

Chapter 27

Configuring PPP over Ethernet

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

T3-ATM, E3-ATM

OC3, OC12

FE, GE

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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 65.

Table 65: 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

Table 65: PPPoE interface parameters (continued)

Parameter	Description
Max. PPP Sessions	Maximum number of subinterfaces permitted on this interface; range 0–4094; default 0 (no limit)

- Click OK.

Creating a PPPoE Subinterface

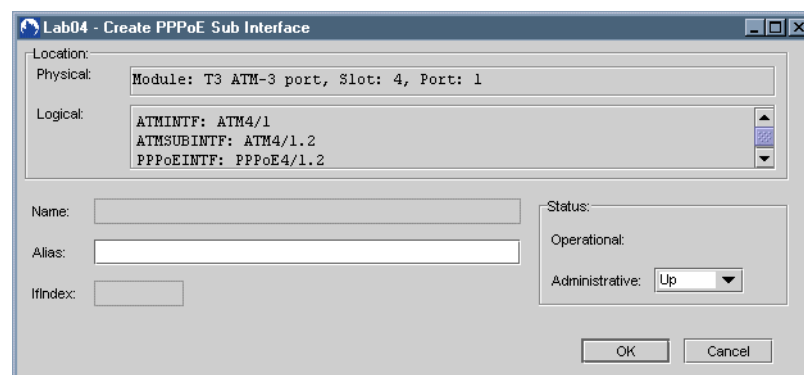
To create a PPPoE subinterface:

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

All existing PPPoE interfaces appear in the list area.

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

The Create PPPoE Sub Interface dialog box appears.



- Set PPPoE subinterface parameters. See Table 66.

Table 66: 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 26, 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 67 for parameter descriptions.

Statistics

Location:
Physical: Module: GE-1 port, Slot: 9, Port: 0

Logical:
PPPoE1/0/0
PPPoE1/0/0.1

System Up Time: 5 days, 6 hours, 33 minutes, 9 seconds

Full Interval (sec): 30 Refresh

Attribute	Raw Value	Delta Value	Rate (per second)
Received Octets	0	0	0
Transmitted Octets	0	0	0
Received Packets with Errors	0	0	0
Transmitted Packets with Errors	0	0	0
Unknown Protocol Packets	0	0	0
Received Unicast Packets	0	0	0
Transmitted Unicast Packets	0	0	0
Received Packets Discarded	0	0	0
Transmitted Packets Discarded	0	0	0
Received Multicast Packets	0	0	0
Transmitted Multicast Packets	0	0	0
Received Broadcast Packets	0	0	0
Transmitted Broadcast Packets	0	0	0

Table 67: 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
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

