

## Configuring NPort 6000 Series servers for PPP connection over RS-422 in a backup network

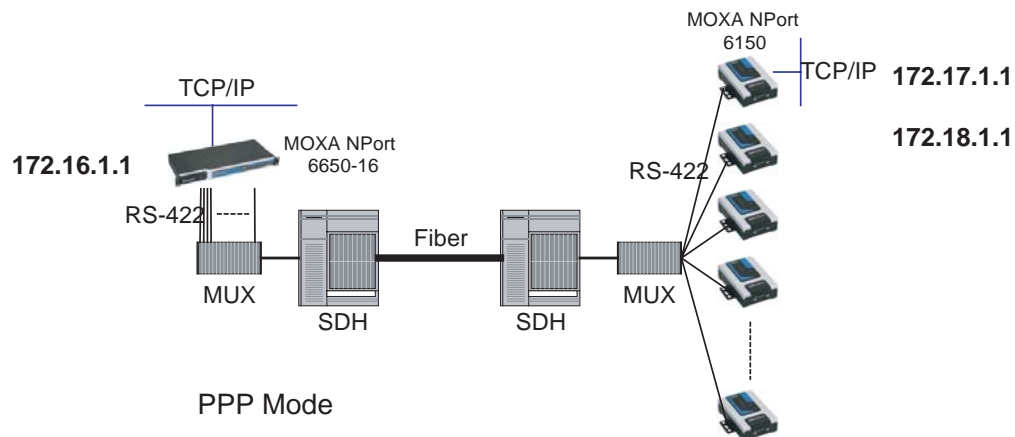
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In this Technical Note, we cover the following topics:

1. Establishing PPP connections over RS-422 for backup network
2. Configuring the NPort 6650 to communicate with multiple NPort 6150 servers
3. Configuring NPort 6150 servers to communicate with the NPort 6650

### 1. Establishing PPP connections over RS-422 for backup network

In a MOXA project for the Taipei metro system, the client wanted to use PPP connections over existing RS-422 lines as a backup network. The diagram below shows the type of architecture that was used to achieve this:



In this paper, we will explain how to configure the NPort 6650-16 and NPort 6150 for this architecture. This may be used as a starting reference point for other similar systems.

The following related products are also suitable for this kind of application: NPort 6000 Series (including NPort 6650, 6450, 6250, and 6150 models).

#### About MOXA

The MOXA Group manufactures one of the world's leading brands of device networking solutions. Products include serial boards, USB-to-serial Hubs, media converters, device servers, embedded computers, Ethernet I/O servers, terminal servers, Modbus gateways, industrial switches, and Ethernet-to-fiber converters. Our products are key components of many networking applications, including industrial automation, manufacturing, POS, and medical treatment facilities.

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## 2. Configuring the NPort 6650 to communicate with multiple NPort 6150 servers

The IP addresses and port numbers used in these instructions are for the example architecture. For your own application, you should substitute your own appropriate values for these fields.

2.1 Open the NPort 6650's web console and log in.

2.2 Configure the NPort 6650 as follows:

Main Menu -> Network Settings -> Basic Network Settings

IP Address	<b>172.16.1.1</b>
Netmask	<b>255.255.0.0</b>

2.3 Configure each port on the NPort 6650 as follows:

Main Menu -> Serial Port Settings -> Port 1 -> Operation Modes

Application	<b>Dial in/out</b>
Mode	<b>PPPD</b>
Destination IP Address	<b>10.1.1.2</b>
Source IP Address	<b>10.1.1.1</b>
Interface	<b>RS422</b>

Main Menu -> Serial Port Settings -> Port 2 -> Operation Modes

Application	<b>Dial in/out</b>
Mode	<b>PPPD</b>
Destination IP Address	<b>10.1.2.2</b>
Source IP Address	<b>10.1.2.1</b>
Interface	<b>RS422</b>

Configure the remaining ports in the same fashion.

2.4 Add entries to the NPort 6650 route table for each port as follows:

Main Menu -> System Management -> Misc. Network Settings -> Route Table  
Port 1 route table entry

Gateway	<b>10.1.1.2</b>
Destination	<b>172.17.0.0</b>
Network	<b>255.255.0.0</b>
Metric	<b>01</b>
Iface	<b>port01</b>

Port 2 route table entry

Gateway	<b>10.1.2.2</b>
Destination	<b>172.18.0.0</b>
Network	<b>255.255.0.0</b>
Metric	<b>01</b>
Iface	<b>port02</b>

Add route table entries for the remaining ports in the same fashion.

### 3. Configuring NPort 6150 servers to communicate with the NPort 6650

3.1 Open the NPort 6150's web console and log in.

3.2 Configure each NPort 6150 as follows:

#### NPort 6150 Server No. 1

Main Menu -> Network Settings -> Basic Network Settings

IP Address	172.17.1.1
Netmask	255.255.0.0

Main Menu -> Serial Port Settings -> Port 1 -> Operation Modes

Application	Dial in/out
Mode	PPP
Destination IP Address	10.1.1.1
Source IP Address	10.1.1.2
Interface	RS422

Main Menu -> System Management -> Misc. Network Settings -> Route Table  
(add this entry)

Gateway	10.1.1.1
Destination	172.16.0.0
Network	255.255.0.0
Metric	01
Iface	port01

#### NPort 6150 Server No. 2

Main Menu -> Network Settings -> Basic Network Settings

IP Address	172.18.1.1
Netmask	255.255.0.0

Main Menu -> Serial Port Settings -> Port 1 -> Operation Modes

Application	Dial in/out
Mode	PPP
Destination IP Address	10.1.2.1
Source IP Address	10.1.2.2
Interface	RS422

Main Menu -> System Management -> Misc. Network Settings -> Route Table  
(add this entry)

Gateway	10.1.2.1
Destination	172.16.0.0
Network	255.255.0.0
Metric	01
Iface	port01

#### NPort 6150 Server No.3 and above

Configure the remaining NPort 6150 servers in the same fashion.