

Configuring PPP over Ethernet

26

The NMC-RX application supports Point-to-Point Protocol over Ethernet (PPPoE) on the following modules:

- T3-ATM, E3-ATM
- OC3, OC12
- FE, GE

| Topic | Page |
|-------------------------------|------|
| Overview | 26-1 |
| References | 26-2 |
| Creating a PPPoE Interface | 26-2 |
| Creating a PPPoE Subinterface | 26-3 |
| PPPoE Statistics | 26-4 |

Overview

PPPoE provides the ability for multiple hosts to open PPP sessions to your system using one or more bridging modems. When service providers want to maintain the session abstraction associated with PPP, PPPoE is used with Broadband Remote Access Server (B-RAS) technologies that provide a bridged Ethernet topology. PPPoE can be configured over ATM or on Ethernet modules with or without VLANs.

PPPoE has two distinct stages: *Discovery* and *Session*.

- Discovery – PPPoE allows each PPP session to learn the Ethernet address of the remote peer and to establish a unique session identifier.

- Session – When Discovery is completed successfully, both the host and the selected remote access concentrator have the information they need to build their point-to-point connection over Ethernet. The only parameter that you can configure is the number of PPPoE sessions.

References

For more information about the PPPoE protocol, see:

- *E-Series Link Layer Configuration Guide, Chapter 7, Configuring Point-to-Point Protocol over Ethernet*

Creating a PPPoE Interface



Note: Although this chapter discusses working with PPPoE on an ATM subinterface, PPPoE interfaces can be created on these other interfaces: FE, GE, VLAN, bridged IP, and ATM.

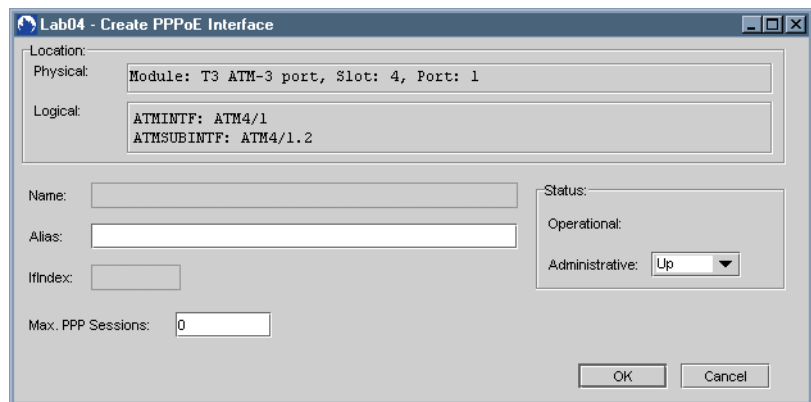
To create a PPPoE interface:

- 1 Navigate to an ATM interface.
- 2 Right-click, select List All, and click ATM Sub Interfaces.

All available ATM subinterfaces appear in the list area.

- 3 From the list, right-click a subinterface, select Create, and click PPPoE Interface.

The Create PPPoE Interface dialog box appears.



- 4 Set the Max PPP Sessions parameter. See Table 26-1.

Table 26-1 PPPoE 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 |
| Max. PPP Sessions | Maximum number of subinterfaces permitted on this interface; range 0–4094; default 0 (no limit) |

- 5 Click OK.

Creating a PPPoE Subinterface

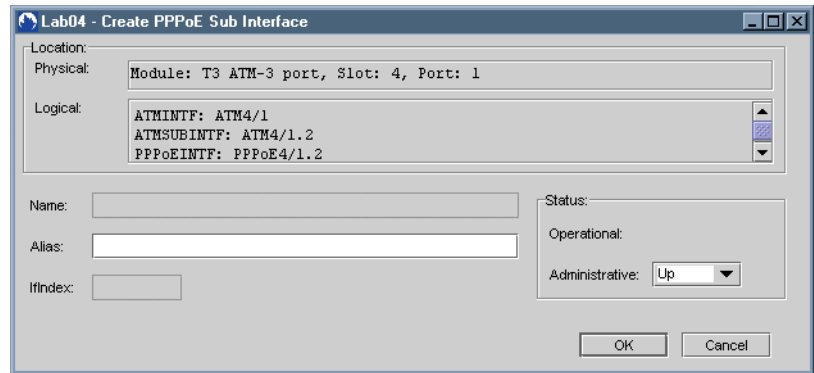
To create a PPPoE subinterface:

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

All existing PPPoE interfaces appear in the list area.

- 2 From the list, select a PPPoE interface, right-click, select Create, and click PPPoE Sub Interfaces.

The Create PPPoE Sub Interface dialog box appears.



- 3 Set PPPoE subinterface parameters. See Table 26-2.

Table 26-2 PPPoE subinterface 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 |

- 4 Click OK.



Note: For information on creating a PPP interface on a PPPoE subinterface, see Chapter 25, *Configuring PPP*.

PPPoE Statistics

The NMC-RX application allows you to view and monitor information about PPPoE interfaces and subinterfaces. Once you select a configured device, you list the objects, request statistics, and a Statistics tab is displayed in the work area. The PPPoE interface and subinterface statistics attributes are the same.

To view PPPoE statistics:

- 1 From the Device-wide Explorer, select PPPoE and either Interfaces or Sub Interfaces.
- 2 Right-click, and click List All.
The interfaces or subinterfaces are displayed in the list area.
- 3 From the list, select the interface or subinterface for which you want to view statistics, right-click, and click Statistics.

The Statistics tab appears in the work area. See Table 26-3 for parameter descriptions.

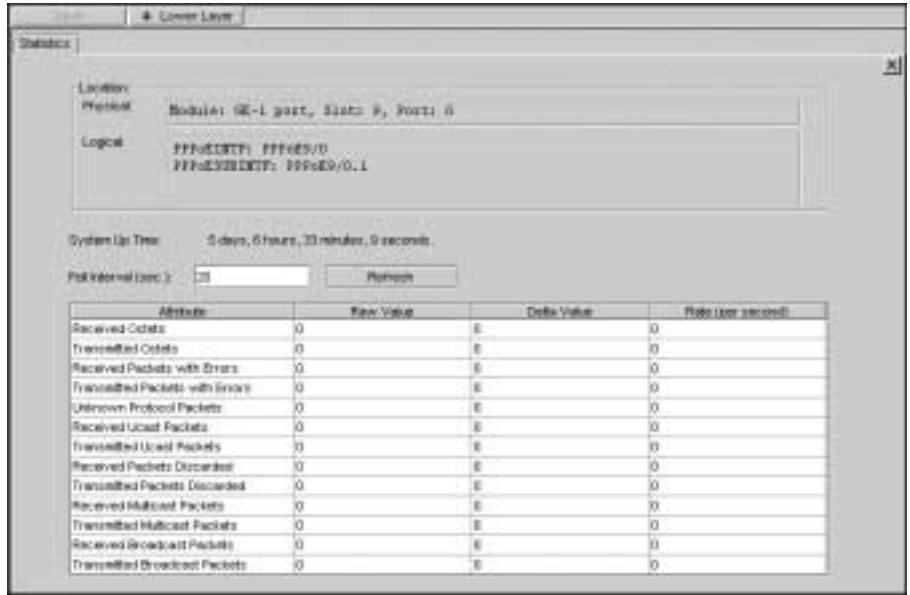


Table 26-3 PPPoE interface and subinterface attributes

| Attribute | Description |
|---------------------------------|-------------------------------------------------------------------------------------------|
| System Up Time | Time since last reported change to the operational status |
| Poll Interval (sec) | Interval in seconds between POLL PDU transmissions |
| Refresh | When button is clicked, the statistics are refreshed |
| Received Octets | Number of incoming octets received on this interface or subinterface |
| Transmitted Octets | Number of outgoing octets transmitted on this interface or subinterface |
| Received Packets with Errors | Number of incoming errors received on this interface or subinterface |
| Transmitted Packets with Errors | Number of outgoing errors on this interface or subinterface |
| Unknown Protocol Packets | Number of packets discarded because of an unknown or unsupported protocol |
| Received Ucast Packets | Number of packets received that were not addressed to a multicast or broadcast address |
| Transmitted Ucast Packets | Number of packets transmitted that were not addressed to a multicast or broadcast address |
| Received Packets Discarded | Number of inbound packets discarded even though no errors were detected |

Table 26-3 PPPoE interface and subinterface attributes (continued)

| Attribute | Description |
|-------------------------------|--------------------------------------------------------------------------|
| Transmitted Packets Discarded | Number of outbound packets discarded even though no errors were detected |
| Received Multicast Packets | Number of packets received that were addressed to a multicast address |
| Transmitted Multicast Packets | Number of packets transmitted that were addressed to a multicast address |
| Received Broadcast Packets | Number of packets received that were addressed to a broadcast address |
| Transmitted Broadcast Packets | Number of packets transmitted that were addressed to a broadcast address |