow (**Async, async-Setting**), routing, and **PPP trace**.

1. From the MAIN MENU, select Utility, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
Server Port seTting Async server utiliti	sAve <mark>[Utility]</mark> Restart Exit es	
Enter: select ESC:	previous menu	

2. From the UTILITY MENU, select Monitor, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	UTILITY	MENU
Ping [Monitor] Dia Monitor async serve	gnostic Upgrade Quit r status		
Enter: select ESC:	previous menu		

3. Each item is discussed in the following subsections.



### Line

1. From the MONITOR MENU, select Line, and then press Enter.

CN2610-8 CN2610-8_19 V2.0	MONITOR	MENU
[Line] Network Async async-Setting Routing PPP-Trace Quit Monitor asynchronous port connective utilization		
Enter: select ESC: previous menu		

2. The **Line** page shows the status of each port.

CN261	0-8		CN2610-8_19 V2.0
[ <b>Line</b> Monit	-	-	e async-Setting Routing PPP-Trace Quit port connective utilization
ESC:	back to	menu	Enter: select
Port 01 02 03 04 05 06 07 08	Type PPP TERM_BIN RTELNET ASPP TERM_BIN RAW PRN FIXTTY ASPP	39Sec 39Sec 39Sec 39Sec 39Sec 39Sec 39Sec	select protocol listen listen select protocol listen #S1:listen S2:listen
09	RAW UDP		

**Type** The current operation mode of the port (set in **PORT MENU**  $\rightarrow$  **Mode**).

Idle The amount of time the port has been idle.

**Status** The current status of the port. (If a host is connected to this port, then the host's IP address is displayed in this column.)

3. Press **Esc** to return to **Line**.

### Network

1. From the **MONITOR MENU**, select **Network**, and then press **Enter**.

Line [Network] Monitor Network p ESC: back to men ETHERNET: Receiv	vrotocol sta u Enter: s		Routing	PPP-Trace	Quit	
		elect				
ETHERNET: Receiv	ed 636					
PPP: Receiv	red 0	_			Sent Sent	106 27
RDisca IP: Receiv RDisca	ed 209		rSum 0 DRoute 0		SDiscard Sent SDiscard	0 104 0
ErrHea ICMP: Receiv REchoR	red 9	Eri	rProto O		ErrAddr Sent SEchoReq	0 0 0
REchoR UDP: Receiv ErrHea	red 4	Eri	rPorts 0		SEchoRply Sent	0 18
TCP: Receiv ErrHea CurrEs	red 55 der 0	Eri	rPorts 0 ens 0		Sent ReSent	86 1

#### **Ethernet statistics**

Received: Sent:	Total number of input datagram packets received from the Ethernet. Total number of output datagram packets delivered to the Ethernet.
<u>PPP statistics</u> Received: RDiscard: ErrSum: Sent:	Received IP datagram packets. Received but discarded IP datagram packets. Checksum error packets. Sent IP datagram packets.
SDiscard:	Sent but discarded IP datagram packets.
<u>IP statistics</u> Received: RDiscard: ErrHeader:	Received IP datagram packets. Received but discarded PPP datagram packets. Received but discarded IP datagram packets due to errors in IP headers.
SNoRoute: ErrProto:	Received IP datagram packets for wrong route. Locally addressed IP datagram packet received successfully but discarded for not matching one of TCP, UDP, ICMP protocols offered by CN2500.
Sent: SDiscard: ErrAddr:	Sent IP datagram packets. Sent but discarded IP datagram packets. Sent datagram packet discarded for invalid destination IP address.
ICMP statistics Received: Sent: REchoReq: REchoRply: SEchoReq: SEchoRply:	Received packets of ICMP messages. Sent packets of ICMP messages. Received packets from remote Ping request. Responding packets to remote Ping request. Received packets from local ping request. Responding packets to local ping request.
<u>UDP statistics</u> Received: ErrPorts:	Received UDP datagram packets. Received UDP datagram packets with invalid destination port.
	15-4

ErrHeader: Sent:	Received UDP datagram packet with incorrect header. Sent UDP datagram packets.
~	
<b>TCP</b> statistics	
<b>Received:</b>	Total received packets of segments, including error packets.
ErrHeader:	Error packets (e.g., bad TCP checksums).
CurrEstab:	The counter of TCP connections for which the current state is either
	ESTABLISHED or CLOSE-WAIT.
ErrPorts:	Received TCP datagram packets with invalid destination port.
<b>Opens:</b>	TCP connections.
Sent:	Total sent packets, including those on current connections.
<b>ReSent:</b>	Retransmitted packets.

2. Press Esc to return to Network

# Async

1. From the **MONITOR MENU**, select **Async**, and then press **Enter**.

CN2610-	8		CI	N2610-8_19	V2.0		MONITOR MENU
	Network r asynchr		-	2	Routing	PPP-Trace	Quit
Enter:	select	ESC: pr	evious	menu			

CN26	10-8		CN26	10-8_1	9 V2.	0					
Line Mon:	e Network itor asynchr				Routi	ing PI	PP-Tr	ace	Quit		
ESC	back to m	enu Enter:	select	5							
Port 01	TXTotalCnt 180	RxTotalCnt 0	TXBuf 0	RXBuf 0	TXAvg 0	RXAvg 0	DTR ON	RTS ON	DSR	CTS OFF	DCD
02	21	0	231	0	0	0	ON	ON		OFF	
03 04	0 0	0 0	0 0	0 0	0 0	0 0	OFF OFF	ON ON		OFF OFF	
05	21	0	231	0	0	0	ON	ON		OFF	
06 07	0 4	0 0	0 0	0 0	0 0	0 0	ON OFF	ON ON		OFF OFF	
08	0	0	0	0	0	0	OFF	ON		OFF	
09 10	0 21	0 0	0 231	0 0	0 0	0 0	ON ON	ON ON		OFF OFF	

<b>TXTotalCnt:</b>	Total transmitted characters.
<b>RXTotalCnt</b> :	Total received characters.
TXBuf:	Queued data bytes in the transmit raw buffer.
RXBuf:	Received data bytes in the receiving raw buffer.
TXAvg:	Current approx. characters per second transmit rate.
RXAvg:	Current approx. characters per second receiving rate.
DTR:	Current DTR status.
RTS:	Current RTS status.
DSR:	Current DSR status
CTS:	Current CTS status.
DCD:	Current DCD status.

2. Press **Esc** to return to **Async**.

# Routing

1. From the **MONITOR MENU**, select **Routing**, and then press **Enter**.

		,	1			
CN2610	-8	CN2610-8_19	9 V2.0			
Line	-	async-Setting	[Routing] PPP-Tr	ace Qui	lt	
Monito	or current routing	g table				
ESC: 1	oack to menu Ent	er: select				
Iface	Destination	Gateway/HA	Netmask	Metric	Flag	Use
eth0	0.0.0.0	192.168.1.3	0.0.0.0	15	UGT+	0
eth0	201.2.2.0	203.67.6.251	255.255.255.0	1	UGT	0
eth0	203.65.66.0	203.67.6.252	255.255.255.0	2	UGT	0
eth0	0.0.0	203.67.6.254	0.0.0.0	1	UGT	9
eth0	192.168.0.0	192.168.2.180	255.255.0.0	1	U	389
1017	192.168.2.180			0	UH	

Iface: Destination: Gateway:	Name of the physical network interface. Network or host that the router allows you to connect to. IP Address of the gateway you configured for this route. If you are directly connected, this is a local address. Otherwise, it is the address of the machine				
	through which packets must be routed.				
Netmask:	Network pattern of the gateway.				
Metric:	Number of hops to the destination.				
Flags:	State of the route. Valid states are:				
	U up				
	D down				
	G route to a gateway				
	H route to a host				
	T setting in route table				
	R dynamic by RIP				
Use:	Correct number of packets being sent in this route.				

2. Press **Esc** to return to **Routing**.

### **PPP-Trace**

1. From the **MONITOR MENU**, select **PPP-Trace**, and then press **Enter**.

CN2610-8	CN2610-8_19 V2.0	MONITOR MENU
Line Network Async Trace PPP protocol conr	async-Setting Routing nect messages	[PPP-Trace] Quit
Enter: select ESC: pr	revious menu	

2. Use the arrow keys to select the port you wish to trace, and then press **Enter** to select.

CN2610-8		CN2	610-8_	<u>19</u> T	72.0				
Line Network . Trace PPP protoco	-	-	-	Rou	ting	[PPP	-Trace	l Quit	
ESC: back to men	u Ente:	r: sele	Ct						
+									+
	Select								
	*01	02	*03	04	05	*06	07	08	
	09	10	[ 11]	12	13	14	*15	16	
	Enter:	select			cancel			start	
<b>+</b>									

3. After selecting the ports that need monitoring, press **Space** to start.

CN2610-8			CN2610-8_	19 V2.0		
Line Net Trace PPP	-	-	-	Routing	[PPP-Trace]	Quit
ESC: back	to menu	Enter: s	elect			
TRACE POR P01 state: P01 send: (	LCP Req-S		002060000	00000304C0:	230506BE2B92D7	07020802

PPP states for the selected ports are shown. LCP (Link Control Protocol), which is an essential part of the PPP link, is used for establishing, configuring, and testing the data link connection.

4. Press **Esc** to return to **PPP-Trace**.

# Diagnostic

CN2610 Diagnostic Utility, which is used to test async ports, Ethernet controllers, and printer ports, supports the following functions.

- Async port controller and internal loop-back test.
- Ethernet controller, internal and external loop-back test.
- Printer port test.
- 1. From the UTILITY menu, select Diagnostic, and then press Enter.

CN2610-8	CN2610-8_19	V2.0	UTILITY MENU
Ping Monitor [Diagnostic] Loopback test and self-diagnos			
Enter: Select ESC: previous	s menu		

2. If any of these tests fails, contact Moxa to request repair services.

CN2610-8	8 CN2610-8_19	V2.0
_	Monitor <mark>[Diagnostic]</mark> Upgrade Quit ck test and self-diagnose	
ESC: b	back to menu Enter: select	
Asynchr Etherne Etherne	ronous port controller test OK. ronous port loopback test OK. et port controller test OK. et port 1 controller loopback test et port 1 transceiver loopback test	

3. Press **Esc** to restart the system.

# Upgrade

The operating system in CN2610 is kept in the Flash ROM. It can be upgraded using the Windows Utility, from a locally connected CONSOLE Terminal using XMODEM protocol, or from a Unix host using RCP protocol.

### Upgrading with the Windows Utility

One of the main features provided by the Windows Utility is to upgrade firmware. If the CN2610 is connected to a Windows network, this is the simplest method available for upgrading the firmware.

1. Run Upgrade.exe from the CN2610 CD.

Server Tool Help							
Name	Upgrade firmware	IP Address	Serial No	MAC address	Firmware Ver.		
CN2510-8 5631	CN2510-8	192.168.127.254	5631	00:90:E8:00:56:31	2.0		

2. Select the CN2610 server by clicking the button on the toolbar. If the CN2610 server is at a remote site, use to add it to the list.

Upgrade NPort Serv	er	×
Enter the file to up	ograde.	
Server Name:	CN2510-8_5631	
IP address:	192.168.127.254	
Serial No:	5631	
	Browse	
	OK Cancel	

3. Specify the new firmware file used to upgrade. Click OK to start.

#### **Administrative Utilities**

Upgrade NPort Serve	r	×
Enter the file to up	grade.	
Server Name:	CN2510-8_5631	
IP address:	192.168.127.254	
Serial No:	5631	
CN2510_2.0.ROM	Browse OK Cancel	

4. When the **Download ok!** window appears, click **OK**.

NPort Server Upgrade	X				
Server Name : CN2510-8_5631					
Serial No.: 5631					
Server IP address : 192.168.127.254					
Downloading					
30%					
NPort Server firmware upgrade utility 🗵					
Download ok!					
ОК					

### Console Terminal Upgrade

1. Run Start → Programs → PComm Terminal Emulator. (If you cannot find the software on your computer, install PComm Lite from the CN2610 CD, and then run the program.)

m PComm Lite 2000(XP) Ver 1.2	🕨 🧇 Library Programming Guide
	🧼 Library Reference
	🕸 PComm Diagnostic
	🛒 PComm Monitor
	😼 PComm Terminal Emulator

2. Use an RJ45-DB9 female cable to connect to the console port, and then turn on CN2610. Start the PComm Terminal program and then open a new connection.

#### Administrative Utilities

#### **CN2610 User's Manual**



3. On the Communication Parameter page, select COM2 for Ports, 115200 for Baudrate, 8 for Data Bits, None for Parity, and 1 for Stop Bits.

P	roperty	×
	Communication Paramete	r Terminal File Transfer Capturing
	COM Options	
	Ports :	
	Baud Rate :	115200 💌
	Data Bits :	8
	Parity :	None
	Stop Bits :	1
	Flow Control	Output State
	XON/XOFF	RTS ON C OFF
		OK Cancel

4. On the **Terminal** page, select **VT100** for **Terminal Type**, and then press **Enter**.

Property		×
Communication Parameter	Terminal File Transfer Ca	apturing
Terminal Type :	VT100	
Dumb Terminal Option : Transmit		
🗖 Local Echo		
Send 'Enter' Key As:	CR-LF	
Receive		
CR Translation :	No Changed 🔄	
LF Translation :	No Changed 🔽	
	ОК С	Cancel

5. Type 1 to choose ansi/VT100 terminal type, and then press Enter to enter the MAIN MENU.

PComm Terminal Emulator - COM1,115200,None,8,1,¥T100		
Profile Edit Port Manager Window Help		
COM1,115200,None,8,1,¥T100		
Async Server CN2510-8 Console terminal type (1: ansi/vt100, 2: vt52) : 1		

6. Use the following keystrokes to navigate CN2610's console utility.

Action	Key
Move	[Up/Down/Left/Right] Arrow Key or [Tab] Key
Jump to next menu, or Select item	[Enter] Key
Return to previous menu, or Close pop up selector	[Esc] Key
Shortcut Key	Capitalized letter of the word

# Upgrading through the Serial Console

1. From the MAIN MENU, select Utility, and then press Enter.

PComm Terminal Emulator - COM1,115200,None,8,1,¥T100			
Profile Edit Port Manager Wine	dow <u>H</u> elp		
a .k s>>	Brk Brk 2B		
COM1,115200,None,8,1,¥T1	00		
CN2510-8	CN2510-8_5631 V2.0	MAIN MENU 🔼	
DTR RTS Server Port seTti Async server utilit	ng sAve <mark>(Utility)</mark> Restart Exit ;ies		
Enter: select ESC:	previous menu		

2. From the UTILITY MENU, select Upgrade, and then press Enter.

PComm Terminal Emulator -	COM1,115200,None,8,1,¥T100		
Profile Edit Port Manager Wind	low <u>H</u> elp		
a 🖬 🕅 🖻 ≽ 🖬 🗟	Brk Brk 2B		
COM1,115200,None,8,1,VT1	00	<u>_   ×</u>	
CN2510-8	CN2510-8_5631 V2.0	UTILITY MENU 🔼	
DTR         Ping Monitor Diagnostic [Upgrade] Quit           RTS         Upgrade operational system program			
Enter: select ESC: previous menu			

3. Select Console port (using XMODEM) for Upgrade type, and then press Ctrl-U to start.

PComm Terminal Emulator - COM1,115200,None,8,1,VT100				
Profile Edit Port Manager Window Help				
🗐 🖃 🕅 🚰 📚 Brk 🔊 2B				
COM1,115200,None,8,1,VT100				
CN2510-8 CN2510-8_5631 V2.0				
DTR Ping Monitor Diagnostic [Upgrade] Quit RTS Upgrade operational system program				
ESC: back to menu Enter: select				
Upgrade via [Console port (using XMODEM)] Host name/IP address [ File name [ User name [ ]	1	1		
Press CTRL-U to start				

4. When you see **Start loading file ...** near the bottom of the screen, click the **Port Manager** menu.

PComm Terminal Emulator - COM1,115200,None,8,1,¥T100				
Pro <u>f</u> ile <u>E</u> dit <u>P</u> ort Manager <u>W</u> indow <u>H</u> elp				
🗐 🖬 🛃 🗃 📚 🖼 😹 Brk 🔜 28				
COM1,115200,None,8,1,¥T100				
CN2510-8 CN2510-8_5631 V2.0				
DTR Ping Monitor Diagnostic [Upgrade] Quit RTS Upgrade operational system program				
ESC: back to menu Enter: select				
Upgrade via [Console port (using XMODEM)] Host name/IP address [ File name [ User name []]	1			
Press CTRL-U to start				
Start loading file	_			
State:OPEN CTS DSR RI DCO Ready	11.			

5. Select **Port Manager**  $\rightarrow$  **File Transfer** from the menu bar.

<b>B</b> PCr	nmm T	erminal Emulator - CO	M1.115200.Non	e.8.1.VT10	n		
Profile		Port Manager Window	Help				
	<b>B</b> M1,11	Close	Ctrl+Alt+O Ctrl+Alt+L Ctrl+Alt+A				
	CN251  Ping Upgr	Port Enable Port Disable	Ctrl+Alt+E Ctrl+Alt+Q	)-8_5631 ] Quit	₩2.0		·····
	ESC: U	File Transfer	r	Console p	port (using XMODEM))	]	]
	S	ress CTRL-U to sta tart loading file					
State:	OPEN	CTS DSR RI DCD File	transfer				11.

6. In the File Transfer window select **XModem-CheckSum** for **Protocol** and **Transmit** for **Direction**, and then click **OK**, The file will be transmitted to the CN2610.

File Transfer	
Protocol	Direction
C ASCI	C Transmit
C Kermit	C Receive
C XModem-1KCRC	
XModem-CheckSum	
C XModem-CRC	
C YModem	ок
O ZModem	Cancel

7. Locate the upgrade file, CN2610\_2.ROM for example, and then click **Open** to transfer the firmware to the CN2610.

Transmit File	<u>? ×</u>
Look jn: 退 3.5 Floppy (A:)	- 🖬 📩 🖃
CN2510_2.0.ROM	
File <u>n</u> ame: CN2510_2.0	<u>O</u> pen
Files of <u>type:</u> *.*	Cancel

8. The CN2610 will store the new firmware in its Flash ROM, and then restart the entire system, completing the Firmware Upgrade procedure.

Transmit File		
Protocol :	XModem-CheckSum	
Port :	СОМ1	
File Name :	MXPCI.SYS	
File Size :	0	
Transmit Length :	p	
Cancel		

# Remote RCP Upgrade

RCP (Remote Copy Program) is the Unix utility for copying files over the Ethernet. RCP allows transparent copying of files between hosts, without the need to enter passwords. This can be done using the security file .rhosts.

NOTE	<b>TE</b> The format of RCP is as follows: <i>rcp</i> from to				
	The from and to arguments can either be specified as local files or remote files. To specify a				
remote file, use the format: user@hostname:filename. If the remote login ID is					
	the local login ID, then user@ can be omitted (i.e., only hostname:filename is required).				

**NOTE** The security file .*rhosts* is a plain text file that must reside in the local user's home directory, and must be owned by that user. This file identifies those users who are "equivalent" to the local user, and are given access without needing to enter a password.

NOTE The file must contain at least a host, and if the login ID is different on the remote host, it must also contain the login ID. This sample .rhosts file is for the user john on the host sun. The following three accounts are considered "equivalent" accounts. The user has accounts on moxal and moxa3 with the same login ID, and has an account on moxa2 as johnwu.
# This comment line is ignored by the operating system.

Moxal.com.tw john Moxal.com.tw john Moxal.com.tw johnwu Moxal.com.tw john.

- 1. Login to your UNIX/LINUX host. For example, login to 203.67.8.22 as user "john".
- 2. Copy the CN2610 firmware file, e.g., "CN2610.rom", to the current directory.
- Create a file named .rhosts in this directory. Enter CN2610's IP address, e.g., 192.168.205.21, in the .rhosts file, or enter CN2610's domain name if it's defined in your /etc/hosts file.
- 4. Telnet CN2610's IP address.
- 5. After entering CN2610's MAIN MENU, select Utility  $\rightarrow$  Upgrade.

Ping Monitor Diagnostic [Upgrade] Quit	
Upgrade operational system program	
Enter: select ESC: previous menu	

6. In the Upgrade via column, select Network host (using RCP).

CN2610-8	CN2610-8	_19 V2	.0			
Ping Monitor Diagnostic Upgrade operational system pr		Quit				
ESC: back to menu Enter: se	elect		+			+
			Console	port	(using	XMODEM)
Upgrade via	[Console	e port (	Network	host	(using	RCP)
Host name/IP address	; [		+			+
File name	[					]
User name	[		]			
Press CTRL-U to start						

- 7. In Host name/IP address, enter the IP address of the UNIX/LINUX host.
- 8. In File name, enter the CN2610 firmware file name in the UNIX/LINUX host.
- 9. In User name, enter the user name for logging into the UNIX/LINUX host.
- 10. Press CTRL-U to start.
- 11. After downloading, CN2610 will restart the system.



### **Export**

Settings can be exported to a file to backup the configuration, or to set up another CN2610 with the same configuration. There are two types of exported file settings: Console Terminal or Remote RCP.

#### Console Terminal Export

- 1. Run Start → Programs → PComm Terminal Emulator. Follow the steps given earlier to enter the MAIN MENU.
- 2. From the MAIN MENU select seTting, and then press Enter.

PComm Terminal Emulator - COM1,115	5200,None,8,1,¥T100	
Profile Edit Port Manager Window Help		
🛃 🖬 🕅 🗃 🚵 🖼 👼 Brk 🔜	28	
COM1,115200,None,8,1,¥T100		
CN2510-8	CN2510-8_5631 V2.0	MAIN MENU 🔼
DTR Server Port [seTting] sAve RTS Export or import configurat	-	
Enter: select ESC: previou	s menu	

3. From the **SETTING MENU** select **Export**, and then press **Enter**.

BPC	omm Terminal I	Emulator - CON	11,115200,N	lone,8,1,¥T100		
Profile	e <u>E</u> dit <u>P</u> ort-Man	ager <u>W</u> indow	Help			
-		≽ 🔄 🐱 Brk	2B			
<b>S</b> c	OM1,115200,Noi	ne,8,1,¥T100				
	CN2510-8		CN2	2510-8_5631	V2.0	SETTING MENU 🔺
DTR RTS	(inpere) impere scilute (uite					
	Enter: sele	ct ESC: pr	evious mer	nu		

4. Select Console port (using XMODEM) for upgrade type, and then press Ctrl-U to start.
| PComm Terminal Emulator - COM1,115200,None,8,1,VT100                         |   |          |
|--|---|----------|
| Profile Edit Port Manager Window Help  |   |          |
|  |   |          |
| COM1,115200,None,8,1,¥T100   |   |          |
| CN2510-8 CN2510-8_5631 V2.0  |   | <b>_</b> |
| DTR [Export] Import Default Quit<br>RTS Export current configuration to file |   |          |
| ESC: back to menu Enter: select  |   |          |
| Export via [Network host (using RCP) ]                                       |   |          |
| Host name/IP address [   | 1 |          |
| File name [  |   | 1        |
| User name [ ]  |   |          |
| Press CTRL-U to start  |   |          |

5. When you see **Start loading file ...** near the bottom of the screen, click the **Port Manager** menu.

PComm	n Terminal Emulator - COM1,11	5200,None,8,1,¥T10	0		
Profile <u>E</u> d	it <u>P</u> ort-Manager <u>W</u> indow <u>H</u> elp				
3	🔣 🖻 ≽ 💽 🐺 Brk 📖	2B			
👪 COM1,	115200,None,8,1,¥T100				
	510-8	CN2510-8_5631	V2.0		
	p <b>ort]</b> Import Default Qu port current configuratio				
ES	C: back to menu Enter:	select			
	Export via	[Console ]	port (using XMOD	EM) ]	
	Host name/IP address	]		1	
	File name User name	l	1		1
	Press CTRL-U to start		1		
	Start loading file				

6. Select **Port Manager**  $\rightarrow$  **File Transfer** from the menu.

<b>B</b> PC	omm T	erminal Fmulator - COI	M1.115200.Non	e.8.1.¥T100					
		Port Manager Vindow	Help						
3			Ctrl+Alt+O Ctrl+Alt+L						
👪 CO	JM1,11	Close All	Ctrl+Alt+A					_ 🗆	×
	CN251  (Expo Expo ESC: E	Port Disable	Ctrl+Alt+E Ctrl+Alt+Q	)-8_5631 Le Donsole p	V2.0  ort (using X ]	NODEM)]	]	]	4
		ress CTRL-U to sta tart loading file		-					

7. In the **File Transfer** window select **XModem-CheckSum** for **Protocol**, and **Receive** for **Direction**. Selecting **OK** causes the terminal to receive settings from the CN2610.

File Transfer	
Protocol	Direction
C ASCI	C Transmit
C Kermit	Receive
C XModem-1KCRC	
XModem-CheckSum	
C XModem-CRC	
C YModem	ок
C ZModem	Cancel

8. Choose the backup filename, CN2610.bak for example, and then click Save.

Receive File	? ×
Save jn: 🖙 WINXP (F:) 💽 🖙 🖽	
Documents and Settings	
Contraction Program Files	
C WINXP	
WUTemp	
File name: CN2501.bak Sa	ve
Save as type: ** Can	

9. CN2610 will export settings to the file.

### Remote RCP Export

As we pointed out earlier, RCP is a file transfer protocol that does not require a password.

- 1. Login to your UNIX/LINUX host. For example, login to 203.67.8.22 as user john.
- 2. Create a file named .rhosts in this directory. Enter CN2610's IP address, e.g., 192.168.205.21, or CN2610's domain name (if it's defined in your /etc/hosts file), in the .rhosts file.
- 3. Telnet CN2610's IP address.
- 4. After entering CN2610's MAIN MENU, select setting  $\rightarrow$  Export.
- 5. In the Export via column, select Network host (using RCP).
- 6. Enter the UNIX/LINUX host's IP address for Host name/IP address.
- 7. Enter CN2610's firmware file name on the UNIX/LINUX host for File name.
- 8. Enter the user name required to login to the UNIX/LINUX host for User name.
- 9. Press **CTRL-U** to start.



### Import

Saved settings can be imported back to the CN2610. There are two settings to choose from for importing from a file, **Console Terminal** or **Remote RCP**.

#### **Console Terminal Import**

- 1. Run Start → Programs → PComm Terminal Emulator. Follow the steps given earlier to enter the MAIN MENU.
- 2. From the MAIN MENU, select seTting, and then press Enter.

PComm Terminal Emulator - COM1,115	200,None,8,1,¥T100	
Profile Edit Port Manager Window Help		
🛃 🖬 🕅 🛃 🚵 🚳 🗟 👘 📠	28	
COM1,115200,None,8,1,¥T100		
CN2510-8	CN2510-8_5631 V2.0	MAIN MENU 🔼
DTR Server Port [seTting] sAve RTS Export or import configurati		
Enter: select ESC: previous	menu	

3. From the SETTING MENU, select Import, and then press Enter.

🚰 PComm Terminal Emu	lator - COM1,115200,None,8,1,¥T100	
Profile <u>E</u> dit <u>P</u> ort Manager	<sup>r</sup> <u>W</u> indow <u>H</u> elp	
	S S Brk Brk 2B	
🔀 COM1,115200,None,8	3,1,¥T100	
CN2510-8	CN2510-8_5631 V2.0	SETTING MENU 🔼
	Default Quit ration from previously saved file	
Enter: select	ESC: previous menu	

4. Select Console port (using XMODEM) for Import type and then press Ctrl-U to start.

P	Comm Terminal Emulator - COM1,1	15200,None,8,1,¥T100		
Profil	e <u>E</u> dit <u>P</u> ort Manager <u>W</u> indow <u>H</u> el	p		
	🕞 🔣 📑 🎥 🔂 🐱 Brk	10 2B		
<b>1</b>	COM1,115200,None,8,1,¥T100			
	CN2510-8	CN2510-8_5631 V2.0		▲
DTR RTS				
	ESC: back to menu Enter	: select		
	Import via	[Console port (using XMODEM)]		
	Host name/IP addres	s [	1	
	File name	[		1
	User name	[ ]		
	Press CTRL-U to start			

5. When you see **Start loading file ...** near the bottom of the screen, click the **Port Manager** menu.

I	S PC	omm Terminal Emulator - COM1,11520	0,None,8,1,	VT100				
	Pro <u>f</u> ile	<u>E</u> dit <u>P</u> ort Manager <u>W</u> indow <u>H</u> elp						
		🖬 🕅 🛃 💽 😹 Brk 🔊 2E	3					
I	😹 CC	DM1,115200,None,8,1,¥T100					_ 0	×
I		CN2510-8 C	N2510-8_	5631 V2.O				
	DTR RTS	Export [Import] Default Quit Import configuration from prev	riously s:	aved file				
I		ESC: back to menu Enter: sel	lect					
I		Import via	[Conse	ole port (u	using XMODEM	1		
I		Host name/IP address	[			1		
I		File name	[				1	
I		User name	[		1			
		Press CTRL-U to start						
		Start loading file						

- PComm Terminal Emulator COM1,115200,None,8,1,VT100 Profile Edi Port Manager Window Help Ctrl+Alt+O Open - 🕄 Close Ctrl+Alt+L Ctrl+Alt+A COM1,11 Close All - 🗆 🗵 CN251 -8\_5631 V2.0 \* Γ Port Disable Ctrl+Alt+Q DTR [Expo Properties RTS Expo Clear Screen ESC: File Transfer Send Pattern onsole port (using XMODEM)] E 1 Send Break 1 Capture ] Double Byte Character Press CTRL-U to start ... Start loading file ...
- 6. Select **Port Manager**  $\rightarrow$  **File Transfer** from the menu.

7. In the **File Transfer** window select **XModem-CheckSum** for **Protocol** and **Transmit** for **Direction**. This causes the file to be sent from the terminal to CN2610. Click **OK**.

File Transfer	
Protocol	Direction
C ASCI	• Transmit
C Kermit	C Receive
C XModem-1KCRC	
C XModem-CheckSum	
C XModem-CRC	
C YModem	ок
C ZModem	Cancel

8. Choose the backup filename, CN2610.bak for example, and then click Open.

Transmit File				? ×
Look jn: 🥯	WINXP (F:)	•	🗢 🔁	<b>d</b> 🗰
Document	s and Settings			
Program F	iles			
C WINXP				
C WUTemp				
1				
File <u>n</u> ame:	CN2510.bak			<u>O</u> pen
<b>F</b> 1 <b>Z</b>				
Files of type:	**		<b>_</b>	Cancel

9. CN2610 will import settings from the file.

### **Remote RCP Import**

As we pointed out earlier, RCP is a file transfer protocol that does not require a password.

- 1. Login to your UNIX/LINUX host. For example, login to 203.67.8.22 as user john.
- 2. Create a file named .rhosts in this directory. Enter CN2610's IP address, e.g., 192.168.205.21, or CN2610's domain name (if it's defined in your /etc/hosts file), in the .rhosts file.
- 3. Telnet CN2610's IP address.
- 4. After accessing CN2610's MAIN MENU, select seTting → Import. In Import via column, select Network host (using RCP).
- 5. Enter the UNIX/LINUX host's IP address for Host name/IP address.
- 6. Enter CN2610's firmware file name on the UNIX/LINUX host for File name.
- 7. Enter the user name required to login to the UNIX/LINUX host for User name.
- 8. Press **CTRL-U** to start.



### Default

CN2610 can restore default settings if necessary. Note that the IP address will not be changed to default.

1. From the MAIN MENU select seTting, and then press Enter.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
Server Port [seTting] Export or import config	sAve Utility Restart Exit uration	
Enter: select ESC: pr	evious menu	

2. From the SETTING MENU, select Default, and then press Enter.

Export Import [Default] Quit Load the factory setting	CN2610-8	CN2610-8_19	V2.0	SETTING	MENU
Entern gelegt EGG, provident menu		-			
Enter: select ESC: previous menu	Enter: select ESC:	previous menu			

3. Press **Enter** to confirm that you wish to erase all settings and restore the default settings. Press any key to cancel.



# **A** Troubleshooting

In this appendix, we give solutions to various problems you may come across when using CN2610.

The following topics are covered in this appendix:

- **Console Terminal Problems**
- **U** How to Configure Dual Ethernet Ports
- **D** Terminal Port Problems
- □ How to Save CN2610's Parameters
- **ASPP Port Problems**
- □ SLIP/PPP Connection Problems
- **RADIUS Problems**

### **Console Terminal Problems**

#### Problem: No message is displayed on the console terminal.

#### Solutions:

- > Check to see if the terminal is set to 115200 bps, 8 data bits, no parity, 1 stop bit.
- Check to see if the RS-232 cable is wired correctly. The console needs CTS/DCD signals to trigger. Refer to the "Cable Wiring" section in Appendix D.
- > The console may be blocked waiting for an event. Press ESC to try unblocking.

#### Problem: Garbage characters are displayed on the console terminal.

#### Solutions:

- Check to see if the terminal is set to 115200 bps, 8 data bits, no parity, 1 stop bit.
- Check to see if terminal type setting is correct. The console only accepts ansi/vt100 or vt52.
- Press Ctrl-L to refresh the display.

#### Question: How can I restore CN2610 to the factory default settings?

#### Solution:

➤ After entering the Console window, select setting → Default, and then press Enter. The CN2610 will be restored to the factory default settings.

CN2610-8	CN2610-8_19 V2.0	MAIN MENU
Server Port <mark>[seTti</mark> Export or import co	ng] sAve Utility Restart Exi nfiguration	lt
Enter: select ESC:	previous menu	
CN2610-8	CN2610-8_19 V2.0	
CN2010-8	CN2010-8_19 V2.0	
Export Import [Def Load the factory set		
ESC: back to menu	Enter: select	
+		+
Ente	r to load factory setting, othe	
		<b>--</b>

Question: If I forget the password for my CN2610, what should I do?

#### Solution:

Press the "Password Reset button" on the CN2610's front panel for more than 5 seconds. The password stored in the Flash ROM will be erased. Refer to Chapter 1 for more details.



Problem: I used Telnet Console in a Windows 9x/NT environment, but I couldn't use the arrow keys to select options.

#### Solution:

In Telnet, click the Terminal menu, choose Preferences, and then select VT100 Arrows in the Terminal Preferences window. Click OK to return to the MAIN MENU. The arrow keys should work properly now.

📑 Telnet - 19	2.168.2.1	80			
<u>Connect</u> <u>E</u> dit	<u>T</u> erminal	<u>H</u> elp			
Terminal Prefe Terminal Optic Local Ech Blinking C Ø Block Curs Ø VT100 Arr	Stop Lo rminal	ogging	Si/ut100, CK Cancel <u>H</u> elp	2: ut52)	: 1

### **Configuring Dual Ethernet Ports**

Question: CN2610 has 2 Ethernet ports. How do I configure these 2 Ethernet ports? Should I set up CN2610's 2 Network Interface Cards in different networks, or set 2 different IP addresses in the same NIC?

#### Solutions:

1. MOXA strongly recommends the following: connect 2 different LAN ports to 2 different physical networks as shown.



MOXA does not recommend that you setup 2 LAN ports in the same physical network and subnet. You might encounter unpredictable outcomes. We suggest that you connect 2 different NICs to different networks.



- 2. First, connect CN2610's LAN1 and LAN2 to the same hub or switch. Configure IP addresses as 192.168.0.1 and 192.168.0.2, and subnet as 255.255.255.0.
- 3. Connect one of the hosts on the network to the same hub or switch, and configure its IP address as 192.168.0.5, and subnet as 255.255.255.0.
- 4. When you set up CN2610 like this, we assume that you expect the 2 NICs to be load balanced. This generally means that both connections transmit at the same time. However, when a CN2610 is configured in this way, there is only 1 IP that is involved in the transmission.
- 5. You might have another expectation when setting up the CN2610: to setup a fail over (redundant) connection. Generally, redundancy means that a NIC has 2 network interfaces connecting to 2 different switches or hubs. When one of the connections, switches, or hubs fails, the other one will take over. This definition of redundancy differs from the one used in MOXA CN2610. MOXA CN2610 has 2 MAC addresses, and 2 IP addresses, which are independent from each other unlike the general definition in which only 1 MAC address and 1 IP is involved.

### **Terminal Port Problems**

Problem: When a terminal is connected to one of CN2610's serial ports, no message is displayed on the terminal attached to the CN2610 terminal port when it is powered on.

#### Solutions:

- ➢ One of the possible reasons is that this serial port is configured to **Disable** mode, or to another application mode. Using the Serial Console or Telnet Console, select Port → Mode, and then move the cursor to the Application corresponding to the serial port, and change **Disable** to **Terminal**.
- Check to see if the terminal's serial port is set to the same settings as CN2610's serial port. Use Serial Console or Telnet Console, select Port -> Line, and then move the cursor to the corresponding serial port, and check to see if Speed, Bits, Stop, Parity, FIFO, RTS/CTS, XON/XOFF, and Discon.ctrl settings are the same as the terminal's serial port.
- Check to see if the RS-232 cable is wired correctly. If the port is utilizing RTS/CTS hardware flow control, then the RTS, CTS pins should be included. In this case, a cable with only TxD, RxD, and GND pins will not work.
- The terminal may be unlocked by pressing [Ctrl-S] (Hex Code 0x13) if software flow control is used. Press [Ctrl-Q] (Hex Code 0x11) to relieve it.

### Saving CN2610's Parameters

Question: How can I save CN2610's parameters to recover from unexpected power failures, or to transfer the same parameters to another CN2610?

#### Solutions:

➤ After entering the Console screen, select seTting → Export, and press Enter. Then you can use XMODEM for a Windows host, or RCP for a UNIX host, to save the parameters to a file.

CN2610-8	CN2610-8_19	V2.0	MAIN MENU
Server Port [seTting] Export or import confi		start Exit	
Enter: select ESC: p	previous menu		
CN2610-8	CN2610-8_19	V2.0	SETTING MENU
[Export] Import Defau	 lt Ouit		
Export current configu			
Enter: select ESC: p	previous menu		
CN2610-8	CN2610-8_19	V2.0	
[Export] Import Defau			
Export current configu	ration to file		
ESC: back to menu E	nter: select		
Export via	Consol	le port (using XMOI	DEM)]
Host name/IP	address [		]
File name User name	l ſ	ı	]
ober name			
Press CTRL-U to st	art		

### **ASPP Port Problems**

Problem: The application utilizing the ASPP subroutines could not connect to the CN2610.

#### Solutions:

- ➤ Check to see if the target port's mode is set to ASPP. The connection will fail if the port mode is set to something other than ASPP. After entering the Console screen, select Port
   → Mode, move the cursor to the Application corresponding to the serial port, and set it to Device Control. In the Mode column, select ASPP.
- Moxa provides example programs on the website (<u>www.moxa.com</u>) that can be downloaded.

### **SLIP/PPP Connection Problems**

Problem: Cannot make a SLIP connection to a remote host.

Solutions:

- ➤ Check to see if the CN2610's SLIP port baudrate (in the Port → Line menu) is the same as the remote host's baudrate.
- $\blacktriangleright$  Check to see if data bits = 8.
- > Check to see if the XON/XOFF flow control is the same as the remote site.
- Check to see if the RS-232 cable is wired correctly. If the port is utilizing RTS/CTS hardware flow control, then the RTS, CTS pins should be included. In this case, cables with only pins 2, 3, and 7 will not work.
- > Make sure there is no "getty" or other process using the SLIP port on the remote site.

### **RADIUS Problems**

### Question: What can I do if there is an authentication check failure on the radius server?

#### Solutions:

- > Check to see if the console password is the same as the radius server's radius key.
- ➤ Make sure the password was entered correctly.
- > Make sure the account and password in the login script are correct.
- If the authentication check runs for a long time and then times out, check to see if the RADIUS Server's IP is correct. E.g., set up one port as Rtelnet, telnet CN2610's TCP port from radius, and then telnet CN2610's console and check the Monitor {line} status. Check to see if the remote IP address matches the radius IP address you set in the CN2610.

#### Question: Why cannot I compile radius software on a system running Linux Red hat 5.0?

#### Solutions:

Take the following steps if you compiled RADIUS2.3 on Red hat 5.0 or above:

1. Save makefile-SCO as a file named makefile-LINUX, and then modify the content as follows:

```
#
# make file for LINUX
#
```

LIBS = -lcrypt include Makefile

2. Add two similar line to the shell program "mk\_radius" at read\_os "1". For example, they might appear as follows:

```
read_os
case $ans in
'1')
clear
mk_src
echo "enter lib directory"
cd lib
echo "compiling source program ...."
make
cd ..
echo "linking program ....."
make -f Makefile-LINUX;;
```

### **RADIUS Server**

Managing dispersed serial lines and modem pools for large numbers of users can create the need for significant administrative support. Since modem pools are a link to the outside world, they require careful attention to security, authorization, and accounting. This can best be achieved by managing a single "database" of users, allowing for authentication (verifying user name and password) as well as configuring information which details the type of service to deliver to the user (for example: SLIP, PPP, Telnet, rlogin). Moxa CN2610 Async Server supports RADIUS protocol, which requires only one database for remote user management.

The following topics are covered in this appendix:

- □ What is RADIUS?
  - > Definition
  - Client/Server Architecture
- □ Setting up CN2610
  - Setting up the RADIUS Server IP Address
  - Setting up Port Configuration

#### **Getting up UXIX Hosts**

- Installing the RADIUS Exceution File
- RADIUS Server Configuration
- Basic/Extended Permission Group Setting
- **Getting up Windows NT Hosts**
- **Getting up Windows 2000 Hosts**
- **Getting up Windows 2003 Hosts**

### What is RADIUS?

### Definition

Remote Authentication Dial-up User Service, or RADIUS, is the standard for centralizing the authentication, authorization, and accounting of remote access users.

Here is a brief description of how RADIUS works: When a user dials in to a remote access device, that device communicates with the central RADIUS server to determine if the user is authorized to connect to the LAN. The RADIUS server performs the authentication and responds with the result—either accept or reject. If the user is accepted, the remote access server routes the user onto the network; if not, the RAS will terminate the user's connection. The RADIUS server also provides accounting services if supported by the remote access server.

With RADIUS, a network manager or ISP only needs to maintain a single, central database against which all remote user authentication takes place. This greatly eases the management burden associated with administering large numbers of Dial-in users.

### **Client/Server Architecture**

RADIUS is a type of client-server software. Communication servers, such as CN2610, play an active role, whereas a RADIUS server is passive.

- 1. When a remote host is connected to CN2610, it is prompted to enter its user ID and password.
- 2. After receiving the user ID and password, CN2610 sends the information to a defined RADIUS server. Up to this point, the remote user is still unable to access the network.
- 3. The RADIUS server compares the user ID and password with its internal database, and then uses the internet to respond, either accepting or rejecting.
- 4. If CN2610 receives the "accept" message from the RADIUS server, the remote user is allowed to enter the network. Otherwise, CN2610 will wait for another try, or terminate the connection when a specified time limit has been reached.

### Setting up CN2610

### Setting up the RADIUS Server IP Address

1. From the MAIN MENU, select Server, and then press Enter.



2. From the SERVER MENU, select Adv., and then press Enter.

CN2610-8 CN261	0-8_19	V2.0			
Info. Lan [Adv.] Host_table Rout Examine/modify async server basic			Quit		
ESC: back to menu Enter: select					
RADIUS server IP RADIUS key UDP port <1:1645 2:1812> Enable RADIUS accounting			]		]
SNMP community name SNMP trap server IP address	[public [	++		]	]
Ethernet IP forwarding Routing protocol	[no ] [None ]	<mark>None</mark>     RIP-1     RIP-2			
TCP retransmission timeout SIO data transfer timeout		++: 5 (range: (			

3. RADIUS settings.

RADIUS server IP:[RADIUS server IP address]RADIUS key:[RADIUS password] (must be the same in the RADIUS server)UDP port:[1/2]

Mode 1: An earlier but rather common setting is 1645. If you choose 1645, the authentication has to be set as 1645, and accounting as 1646 in the RADIUS Server.

Mode 2: The latest setting is 1812. If you choose 1812, the authentication must be set as 1812, and accounting as 1813 in the RADIUS Server.

#### Enable RADIUS accounting: [yes/no]

4. Save, and then restart CN2610.

### Setting up Port Configuration

RADIUS is effective for dial-up services. Apart from dial-in services (PPP, SLIP, Dynamic), it also supports RADIUS settings in Terminal applications and Console Management application.

### Dialin/out—Dynamic Mode

CN2610	0-8		CN2610-8	8_19 V2	2.0
[Mode] Exami	Line mOdem .ne/modify the		- ~		ports
ESC:	back to menu	Enter:	select		
Port 01 02 03 04	Application [Dialin/out [Dialin/out [Dialin/out [Dialin/out	] ] ]	Mode [DYNAMIC [DYNAMIC [DYNAMIC [DYNAMIC	] ] ] ]	Description/more setting [Auto Term/SLIP/PPP identification] [Auto Term/SLIP/PPP identification] [Auto Term/SLIP/PPP identification] [Auto Term/SLIP/PPP identification]

+     TERM_BIN mode   PPPD mode   SLIPD mode	Enable [ <mark>yes</mark> ] [yes] [yes]	Detail-setting   [Term parameters]   [PPP parameters]   [SLIP parameters]
TERM_BIN mode		[none]

### Dialin/out—PPP/PPD Mode

CN2610	0-8	CN	2610-8_19	V2.0	
[Mode] Line mOdem Welcome_MSG Quit Examine/modify the operation mode of async ports					
ESC:	back to menu	Enter: sel	ect		
Port 01 02 03 04	Application [Dialin/out [Dialin/out [Dialin/out [Dialin/out	Mode ] [PPP ] [PPP ] [PPP ] [PPP ] [PPP	]	Description/more setting [Point-to-Point Protocol ] [Point-to-Point Protocol ] [Point-to-Point Protocol ] [Point-to-Point Protocol ]	

+		+
Destination IP address	: [	]
Source IP address	: [	]
IP netmask	: [	]
TCP/IP compression	: [no ]	
Inactivity time	: [0 ] minutes	
Link quality report	: [no ]	
Outgoing PAP ID	: [	]
PAP password	: [	]
Incoming PAP check	: [none ]	
		+

### Dialin/out—TERM\_BIN / TERM\_ASC Mode

CN2610	0-8	CN2610-8_19 V2.0	
[Mode] Exami		Welcome_MSG Quit operation mode of async ports	
ESC:	back to menu	Enter: select	
Port 01	Application [Terminal		n/more setting minal mode (8 sessions)]
02	[Terminal [Terminal	] [TERM_ASC ] [ASCII Term	ninal mode (8 sessions)] ninal mode (8 sessions)] ninal mode (8 sessions)]

+	+
Key Mapping :	
Max. Sessions	: [ 8 ]
Change Session	: [^T]
Quit	: [^E]
Break	:[]
Interrupt	:[]
Auto-link protocol	: [none ]
Telnet TCP port	: [23 ]
Primary host IP	:[]]
Link by input IP	: [Disable]
Secondary host IP	:[]]
Auto-login prompt	: [ogin: ]
Password prompt	: [assword: ]
Login user name	:[]]
Login password	:[]]
Terminal type	: [ansi ]
Inactivity time	: [0 ] minutes
Authentication type	: [none ]
TCP alive check time	: [0 ] minutes
+	+

### **Console Management—RADIUS Settings**

CN2610-8		CN2610-8_	_19	V2.0	
[Mode] Line mOdem Weld	com	e_MSG Quit			
Examine/modify the opera	ati	on mode of a	asyı	nc ports	
ESC: back to menu Ente	r:	select			
Port Application		Mode	Γ	escription/more setting	
01 [Reverse Terminal	]	[RTELNET ]		Reverse Telnet mode	]
02 [Reverse Terminal				Reverse Telnet mode	]
03 [Reverse Terminal	]	[RTELNET ]	[	Reverse Telnet mode	]
04 [Reverse Terminal				Reverse Telnet mode	]
05 [Reverse Terminal	]	[RTELNET ]	[	Reverse Telnet mode	]

+		+
TCP port	: [4003 ]	
Source IP address	: [	]
Destination IP addr	: [	] [
Inactivity time	: [0 ] minutes	
Map keys <cr-lf> to</cr-lf>	: [CR-LF]	
Authentication type	: [none ]	
TCP alive check time	: [0 ] minutes	
+		+

### **Setting up UNIX Hosts**

You can use your own RADIUS software to do this. MOXA, however, provides a RADIUS program for UNIX. To use the MOXA RADIUS Server, extract radius.2.3.tar from the CN2610 CD. All files are extracted to the /radius.2.3 directory.

### Installing the RADIUS Execution File

1. Login to the UNIX host and create a directory.

#mkdir /radius #cd radius.2.3/bin

2. Mount the CD-ROM volume

OS	Command
SCO OpenServer	#mount -f ISO9660, filemode=444 <device></device>
	Example: #mount-f ISO9660, filemode=444 /dev/cd1/mnt
Solaris x86	In the volume manager mounts the CD-ROM on mount point /cdrom/cdrom0
Linux	#mount /dev/cdrom or
	#mount-t iso9660-ro mode=0555 <device></device>
	Example: #mount-t iso9660-ro mode=0555/dev/hdb/mnt

3. Copy the file to the UNIX host.

#cp /mnt/cdrom/radius.2.3.tar

- 4. Extract the .tar to files.(radiu.2.3 subdirectory)
  - #tar xvf radius.2.3.tar

After extracting, there are subdirectories, as follows:

- /src: source code
- /conf: configuration
- /log: log record

/temp: temporary files

/bin: execution files

5. Compile and link.

#cd /src #sh mk\_radius

### **RADIUS Server Configuration**

++   MOXA RADIUS SERVER Administration   ++
>Configuration       Monitor       Daemon Control       Report       Others
J:Down K:Up Q:Quit Enter:Select

1. Specify password file.

"Configuration" → "Basic Configuration" → Password File (/etc/passwd for LINUX) (/etc/shadow for SCO UNIX and SOLARIS) (/etc/master.passwd fot FREEBSD and BSDI)

+	+ 
> assword File (/etc/passwd   Async Server Administration   Save & Exit	

2. Specify CN2610 IP.

"Configuration" → "Basic Configuration" → "Async Server Administration" → "Add Async Server"

+
Basic Configuration
Password File : /etc/passwd Sync Server Administration Save & Exit
Async Server Administration
dd Async Server Modify Async Server Delete Async Server
J:Down K:Up Q:Quit Enter:Select
·
Add Async Server
> P Address :   Name :   Console Password :   Ok
J:Down K:Up Q:Quit Enter:Select

IP address: [ ]→ CN2610 IP

Name: []→CN2610 server name

Console Password: [ ]→CN2610 console password

3. Save and exit.

### Basic/Extended Permission Group Setting

Basic and extended permission group defines access rights for users.

### Add/Modify permission group

"Configuration" → "User Permission Administration" → "Basic Permission Maintenance" or "Extended Permission Maintenance"

+	+
Configuration	
Basic Configuration   > ser Permission Maintenance   Proxy Server Administration	

+	+
User Permission Maintenance	ļ
+	+
Modify User Permission	
> asic Permission Maintenance	
Extended Permission Maintenance	
Save & Exit	İ
+	+

### **Basic Permission Maintenance**

+	
> dd Permission Group   Modify Permission Group   Delete Permission Group	
*	-+

Add Basic Permission		
Group Name	: Example1	
Maximum occurrences/user	: 1	
Maximum minutes/login	: 60	
Idle minutes force to logout	: 5	
Maximum login hours/month	: 500	
> k		

Basic Permission Group	Example	Description
Group Name	Example1	Name of this permission setting
Maximum occurrences/user	1	The user can only login once at the same time. "0" for simultaneous unlimited login sessions
Maximum minutes/login	60	The user has only 60 minutes in each login session "0" for unlimited time
Idle minutes force to logout	5	If the user is idle for 5 minutes, the session will be terminated "0" for no kick-out
Maximum login hours/month	500	The user has max. 500 hours per month. "0" means unlimited access

Select **OK** to save.

### **Extended Permission Maintenance**

User Permission Administration	+
Modify User Permission         Basic Permission Maintenance         > xtended Permission Maintenance         Save & Exit	

Extended Permission Maintenance	+   
> dd Permission Group   Modify Permission Group   Delete Permission Group	
Add Extended   Hint : Sun Mor + Input : 100000	: 30 : 08:00-22:00

Extended Permission Group	Example	Description
Group Name	Example2	Name of this permission setting
Days to expire after first login	30	The user account expires after 30 days after first login "0" for no expires
Login time interval in a day	08:00-22:00	The user has only 60 minutes in each login session "0" for unlimited 24 hours usage,
Barred login days	Sun Sat	The user is not allowed to login in on Saturday or Sunday. "0" for accept, "1" for reject.
Maximum login hours	500	The user has max. 500 hours for this account. "0" means unlimited access.

Select OK to save.

### **User Settings**

User Permission Administration	
> odify User Permission Basic Permission Maintenance Extended Permission Maintenance	
Save & Exit	

"User List" lists all UNIX/LINUX users.

```
Vser List
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V
```

- 1. Select the user "george" and press [Enter] to modify settings. Press [Ctrl-F] for page down, [Ctrl-B] for page up.
- 2. Specify basic permission group and extended group for the user "george".

+   User Name = george		+   
Basic Permission Group   > xtended Permission Group   Ok	: Example 1 : Example 2	+     

3. Select **OK** to save.

### **RADIUS proxy**

"Configuration" → "Proxy Server Administration" → "Add Proxy Server"

```
- -
                _____
Configuration
Basic Configuration
User Permission Administration
> roxy Server Administration
 _____
Proxy Server Administration
      _____
> dd Proxy Server
Modify Proxy Server
Delete Proxy Server
Save & Exit
 -----
Add Proxy Server
      _____
> P Address
           :
Name
Radius Hash Key
             :
Ok
```

IP address:[]  $\rightarrow$  Proxy Server IP

Name: []  $\rightarrow$  Proxy Server Name

Radius Hash Key: []  $\rightarrow$  RADIUS encryption key, must be the same key in the proxy server end. Select "OK" to save.

### Setting up Windows NT Hosts

Install Windows NT OPTION PACK 4.0 to Windows NT server.

1. Start → Programs → Windows NT 4.0 Option Pack → Microsoft Internet Information Server → Management Console Manger.



- 2. Click **Console Root** → **Internet Information Server** (in the left info window). Your computer's name will be visible.
- 3. Click your computer name, after which you will see **RADIUS** in the right info window.



4. Right click **RADIUS** in the left info window, and then select **Properties**.

hicrosoft Management Console	- [iis - Console Ro	oot\Internet Information Serve	r\* rats 🔳 🗆 🗙
📸 <u>C</u> onsole <u>W</u> indow <u>H</u> elp			
12 🖙 🖬 🔚 😰			
I ★ Action ★ View	] 🖳 🕨 🗉 🗉	- 👎 🖬 🖪 🗶 🏀	
🤤 Console Root	Name	Path	
internet Information Server			
ia- 🚚 * ratsnt4 ia- 🙀 Default FTP Site			
RADIUS (Stopper)		1	
🗈 👶 Default Web Site Start			
Default SMTP Sit     Pause     Oefault NNTP Sit			
Microsoft Transaction S	ies		
New	۶.		
Task	Þ		
New <u>w</u> i	ndow from here		
Refres	1		
✓ Scope	Pane		
	otion <u>B</u> ar		
Properties for the selected iterr		·	

5. Select Service. Check the RADIUS ports.

[Authentication] 1645 [Accounting] 1646

6. Select **Client**, and the click **Add**. Enter CN2610's IP address in the **IP address** field. Enter CN2610's password in the **password** field. The password corresponds to the RADIUS key setting in the CN2610 Console.

Internet Authentication Service Properties -	ratsnt4
Service Logging Clients Profiles	
Clients are network access device the control of th	ormation ? ×
Authentication requests can be re	Lucation
Client Location   C [P :	address: 192 168 205 200
	IS name:
Pesswo 1234	ord (shared secret):
	Connect 192188 205 200 Connect Edit Lemmid Belp HoxaServer U2.00
Add Bemove	Info. [Adus] Host_table Route_table User_table Quit Examine/modify async server advance configuration
OK	ESC back to menu Enter: select
(	RADIUS server         IP         [192.168.205.101]           RADIUS key         [1234]         1           UDP port (1.1645 2:1812)         [1]         1           Enable RADIUS accounting [yes]         1         1
	SNHP community name [public ] SNHP trap server IP address [ ]
	Ethernet IP forwarding [no ] Routing protocol [None ]
	TCP retransmission timeout [ ]

- 7. Click Apply.
- 8. Right click **RADIUS** in the left info window, and select **Start**.
- 9. You will now see that RADIUS is running.

### Setting up Windows 2000 Hosts

- 1. Click Start  $\rightarrow$  Programs  $\rightarrow$  Administrative Tools  $\rightarrow$  Routing and Remote Access.
- 2. Follow the steps below to install. Right click **Server (Local)** to select **Configure and Enable Routing and Remote Access**. Click **Next** to continue.
- 3. Select **Remote access server** and then click **Next** to continue.

🚊 Routing	and Remote Access	_ 🗆 🗵
Action	Routing and Remote Access Server Setup Wizard	
Tree Routing		
i 🔁 ANN	C Internet connection server Enable all of the computers on this network to connect to the Internet.	
	Remote access server Enable remote computers to dial in to this network.	ss
	O Virtual private network (VPN) server Enable remote computers to connect to this network through the Internet.	
	<ul> <li>Network router</li> <li>Enable this network to communicate with other networks.</li> </ul>	
	Manually configured server Start the server with default settings.	
	< Back Next > Cancel	
Start	🚮 🍊 🕼 🛛 🚊 Routing and Remote A	1:15 PM

4. Select Set up an advanced remote access server, and then click Next to continue.

5. Select TCP/IP protocol, and then click Next to continue.

### **RADIUS Server**

### CN2610 User's Manual

🚊 Routing	and Remote Access	- 🗆 ×
Action	Routing and Remote Access Server Setup Wizard	
Tree Routing		
- 🔂 ANN	Verify that the protocols required on this server for remote clients are listed below.	
	Protocols:	
	TCP/IP	955
	Yes, all of the required protocols are on this list	
	O No, I need to add protocols	
	< Back Next > Cancel	
🛃 Start 📗	🙆 🥭 🕼 🗍 🚊 Routing and Remote A	2:01 PM

6. Specify an IP address.

🚊 Routing	and Remote Access	_ 🗆 🗵
Action	Routing and Remote Access Server Setup Wizard	
Tree Routing	IP Address Assignment You can select the method for assigning IP addresses to remote clients.	
	How do you want IP addresses to be assigned to remote clients? C Automatically If you use a DHCP server to assign addresses, confirm that it is configured properly.	85
🛃 Start 📗	🙆 🥭 🎲 🗍 🚊 Routing and Remote A 🍕	2:03 PM

Routing and Remote Access	- 🗆 ×
Action Routing and Remote Access Server Setup Wizard	
Address Range Assignment You can specify the address ranges that this server will use to assign addresses to remote clients.         Server       New Address Range         En       New Address Range         Type a starting IP address and either an ending IP address or the number of addresses in the range.	255
🚯 Start 🛛 🙆 😂 🔰 🖉 🧱 Routing and Remote A	2:05 PM

7. Select Yes, I want to use a RADIUS server, and then click Next to start using this function.

🚊 Routing	j and Remote Access	_ 🗆 ×
Action	Routing and Remote Access Server Setup Wizard	
Tree Routing		
🔂 ANN	A Remote Authentication Dial-In User Service (RADIUS) server provides a central authentication database for multiple remote access servers and collects accounting information about remote connections.	
	Do you want to set up this remote access server to use an existing RADIUS server?	ess
	O No, I don't want to set up this server to use RADIUS now	;00
	Yes, I want to use a RADIUS server	
	Windows provides a RADIUS solution called Internet Authentication Service (IAS) as an optional component that you can install through Add/Remove Programs.	
	< Back Next > Cancel	
🛃 Start 📗	🖄 🥭 🤤 🗍 🧕 Routing and Remote A	2:12 PM

### Setting up Windows 2003 Hosts

Windows 2003 uses IAS service instead of RADIUS service. For this reason, you need to install IAS service to use RADIUS with Windows 2003 (IAS service will not be installed by default).

- 1. Click Start → Add or Remove Programs → Add/Remove Windows Components.
- 2. With Windows Components selected, choose Network Services.

Windows Components Wizard	×
Windows Components You can add or remove components of Windows.	t
To add or remove a component, click the checkbox. A shaded box mex part of the component will be installed. To see what's included in a com Details. <u>C</u> omponents:	
🔲 🚉 Management and Monitoring Tools	6.4 MB 🔺
🗹 🚔 Networking Services	2.6 MB
Other Network File and Print Services	0.0 MB 🔜
🗆 🚚 Remote Installation Services	2.0 MB
🗔 📾 Bemote Storage	35 MB 🔟
Description: Contains a variety of specialized, network-related services	and protocols.
Total disk space required: 17.2 MB	Details
Space available on disk: 1914.9 MB	
< <u>B</u> ack <u>N</u> ext > Cancel	Help

3. Select **Details**, and then **Internet Authentication Service**. Click **OK** to continue until the installation is finished.

Networking Services		X	
To add or remove a component, click the check box. A shaded box means th of the component will be installed. To see what's included in a component, cli			
Sub <u>c</u> omponents of Networking Services:			
🗆 📮 Domain Name System (DNS)	1.6 MB 🛽	*	
🗌 📃 🧕 Dynamic Host Configuration Protocol (DHCP) 🛛 🔅 🤇	0.0 MB		
🗹 😓 Internet Authentication Service 🛛 🔰	0.0 MB		
RPC over HTTP Proxy (	0.0 MB		
Simple TCP/IP Services (	0.0 MB		
Windows Internet Name Service (WINS)	0.9 MB	-	
Description: Enables authentication, authorization and accounting of dial-up users. IAS supports the RADIUS protocol.	o and VPI	N	
Total disk space required: 14.6 MB	Details		
Space available on disk: 1914.9 MB	<u></u>		
ОК	Cancel		

4. After the installation is finished, click **Administrative Tools**, and run **Internet Authentication Service**. The window shown below will open.

#### **RADIUS Server**

#### **CN2610 User's Manual**



5. Select **NEW RADIUS Client** to add a new RADIUS client. You will then be able to start using this function.

## **SNMP Agent with MIB II**

Simple Network Management Protocol agent software is built into CN2610. The software supports cold/warm start trap, line up/down trap, and RFC 1213 MIB-II. The following table lists the standard MIB-II groups, as well as the variable implementations for CN2610.

#### Supported SNMP variables

System MIB	Interfaces MIB	IP MIB	ICMP MIB				
SysDescr	itNumber	ipForwarding	IcmpInMsgs				
SysObjectID	ifIndex	ipDefaultTTL	IcmpInErrors				
SysUpTime	ifDescr	ipInreceives	IcmpInDestUnreachs				
SysContact	ifType	ipInHdrErrors	IcmpInTimeExcds				
SysName	ifMtu	ipInAddrErrors	IcmpInParmProbs				
SysLocation	ifSpeed	ipForwDatagrams	IcmpInSrcQuenchs				
SysServices	ifPhysAddress	ipInUnknownProtos	IcmpInRedirects				
	ifAdminStatus	ipInDiscards	IcmpInEchos				
	ifOperStatus	ipInDelivers	IcmpInEchoReps				
	ifLastChange	ipOutRequests	IcmpInTimestamps				
	ifInOctets	ipOutDiscards	IcmpTimestampReps				
	ifInUcastPkts	ipOutNoRoutes	IcmpInAddrMasks				
	ifInNUcastPkts	ipReasmTimeout	IcmpOutMsgs				
	ifInDiscards	ipReasmReqds	IcmpOutErrors				
	ifInErrors	ipReasmOKs	IcmpOutDestUnreachs				
	ifInUnknownProtos	ipReasmFails	IcmpOutTimeExcds				
	ifOutOctets	ipFragOKs	IcmpOutParmProbs				
	ifOutUcastPkts	ipFragFails	IcmpOutSrcQuenchs				
	ifOutNUcastPkts	ipFragCreates	IcmpOutRedirects				
	ifOutDiscards	ipAdEntAddr	IcmpOutEchos				
	ifOutErrors	ipAdEntIfIndex	IcmpOutEchoReps				
	ifOutQLen	ipAdEntNetMask	IcmpOutTimestamps				
	ifSpecific	ipAdEntBcastAddr	IcmpOutTimestampReps				
		ipAdEntReasmMaxSize	IcmpOutAddrMasks				
		IpNetToMediaIfIndex	IcmpOutAddrMaskReps				
		IpNetToMediaPhysAddress					
		IpNetToMediaNetAddress					
		IpNetToMediaType					
		IpRoutingDiscards					

UDP MIB	TCP MIB	SNMP MIB				
UdpInDatagrams	tcpRtoAlgorithm	snmpInPkts				
UdpNoPorts	tcpRtoMin	snmpOutPkts				
UdpInErrors	tcpRtoMax	snmpInBadVersions				
UdpOutDatagrams	tcpMaxConn	snmpInBadCommunityNames				
UdpLocalAddress	tcpActiveOpens	snmpInASNParseErrs				
UdpLocalPort	tcpPassiveOpens	snmpInTooBigs				
	tcpAttempFails	snmpInNoSuchNames				
Address Translation MIB	tcpEstabResets	snmpInBadValues				
AtIfIndex	tcpCurrEstab	snmpInReadOnlys				
AtPhysAddress	tcpInSegs	snmpInGenErrs				
AtNetAddress	tcpOutSegs	snmpInTotalReqVars				
	tcpRetransSegs	snmpInTotalSetVars				
	tcpConnState	snmpInGetRequests				
	tcpConnLocalAddress	snmpInGetNexts				
	tcpConnLocalPort	snmpInSetRequests				
	tcpConnRemAddress	snmpInGetResponses				
	tcpConnRemPort	snmpInTraps				
	tcpInErrs	snmpOutTooBigs				
	tcpOutRsts	snmpOutNoSuchNames				
		snmpOutBadValues				
		snmpOutGenErrs				
		snmpOutGetRequests				
		snmpOutGetNexts				
		snmpOutSetRequests				
		snmpOutGetResponses				
		snmpOutTraps				
		snmpEnableAuthenTraps				

# **Pin Assignments and Cable Wiring**

In this appendix, common pin assignment and cable wiring diagrams are presented.

The following topics are covered in this appendix:

- **D** Pin Assignments
  - ➤ 10/100BaseTX Port Pin Assignment
  - Console Port Pin Assignment
  - Async RS-232 Port Pin Assignment
- **Cable Wiring** 
  - ➤ 10/100BaseTX Port Cable Wiring
  - ➢ Async RS-232 Port Cable Wiring
  - DB9 and DB25 Connector Pin Assignments

### **Pin Assignments**

10/100BaseTX Port Pin Assignment

Pin	Signal	
1	Tx+	
2	Tx-	1 8
3	Rx+	
6	Rx-	

### **Console Port Pin Assignment**

Pin	RS-232	
1	DSR (in)	
2	RTS (out)	1 8
3	GND	
4	TxD (out)	
5	RxD (in)	
6	DCD (in)	
7	CTS (in)	
8	DTR (out)	

### Async RS-232 Port Pin Assignment



### **Cable Wiring**

### 10/100BaseTX Port Cable Wiring





### Async RS-232 Port Cable Wiring



#### 8-pin RJ45 to Male DB25 for CN2610



### DB9 and DB25 Connector Pin Assignments

#### **DB9** Connector Pin Assignment



#### **DB25** Connector Pin Assignment



# LCM Display

Ε

For first time installation, we recommend using the LCM display and four push buttons to configure the IP address.

#### **Basic Operation**

If the CN2610 is working properly, the LCM panel will display a green color. The red Ready LED will also light up, indicating that the CN2610 is receiving power. After the red Ready LED turns to green, you will see a display similar to:

	С	Ν	2	6	1	0	-	1	6	-	0	3				
ſ	1	9	2		1	6	8		1	2	7		2	5	4	

This is where

• CN2610-16	is the CN2610's name
• 03	is the CN2610's serial number
• 192.168.127.254	is the CN2610's IP address

There are four push buttons on CN2610's nameplate. Going from left to right, the buttons are:

Button	Name	Action
MENU	menu	activates the main menu, or returns to an upper level
$\bigtriangleup$	up cursor	scrolls up through a list of items shown on the LCM panel's 2nd line
$\bigtriangledown$	down cursor	scrolls down through a list of items shown on the LCM panel's 2nd line
SEL	select	selects the option listed on the LCM panel's 2nd line

The buttons are manipulated in a manner similar to the way a modern cellular phone operates. As you move through the various functions and setting options, note that the top line shows the current menu or submenu name, and the bottom line shows the submenu name or menu item which is activated by pressing the SEL button.

#### **Detailed Menu Options**

The best way to explain all of CN2610's LCM functions is to refer to the tree graph shown on the next page. There are three main levels—1, 2, and 3—with each level represented by a separate column.

The first thing to remember is that the MENU button is used to move back and forth between the LCM panel's default screen, and main menu screen:



In addition, you only need to remember to:

- Use the SEL button to move up one level (i.e., left to right on the tree graph)
- Use the MENU button to move down one level (i.e., right to left on the tree graph)
- Use the cursor keys,  $\triangle$  and  $\nabla$ , to scroll between the various options within a level (i.e., up and down on the tree graph).

As you use the buttons to operate the LCM display, you will notice that with very few exceptions, moving up one level causes the bottom line of the display to move to the top line of the display. You will also notice that the bottom three options in level 2, and all of the options in level 3 have either a C or D attached. The meaning is as follows:

- C = configurable

I.e., you are allowed to change the setting of this option

• D = display only I.e., the setting for this option is displayed, but it cannot be changed (this does NOT necessarily mean that the number doesn't change; only that you can't change it)

Main Menu			
	Server	Serial number	D
	setting	Server name	С
		Firmware ver	D
		Model name	D
	Network	Ethernet status	D
	setting	MAC address	D
		IP config	С
		IP address	С
		Netmask	С
		Gateway	С
		DNS server 1	С
		DNS server 2	С
	Serial set	Select port	С
		Baudrate	С
		Data bit	С
		Stop bit	С
		Parity	С
		Flow control	С
		Tx/Rx fifo	С
		Interface	С
		Tx/Rx bytes	D
		Line status	D

The part of the LCM operation that still requires some explanation is how to edit the configurable options. In fact, you will only encounter two types of configurable options.

The first type involves entering numbers, such as IP addresses, Netmasks, etc. In this case, you change the number one digit at a time. The up cursor  $(\triangle)$  is used to decrease the highlighted digit, the down cursor  $(\nabla)$  is used to increase the highlighted digit, and the sel button is used to move to the next digit. When the last digit has been changed, pressing sel simply enters the number into CN2610's memory.

The second type of configurable option is when there are only a small number of options from which to choose (although only one option will be visible at a time). Consider the Parity attribute under Serial set as an example. Follow the tree graph to arrive at the following Parity screen. The first option, None, is displayed, with a down arrow all the way to the right. This is an indication that there are other options from which to choose.

-										
Ν	0	n	е							$\rightarrow$
Ρ	a	r	i	t	У					

Press the down cursor button once to see Odd as the second option.

P	a	r	i	t	У					$\uparrow$
0	d	d								$\downarrow$

Press the down cursor button again to see Even as the third option.

Ρ	a	r	i	t	У					$\uparrow$
Е	v	e	n							$\downarrow$

Press the down cursor button again to see Space as the fourth option.

	Ρ	а	r	i	t	У							$\uparrow$
	S	р	a	С	е								$\downarrow$
Press the down cursor button yet again to see the last option, Mark.													

Ρ	a	r	i	t	У					$\uparrow$
м	0	r	Ŀ							

 M
 a
 r
 k

 To choose the desired option, press the SEL button when the option is showing on the screen.

# F

# **Service Information**

In this appendix, we show you how to contact Moxa for information about this and other products, and how to report problems.

The following topics are covered in this appendix:

- **MOXA Internet Services**
- **D** Problem Report Form
- **D** Product Return Procedure

### **MOXA Internet Services**

Customer satisfaction is our number one concern, and to ensure that customers receive the full benefit of our products, Moxa Internet Services has been set up to provide technical support, driver updates, product information, and user's manual updates.

The following services are provided

E-mail for technical support.....support@moxa.com.tw

World Wide Web (WWW) Site for product information:

.....<u>http://www.moxa.com</u>

### **Problem Report Form**

### MOXA CN2610 Series

Customer name:						
Company:						
Tel:	Fax:					
Email:	Date:					

**1. Moxa Product:** 
CN2610-8
CN2610-16

2. Serial Number:

**Problem Description:** Please describe the symptoms of the problem as clearly as possible, including any error messages you see. A clearly written description of the problem will allow us to reproduce the symptoms, and expedite the repair of your product.

### **Product Return Procedure**

For product repair, exchange, or refund, the customer must:

- Provide evidence of original purchase.
- Obtain a Product Return Agreement (PRA) from the sales representative or dealer.
- ♦ Fill out the Problem Report Form (PRF). Include as much detail as possible for a shorter product repair time.
- Carefully pack the product in an anti-static package, and send it, pre-paid, to the dealer. The PRA should be visible on the outside of the package, and include a description of the problem, along with the return address and telephone number of a technical contact.