Mobile Wireless Radio Access Networking Commands

clear ppp mux

To clear PPP mux statistics, use the **clear ppp mux** EXEC command.

clear ppp mux [**interface** *interface*]

Syntax Description

interface	(Optional) The identifier of the multilink or serial interface for which you want to clear counters.

Defaults

If no interface is specified, statistics for all multilink and serial interfaces are cleared.

Command Modes

EXEC

Command History

Release	Modification
12.2(8)MC2	This command was introduced.
12.2(15)MC1	This command was incorporated in Cisco IOS Release 12.2(15)MC1.
12.3(11)T	This command was incorporated in Cisco IOS Release 12.3(11)T.

Usage Guidelines

None

Examples

The following example clears PPP mux statistics for multilink interface 1:

```
clear ppp mux interface multilink1
```

Related Commands

Command	Description
show ppp mux	Displays PPP mux counters for the specified multilink interface.

ip rtp compression-connections (mobile wireless)

To specify the total number of Real-Time Transport Protocol (RTP) header compression connections that can exist on an interface, use the **ip rtp compression-connections** command in interface configuration mode. To restore the default value, use the **no** form of this command.

ip rtp compression-connections *number*

no ip rtp compression-connections

Syntax Description

number	Number of RTP header compression connections the cache supports, in the range from 3 to 1000.

Defaults

For PPP and High-Level Data Link Control (HDLC) interfaces, the default is 16 compression connections.

For Frame Relay interfaces, the default is 256 compression connections.

Command Modes

Interface configuration

Command History

Release	Modification
11.3	This command was introduced.
12.0(7)T	This command was integrated into Cisco IOS Release 12.0(7)T and for PPP and HDLC interfaces, the maximum number of compression connections increased from 256 to 1000. For Frame Relay interfaces, the maximum number of compression connections increased from 32 to 256. The default number of compression connections was increased from 32 (fixed) to 256 (configurable).
12.1(4)E	This command was integrated into Cisco IOS Release 12.1(4)E and was supported on Cisco 7100 series routers.
12.3(11)T	This command was integrated into Cisco IOS Release 12.3(11)T.

Usage Guidelines

You should configure one connection for each RTP call through the specified interface.

Each connection sets up a compression cache entry, so you are in effect specifying the maximum number of cache entries and the size of the cache. Too few cache entries for the specified interface can lead to degraded performance, and too many cache entries can lead to wasted memory.

Note Both ends of the serial connection must use the same number of cache entries.

Note The MGX-RPM-1FE-CP back card supports up to 150 RTP header compression connections on a T1 interface and up to 1000 connections per MLP bundle regardless of whether the bundle contains one T1 interface or four.

Examples

The following example changes the number of RTP header compression connections supported to 150:

```
Router> enable
Router# configure terminal
Router(config)# interface Serial1/0.0
Router(config-if)# encapsulation ppp
Router(config-if)# ip rtp header-compression
Router(config-if)# ip rtp compression-connections 150
Router(config-if)# exit
```

Related Commands

Command	Description
ip rtp header-compression	Enables RTP header compression.
show ip rtp header-compression	Displays RTP header compression statistics.

ip rtp header-compression (mobile wireless)

To enable Real-Time Transport Protocol (RTP) header compression, use the **ip rtp header-compression** command in interface configuration mode. To disable RTP header compression, use the **no** form of this command.

ip rtp header-compression [**passive | iphc-format | ietf-format**] [**periodic-refresh**] **[ignore-id]**

no ip rtp header-compression [**passive | iphc-format | ietf-format**] [**periodic-refresh**] **[ignore-id]**

Syntax Description

passive	(Optional) Compresses outgoing RTP packets only if incoming RTP packets on the same interface are compressed. If you do not specify the **passive** keyword, all RTP packets are compressed. This option is not applicable on PPP links.
iphc-format	(Optional) Indicates that the IP Header Compression (IPHC) format of header compression will be used.
ietf-format	(Optional) Indicates that the Internet Engineering Task Force (IETF) format of header compression will be used.
periodic-refresh	(Optional) Indicates that the compressed IP header will be refreshed periodically.
ignore-id	(Optional) Suppresses the IP ID checking in RTP/UDP header compression.

Defaults

Disabled

For PPP interfaces, the default format for header compression is the IPHC format.

For High-Level Data Link Control (HDLC) and Frame Relay interfaces, the default format for header compression is the original proprietary Cisco format. The maximum number of compression connections for the proprietary Cisco format is 256.

Command Modes

Interface configuration

Command History

Release	Modification
11.3	This command was introduced.
12.0	This command was integrated into Cisco IOS Release 12.0. The **iphc-format** optional keyword was added.
12.3(2)T	This command was integrated into Cisco IOS Release 12.3(2)T and the **periodic-refresh** optional keyword was added.
12.3(4)T	This command was integrated into Cisco IOS Release 12.3(4)T and the **ietf-format** keyword was added.
12.3(11)T	This command was integrated into Cisco IOS Release 12.3(11)T and the mobile wireless-specific **ignore-id** optional keyword was added.

Usage Guidelines

You can compress IP/User Datagram Protocol (UDP)/RTP headers to reduce the size of your packets. Compressing headers is especially useful for RTP because RTP payload size can be as small as 20 bytes, and the uncompressed header is 40 bytes.

Header Compression passive Keyword

By default, the **ip rtp header-compression** command compresses outgoing RTP traffic. This command includes an optional **passive** keyword. If you specify the **passive** keyword, outgoing RTP traffic is compressed only if *incoming* RTP traffic on the *same* interface is compressed. If you do not specify the **passive** keyword, *all* RTP traffic is compressed.

For PPP interfaces, the **passive** keyword is ignored. PPP interfaces negotiate the use of header-compression, regardless of whether the **passive** keyword is specified. Therefore, on PPP interfaces, the **passive** keyword is replaced by the IPHC format, the default format for PPP interfaces.

Header Compression iphc-format Keyword

This command includes the **iphc-format** keyword. The **iphc-format** keyword indicates the type of header compression that will be used. For PPP and HDLC interfaces, when the **iphc-format** keyword is specified, TCP header-compression is also enabled. For this reason, the **ip tcp header-compression** command appears in the output of the **show running-config** command. Since both RTP and TCP header compression are enabled, both UDP and TCP packets are compressed.

The **iphc-format** keyword includes checking whether the destination port number is even and in the ranges of 16385 to 32767 (for Cisco audio) or 49152 to 65535 (for Cisco video). Valid RTP packets that meet the criteria (that is, the port number is even and within the specified range) are compressed using the compressed RTP packet format. Otherwise, packets are compressed using the less-efficient compressed non-TCP packet format.

Note For Frame Relay interfaces, the **iphc-format** keyword is not available.

Header Compression ietf-format Keyword

This command includes the **ietf-format** keyword. The **ietf-format** keyword indicates the type of header compression that will be used. For HDLC interfaces, the ietf-format compresses only UDP packets. For PPP interfaces, when the **ietf-format** keyword is specified, TCP header-compression is also enabled. For this reason, the **ip tcp header-compression** command appears in the output of the **show running-config** command. Since both RTP and TCP header compression are enabled, both UDP and TCP packets are compressed.

However, with the **ietf-format** keyword, the requirement of checking whether a destination port number is in a specific range has been removed. Any even destination port number higher than 1024 can be used. Valid RTP packets that meet the criteria (that is, the port number is even and higher than 1024), are compressed using the compressed RTP packet format. Otherwise, packets are compressed using the less-efficient compressed non-TCP packet format.

Note For Frame Relay interfaces, the **ietf-format** keyword is not available.

Support for Serial Lines

RTP header compression is supported on serial lines using Frame Relay, HDLC, or PPP encapsulation. You must enable compression on both ends of a serial connection.

Unicast or Multicast RTP Packets

This command can compress unicast or multicast RTP packets, and, hence, multicast backbone (MBONE) traffic can also be compressed over slow links. The compression scheme is beneficial only when you have small payload sizes, as in audio traffic.

Examples

The following example enables RTP header compression on the Serial1/0.0 subinterface and limits the number of RTP header compression connections to 10. In this example, the optional **iphc-format** keyword of the **ip rtp header-compression** command is specified.

```
Router> enable
Router# configure terminal
Router(config)# interface Serial1/0.0
Router(config-if)# encapsulation ppp
Router(config-if)# ip rtp header-compression iphc-format
Router(config-if)# ip rtp compression-connections 10
Router(config-if)# exit
```

The following example enables RTP header compression on the Serial2/0.0 subinterface and limits the number of RTP header compression connections to 20. In this example, the optional **ietf-format** keyword of the **ip rtp header-compression** command is specified.

```
Router> enable
Router# configure terminal
Router(config)# interface Serial2/0.0
Router(config-if)# encapsulation ppp
Router(config-if)# ip rtp header-compression ietf-format
Router(config-if)# ip rtp compression-connections 20
Router(config-if)# exit
```

In the following example, RTP header compression is enabled on the Serial1/0.1 subinterface and the optional **periodic-refresh** keyword of the **ip rtp header-compression** command is specified:

```
Router> enable
Router# configure terminal
Router(config)# interface Serial1/0.1
Router(config-if)# encapsulation ppp
Router(config-if)# ip rtp header-compression iphc-format periodic-refresh
Router(config-if)# ip rtp compression-connections 10
Router(config-if)# exit
```

Related Commands

Command	Description
clear ip rtp header-compression	Clears RTP header compression structures and statistics.
ip rtp compression-connections	Specifies the total number of RTP header compression connections that can exist on an interface.
show ip rtp header-compression	Displays RTP header compression statistics.
show running-config	Displays the contents of the currently running configuration file or the configuration for a specific interface, or map class information.

mode y-cable

To access the command mode that allows you to manually control the relays on the VWIC card, use the **mode y-cable** command.

mode y-cable

Syntax Description

This command has no parameters, it invokes the y-cable mode.

Defaults

There are no default settings or behaviors.

Command Modes

Redundancy configuration

Command History

Release	Modification
12.2(8)MC2	This command was introduced.
12.2(15)MC1	This command was incorporated in Cisco IOS 12.2(15)MC1.
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Examples

The following example enables y-cable mode.

```
mode y-cable
```

Related Commands

Command	Description
standalone	Indicates whether the MWR 1941-DC router is being used as a standalone device and manually sets the relays.
standby use-interface	Designates a loopback interface as a health or revertive interface.
redundancy	Invokes redundancy mode.

ppp mux

To enable PPP multiplexing/demultiplexing, use the **ppp mux** command in interface configuration mode. To disable PPP multiplexing/demultiplexing, use the **no** form of this command.

ppp mux

no ppp mux

Syntax Description

This command has no parameters.

Defaults

PPP multiplexing/demultiplexing is disabled by default.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)MC1	This command was introduced (MGX-RPM-1FE-CP back card).
12.2(8)MC2	This command was introduced (MWR 1941-DC router).
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Examples

The following example enables PPP multiplexing/demultiplexing.

```
ppp mux
```

Related Commands

Command	Description
ppp mux delay	Sets the maximum delay.
ppp mux frame	Sets the maximum length of the PPP superframe.
ppp mux pid	Sets the default PPP protocol ID.
ppp mux subframe count	Sets the maximum number of subframes in a superframe.
ppp mux subframe length	Sets the maximum length of the PPP subframe.
show ppp mux	Displays PPP mux counters for the specified multilink interface.

ppp mux delay

To set the maximum time the processor can wait before sending a superframe, use the **ppp mux delay** command in interface configuration mode. To set the maximum delay to the default, use the **no** form of this command.

ppp mux delay ***integer***

no ppp mux delay

Syntax Description

integer	The maximum number of microseconds that the processor can wait before sending out a PPP superframe. Possible values: • Cisco MWR 1941-DC router—0 through 4000000 microseconds. • MGX-RPM-1FE-CP back card—1 through 4000000 microseconds.

Defaults

Cisco MWR 1941-DC router—The default maximum delay is 0, which indicates that a superframe will be sent when the transmit queue is full.

MGX-RPM-1FE-CP back card—The default maximum delay is 800.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)MC1	This command was introduced (MGX-RPM-1FE-CP back card).
12.2(8)MC2	This command was introduced (MWR 1941-DC router).
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Usage Guidelines

To use this command, you must first enable PPP multiplexing/demultiplexing.

MGX-RPM-1FE-CP Back Card

When the ppp mux delay command is configured, the maximum number of microseconds that the processor can wait resolves to the nearest 200-microsecond increment. For example, if ppp mux delay 302 is specified, the actual maximum number of microseconds that the processor can wait before sending out a PPP superframe is 400. If ppp mux delay 298 is specified, the actual maximum number of microseconds that the processor can wait before sending out a PPP superframe is 200.

Examples

The following example sets the maximum delay to 5 microseconds on the MWR 1941-DC router.

```
ppp mux delay 5
```

The following example sets the maximum delay to 200 microseconds on the MGX-RPM-1FE-CP back card.

```
ppp mux delay 200
```

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing
ppp mux frame	Sets the maximum length of the PPP superframe.
ppp mux pid	Sets the default PPP protocol ID.
ppp mux subframe count	Sets the maximum number of subframes in a superframe.
ppp mux subframe length	Sets the maximum length of the PPP subframe.
show ppp mux	Displays PPP mux counters for the specified multilink interface.

ppp mux frame

To set the maximum length (in bytes) of the PPP superframes, use the **ppp mux frame** command in interface configuration mode. To set the maximum length to the default, use the **no** form of this command.

ppp mux frame *integer*

no ppp mux frame

Syntax Description

integer	The maximum number of bytes in any multiplexed PPP superframe. Possible values: • Cisco MWR 1941-DC router—1 through 512 bytes. • MGX-RPM-1FE-CP back card—0 through 512 bytes.

Defaults

The default maximum length is 197.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)MC1	This command was introduced (MGX-RPM-1FE-CP back card).
12.2(8)MC2	This command was introduced (MWR 1941-DC router).
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Usage Guidelines

To use this command, you must first enable PPP multiplexing/demultiplexing.

Examples

The following example sets the maximum superframe length to 80 bytes.

```
ppp mux frame 80
```

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing
ppp mux delay	Sets the maximum delay.
ppp mux pid	Sets the default PPP protocol ID.
ppp mux subframe count	Sets the maximum number of subframes in a superframe.
ppp mux subframe length	Sets the maximum length of the PPP subframe.
show ppp mux	Displays PPP mux counters for the specified multilink interface.

ppp mux pid

To set the default receiving PPP protocol ID, use the **ppp mux pid** command in interface configuration mode. To remove this configuration, use the **no** form of this command.

ppp mux pid ***integer***

no ppp mux pid

Syntax Description

integer	The default value of the PPP protocol ID. Possible values are 0 through 65534.

Defaults

The default is 33 (0x21), which is the IP protocol.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)MC1	This command was introduced (MGX-RPM-1FE-CP back card).
12.2(8)MC2	This command was introduced (MWR 1941-DC router).
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Usage Guidelines

To use this command, you must first enable PPP multiplexing/demultiplexing.

Examples

The following example sets the default PPP protocol ID to 8.

```
ppp mux pid 8
```

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing
ppp mux delay	Sets the maximum delay.
ppp mux frame	Sets the maximum length of the PPP superframe.
ppp mux subframe count	Sets the maximum number of subframes in a superframe.
ppp mux subframe length	Sets the maximum length of the PPP subframe.
show ppp mux	Displays PPP mux counters for the specified multilink interface.

ppp mux subframe count

To set the maximum number of PPP subframes that can be contained in a superframe, use the **ppp mux subframe count** command in interface configuration mode. To set the maximum number to the default, use the **no** form of this command.

ppp mux subframe count ***integer***

no ppp mux subframe count

Syntax Description

integer	The maximum number of subframes that can be contained in a superframe. Possible values are 1 through 15 bytes. Possible values: • Cisco MWR 1941-DC router—1 through 15 bytes. • MGX-RPM-1FE-CP back card—0 through 15 bytes.

Defaults

The default maximum is 15.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)MC1	This command was introduced (MGX-RPM-1FE-CP back card).
12.2(8)MC2	This command was introduced (MWR 1941-DC router).
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Usage Guidelines

To use this command, you must first enable PPP multiplexing/demultiplexing.

Examples

The following example sets the maximum subframe count to 20 bytes.

```
ppp mux subframe count 20
```

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing
ppp mux delay	Sets the maximum delay.
ppp mux frame	Sets the maximum length of the PPP superframe.
ppp mux pid	Sets the default PPP protocol ID.

Command	Description
ppp mux subframe length	Sets the maximum length of the PPP subframe.
show ppp mux	Displays PPP mux counters for the specified multilink interface.

ppp mux subframe length

To set the maximum length (in bytes) of the PPP subframes, use the **ppp mux subframe length** command in interface configuration mode. To set the maximum length to the default, use the **no** form of this command.

ppp mux subframe length *integer*

no ppp mux subframe length

Syntax Description

integer	The maximum number of bytes in any single subframe that is to be multiplexed. Possible values: • Cisco MWR 1941-DC router—1 through 512 bytes. • MGX-RPM-1FE-CP back card—0 through 512 bytes.

Defaults

The default maximum length is 195.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)MC2	This command was introduced.
12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Usage Guidelines

To use this command, you must first enable PPP multiplexing/demultiplexing. The maximum length of the subframe should be the maximum length of the superframe minus the length of the L2 header.

Examples

The following example sets the maximum subframe length to 20 bytes.

```
ppp mux subframe length 20
```

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing
ppp mux delay	Sets the maximum delay.
ppp mux frame	Sets the maximum length of the PPP superframe.
ppp mux pid	Sets the default PPP protocol ID.
ppp mux subframe count	Sets the maximum number of subframes in a superframe.
show ppp mux	Displays PPP mux counters for the specified multilink interface.

redundancy

To enter redundancy configuration mode, use the **redundancy** command in global configuration mode.

redundancy

Syntax Description

This command has no arguments or keywords.

Command Default

No default behaviors or values.

Command Modes

Global configuration

Command History

Release	Modification
12.1(5)XV1	This command was introduced on the Cisco AS5800 universal access server.
12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.
12.0(9)SL	This command was integrated into Cisco IOS Release 12.0(9)SL.
12.0(16)ST	This command was implemented on the Cisco 7500 series Internet routers.
12.2(14)S	This command was integrated into Cisco IOS Release 12.2(14)S.
12.2(14)SX	Support for this command was added for the Supervisor Engine 720.
12.2(18)S	This command was implemented on the Cisco 7500 series Internet routers.
12.2(20)S	This command was implemented on the Cisco 7304 router.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was extended to Release 12.2(17d)SXB.
12.3(7)T	This command was implemented on the Cisco 7500 series Internet routers.
12.2(8)MC2	This command was implemented on the MWR 1900 Mobile Wireless Edge Router (MWR).
12.3(11)T	This command was implemented on the MWR 1900 MWR.
12.0(22)S	This command was implemented on the Cisco 10000 series Internet routers.
12.2(18)SXE2	This command was integrated into Cisco IOS Release 12.2(18)SXE2.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Use the **redundancy** command to enter redundancy configuration mode, where you can define aspects of redundancy such as shelf redundancy for the Cisco AS5800 universal access server.

Cisco 10000 Series Router

Before configuring line card redundancy, install the Y-cables. Before deconfiguring redundancy, remove the Y-cables.

The following restrictions apply to line card redundancy on the Cisco 10000 series router:

- Port-level redundancy is not supported.
- Redundant cards must occupy the two subslots within the same physical line card slot.
- The line card that will act as the primary line card must be the first line card configured, and it must occupy subslot 1.

Cisco 7600 Series Router

From redundancy configuration mode, you can enter the main CPU submode to manually synchronize the configurations that are used by the two supervisor engines.

From the main CPU submode, you can use the **auto-sync** command to use all of the redundancy commands that are applicable to the main CPU.

To select the type of redundancy mode, use the **mode** command.

Nonstop forwarding (NSF) with stateful switchover (SSO) redundancy mode supports IPv4. NSF with SSO redundancy mode does not support IPv6, INternetwork Packet Exchange (IPX), and Multiprotocol Label Switching (MPLS).

Examples

The following example enables redundancy mode:

```
Router(config)# redundancy
Router(config-red)#
```

The following example assigns the configured router shelf to the redundancy pair designated as 25. This command must be issued on both router shelves in the redundant router-shelf pair:

```
Router(config)# redundancy
Router(config-red)# failover group-number 25
```

Cisco 10000 Series Router

The following example configures two 4-port channelized T3 half eight line cards that are installed in line card slot 2 for one-to-one redundancy:

```
Router(config)# redundancy
Router(config-red)# linecard-group 1 y-cable
Router(config-red-lc)# member subslot 2/1 primary
Router(config-red-lc)# member subslot 2/0 secondary
```

Cisco 7600 Series Router

The following example shows how to enter the main CPU submode:

```
Router (config)# redundancy
Router (config-r)# main-cpu
Router (config-r-mc)#
```

Related Commands

Command	Description
auto-sync	Enables automatic synchronization of the configuration files in NVRAM.
clear redundancy history	Clears the redundancy event history log.
linecard-group y-cable	Creates a line card group for one-to-one line card redundancy.
member subslot	Configures the redundancy role of a line card.
mode (redundancy)	Configures the redundancy mode of operation.

Command	Description
redundancy force-switchover	Switches control of a router from the active RP to the standby RP.
show redundancy	Displays information about the current redundant configuration and recent changes in states or displays current or historical status and related information on planned or logged handovers.

show ip rtp header-compression (mobile wireless)

To display Enhanced Compressed Real-Time Transport Protocol (CRTP) statistics, use the **show ip rtp header-compression** command in privileged EXEC mode.

show ip rtp header-compression [**detail**] [*interface-type interface-number*]

Syntax Description

detail	(Optional) Displays details of each connection.
interface-type interface-number	(Optional) The interface type and number.

Defaults

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3	This command was introduced.
12.1(5)T	This command was integrated into Cisco IOS Release 12.3(5)T and the command output was modified to include information related to the Distributed Compressed Real-Time Transport Protocol (dCRTP) feature.
12.3(11)T	This command was integrated into Cisco IOS Release 12.3(11)T and the command output was modified to include information related to the Enhanced Compressed Real-Time Transport Protocol (ECRTP) feature.

Usage Guidelines

The **detail** keyword is not available with the **show ip rtp header-compression** command on a Route Switch Processor (RSP). However, the **detail** keyword is available with the **show ip rtp header-compression** command on a Versatile Interface Processor (VIP). Enter the **show ip rtp header-compression** *interface-type interface-number* **detail** command on a VIP to retrieve detailed information regarding RTP header compression on a specific interface.

The **detail** keyword is also not supported with the **show ip rtp header-compression** command on a Cisco MWR 1941-DC router or a MGX-RPM-1FE-CP back card (Cisco IOS Mobile Wireless IP Radio Access Network [IP-RAN] implementation). If specified when the command is entered, the output is not displayed. Additionally, some of the field descriptions displayed by the **show ip rtp header-compression** command do not apply to the MWR 1941-DC router and MGX-RPM-1FE-CP back card.

Examples

The following example displays statistics from ECRTP on an interface:

```
Router# show ip rtp header-compression

RTP/UDP/IP header compression statistics:
  Interface Serial2/0 (compression on, IETF, ECRTP)
    Rcvd:    1473 total, 1452 compressed, 0 errors, 0 status msgs
             0 dropped, 0 buffer copies, 0 buffer failures
    Sent:    1234 total, 1216 compressed, 0 status msgs, 379 not predicted
             41995 bytes saved, 24755 bytes sent
             2.69 efficiency improvement factor
    Connect: 16 rx slots, 16 tx slots,
             6 misses, 0 collisions, 0 negative cache hits, 13 free contexts
             99% hit ratio, five minute miss rate 0 misses/sec, 0 max
```

Table 1 describes the significant fields shown in the display.

Table 1 show ip rtp header-compression Field Descriptions

Field	Description
Interface	Type and number of interface.
Rcvd	Received statistics described in subsequent fields.
total	Number of packets received on the interface.
compressed	Number of packets received with compressed headers.
errors	Number of errors.
status msgs	Number of resynchronization messages received from the peer.
dropped	Number of packets dropped.
buffer copies	Number of buffers that were copied.
buffer failures	Number of failures in allocating buffers.
Sent	Sent statistics described in subsequent fields.
total	Number of packets sent on the interface.
compressed	Number of packets sent with compressed headers.
status msgs	Number of resynchronization messages sent from the peer.
not predicted	Number of packets taking a non-optimal path through the compressor.
bytes saved	Total savings in bytes due to compression.
bytes sent	Total bytes sent after compression.
efficiency improvement factor	Compression efficiency.
Connect	Connect statistics described in subsequent fields.
rx slots	Total number of receive slots.
tx slots	Total number of transmit slots.
misses	Total number of misses.
collisions	Total number of collisions.
negative cache hits	Total number of negative cache hits.
free contexts	Number of available context resources.

Table 1 show ip rtp header-compression Field Descriptions (continued)

Field	Description
hit ratio	Percentage of received packets that have an associated context.
five minute miss rate	Number of new flows found per second averaged over the last five minutes.
max	Highest average rate of new flows reported.

Related Commands

Command	Description
ip rtp compression-connections	Specifies the total number of RTP header compression connections supported on the interface.
ip rtp header-compression	Enables RTP header compression.

show ppp mux

To display counters for a multilink interface, use the **show ppp mux** command in EXEC mode.

show ppp mux [interface ***interface*****]**

Syntax Description

interface *interface*	(Optional) The identifier of the multilink or serial interface for which you want to view counters.

Defaults

If no interface is specified, statistics for all multilink and serial interfaces are displayed.

Command Modes

EXEC

Command History

Release	Modification
12.2(8)MC1	This command was introduced (MGX-RPM-1FE-CP back card).
12.2(8)MC2	This command was introduced (MWR 1941-DC router).
12.3(11)T	This command was incorporated into Cisco IOS Release 12.3(11)T.

Usage Guidelines

This command is only valid when issued against multilink or PPP interfaces.

Examples

The following is an example of the output generated by this command.

```
show ppp mux interface multilink 1

PPP Multiplex Statistics on Interface Multilink1:

Multiplex:
 Total input packets:0
 Errored input packets:0
 Valid input bytes:0
 Total output packets:0
 Multiplexed output packets:0
 Output bytes:0
 Efficiency improvement factor:0%

Demultiplex:
 Total input packets:0
 Multiplexed input packets:0
 Errored input packets:0
 Valid input bytes:0
 Total output packets:0
 Output bytes:0
 Efficiency improvement factor:0%
```

Table 2 describes the significant fields shown in the display.

Table 2 show ppp mux Field Descriptions

Field	Description
Total output packets	Number of outbound packets
Multiplexed output packets	Number of outbound multiplexed superframes
Output byte count	Number of outbound bytes
Total input packets	Number of inbound packets
Errored input packets	Number of inbound packets discarded due to error
Efficiency improvement factor	Percentage of efficiency improvement achieved through multiplexing or demultiplexing

The efficiency improvement factor is calculated as follows:

Multiplex efficiency improvement factor = 100 * (Total bytes saved) / (Total bytes received)

Where total bytes saved = bytes_received_at_muxer - bytes_sent_at_muxer.

Demultiplex efficiency improvement factor = 100 * (Total bytes saved) / (Total bytes sent)

Where total bytes saved = bytes_sent_at_demuxer - bytes_received_at_demuxer.

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing

standalone

To specify that the MWR 1941-DC is being used in a stand-alone configuration (which impacts the relays on the VWIC), use the **standalone** command. To use the MWR 1941-DC in a redundant configuration, use the **no** form of this command.

[**no**] **standalone**

Syntax Description

This command has no attributes.

Defaults

By default, the MWR 1941-DC is configured to be used in a redundant configuration (**no standalone**) and the relays are open.

Command Modes

Y-cable configuration

Command History

Release	Modification
12.2(8)MC2	This command was introduced.
12.3(11)T	This command was incorporated in Cisco IOS Release 12.3(11)T.

Usage Guidelines

Issuing the standalone command closes the relays on the VWICs installed in the MWR 1941-DC.

Examples

The following example closes the relays so that the MWR 1941-DC can be used as a stand-alone device.

```
standalone
```

Related Commands

Command	Description
mode y-cable	Invokes y-cable mode.
standby use-interface	Specifies the interfaces to be used for health and revertive interfaces.

standby use-interface

To designate a loopback interface as a health or revertive interface, use the **standby use-interface** command.

standby use-interface *interface* {**health | revertive | backhaul**}

Syntax Description

interface	Indicates the interface to be used with the specified parameter. For **health** and **revertive**, this is the loopback interface specified in the **standby track** command. For **backhaul**, the interface must be an MLPPP interface. If you want to use a serial interface as the backhaul, you must first configure that interface to be part of an MLPPP bundle.
health	Indicates the interface to monitor for an over temperature condition, the state of the processor, and the state of the T1/E1 firmware. If any of these watched conditions indicate a failure, this interface is brought down. Otherwise, the health interface remains in the up state.
revertive	Indicates the interface that acts as the revertive interface. If the MWR 1941-DC router changes state from active to standby, the revertive interface is brought up. If the MWR 1941-DC router changes state from standby to active, the revertive interface is brought down.
backhaul	Indicates the interface to be used for backhauling.

Defaults

By default, the MWR 1941-DC is configured to be used in a redundant configuration (**no standalone**) and the relays are open.

Command Modes

Y-cable configuration

Command History

Release	Modification
12.2(8)MC2	This command was introduced.
12.3(11)T	This command was incorporated in Cisco IOS Release 12.3(11)T.

Usage Guidelines

The loopback interfaces that you specify for health and revertive interfaces must be the same loopback interfaces that you specified in the **standby track** command. In the **standby track** command, the decrement value for the revertive interface should always be less than that for other interfaces. We recommend that you use loopback101 for health and loopback102 for revertive.

The interface that you specify for the backhaul must be an MLPPP interface. If you want to use a serial interface as the backhaul, you must first configure that interface to be part of an MLPPP bundle. We recommend you use multilink1 for the backhaul interface.

Examples

The following example specifies loopback101 as the health interface and loopback102 as the revertive interface.

```
standby use-interface loopback101 health
standby use-interface loopback102 revertive
standby use-interface multilink1 backhaul
```

Related Commands

Command	Description
mode y-cable	Invokes y-cable mode.
redundancy	Invokes redundancy mode.
standalone	Specifies whether the MWR 1941-DC router is used in a redundant or stand-alone configuration.
standby	Sets HSRP attributes