

Configuring PPP

25

The NMC-RX application supports Point-to-Point Protocol (PPP) on the following modules: CT3, CT1, CE1, T3-ATM, E3-ATM, OC3-ATM, and OC3-POS.

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Overview

Point-to-Point Protocol (PPP) provides a standard method for transporting multiprotocol datagrams over point-to-point links. PPP offers the following functions:

- A framing technique that defines the start and end of each frame and provides error detection
- A Link Control Protocol (LCP) for establishing, configuring, and testing the data link connection
- A family of Network Control Protocols (NCPs) for establishing and configuring different network-layer protocols

PPP is designed for simple links that transport packets directly between two peers. On an ERX device, it provides router-to-router and host-to-network synchronous connections and also provides a method for transmitting protocol datagrams at the data link layer over serial point-to-point links.

References

For more information about PPP, see the *ERX Link Layer Configuration Guide, Chapter 4, Configuring Point-to-Point Protocol*.

Creating PPP Interfaces

You can create PPP interfaces over a POS interface, a DS0 bundle, an ATM subinterface, or a PPPoE subinterface.

To create a PPP interface over POS:

- 1 In the Device-wide Explorer, select POS interface, right-click, and click List All.
- 2 In the list area, select the POS interface you want, right-click, select Create, and click PPP Interface.

The Create PPP Interface dialog box appears.

The screenshot shows a dialog box titled "Lab01 - Create PPP Interface". It contains the following fields and options:

- Location:**
 - Physical: Module: OC3 POS-4 port, Slot: 9, Port: 0
 - Logical: POS IFINDEX: 218103873
- Name:** [Empty text box]
- Alias:** [Empty text box]
- Ifindex:** [Empty text box]
- Profile:** -- None -- [Dropdown menu]
- Status:**
 - Operational: [Checked]
 - Administrative: Up [Dropdown menu]
- LCP Config:**
 - Magic Number Enabled
 - Initial MRU: 1492 [Text box]
 - Keepalive Timeout (sec): 30 [Text box]
- Authentication:**
 - Type: None [Dropdown menu]
 - Max Authen Retries: 0 [Text box]
 - DNS Address Peer Precedence
 - WINS Address Peer Precedence
- Buttons:** Apply Template..., Save As Template..., OK, Cancel

- 3 Set the PPP interface parameters. See Table 25-1.

Table 25-1 PPP interface parameters


Parameter	Description
Name	Identifies the interface; generated automatically
Alias	Description of the interface; 0–15 characters; default blank
IfIndex	Identifies the interface on the particular line interface; generated automatically
Operational	Current operational status of the interface
Administrative	Desired status of the interface: Up/Down; default Up
Profile	Profile name that you want to associate with this interface. Click  to open the Associate Profile dialog box. Select profile, then click OK. The profile name appears in the Create PPP Interface dialog box. See <i>NMC-RX User Guide, Vol. 2, Chapter 7, Configuring Profiles</i> for more information.
Interface Index	Number that identifies the PPP interface on the particular line interface; automatically generated
LCP Config	
Magic Number Enabled	Randomly generated number used to identify one end of a point-to-point connection. LCP (Link Control Protocol) magic number support is available on all serial interfaces. PPP always attempts to negotiate for magic numbers, which are used to detect looped-back lines. The router might shut down a link if it detects a loop.
Initial MRU	LCP on maximum receive unit must be within the following ranges: <ul style="list-style-type: none"> • POS interface – 64–4466 • DS0 bundle – 64–1596 • ATM subinterface – 64–9178 • PPPoE subinterface – 64–1492
Keepalive Timeout (sec)	Keepalive tracks the status of the connection. The timeout period is set in the range 30–300 seconds for high-density mode (for example, when PPP is layered over PPPoE or ATM subinterfaces) and 10–300 seconds for low-density mode (when PPP is layered over POS or a DS0 bundle). The default is 30 seconds.
Authentication	
Type	Authentication method chosen to verify access to the interface. Choose from the drop-down list. <ul style="list-style-type: none"> • None – no authentication method specified • pap – specifies PAP (Password Authentication Protocol) as primary authentication protocol • chap – specifies CHAP (Challenge Handshake Authentication Protocol) as primary authentication protocol

Table 25-1 PPP interface parameters (continued)

Parameter	Description
	<ul style="list-style-type: none"> • papChap – specifies PAP as primary authentication protocol and CHAP as the alternate • chapPap – specifies CHAP as primary authentication protocol and PAP as the alternate
Max Authen Retries	Number of times a user can fail to enter the correct login information (username and password) to gain access
DNS Address Peer Precedence	Indicates which value takes precedence when the RX system and the PPP peer system have the primary and secondary Domain Name System (DNS) name server addresses configured with different values.
WINS Address Peer Precedence	Indicates which value takes precedence when the RX system and the PPP peer system have the primary and secondary Windows Internet Name System (WINS) name server addresses configured with different values.
Apply Template... Save As Template...	See <i>Chapter 9, Using Templates</i> .

4 Click OK.



Note: If there is an applicable template, you can use that template to configure the non-unique parameters for PPP. The non-unique parameters are displayed in blue in a template.

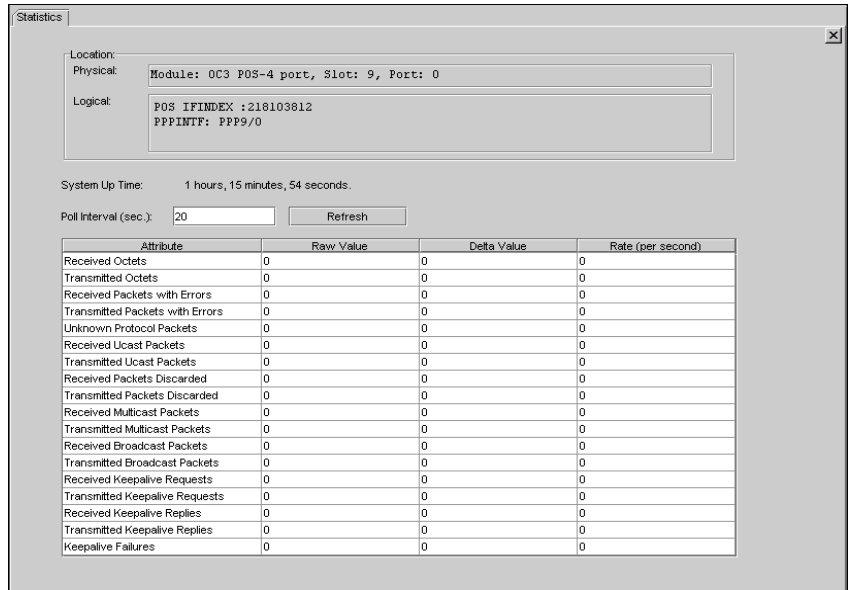
PPP Statistics

The NMC-RX application allows you to view and monitor information about PPP interfaces. Once you select a configured device, list the object and request statistics, and a Statistics tab appears.

To view PPP statistics:

- 1 From the Device-wide Explorer, select PPP, right-click, and click List All.

A list of all PPP interfaces configured on the device appears in the list area.



2 From the list, select the interface for which you want to view statistics, right-click, and click Statistics.

The PPP Statistics tab appears. See Table 25-2.

Table 25-2 PPP interface statistics attributes

Attribute	Description
System Up Time	Time since last reported change to the operational status
Poll Interval (sec.)	Interval in seconds between receiving data transmissions
Refresh	Click to update the statistics displayed for the PPP interface being monitored
Received Keepalive Requests	Number of received keepalive requests for life of the interface (since system boot or interface creation, whichever is later)
Received Keepalive Replies	Number of received keepalive replies for life of the interface
Keepalive Failures	Number of keepalive failures reported on the interface
Transmitted Keepalive Requests	Number of transmitted keepalive requests for life of the interface
Transmitted Keepalive Replies	Number of transmitted keepalive replies for life of the interface

Table 25-2 PPP interface statistics attributes (continued)

Attribute	Description
Received Octets	Number of incoming octets received on this interface
Received Ucast Packets	Number of packets received that were not addressed to a multicast or broadcast address
Received Packets Discarded	Number of inbound packets discarded even though no errors were detected
Received Packets with Errors	Number of incoming errors received on this interface
Received Multicast Packets	Number of packets received that were addressed to a multicast address
Received Broadcast Packets	Number of packets received that were addressed to a broadcast address
Unknown Protocol Packets	Number of packets discarded because of an unknown or unsupported protocol
Transmitted Octets	Number of outgoing octets transmitted on this interface
Transmitted Ucast Packets	Number of packets transmitted that were not addressed to a multicast or broadcast address
Transmitted Packets Discarded	Number of outbound packets discarded even though no errors were detected
Transmitted Packets with Errors	Number of outgoing errors on this interface
Transmitted Multicast Packets	Number of packets transmitted that were addressed to a multicast address
Transmitted Broadcast Packets	Number of packets transmitted that were addressed to a broadcast address