



Cisco MWR 1941-DC Router IP-RAN Command Reference

This chapter contains information about commands that were introduced specifically in support of implementing the Cisco MWR 1941-DC router in an IP-RAN:

The following commands have been added or changed:

- `clear ppp mux`
- `mode y-cable`
- `ip rtp compression-connections`
- `ip rtp header-compression`
- `ppp mux`
- `ppp mux delay`
- `ppp mux frame`
- `ppp mux pid`
- `ppp mux subframe length`
- `ppp mux subframe count`
- `redundancy`
- `show ppp mux`
- `show redundancy`
- `standalone`
- `standby use-interface`

The following commands were not altered but have been included for your convenience:

- `clear ip rtp header-compression`
- `keepalive`
- `show ip rtp header-compression`

clear ip rtp header-compression

To clear Real-Time Transport Protocol (RTP) header compression structures and statistics, use the **clear ip rtp header-compression** EXEC command.

clear ip rtp header-compression [*interface-type interface-number*]

Syntax Description	<i>type number</i> (Optional) Interface type and number.
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Command Modes	EXEC
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Command History	Release	Modification
	11.3	This command was introduced.
12.2(8)MC2	This command was incorporated in Cisco IOS 12.2(8)MC2.	
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.	

Usage Guidelines	If this command is used without an interface type and number, it clears all RTP header compression structures and statistics.
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Examples	The following example clears RTP header compression structures and statistics for multilink interface 1: <pre>clear ip rtp header-compression multilink1</pre>
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Related Commands	Command	Description
	ip rtp header-compression	Enables RTP header compression.

clear ppp mux

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

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

Syntax Description	<i>interface</i>	(Optional) The identifier of the multilink or serial interface for which you want to clear counters.
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Defaults	If no interface is specified, statistics for all multilink and serial interfaces are cleared.
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Command Modes	EXEC
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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.

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.

keepalive

To enable keepalive packets and to specify the number of times that the Cisco IOS software tries to send keepalive packets without a response before bringing down the interface or before bringing the tunnel protocol down for a specific interface, use the `keepalive` command in interface configuration mode. When the keepalive function is enabled, a keepalive packet is sent at the specified time interval to keep the interface active. To turn off keepalive packets entirely, use the `no` form of this command.

keepalive [*period* [*retries*]]

no keepalive [*period* [*retries*]]

Syntax Description

<i>period</i>	(Optional) Integer value in seconds greater than 0. The default is 10.
<i>retries</i>	(Optional) Specifies the number of times that the device will continue to send keepalive packets without response before bringing the interface down. Integer value greater than 1 and less than 255. If omitted, the value that was previously set is used; if no value was specified previously, the default of 5 is used. If using this command with a tunnel interface, specifies the number of times that the device will continue to send keepalive packets without response before bringing the tunnel interface protocol down.

Defaults

period: 10 seconds

retries: 5

If you enter only the **keepalive** command with no arguments, defaults for both arguments are used.

If you enter only the **keepalive** command and the timeout (*period*) parameter, the default number of retries (5) is used.

If you enter the **no keepalive** command, keepalive packets are disabled on the interface.

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.
12.2(8)T	The <i>retries</i> argument was added and made available on tunnel interfaces.
12.2(13)	The default value for the <i>retries</i> argument was increased to 5.
12.2(8)MC2	This command was incorporated in Cisco IOS 12.2(8)MC2.
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.

Usage Guidelines**Keepalive Time Interval**

You can configure the keepalive time interval, which is the frequency at which the Cisco IOS software sends messages to itself (Ethernet and Token Ring) or to the other end (serial and tunnel), to ensure that a network interface is alive. The interval is adjustable in 1-second increments down to 1 second. An interface is declared down after three update intervals have passed without receiving a keepalive packet unless the retry value is set higher.

Setting the keepalive timer to a low value is very useful for rapidly detecting Ethernet interface failures (transceiver cable disconnecting, cable not terminated, and so on).

Line Failure

A typical serial line failure involves losing Carrier Detect (CD) signal. Because this sort of failure is typically noticed within a few milliseconds, adjusting the keepalive timer for quicker routing recovery is generally not useful.

Keepalive Packets with Tunnel Interfaces

GRE keepalive packets may be sent from both sides of a tunnel, or from just one side. If they are sent from both sides, the period and retry parameters can be different at each side of the link. If you configure keepalives on only one side of the tunnel, the tunnel interface on the sending side might perceive the tunnel interface on the receiving side to be down because the sending interface is not receiving keepalives. From the receiving side of the tunnel, the link appears normal because no keepalives were enabled on the second side of the link.

Dropped Packets

Keepalive packets are treated as ordinary packets, so it is possible that they will be dropped. To reduce the chance that dropped keepalive packets will cause the tunnel interface to be taken down, increase the number of retries.

**Note**

When adjusting the keepalive timer for a very low bandwidth serial interface, large datagrams can delay the smaller keepalive packets long enough to cause the line protocol to go down. You may need to experiment to determine the best values to use for the timeout and the number of retry attempts.

Examples

The following example shows how to set the keepalive interval to 3 seconds:

```
Router(config)# interface ethernet 0
Router(config-if)# keepalive 3
```

The following example shows how to set the keepalive interval to 3 seconds and the retry value to 7:

```
Router(config)# interface tunnel 1
Router(config-if)# keepalive 3 7
```

ip rtp compression-connections

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** interface configuration command. To restore the default value, use the **no** form of this command.

ip rtp compression-connections *number*

no ip rtp compression-connections

Syntax Description	<i>number</i>	Number of RTP header compression connections the cache supports, in the range from 3 to 1800. The default is 16 connections.
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Defaults	16 connections
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Command Modes	Interface configuration
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Command History	Release	Modification
	11.3	This command was introduced.
12.0(7)T	For PPP and High-Level Data Link Control (HDLC) encapsulation, the maximum number of connections increased from 256 to 1000. For Frame Relay encapsulation, the maximum number of connections increased to 256. The maximum value for Frame Relay is fixed, not configurable.	
12.1(4)E	This command was supported on Cisco 7100 series routers.	
12.2(8)MC2	The upper limit for the MWR 1941-DC is set at 1000.	
12.2(14)S	This command was integrated into Cisco IOS Release 12.2(14)S.	
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.	
12.2(15)MC2h	The upper limit for MWR 1941-DC is set at 1800.	

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

```
interface serial 0
 encapsulation ppp
 ip rtp header-compression ignore-id
 ip rtp compression-connections 150
```

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

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

ip rtp header-compression [passive] [ignore-id]

no ip rtp header-compression

Syntax Description		
passive	(Optional)	Compresses outgoing RTP packets only if incoming RTP packets on the same interface are compressed. This option is not applicable on PPP links.
ignore-id	(Optional)	Suppresses the IP ID checking in RTP/UDP header compression.

Defaults Disabled

Command Modes Interface configuration

Command History	Release	Modification
	11.3	This command was introduced.
	12.2(15)MC1	This command was incorporated in Cisco IOS Release 12(15)MC1 and the ignore-id keyword option was added.
	12.3(11)T	This command was incorporated in Cisco IOS Release 12.3(11)T.

Usage Guidelines If you use this command without the passive keyword, the software compresses all RTP traffic. You can compress IP/UDP/RTP headers and IP/UDP 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 decompressed header is 40 bytes.

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

Examples The following example enables RTP header compression on fast ethernet interface 1 and limits the number of RTP header compression connections to 10:

```
interface serial 0
 encapsulation ppp
 ip rtp header-compression
 ip rtp compression-connections 10
```

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.

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)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 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	<i>integer</i>	The maximum number of microseconds that the processor can wait before sending out a PPP superframe. Possible values are 0 through 4000000 microseconds.
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Defaults	The default maximum delay is 0, which indicates that a superframe will be sent when the transmit queue is full.
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Command Modes	Interface configuration
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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.

Usage Guidelines	To use this command, you must first enable PPP multiplexing/demultiplexing.
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Examples	The following example sets the maximum delay to 5 microseconds.
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```
ppp mux delay 5
```

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	<i>integer</i>	The maximum number of bytes in any multiplexed PPP superframe. Possible values are 1 through 512 bytes.
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Defaults	The default maximum length is 197.
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Command Modes	Interface configuration
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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.

Usage Guidelines	To use this command, you must first enable PPP multiplexing/demultiplexing.
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Examples	The following example sets the maximum superframe length to 80 bytes.
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```
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	<i>integer</i>	The default value of the PPP protocol ID. Possible values are 0 through 65534.
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Defaults The default is 33 (0x21), which is the IP protocol.

Command Modes Interface 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.

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 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	<i>integer</i>	The maximum number of bytes in any single subframe that is to be multiplexed. Possible values are 1 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.
	12.2(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.
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	<p>The following example sets the maximum subframe length to 20 bytes.</p> <pre>ppp mux subframe length 20</pre>	
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.

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	<i>integer</i>	The maximum number of subframes that can be contained in a superframe. Possible values are 1 through 15 bytes.
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Defaults	The default maximum is 15.
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Command Modes	Interface configuration
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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.

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

redundancy

To access the command mode that allows you to configure aspects of redundancy, use the **redundancy** command.

redundancy

Syntax Description This command has no parameters, it invokes the redundancy mode.

Defaults There are no default settings or behaviors.

Command Modes Global 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 redundancy mode.

```
redundancy
```

Related Commands	Command	Description
	mode y-cable	Invoked y-cable mode.
	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.

show ip rtp header-compression

To show RTP header compression statistics, use the **show ip rtp header-compression** EXEC command.

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

Syntax Description	<i>type number</i>	(Optional) Interface type and number.
	detail	(Optional) Displays details of each connection.
	Note	This keyword is not supported on the Cisco MWR 1941-DC.

Command Modes EXEC

Command History	Release	Modification
	11.3	This command was introduced.
	12.1(5)T	The command output was modified to include information related to the Distributed Compressed Real-Time Transport Protocol (dCRTP) feature.
	12.2(8)MC2	This command was incorporated in Cisco IOS Release 12.2(8)MC2.
	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.

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 type number detail** command on a VIP to retrieve detailed information regarding RTP header compression on a specific interface.

Examples The following is sample output from the **show ip rtp header-compression** command:

```
show ip rtp header-compression

RTP/UDP/IP header compression statistics:
Interface Serial1:
  Rcvd: 0 total, 0 compressed, 0 errors
        0 dropped, 0 buffer copies, 0 buffer failures
  Sent: 430 total 429 compressed
        15122 bytes saved, 0 bytes sent
        0 efficiency improvement factor
  Connect: 16 rx slots, 16 tx slots, 0 long searches, 1 misses
          99% hit ratio, five minute miss rate 0 misses/sec, 0 max.
```

[Table 5-1](#) describes the significant fields shown in the display.

Table 5-1 *show ip rtp header-compression Field Descriptions*

Field	Description
Interface Serial1	Type and number of interface.
Rcvd: total	Number of packets received on the interface.
compressed	Number of packets with compressed header.
errors	Number of errors.
dropped	Number of dropped packets.
buffer copies	Not applicable to the MWR 1941-DC router.
buffer failures	Not applicable to the MWR 1941-DC router.
Sent: total	Total number of packets sent.
compressed	Number of packets sent with compressed header.
bytes saved	Total savings in bytes due to compression.
bytes sent	Not applicable to the MWR 1941-DC router.
efficiency improvement factor	Efficiency achieved through compression.
Connect: rx slots	Total number of receive slots.
tx slots	Total number of transmit slots.
long searches	Not applicable to the MWR 1941-DC router.
misses	Number of new states that were created.
hit ratio	Number of times existing states were revised.
five minute miss rate	Average miss rate.
max.	Maximum miss rate.
negative cache	Not applicable to the MWR 1941-DC router.

Related Commands

Command	Description
ip rtp compression-connections	Specifies the total number of RTP header compression connections that can exist on an interface.
ip rtp header-compression	Enables RTP header compression.

show ppp mux

To display counters for a multilink interface on the MWR 1941-DC, use the **show ppp mux** command in EXEC mode.

```
show ppp mux [interface interface]
```

Syntax Description	interface <i>interface</i> (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)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.

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.
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```
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 5-2 describes the significant fields shown in the display.

Table 5-2 *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 = $100 * (\text{Total bytes saved}) / (\text{Total bytes received})$

Where total bytes saved = bytes_received_at_muxer - bytes_sent_at_muxer.

Demultiplex efficiency improvement factor = $100 * (\text{Total bytes saved}) / (\text{Total bytes sent})$

Where total bytes saved = bytes_sent_at_demuxer - bytes_received_at_demuxer.

Related Commands

Command	Description
ppp mux	Enables PPP multiplexing/demultiplexing

show redundancy

To display information about the current redundant configuration and recent changes in states, use the **show redundancy** command in EXEC mode.

show redundancy

Syntax Description This command has no attributes.

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 12.2(15)MC1.
	12.3(11)T	This command was incorporated in Cisco IOS 12.3(11)T.

Usage Guidelines In the **standby group name group-name** command, if you omit the *group-name* or if you enter a group name that doesn't begin with one or two, the configuration will fail and there will be a mismatch in the information displayed by the **show redundancy** and **show standby** commands.

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

```

show redundancy
MWR1900 is the Active Router
Previous States with most recent at bottom

INITL_INITL      Dec 31 19:00:00.000
LISTN_INITL      Feb 28 19:00:15.568
LISTN_LISTN      Feb 28 19:00:15.568
SPEAK_LISTN      Feb 28 19:00:18.568
SPEAK_SPEAK      Feb 28 19:00:18.568
STDBY_SPEAK      Mar 19 08:54:26.191
ACTIV_SPEAK      Mar 19 08:54:26.191
ACTIV_STDBY      Mar 19 08:54:26.191
ACTIV_ACTIV      Mar 19 08:54:26.191
INITL_ACTIV      Mar 19 08:56:22.700
INITL_INITL      Mar 19 08:56:22.700
INITL_LISTN      Mar 19 08:56:28.544
LISTN_LISTN      Mar 19 08:56:28.652
LISTN_SPEAK      Mar 19 08:56:31.544
SPEAK_SPEAK      Mar 19 08:56:31.652
SPEAK_STDBY      Mar 19 08:56:34.544
SPEAK_ACTIV      Mar 19 08:56:34.544
STDBY_ACTIV      Mar 19 08:56:34.652
ACTIV_ACTIV      Mar 19 08:56:34.652
INITL_ACTIV      Mar 19 10:20:41.455
INITL_INITL      Mar 19 10:20:41.455
INITL_LISTN      Mar 19 10:20:49.243
LISTN_LISTN      Mar 19 10:20:49.299

```

```

LISTN_SPEAK      Mar 19 10:20:52.244
SPEAK_SPEAK     Mar 19 10:20:52.300
SPEAK_STDBY     Mar 19 10:20:55.244
STDBY_STDBY     Mar 19 10:20:55.300
ACTIV_STDBY     Mar 19 10:21:01.692
ACTIV_ACTIV     Mar 19 10:21:01.692

```

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
standby use-interface	Specifies the interfaces to be used for health and revertive interfaces.

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.
	12.2(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.

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

<i>interface</i>	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.

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