Reliability Configuration Commands

1. REUP Commands
2. RLDP Commands
3. IP Event Dampening Commands

1 REUP Commands

1.1 *link state group*

Use this command to add the port into the specified link state track group. The **no** form of this command is used to delete a port from the specified link state track group.

link state group *num* { **upstream** | **downstream** }

no link state group

Parameter Description

Parameter	Description
num	ID of the link state track group.
upstream	Configures the port to be an upstream port in the link state track group.
downstream	Configures the port to be a downstream port in the link state track group.

Defaults The port is not added into any link state track group.

Command Mode Interface configuration mode.

Usage Guide First create a link state track group and then add a port into the specified link state track group.

Configuration Examples The following example shows how to add the port fa0/2 into the link state track group:

```
Orion Alpha A28X(config)# link state track 1
Orion Alpha A28X(config)# interface fa 0/2
Orion Alpha A28X(config-if)# link state group 1 upstream
```

Related Commands

Command	Description
link state track	Enables a link state track group.

Platform Description N/A.

1.2 *link state track*

Use this command to enable the link state track group. The **no** form of this command is used to disable a link state track group

link state track [*num*]

no link state track [*num*]

Parameter Description

Parameter	Description
num	Interface ID of the link aggregation group.

Defaults N/A.

Command Mode Global configuration mode.

Usage Guide First create a link state track group and then add a port into the specified link state track group.

Configuration Examples The following example shows how to create a link state track group:

```
Orion Alpha A28X(config)# link state track 1
```

Related Commands

Command	Description
link state group	Adds the port to the specified link state track group.

Platform Description N/A.

1.3 *mac-address-table move update max-update-rate*

Use this command to configure the maximum number of MAC address update packets sent per second.

mac-address-table move update max-update-rate *pkts-per-second*

no mac-address-table move update max-update-rate

Parameter Description

Parameter	Description
pkts-per-second	The maximum number of MAC address update packets sent per second. It ranges from 0 to 32000, and the default value is 150.

Defaults A maximum of 150 MAC address update packets are sent per second.

Command Mode Global configuration mode.

Usage Guide When a link is switched, REUP sends a certain number of MAC address update packets to an uplink device in every second to recover downlink data transmission of the uplink device.

Configuration Examples The following example shows how to configure the maximum number of MAC address update packets sent per second:

```
Orion Alpha A28X(config)# mac-address-table move update max-update-rate 20
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description N/A.

1.4 mac-address-table move update receive

Use this command to enable REUP to receive the mac-address-table update messages.
mac-address-table move update receive
no mac-address-table move update receive

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults Disabled.

Command Mode Global configuration mode.

Usage Guide The dual link backup switchover will lead to the loss of downstream data flow, for the MAC address for the uplink switch has not been updated in time. Therefore, it is necessary to update the MAC address table of the uplink switch, to reduce the loss of L2 data flow. You need to enable the switch of receiving the MAC address update messages on the uplink switch.

Configuration Examples

```
Orion Alpha A28X(config)# mac-address-table move update receive
```

Related Commands

Command	Description
mac-address-table move update transit	Enables REUP to transmit the mac-address-table update messages.

Platform Description N/A.

1.5 mac-address-table move update receive vlan

Use this command to configure the VLANs processing MAC address update packets.
mac-address-table move update receive vlan *vlan-range*
no mac-address-table move update receive vlan *vlan-range*

Parameter Description

Parameter	Description
vlan-range	Range of the VLANs processing MAC address update packets.

Defaults All VLANs process MAC address update packets.

Command Mode Global configuration mode.

Usage Guide This command can be used to disable some VLANs from processing MAC address update packets. VLANs disabled from processing MAC address update packets can still recover downlink data transmission of the uplink device using MAC address update packets, but the capability to provide

convergence on link failure will be degraded.

Configuration Examples The following example configures VLANs processing MAC address update packets:

```
Orion Alpha A28X(config)# no mac-address-table move update receive vlan 20
```

Related Commands

Command	Description
mac-address-table move update receive	Enables REUP to receive MAC address update packets.

Platform Description N/A.

1.6 mac-address-table move update transit

Use this command to enable REUP to transmit the mac-address-table update messages.

mac-address-table move update transit

no mac-address-table move update transit

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults Disabled.

Command Mode Global configuration mode.

Usage Guide In order to reduce the link switchover and the loss of the downstream data flow, it is necessary to enable the switch of receiving the MAC address update messages on the uplink switch.

Configuration Examples

```
Orion Alpha A28X(config)# mac-address-table move update transit
```

Related Commands

Command	Description
mac-address-table move update transit vlan	Enables REUP to transmit the mac-address-table update messages.

Platform Description N/A.

1.7 mac-address-table move update transit vlan

Use this command to enable REUP to transmit the mac-address update messages.

mac-address-table move update transit vlan *vid*

no mac-address-table move update transit vlan

Parameter

Parameter	Description

Description

vid	ID of the VLAN transmitting MAC address update packets.

Defaults Transmit the MAC-address update messages in the default VLAN on the port.

Command Mode Interface configuration mode.

Usage Guide When a link is switched, the VLAN enabled to transmit MAC address update packets will send MAC address update packets to its uplink device.

Configuration Examples The following example configures VLANs transmitting MAC address update packets:

```
Orion Alpha A28X(config)# mac-address-table move update transit
```

Related Commands

Command	Description
mac-address-table move update transit	Enables REUP to receive the mac-address-table update messages.

Platform Description N/A.

1.8 mac-address-table update group

Use this command to set the mac-address-table update group.

mac-address-table update group [*group-num*]

no mac-address-table update group

Parameter Description

Parameter	Description
group-num	The mac-address-table update group ID.

Defaults By default, no mac-address-table update group is configured.

Command Mode Interface configuration mode.

Usage Guide In order to reduce the flood due to the MAC address update and the influence on the normal data transmission of the switch, Orion Alpha A28X products add a configuration of MAC address update group. Only if all the interfaces are added to a MAC address update group, the downstream data transmission be restored rapidly.

Configuration Examples

```
Orion Alpha A28X(config-if)# mac-address-table update group 2
```

Related Commands

Command	Description
show mac-address-table update group detail	Displays the mac-address-table update group information.

Platform Description N/A.

1.9 show interfaces switchport backup

Use this command to display the dual link backup information on the interfaces.

show interfaces [*interface-id*] **switchport backup** [**detail**]

Parameter Description

Parameter	Description
interface-id	The interface id of the dual link backup.
detail	Displays the detailed information about the dual link backup.

Defaults Show the dual link backup information on all interfaces.

Command Mode Privileged EXEC mode.

Usage Guide N/A.

Configuration Examples

```
Orion Alpha A28X # show interfaces switchport backup detail
Switch Backup Interface Pairs:
Active Interface      Backup Interface       State
------------------------------------------------------
Gi0/23                  Gi0/24                  Active Up/Backup Standby
Interface Pair : Gi0/23, Gi0/24
Preemption Mode : Off
Preemption Delay : 35 seconds
Bandwidth : Gi0/23(1000 Mbits), Gi0/24(1000 Mbits)
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description N/A.

1.10 show link state group

Use this command to display the information of a link state track group.

show link state group

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults N/A.

Command Mode Privileged EXEC mode.

Usage Guide N/A.

Configuration Examples The following example displays the link state track group:

```
Orion Alpha A28X # show link state group
Link State Group:1  Status: Enabled, UP
Upstream Interfaces :Gi0/1(Up)
Downstream Interfaces :Gi0/3(Dwn), Gi0/4(Dwn)
Link State Group:2  Status: Disabled, Down
Upstream Interfaces :
Downstream Interfaces :
(Up):Interface up (Dwn):Interface Down (Dis):Interface disabled
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description N/A.

1.11 show mac-address-table move update

Use this command to display the statistics about the MAC address updates tranceived on the interface.

show mac-address-table move update

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A.

Configuration Examples

```
Orion Alpha A28X#show mac-address-table move update
Mac address table move update status:
Transit:disable
Receive:disable
Max-update-rate:150
Receive vlan:1-4094

Pair: Ag1,Ag2
Members              Status    Transit Count    Transit VLAN   Last
Transit Time
```

```
------------------------------------------------------------------------
----------------------
Ag1                  Down      0
Ag2                  Down      0
Pair: Ag3,Gi0/6
Members              Status    Transit Count    Transit VLAN   Last
Transit Time
------------------------------------------------------------------------
----------------------
Ag3                  Down      0
Gi0/6                Down      0
Pair: Gi0/1,Gi0/2
Members              Status    Transit Count    Transit VLAN   Last
Transit Time
------------------------------------------------------------------------
----------------------
Gi0/1                Up        0
Gi0/2                Standby   0
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description N/A.

1.12 show mac-address-table update group

Use this command to display the mac-address-table update group information.

show mac-address-table update group detail

Parameter Description

Parameter	Description
detail	Displays the detailed information about the mac-address-table update group.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A.

Configuration Examples

```
Orion Alpha A28X # configure terminal
Orion Alpha A28X (config)# mac-address-table move update receive
Orion Alpha A28X (config)# interface range gigabitEthernet 0/3-4
Orion Alpha A28X (config-if-range)# mac-address-table update group
```

```
Orion Alpha A28X (config-if-range)# end
Orion Alpha A28X # show mac-address-table update group detail
Mac-address-table Update Group:1
Received mac-address-table update message count:7
Group member  Receive Count  Last Receive Switch-ID  Receive Time
------------------------------------------------------------
GigabitEthernet 0/3  0               0000.0000.0000
GigabitEthernet 0/4  0               0000.0000.0000
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description N/A.

1.13 *switchport backup interface*

Use this command to configure the REUP dual link backup interface.

switchport backup interface *interface-id*

no switchport backup

Parameter Description

Parameter	Description
interface-id	Interface ID of the backup link.

Defaults N/A.

Command Mode Interface configuration mode.

Usage Guide Enter the primary interface configuration mode, the interface-id in the parameter is for the backup interface. When the active link fails, the backup link transmission is restored rapidly

Configuration Examples The following example shows how to set the dual link backup, with fa 0/1 and fa 0/2 as primary interface and backup interface:

```
Orion Alpha A28X(config)# interface fa 0/1
Orion Alpha A28X(config-if)# switchport backup interface fa 0/2
```

Related Commands

Command	Description
show interface switchport backup	Displays the dual link backup configuration on the switch.

Platform Description N/A.

1.14 switchport backup interface preemption

Use this command to configure the REUP link preemption function.
switchport backup interface *interface-id* **preemption mode** { **forced** | **bandwidth** | **off** }
switchport backup interface *interface-id* **preemption delay**
no switchport backup interface *interface-id* **preemption delay**

Parameter Description

Parameter	Description
interface-id	The interface id of the backup link.
delay-time	The preemption delay time.

Defaults The default preemption delay time is 35s.

Command Mode Interface configuration mode.

Usage Guide The preemption mode includes **forced, bandwidth and off**. In the **bandwidth** preemption mode, the interface with high bandwidth has priority over other interfaces to transmit the data. In the **forced** preemption mode, the primary has priority over backup interfaces to transmit the data. No preemption event occurs in the **off** preemption mode. By default, the preemption mode is off.
The preemption delay refers to the delay time of the link switchover after the restoration of the link failure.

Configuration Examples The following example shows how to set the dual link backup, with fa 0/1 and fa 0/2 as the primary interface and backup interface, set the bandwidth preemption mode and 40s preemption delay:

```
Orion Alpha A28X(config)# interface fa 0/1
Orion Alpha A28X(config-if)# switchport backup interface fa 0/2
preemption mode bandwitdh
Orion Alpha A28X(config-if)# switchport backup interface fa 0/2
preemption delay 40
```

Related Commands

Command	Description
show interface switchport backup	Displays the dual link backup configuration.

Platform Description N/A.

1.15 switchport backup interface prefer

Use this command to configure VLAN load balancing on a link. The **no** form of this command is used to delete the configured VLAN load strategy.
switchport backup interface *interface-id* **prefer instance** *instance-range*
no switchport backup interface *interface-id* **prefer**

Parameter Description

Parameter	Description

interface-id	Interface ID of the backup link.
instance-range	Instance range of loading on the backup interface.

Defaults No VLAN load on the backup interface.

Command Mode Interface configuration mode.

Usage Guide MSTP instance mapping can be used to modify the mapping between an instance and a VLAN.

Configuration Examples The following example configures VLAN load balancing on dual links.

```
Orion Alpha A28X(config-if)# switchport backup interface gigabitEthernet
0/2 prefer instance 1
```

Related Commands

Command	Description
show interface switchport backup	Displays the configuration of dual-link backup on the switch.
spanning-tree mst configuration	Configures MSTP instances.

Platform Description N/A.

2 RLDP Commands

2.1 rldp detect-interval

Use this command to configure the interval at which the RLDP sends the detection message on the port. Use the **no** form of this command to restore the default value.

rldp detect-interval *interval*

no rldp detect-interval

Parameter Description

Parameter	Description
interval	Detection interval in the range 2 to 15 seconds

Defaults 3 seconds.

Command Mode Global configuration mode.

Usage Guide In the environment where STP is enabled, it is recommended that the product of interval multiplying the maximum number of detections is less than the topology convergence time of STP.

Configuration Examples The following example shows how to set the detection interval as 5s:

```
Orion Alpha A28X(config)# rldp detect-interval 5
```

Related Commands

Command	Description
rldp detect-max	Sets the maximum number of detections.

Platform Description N/A.

2.2 rldp detect-max

Use this command to set the maximum number of sending detection packets on the port. If the neighboring port does not respond when this detection number is exceeded, the link is considered faulty. Use the **no** form of this command to restore it to the default value.

rldp detect-max *num*

no rldp detect-max

Parameter Description

Parameter	Description
num	Maximum number of detections in the range 2 to 10

Defaults 2.

Command Global configuration mode.

Mode

Usage Guide This command is used together with the detection interval to specify the maximum number of detections.

Configuration Examples The following example shows how to set the maximum number of detections as 5:

```
Orion Alpha A28X(config)# rldp detect-max 5
```

Related Commands

Command	Description
rldp detect-interval	Sets the detection interval.

Platform Description N/A.

2.3 rldp enable

Use this command to enable RLDP globally. Use the **no** form of this command to disable the function.

rldp enable

no rldp enable

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults Disabled.

Command Mode Global configuration mode.

Usage Guide You can enable RLDP on the interface only when the global RLDP is enabled.

Configuration Examples The following example shows how to enable RLDP:

```
Orion Alpha A28X(config)# rldp enable
```

Related Commands

Command	Description
rldp port	Enables the RLDP function on the port.

Platform Description N/A.

2.4 rldp neighbor-negotiation

Use this command to enable RLDP neighbor negotiation. Use the **no** form or **default** form of this command to restore the default setting.

rldp neighbor-negotiation

no rldp neighbor-negotiation

default rldp neighbor-negotiation

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults RLDP neighbor negotiation is disabled by default.

Command Mode Global configuration mode.

Usage Guide With neighbor negotiation enabled, RLDP unidirectional-/bidirectional-link detection starts only after the neighbor negotiation is successful. (Receiving the Prob message from the neighbor indicates the neighbor negotiation is successful.)

Configuration Examples The following example shows how to enable RLDP neighbor negotiation:

```
Orion Alpha A28X#config
Orion Alpha A28X(config)#rldp neighbor-negotiation
```

Related Commands

Command	Description
rldp port	Enables the RLDP function on the port.

Platform Description N/A.

2.5 rldp port

Use this command to enable RLDP on the port and specify detection type and troubleshooting method. Use the **no** form of this command to disable the function.

rldp port { **unidirection-detect** | **bidirection-detect** | **loop-detect** } { **warning** | **shutdown-svi** | **shutdown-port** | **block** }

no rldp port { **unidirection-detect** | **bidirection-detect** | **loop-detect }**

Parameter Description

Parameter	Description
unidirection-detect	Sets unidirectional link detection.
bidirection-detect	Sets bidirectional link detection.
loop-detect	Sets loop detection type.
warning	Warns the user.
shutdown-svi	Shutdowns the SVI the port belongs to.
shutdown-port	Shutdowns the port.

Defaults N/A

Command Mode Interface configuration mode.

Usage Guide The RLDP detection on the port takes effect only when the global RLDP is enabled.

Configuration Examples The following example shows how to configure RLDP detection on fas 0/1, specify the detection type as loop detection, and troubleshooting method as block.

```
Orion Alpha A28X(config)# interface fas 0/1
Orion Alpha A28X(config-if)# rldp port loop-detect block
```

Related Commands

Command	Description
rldp enable	Enables RLDP globally.

Platform Description N/A.

2.6 rldp reset

Use this command to make all the ports that have been handled using rldp shutdown or disable to perform RLDP detection again.

rldp reset

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults N/A.

Command Mode Privileged EXEC mode.

Usage Guide N/A.

Configuration Examples The example below demonstrates how to use this command:

```
Orion Alpha A28X# rldp reset
```

Related Commands

Command	Description
rldp enable	Enables RLDP globally.

Platform Description N/A.

2.7 show rldp

Use this command to display the RLDP information.

show rldp [**interface** *interface-id*]

Parameter Description

Parameter	Description
interface-id	Interface ID

Defaults N/A.

Command Mode Privileged EXEC mode.

Usage Guide N/A.

Configuration Examples N/A.

Related Commands

Command	Description
N/A.	N/A.

Platform Description N/A.

3 IP Event Dampening Commands

3.1 dampening

Use this command to enable the IP event dampening function on the interface. Use the **no** or **default** form of this command to disable this function.

dampening [*half-life-period* [*reuse-threshold suppress-threshold max-suppress* [**restart** [*restart-penalty*]]]]

no dampening

default dampening

Parameter Description

Parameter	Description
half-life-period	Configures the half-life period of suppression penalty. The range is from 1 to 30. The unit is seconds. The default value is 5 seconds.
reuse-threshold	Configures the penalty threshold to unsuppress the interface. The range is from 1 to 20,000. The default value is 1,000.
suppress-threshold	Configures the penalty threshold to suppress the interface. The range is from 1 to 20,000. The default value is 2,000.
max-suppress	Configures the maximum suppress time. The range is from 1 to 255. The default value is 4 times of the *half-life-period.*
restart-*penalty*	Configures the initial penalty value on the interface. The range is from 1 to 20,000. The default value is 2,000.

Defaults IP event dampening is disabled by default.

Command mode Interface configuration mode.

Usage Guide This function will influence the modules of the directly-connected/host route, static route, dynamic route and VRRP. If one interface meets the configuration condition of this command, which is in the suppression status, the above influenced modules consider the status of this interface as DOWN, so as to delete the corresponding route and not transcieve the data packets on this interface.
Re-configuring the dampening command on the interface that has been configured this command makes all dampening information on this interface cleared. However, the interface flapping times will be remained unless use the clear counters command to clear the statistical information of the interface.

Configuration Examples The following example configures the IP event dampening function.

```
Orion Alpha A28X(config)#interface gigabitEthernet 0/1
Orion Alpha A28X(config-if-GigabitEthernet 0/1)# no switchport
Orion Alpha A28X(config-if-GigabitEthernet 0/1)# dampening 30 1500 10000
100
```

Related Commands

Command	Description

clear counters	Clears the interface counters.
show dampening interface	Displays the statistics of the dampening interface.
show interface dampening	Displays details of the dampening interface.

Platform Description When a Layer-3 port on a switch is converted to a Layer-2 port (for example, from a routed port to a switch port), the IP Event Dampening configuration on the port will be deleted.

3.2 show dampening interface

Use this command to show the statistics of the dampening interface.

show dampening interface

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command mode Privileged EXEC mode/ global configuration mode/ interface configuration mode

Usage Guide N/A

Configuration Examples The following example displays the statistics of the dampening interface.

```
Orion Alpha A28X# show dampening interface
3 interfaces are configured with dampening.
No interface is being suppressed.
```

Related Commands

Command	Description
dampening	Enables the IP event dampening function on the interface.
clear counters	Clears the interface counters.
show interface dampening	Displays details of IP event dampening configuration.

Platform Description N/A

3.3 show interface dampening

Use this command to display the details of IP event dampening configuration.

show interface [*interface-Id*] **dampening**

Parameter Description

Parameter	Description

interface-id	Interface name

Defaults N/A

Command mode Privileged EXEC mode/ global configuration mode/ interface configuration mode

Usage Guide If the interface-id is specified, only the dampening information of this specified interface is displayed.

Configuration Examples The following example shows the details of IP event dampening configuration.

```
Orion Alpha A28X# show interface dampening Ethernet1/0
Flaps  Penalty  Supp ReuseTm HalfL ReuseV SuppV MaxSTm MaxP Restart
 0      0      FALSE   0      5    1000  2000   20     16000    0
```

Domain	Description
Flaps	Interface flapping times.
Penalty	The current penalty value on the interface.
Supp	Suppressed or not.
ReuseTm	Time to unsuppress the interface, in seconds.
HalfL	Half-life period, in seconds.
ReuseV	Unsuppressed threshold.
SuppV	Start suppression threshold.
MaxSTm	Maximum suppression time.
MaxP	Maximum penalty value.
Restart	The initial penalty value on the interface.

Related Commands

Command	Description
dampening	Enables the IP event dampening function.
clear counters	Clears the interface counters.
show dampening interface	Displays statistics of the dampening interface.

Platform Description N/A