Chapter 27
Configuring PPP

This chapter describes how to configure Point-to-Point Protocol (PPP) on the following modules:

- CT3, CT1, and CE1
- T3-ATM, E3-ATM, and OC3-ATM
- OC3-POS and OC48-POS

This chapter contains the following sections:

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 E-series 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 *JUNOSe Link Layer Configuration Guide, Chapter 4, Configuring Point-to-Point Protocol.*

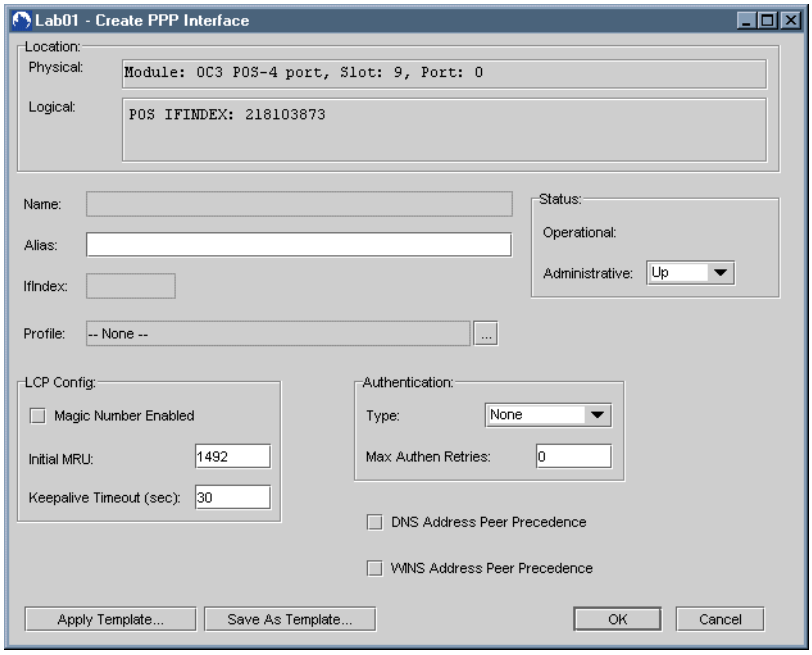
Creating PPP Interfaces

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 select 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.



3. Set the PPP interface parameters (Table 85).

Table 85: 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

Table 85: PPP Interface Parameters (continued)

Parameter	Description
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. For more information, see *NMC-RX User Guide, Vol. 2, Chapter 7, Configuring Profiles*.
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: ■ 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. ■ 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 ■ 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 E-series 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 E-series 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 *Chapter 10, Using Templates*.

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.

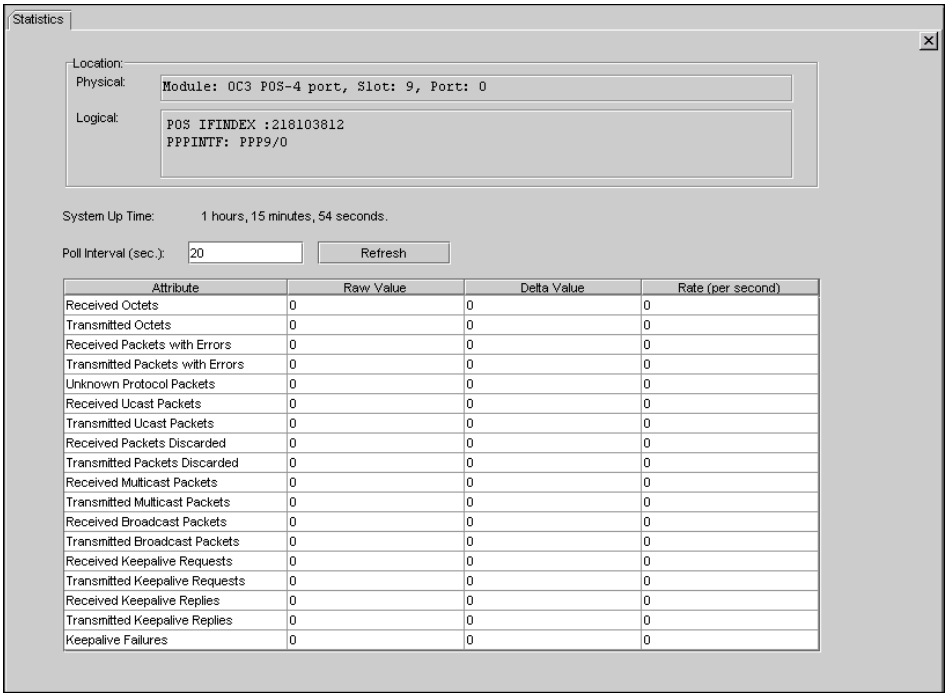
Viewing PPP Statistics

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

To view PPP statistics:

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

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



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 Ucast Packets	0	0	0
Transmitted Ucast 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
Received Keepalive Requests	0	0	0
Transmitted Keepalive Requests	0	0	0
Received Keepalive Replies	0	0	0
Transmitted Keepalive Replies	0	0	0
Keepalive Failures	0	0	0

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

   The PPP Statistics tab appears (Table 86).

Table 86: 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 Octets	Number of incoming octets received on this interface
Transmitted Octets	Number of outgoing octets transmitted on this interface
Received Packets with Errors	Number of incoming errors received on this interface
Transmitted Packets with Errors	Number of outgoing errors on this interface
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
Received Keepalive Requests	Number of received keepalive requests for life of the interface (since system boot or interface creation, whichever is later)
Transmitted Keepalive Requests	Number of transmitted keepalive requests for life of the interface
Received Keepalive Replies	Number of received keepalive replies for life of the interface
Transmitted Keepalive Replies	Number of transmitted keepalive replies for life of the interface
Keepalive Failures	Number of keepalive failures reported on the interface