PPP Debug Commands on Cisco IOS XR Software

This chapter describes the commands used to debug Point-to-Point Protocol (PPP), an encapsulation scheme that can be used on Packet-over-SONET (PoS) interfaces on the Cisco IOS XR software.

debug ppp authentication

To enable debugging of the Link Control Protocol (LCP) session authentication, use the **debug ppp authentication** command in EXEC mode. To disable debugging, use the **no** form of this command.

debug ppp authentication [**location** *node-id*]

no debug ppp authentication [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Specifies a location of the line card. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

The default is that debugging is turned off.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Examples

The following example shows how to use the **debug ppp authentication** command:

```
RP/0/RP0/CPU0:router# debug ppp authentication location 0/2/CPU0

LC/0/2/CPU0:Jun 24 18:00:25.324 : LCP[167]: PO0/2/0/3 CHAP: O CHALLENGE id 93 len 32 from
"router1"
LC/0/2/CPU0:Jun 24 18:00:25.358 : LCP[167]: PO0/2/0/3 CHAP: I RESPONSE id 93 len 32 from
"router2"
LC/0/2/CPU0:Jun 24 18:00:25.383 : LCP[167]: PO0/2/0/3 CHAP: I CHALLENGE id 139 len 32 from
"router2"
LC/0/2/CPU0:Jun 24 18:00:25.489 : LCP[167]: PO0/2/0/3 CHAP: O SUCCESS id 93 len 4
LC/0/2/CPU0:Jun 24 18:00:25.507 : LCP[167]: PO0/2/0/3 CHAP: O RESPONSE id 139 len 32 from
"router1"
LC/0/2/CPU0:Jun 24 18:00:25.585 : LCP[167]: PO0/2/0/3 CHAP: I SUCCESS id 139 len 4
LC/0/2/CPU0:Jun 24 18:00:25.587 : LCP[167]: PO0/2/0/3 PPP: Phase is UP
```

Related Commands

Command	Description
debug ppp negotiation	Enables debugging of LCP and Network Control Protocol (NCP) session negotiations.

debug ppp negotiation

To enable debugging of LCP and NCP session negotiations, use the **debug ppp negotiation** command in EXEC mode. To disable debugging, use the **no** form of this command.

debug ppp negotiation [**location** *node-id*]

no debug ppp negotiation [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Specifies a location of the line card. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

The default is that debugging is turned off.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Examples

The following example shows sample output from the **debug ppp negotiation** command for LCP and IP Control Protocol (IPCP):

```
RP/0/RP0/CPU0:router# debug ppp negotiation location 0/2/CPU0

LC/0/2/CPU0:Jun 24 17:57:39.300 : LCP[167]: PO0/2/0/3 PPP: Phase is ESTABLISHING
LC/0/2/CPU0:Jun 24 17:57:39.327 : LCP[167]: PO0/2/0/3 LCP: O CONFREQ[Starting] id 1 len 14
LC/0/2/CPU0:Jun 24 17:57:39.327 : LCP[167]: PO0/2/0/3 LCP:    MRU 4470 (0x01041176)
LC/0/2/CPU0:Jun 24 17:57:39.329 : LCP[167]: PO0/2/0/3 LCP:    MagicNumber 0x34b60d89
(0x050634b60d89)
LC/0/2/CPU0:Jun 24 17:57:39.366 : LCP[167]: PO0/2/0/3 LCP: I CONFACK[REQsent] id 1 len 14
LC/0/2/CPU0:Jun 24 17:57:39.367 : LCP[167]: PO0/2/0/3 LCP:    MRU 4470 (0x01041176)
LC/0/2/CPU0:Jun 24 17:57:39.368 : LCP[167]: PO0/2/0/3 LCP:    MagicNumber 0x34b60d89
(0x050634b60d89)
LC/0/2/CPU0:Jun 24 17:57:39.787 : LCP[167]: PO0/2/0/3 LCP: I CONFREQ[ACKrcvd] id 8 len 14
LC/0/2/CPU0:Jun 24 17:57:39.787 : LCP[167]: PO0/2/0/3 LCP:    MRU 4470 (0x01041176)
LC/0/2/CPU0:Jun 24 17:57:39.789 : LCP[167]: PO0/2/0/3 LCP:    MagicNumber 0x0c6acbd7
(0x05060c6acbd7)
LC/0/2/CPU0:Jun 24 17:57:39.789 : LCP[167]: PO0/2/0/3 LCP: O CONFACK[ACKrcvd] id 8 len 14
LC/0/2/CPU0:Jun 24 17:57:39.790 : LCP[167]: PO0/2/0/3 LCP:    MRU 4470 (0x01041176)
```

```
LC/0/2/CPU0:Jun 24 17:57:39.791 : LCP[167]: PO0/2/0/3 LCP:    MagicNumber 0x0c6acbd7
(0x05060c6acbd7)
LC/0/2/CPU0:Jun 24 17:57:39.795 : LCP[167]: PO0/2/0/3 LCP: State is Open LC/0/2/CPU0:Jun
24 17:57:39.799 : LCP[167]: PO0/2/0/3 PPP: Phase is UP

LC/0/2/CPU0:Jun 24 17:58:46.869 : IPCP[147]: PO0/2/0/3 IPCP: O CONFREQ[Starting] id 1 len
10
LC/0/2/CPU0:Jun 24 17:58:46.870 : IPCP[147]: PO0/2/0/3 IPCP:    Address 12.0.0.1
(0x03060c000001)
LC/0/2/CPU0:Jun 24 17:58:46.883 : IPCP[147]: PO0/2/0/3 IPCP: I CONFREQ[REQsent] id 2 len
10
LC/0/2/CPU0:Jun 24 17:58:46.884 : IPCP[147]: PO0/2/0/3 IPCP:    Address 12.0.0.2
(0x03060c000002)
LC/0/2/CPU0:Jun 24 17:58:46.886 : IPCP[147]: PO0/2/0/3 IPCP: O CONFACK[REQsent] id 2 len
10
LC/0/2/CPU0:Jun 24 17:58:46.888 : IPCP[147]: PO0/2/0/3 IPCP:    Address 12.0.0.2
(0x03060c000002)
LC/0/2/CPU0:Jun 24 17:58:46.892 : IPCP[147]: PO0/2/0/3 IPCP: I CONFACK[ACKsent] id 1 len
10
LC/0/2/CPU0:Jun 24 17:58:46.893 : IPCP[147]: PO0/2/0/3 IPCP:    Address 12.0.0.1
(0x03060c000001)
LC/0/2/CPU0:Jun 24 17:58:46.897 : IPCP[147]: PO0/2/0/3 IPCP: State is Open LC/0/2/CPU0:Jun
24 17:58:46.907 : IPCP[147]: PO0/2/0/3 IPCP: Install adjacency 0XFF030021
```

Related Commands

Command	Description
debug ppp authentication	Enables debugging of LCP session authentication.