PPP Mode for NPort 6000: Dial-out

Moxa Technical Support Team
support@moxa.com

This Tech Note applies to the NPort 6000 device server. The following models are included:

- NPort 6150
- NPort 6250
- NPort 6450
- NPort 6650

What is PPP Mode?

The NPort 6000 provides dial-in/dial-out access for ISPs and enterprises that need a remote access solution. With PPP mode, a remote modem connection is established to a PPP server on a network. For PPP dial-out, the NPort is connected to a modem that dials out to the PPP server. The NPort will establish the modem connection to the PPP server, allowing other attached devices to access the network. For PPP dial-in, the NPort is connected to a modem or modems that receive dial-in connection requests from remote devices. The NPort itself acts as the PPP server and can authenticate users through its own user table or through a RADIUS server.
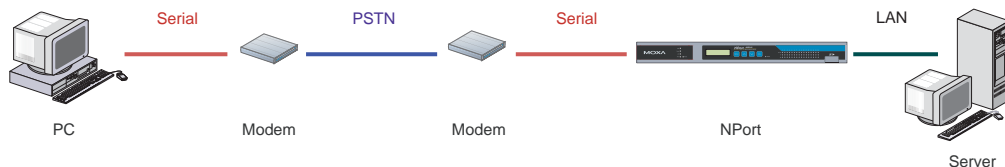
Configuring the NPort 6000 for Dial-out PPP Mode

Before performing the following steps, restore the NPort 6000 default settings by holding the reset button down for 5 seconds.

1. Turn the NPort on. The Ready LED should turn green.

2. Make sure that the NPort and the host PC are properly connected to the network.

Copyright © 2008 Moxa Inc.   Released on September 10, 2008

3.   Run "NPort Search Utility". This can be installed from the NPort Document and Software CD.

4.   In NPort Search Utility, use **Search** or **Search IP** to find your NPort on the network.

5.   Select your NPort and click the console icon to open its web console. From this point forward, you will be submitting changes to the NPort's settings. Once all the changes have been submitted, you will restart the NPort with the new settings.

6.   In the web console under **Basic Settings**, modify the server name and time settings if desired. Remember to submit any changes that are made.

7.   In the web console under **Network Settings** > **Basic Network Settings**, modify the NPort's IP address, netmask, gateway, and other IP parameters as necessary. You must set the NPort 6000's IP address so that it is in the same network as your PC. You may also need to modify the host PC's IP configuration. Make sure you can ping the NPort from your host PC.

      Remember, the IP addresses of the NPort and the PC must be on the same subnet. If one IP address is modified, you may need to modify the other IP address.

8.   In the web console under **Advanced Network Settings**, set the **Routing Protocol** to RIP-1.

9.   In the web console under **Serial Port Settings**, select the serial port that will be set to PPP Mode. Under **Operation Modes**, set **Application** to Dial in/out and **Mode** to PPP. New parameters should become available, and they should be modified as follows:
      ● **Destination IP Address**: the IP address of the PPP server
      ● **Source IP Address**: the IP address of this serial port
      ● **IP Netmask**: 255.255.255.255
      ● **Outgoing PAP ID/password**: the ID and password required by the PPP server, if necessary
      ● **Disconnect By**: DCD-Off
      ● **Communication Parameters**: adjust as necessary for your modem (RS-485 2 Wire is not supported for PPP)

10.   Make sure the modem attached to the NPort is enabled and adjust its settings appropriately. Set the modem's dial-out number to the phone number of the remote PC's modem.

11.   In the web console under **System Management** > **Misc. Network Settings**, adjust the following parameters:
      ● **Route Table**: add routing parameters if necessary
      ● **Gateway**: the IP address of this NPort 6000
      ● **Destination**: the dial-in IP (of the attached device or PC)
      ● **Netmask**: set as necessary for the dial-in IP
      ● **Iface**: set to LAN

12.   Make sure all changes have been submitted. In the web console, select **Save/Restart** to restart the NPort with the new settings activated.

Testing PPP Mode for the NPort 6000
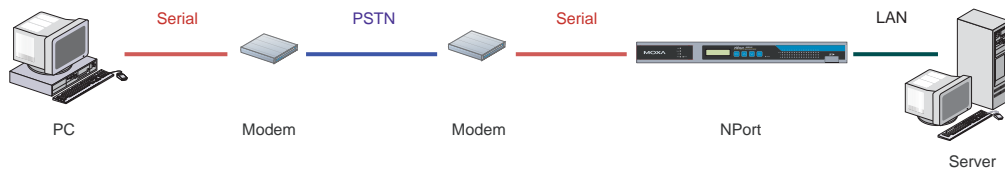
1. Connect or install a modem in your PC and connect the phone line. Note the phone number for that line (12345 in this example).

2. Set the PC's IP address to 192.168.127.1.

3. Establish an "Incoming Connection" on the PC. Create a user name called "test" with password of "test". Incoming connections are supported on Windows 2000 and higher.

4. Connect Port 1 on the NPort to another modem and connect the phone line. Note the phone number for that line (54321 in this example).

5. Set the NPort's IP address to 192.168.127.2.

6. On the NPort, set Port 1 as follows:
   - **Application**: Dial in/out
   - **Mode**: PPP
   - **Destination IP Address**: 192.168.128.1
   - **Source IP Address**: 192.168.128.2
   - **IP Netmask**: 255.255.255.0
   - **Outgoing PAPID/Password**: test/test
   - **Disconnect By**: DCD-Off
   - **Baudrate**: 115200
   - **Parity**: N
   - **Data Bits**: 8
   - **Stop Bits**: 1
   - **Flow Control**: RTS/CTS
   - **Serial Interface**: RS-232

7. Make sure the modem attached to the NPort is enabled and adjust its settings appropriately. Set the modem's dial-out number to the phone number of the PC's modem (12345 in this example).

8. In the NPort's web console under **System Management > Misc. Network Settings** > **Route Table**, add an entry as follows:
   - **Gateway**: 192.168.127.2 (the NPort's IP address)
   - **Destination**: 192.168.128.0 (the dial-in IP)
   - **Netmask**: 255.255.255.0 (for this routing)
   - **Iface**: port1

9. In the NPort's web console under **System Management > Misc. Network Settings** > **User Table**, add a user name called "test" with password of "test", Set the phone number the number used by the modem on the PC (12345 in this example).

10. In the NPort's web console, submit and save changes and restart the NPort.

---

11. Disconnect the PC from the Ethernet network.

12. On the local server, ping the PC's IP address from a command prompt by entering "ping 192.168.128.2".

13. The modem connected to the NPort should begin dialing out. The modem attached to the PC will answer, and the connection will be established. Note that if the remote PC is connected to a LAN environment, you will need to add routing.

Cable Wiring

RS-232 Cable Wiring

NPort	Device
TxD	RxD
RxD	TxD
RTS	CTS
CTS	RTS
DTR	DSR
DSR	DTR
DCD	DCD
GND	GND

4 wire RS-422/485 Cable Wiring

NPort	Device
Tx (+)	Rx (+)
Tx (−)	Rx (−)
Rx (+)	Tx (+)
Rx (−)	Tx (−)
GND	GND