

11-Commands for Reliability

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1.Commands for MRPP

control-vlan

Command	control-vlan <vid> no control-vlan
parameter	vid expresses control VLAN ID, the valid range is from 1 to 4094
default	-
Mode	MRPP ring mode
Usage Guide	<p>The command specifies Virtual VLAN ID of MRPP ring, currently it can be any value in 1-4094. To avoid confusion, it is recommended that the ID is non-configured VLAN ID, and the same to MRPP ring ID. In configuration of MRPP ring of the same MRPP loop switches, the control VLAN ID must be the same, otherwise the whole MRPP loop may not be able to work normally or form broadcast.</p> <p>The mrpp enable command must be start before the control-vlan command be used. If primary port, secondary port, node-mode and enable commands all be configured after control-vlan, the mrpp-ring function is enabled.</p>
Example	Configure control VLAN of mrpp ring 4000 is 4000. Switch(config)#mrpp ring 4000 Switch(mrpp-ring-4000)#control-vlan 4000

clear mrpp statistics

Command	clear mrpp statistics [<ring-id>]
parameter	ring-id is MRPP ring ID, the valid range is from 1 to 4096, if not specified ID, it clears all of MRPP ring statistic information.
default	-
Mode	Admin Mode.
Usage Guide	Clears statistics for MRPP packets received and transmitted by the MRPP loop.
Example	Clear switch MRPP ring 4000 statistics. Switch#clear mrpp statistics 4000

enable

Command	enable no enable
parameter	-
default	Default disable MRPP ring
Mode	MRPP ring mode
Usage Guide	This command is used to enable the configured MRPP ring , " no enable" command disables this enabled MRPP ring.
Example	<p>Configure MRPP ring 4000 of switch to primary node, and enable the MRPP ring.</p> <pre>Switch(config)#mrpp enable Switch(config)#mrpp ring 4000 Switch(mrpp-ring-4000)#control-vlan 4000 Switch(mrpp-ring-4000)# node-mode master Switch(mrpp-ring-4000)#fail-timer 18 Switch(mrpp-ring-4000)#hello-timer 6 Switch(mrpp-ring-4000)#enable Switch(mrpp-ring-4000)#exit Switch(config)#in ethernet1/0/1 Switch(config-If-Ethernet1/0/1)#mrpp ring 4000 primary-port Switch(config)#in ethernet 1/0/3 Switch(config-If-Ethernet1/0/3)#mrpp ring 4000 secondary-port</pre>

errp domain

Command	errp domain <domain-id> no errp domain <domain-id>
parameter	domain-id domain ID of ERRP, the range between 1 and 15.
default	Default Unconfigured ID
Mode	Global mode
Usage Guide	If domain ID of ERRP needs to be configured, the compatible mode of ERRP should be enabled firstly. When executing this command, it should create a new ERRP domain if there is no ERRP domain. However, the no command is used to delete the corresponding domain ID of ERRP.
Example	<p>Configure domain ID for ERRP globally.</p> <pre>Switch(Config)#errp domain 1</pre>

fail-timer

Command	fail-timer <timer> no fail-timer
parameter	<i>timer</i> valid range is from 1 to 300s.
default	Default configure timer interval 3s
Mode	MRPP ring mode
Usage Guide	If primary node of MRPP ring doesn't receives Hello packet from primary port of primary node on configured fail timer, the whole loop is fail. Transfer node of MRPP doesn't need this timer and configure. To avoid time delay by transfer node forwards Hello packet, the value of fail timer must be more than or equal to 3 times of Hello timer. On time delay loop, it needs to modify the default and increase the value to avoid primary node doesn't receive Hello packet on fail timer due to time delay.
Example	Configure fail timer of MRPP ring 4000 to 10s. Switch(config)# mrpp ring 4000 Switch(mrpp-ring-4000)#fail-timer 10

hello-timer

Command	hello-timer <timer> no hello-timer
parameter	<i>timer</i> valid range is from 1 to 100s.
default	Default configuration timer interval is 1s.
Mode	MRPP ring mode
Usage Guide	The primary node of MRPP ring continuously sends Hello packet on configured Hello timer interval, if secondary port of primary node can receive this packet in configured period; the whole loop is normal, otherwise fail. Transfer node of MRPP ring doesn't need this timer and configure.
Example	Configure hello-timer of MRPP ring 4000 to 3 seconds. Switch(config)# mrpp ring 4000 Switch(mrpp-ring-4000)#hello-timer 3

mrpp eaps compatible

Command	mrpp eaps compatible no mrpp eaps compatible
parameter	-
default	Disable the compatible function of EAPS
Mode	Global mode
Usage Guide	If the compatible function of EAPS needs to be configured, MRPP protocol should be enabled firstly. When executing no mrpp eaps compatible command, it should ensure that the switch has enabled MRPP protocol.
Example	Enable the compatible function of EAPS globally Switch(Config)#mrpp enable Switch(Config)#mrpp eaps compatible

mrpp enable

Command	mrpp enable no mrpp enable
parameter	-
default	The system doesn't enable MRPP protocol module
Mode	Global Mode
Usage Guide	If it needs to configure MRPP ring, it enables MRPP protocol. Executing "no mrpp enable" command, it ensures to disable the switch enabled MRPP ring.
Example	Globally enable MRPP. Switch(config)#mrpp enable

mrpp errp compatible

Command	mrpp errp compatible no mrpp errp compatible
parameter	-
default	Disable the compatible function of ERRP.
Mode	Global mode

Usage Guide	If the compatible function of ERRP needs to be configured, MRPP protocol should be enabled firstly. Furthermore, the port with ERRP compatible mode should be configured as hybrid or trunk mode and allow the packets with Control Vlan information.
Example	<pre> Enable the compatible function of ERRP globally. Switch(Config)#mrpp enable Switch(Config)#mrpp errp compatible Switch(Config)#mrpp ring 2 Switch(mrpp-ring-2)#control-vlan 4000 Switch(config-if-ethernet1/51)#switchport mode hybrid Switch(config-if-ethernet1/51)#switchport hybrid allowed vlan 4000 tag Switch(config-if-ethernet1/52)#switchport mode hybrid Switch(config-if-ethernet1/52)#switchport hybrid allowed vlan 4000 tag </pre>

mrpp poll-time

Command	mrpp poll-time <20-2000>
parameter	<20-2000> Enquiry Time, Unit: ms
default	Default configuration ms 100
Mode	Global mode.
Usage Guide	Configure the query time to adjust the query interval of MRPP, the default interval is 100ms.
Example	<pre> Set the query time as 200ms. Switch(Config)# mrpp poll-time 200 </pre>

mrpp ring

Command	mrpp ring <ring-id> no mrpp ring <ring-id>
parameter	ring-id is MRPP ring ID, the valid range is from 1 to 4096
default	Default does not configure ring id
Mode	Global mode
Usage Guide	If this MRPP ring doesn't exist it create new MRPP ring when executing the command, and then it enter MRPP ring mode. It needs to ensure disable this MRPP ring when executing the

“no mrpp ring” command.

Example

Create a mrpp ring 100.
Switch(config)#mrpp ring 100

mrpp ring primary-port

Command

mrpp ring <ring-id> primary-port {cos <cos>}
no mrpp ring <ring-id> primary-port

parameter

ring-id is the ID of MRPP ring; range is <1-4096>.

cos <cos> is the cos value in the packet head; range is <0-7>

default

There is no configuration and the cos value is 0 as default.

Mode

Port mode

Usage Guide

The command specifies MRPP ring primary port. Primary node uses primary port to send Hello packet, secondary port is used to receive Hello packet from primary node. There are no difference on function between primary port and secondary of secondary node.

Example

Configure the primary of MRPP ring 4000 to Ethernet 1/0/1
Switch(Config)#interface ethernet 1/0/1
Switch(config-If-Ethernet1/0/1)#mrpp ring 4000 primary-port

mrpp ring secondary-port

Command

mrpp ring <ring-id > secondary-port {cos <cos>}
no mrpp ring <ring-id > secondary-port

parameter

ring-id is the ID of MRPP ring; range is <1-4096>.

cos <cos> is the cos value in the packet head; range is <0-7>.

default

There is no configuration and the cos value is 0 as default

Mode

Port mode

Usage Guide

The command specifies secondary port of MRPP ring. The primary node uses secondary port to receive Hello packet from primary node. There are no difference on function between primary port and secondary of secondary node.

The mrpp enable command must be enabled before the control-vlan command be used. If primary port, secondary port, node-mode and enable commands all be configured after control-vlan, then the mrpp-ring function is enabled.

Example

Configure secondary port of MRPP ring to 1/0/3.
Switch(config)#interface ethernet1/0/3
Switch(Config-If-Ethernet1/0/3)#mrpp ring 4000 secondary-port

node-mode

Command

node-mode {maser | transit}

parameter

-

default

Default the node mode is secondary node.

Mode

MRPP ring mode

Usage Guide

This command configures the node type as the primary or secondary node.

Example

Configure the switch to primary node. MRPP ring 4000.
Switch(config)# mrpp ring 4000
Switch(mrpp-ring-4000)#node-mode master

show mrpp

Command

show mrpp [<ring-id>]

parameter

ring-id is MRPP ring ID, the valid range is from 1 to 4096, if not specified ID, it display all of MRPP ring configuration.

default

-

Mode

Admin and Configuration Mode

Usage Guide

This command is used to view the MRPP ring configuration.

Example

Display configuration of MRPP ring 4000 of switch
Switch# show mrpp 4000

show mrpp statistics

Command

show mrpp statistics [<ring-id>]

parameter	<i>ring-id</i> is MRPP ring ID, the valid range is from 1 to 4096, if not specified ID, it displays all of MRPP ring statistic information.
default	-
Mode	Admin and Configuration Mode.
Usage Guide	This command is used to display the statistics of the MRPP loop receiving and transmitting packets.
Example	Display statistic information of MRPP ring 4000 of switch. Switch# show mrpp statistic 4000

2.Commands for ULPP

clear ulpp flush counter interface

Command	clear ulpp flush counter interface <name>
parameter	<i>name</i> is the name of the port
default	-
Mode	Admin mode
Usage Guide	Clear the statistics of the packets.
Example	Clear the statistic information of the flush packets for the port1/0/1 Switch#clear ulpp flush counter interface e1/0/1

control vlan

Command	control vlan <integer> no control vlan
parameter	<i>integer</i> is the control VLAN ID that sends the flush packets, range from 1 to 4094.
default	The default is VLAN 1
Mode	ULPP group configuration mode.

Usage Guide	Configure the control VLAN of ULPP group. This VLAN must correspond the existent VLAN, after it is configured, this VLAN can't be deleted. It must belong to the VLAN protected by ULPP group to avoid flush packets loopback.
Example	Configure the sending control VLAN of ULPP group as 10. Switch(config)# ulpp group 20 Switch(ulpp-group-20)# control vlan 10

description

Command	description <string> no description
parameter	<i>string</i> is the name of ULPP group, the max number of the characters is 128.
default	Do not configure ULPP name by default.
Mode	ULPP group configuration mode.
Usage Guide	Configure the description string for the ULPP group. Delete description no command.
Example	Configure the description of ULPP group as switch. Switch(config)# ulpp group 20 Switch(ulpp-group-20)# description switch

flush {enable | disable} arp

Command	flush {enable disable} arp
parameter	-
default	By default, enable the sending function of the flush packets which are deleted by ARP.
Mode	ULPP group configuration mode.
Usage Guide	If configure this command, when the link is switched, it will not actively send the flush packets to notify the upstream device to delete the entries of ARP.
Example	Disable sending the flush packets of deleting ARP. Switch(config)# ulpp group 20 Switch(ulpp-group-20)# flush disable arp

flush {enable | disable} mac

Command	flush {enable disable}mac
parameter	-
default	By default, enable sending the flush packets of updating MAC address.
Mode	ULPP group configuration mode.
Usage Guide	If configure this command, when the link is switched, it will not actively send the flush packets to notify the upstream device to update the MAC address table.
Example	Disable sending the flush packets of updating MAC address. Switch(config)# ulpp group 20 Switch(ulpp-group-20)# flush disable mac

flush {enable | disable} mac-vlan

Command	flush {enable disable}mac-vlan
parameter	-
default	Disable.
Mode	ULPP group configuration mode
Usage Guide	If configure this command, when the link is switched, it will not actively send the flush packets to notify the upstream device to delete the dynamic unicast mac according to vlan.
Example	Disable sending the flush packets deleted by mac-vlan. Switch(config)#ulpp group 1 Switch(ulpp-group-1)#flush disable mac-vlan

preemption delay

Command	preemption delay <integer> no preemption delay
parameter	<i>integer</i> the preemption delay, range from 1 to 600, in second.
default	The default preemption delay is 30.
Mode	ULPP group configuration mode.

Usage Guide	The preemption delay is the delay time before the master port is preempted as the forwarding state, for avoiding the link oscillation in a short time. After the preemption mode is enabled, the preemption delay takes effect.
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Example	Configure the preemption delay as 50s for ULPP group. Switch(config)# ulpp group 20 Switch(ulpp-group-20)# preemption delay 50
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preemption mode

Command	preemption mode no preemption mode
parameter	-
default	Do not preempt.
Mode	ULPP group configuration mode.
Usage Guide	If the preemption mode configured by ULPP group, and the slave port is in forwarding state, and the master port is in the standby state, the master port will turn into the forwarding state and the slave port turn into the standby state after the preemption delay.
Example	Configure the preemption mode of ULPP group. Switch(config)# ulpp group 20 Switch(ulpp-group-20)# preemption mode

protect vlan-reference-instance

Command	protect vlan-reference-instance <instance-list> no protect vlan-reference-instance <instance-list>
parameter	<i>instance-list</i> is MSTP instance list, such as: i; j-k. The number of the instances is not limited in the list.
default	Do not protect any VLANs by default that means any instances are not quoted.
Mode	ULPP group configuration mode.
Usage Guide	Quote the instances of MSTP to protect the VLANs. The VLAN corresponds to this instance is at the forwarding state on one port of this group, and at the blocked state on another port of this group. Each ULPP group can quotes all instances of MSTP. And it can quotes the inexistent MSTP instances that means any VLANs are not protected, the different ULPP groups can't quote the same instance.

Example

Configure the protective VLAN quoted from instance 1 for ULPP group.
Switch(config)# ulpp group 20
Switch(ulpp-group-20)# protect vlan-reference-instance 1

show ulpp flush counter interface

Command

show ulpp flush counter interface {ethernet <IFNAME> | <IFNAME>}

parameter

IFNAME is the name of the ports.

default

-

Mode

Admin mode.

Usage Guide

Show the statistic information of the flush packets, such as: the information of the flush packets number which has been received, the time information that receive the flush packets finally.

Example

Show the statistic information of the flush packets for ULPP group1.
Switch# show ulpp flush counter interface e1/0/1
Received flush packets: 10

show ulpp flush-receive-port

Command

show ulpp flush-receive-port

parameter

-

default

-

Mode

Admin mode.

Usage Guide

displays the port that receives the flush packet, flush type, and control VLAN.

Example

Show the information that the port receives flush packets.
Switch# show ulpp flush-receive-port
ULPP flush-receive portlist:
Portname Type Control Vlan

Ethernet1/0/1 ARP 1
Ethernet1/0/3 MAC 1;3;5-10

show ulpp group

Command	show ulpp group [group-id]
parameter	group-id Show the information of the specific ULPP group
default	By default, show the information of all ULPP groups which have been configured
Mode	Admin mode.
Usage Guide	Show the configuration information of ULPP groups which have been configured, such as: the state of the master port and the slave port, the preemption mode, the preemption delay, etc.

Example	<p>Show the configuration information of ULPP group1.</p> <pre>Switch# show ulpp group 1 ULPP flush-receive portlist: Portname Type Control Vlan ----- Switch#show ulpp group 20 ULPP group 20 information: Description: switch Preemption mode: ON Preemption delay: 50s Control VLAN: 10 Flush packet: NONE Protected VLAN: Reference Instance 1 Member Role State Track-cfm-level -----</pre>
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ulpp control vlan

Command	ulpp control vlan <vlan-list> no ulpp control vlan <vlan-list>
parameter	vlan-list specify the control VLAN list that receives the flush packets, such as: i; j-k. The number of VLANs in Each character string cannot exceed 100. The receiving control VLAN of the port can be added.
default	The default is VLAN 1.
Mode	Port mode
Usage Guide	Configure the receiving control VLAN for the port. This VLAN must correspond the existent VLAN, after it is configured, this VLAN can't be deleted.

Example Configure the receiving control VLAN as 10
Switch(config)# interface ethernet 1/0/1
Switch(config-If-Ethernet1/0/1)# ulpp control vlan 10

ulpp flush {enable | disable} arp

Command	ulpp flush {enable disable} arp
parameter	-
default	By default, disable receiving the flush packets of deleting ARP
Mode	Port mode.
Usage Guide	If this command is configured, then it will not receive the flush packets of deleting ARP.
Example	Disable receiving the flush packets of deleting ARP. Switch(config)# interface ethernet 1/0/1 Switch(config-If-Ethernet1/0/1)# ulpp flush disable arp

ulpp flush {enable | disable} mac

Command	ulpp flush {enable disable} mac
parameter	-
default	By default, disable receiving the flush packets of updating MAC address.
Mode	Port mode.
Usage Guide	If this command is configured, then it will not receive the flush packets of updating MAC address.
Example	Disable receiving the flush packets of updating MAC address. Switch(config)# interface ethernet 1/0/1 Switch(config-If-Ethernet1/0/1)# ulpp flush disable mac

ulpp flush {enable | disable} mac-vlan

Command	ulpp flush {enable disable} mac-vlan
parameter	-
default	Disable

Mode	Port mode.
Usage Guide	If enabling this function, forward the hardware of the flush packets with mac-vlan type received in port. It will not be analyzed.
Example	Disable receiving the flush packets deleted by mac-vlan of port. Switch(config)#interface e1/0/2 Switch(config-if-ethernet1/0/2)#ulpp flush disable mac-vlan

ulpp group

Command	ulpp group <integer> no ulpp group <integer>
parameter	<i>integer</i> is the ID of ULPP group, range from 1 to 48.
default	Any ULPP groups are not configured.
Mode	Global Mode.
Usage Guide	Create a ULPP group. If the group exists, enter the configuration mode of the ULPP group. no command delete ULPP group.
Example	Configure ulpp group 20 or enter the mode of ulpp group 20. Switch(config)# ulpp group 20 Switch(ulpp-group-20)#

ulpp group {master | slave}

Command	ulpp group <integer> {master slave} no ulpp group <integer> {master slave}
parameter	<i>integer</i> is the ID of ULPP group, range from 1 to 48.
default	There is no master port configured by default.
Mode	Port mode
Usage Guide	There is no sequence requirement for the master and slave port configuration in a group, but the protective VLANs must be configured before the member ports. Each group has only one master port, if the master port exists, then the configuration fail.

Example Configure the master port of ULPP group.
Switch(config)# interface ethernet 1/0/2
Switch(config-If-Ethernet1/0/2)# ulpp group 20 slave

3.Commands for ULSM

show ulsm group

Command	show ulsm group [group-id]
parameter	group-id the ID of ULSM group.
default	By default, show the information of all ULSM groups which have been configured
Mode	Admin Mode
Usage Guide	This command is used to display configuration information for ULSM groups.
Example	Show the configuration information of ULSM group1. Switch# show ulsm group 1

ulsm group

Command	ulsm group <group-id> no ulsm group <group-id>
parameter	group-id is the ID of ULSM group, range from 1 to 32.
default	There is no ULSM group configured by default.
Mode	Global Mode.
Usage Guide	This command is used to create a ULSM group. no command delete ULSM group.
Example	Create ULSM group 10. Switch(config)# ulsm group 10

ulsm group {uplink | downlink}

Command	ulsm group <group-id> {uplink downlink} no ulsm group <group-id>						
parameter	<table border="1"> <tr> <td><i>group-id</i></td> <td>The ID of ULSM group, the range from 1 to 32.</td> </tr> <tr> <td>uplink</td> <td>Configure the port as the uplink port</td> </tr> <tr> <td>downlink</td> <td>Configure the port as the downlink port.</td> </tr> </table>	<i>group-id</i>	The ID of ULSM group, the range from 1 to 32.	uplink	Configure the port as the uplink port	downlink	Configure the port as the downlink port.
<i>group-id</i>	The ID of ULSM group, the range from 1 to 32.						
uplink	Configure the port as the uplink port						
downlink	Configure the port as the downlink port.						
default	The port does not belong to any ULSM group						
Mode	Port Mode						
Usage Guide	Configure the uplink/downlink ports of ULSM group. Each ULSM group can configure 8 uplink ports and 16 downlink ports at most.						
Example	Configure port1/0/3 as the uplink port of ULSM group10. Switch(config)# interface ethernet 1/0/3 Switch(config-If-Ethernet1/0/3)# ulsm group 10 uplink						