Ethernet Switching Commands

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1 Interface Commands

1.1 bandwidth

Use this command to set the bandwidth on the interface. Use the **no** form of this command to restore the default setting.
bandwidth *kilobits*
no bandwidth

Parameter Description

Parameter	Description
kilobits	Bandwidth per second, in the unit of Kbps.

Defaults If this command is not configured on the interface, use the show interface command to display the default setting in privileged EXEC mode.

Command Mode Interface configuration mode

Usage Guide This command does not affect the actual bandwidth on the interface. Instead, it is used to display the system the bandwidth specification. By default, the bandwidth is determined by the actual link rate on the interface. It can be set by the user as well.

Configuration Examples The following example sets the bandwidth on the interface to 64 Kbps.

```
Orion_B54Q(config)#interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# bandwidth 64
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.2 carrier-delay

Use this command to set the carrier delay on the interface. Use the **no** form of this command to restore the default value.
carrier-delay { [**milliseconds**] *num* | **up** [**milliseconds**] *num* **down** [**milliseconds**] *num*}
no carrier-delay

Parameter Description

Parameter	Description
num	(Optional) in the range from 0 to 60 in the unit of seconds.
milliseconds	(Optional) in the range from 0 to 60000 in the unit of milliseconds.
up	(Optional) Configures the delay after which DCD changes from Down to Up in status.
down	(Optional) Configures the delay after which DCD changes from Up to Down in status.

Defaults The default is 2 seconds.

Command Mode Interface configuration mode

Usage Guide This parameter refers to the delay after which the carrier detection signal DCD of the interface link changes from the Down status to the Up status or vice versa. If the DCD changes within the delay, the system will ignore such changes without disconnecting the upper data link layer for renegotiation. If the DCD carrier is disconnected for a long time, the parameter should be set longer to accelerate route aggregation so that the routing table can be converged more quickly. On the contrary, if the DCD carrier interruption period is shorter than the time used for route aggregation, you should set the parameter to a higher value to avoid unnecessary route vibration.

Configuration Examples The following example sets the carrier delay of serial interface to 5 seconds.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config)# carrier-delay 5
```

The following example sets the carrier delay of serial interface to 100 milliseconds.

```
Orion_B54Q(config)# interface GigabitEthernet 1/1
Orion_B54Q(config-if-GigabitEthernet 1/1)#carrier-delay
milliseconds 100
```

The following example sets the DCD delay from Down to Up in status to 100 milliseconds and from Up to Down to 200 milliseconds.

```
Orion_B54Q(config)# interface GigabitEthernet 1/1
Orion_B54Q(config-if-GigabitEthernet 1/1)# carrier-delay up
milliseconds 100 down milliseconds 200
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.3 clear counters

Use this command to clear the counters on the specified interface.

clear counters [*interface-id*]

Parameter Description

Parameter	Description
interface-id	Interface type and interface ID

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide In the privileged EXEC mode, use the **show interfaces** command to display the counters or the **clear counters** command to clear the counters. If the interface is not specified, the counters on all interfaces will be cleared.

Configuration Examples The following example clears the counters on interface gigabitethernet 1/1.

```
Orion_B54Q# clear counters gigabitethernet 1/1
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.4 clear interface

Use this command to reset the interface.

clear interface *interface-id*

Parameter Description

Parameter	Description
interface-id	Interface type and interface ID

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide This command is only used on the switch port, member port of the L2 Aggregate port, routing port, and member port of the L3 aggregate port. This command is equal to the **shutdown** and **no shutdown** commands.

Configuration Examples The following example resets the interface gigabitethernet 1/1.

```
Orion_B54Q# clear interface gigabitethernet 1/1
```

Related Commands

Command	Description
shutdown	Disables the interface.

Platform Description N/A

1.5 description

Use this command to configure the alias of interface. Use the **no** form of this command to restore the default setting.

description *string*

no description

Parameter Description

Parameter	Description
string	Interface alias

Defaults No alias is configured by default.

Command Mode Interface configuration mode.

Usage Guide Use **show interfaces** to display the interface information, including the alias.

Configuration Examples The following example configures the alias of interface.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# description GBIC-1
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.6 duplex

Use this command to specify the duplex mode for the interface. Use the **no** form of this command to restore the default setting.

duplex { **auto** | **full** | **half** }

no duplex

Parameter Description

Parameter	Description
auto	Self-adaptive full duplex and half duplex
full	Full duplex
half	Half duplex

Defaults The default is **auto**,

Command Mode Interface configuration mode.

Usage Guide The duplex mode is associated with the interface type. Use **show interfaces** to display the duplex mode of the interface

Configuration Examples The following example specifies the duplex mode for the interface.

```
Orion_B54Q(config-if)# duplex full
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.7 errdisable recovery

Use this command to recover the interface in violation.

errdisable recovery [**interval** *time*]

Parameter Description

Parameter	Description
time	Time for the command to take effect. The range is from 30 to 86,400 seconds.

Defaults N/A

Command Mode Interface configuration mode.

Usage Guide Use the command to recover the port that triggers violation after being configured with the **violation shutdown** command.

Configuration Examples The following example recovers the violation interface gigabitethernet 1/1.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# errdisable recovery
```

Related Commands

Command	Description
switchport port-security violation shutdown	Configures the port security violation to shutdown.

Platform Description N/A.

1.8 flowcontrol

Use this command to enable or disable the flow control. Use the **no** form of this command to restore the default setting.

flowcontrol { **auto** | **off** | **on** | **receive** { **auto** | **off** | **on** } | **send** { **auto** | **off** | **on** }}

no flowcontrol

Parameter Description

Parameter	Description
auto	Self-negotiates the flow control.
off	Disables the flow control.
on	Enables the flow control.
receive	Receiving direction of the non-symmetric flow control.
send	Sending direction of the non-symmetric flow control.

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide Use the **show interfaces** command to display the flow control configuration.

Configuration Examples The following example enables flow control on fastEthernet port 1/1.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
```

```
Orion_B54Q(config-if)# flowcontrol on
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.9 negotiation mode

Use this command to enable or disable auto-negotiation mode. Use the **no** form of this command to restore the default setting.

negotiation mode { **on** | **off** }

no negotiation mode

Parameter Description

Parameter	Description
on	Enables auto-negotiation.
off	Disables auto-negotiation.

Defaults This function is disabled by default.

Command Mode Interface configuration mode

Usage Guide In general, the auto-negotiation status is determined by interface speed, duplex, flow control and auto-negotiation factor mode.

Configuration Examples The following example enables auto-negotiation mode on interface GigabitEthernet 1/1.

```
Orion_B54Q(config)# interface GigabitEthernet 1/1
Orion_B54Q(config-if-GigabitEthernet 1/1)# negotiation mode on
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.10 interface

Use this command to enter the interface configuration mode.

interface *interface-type interface-number*

Parameter Description

Parameter	Description
interface-type	The interface type.
interface-number	The interface ID.

Defaults N/A

Command Mode Interface configuration mode

Usage Guide This command is used to enter interface configuration mode. The user can modify the interface configuration next,

Configuration Examples The following example enters configuration mode on Aggregateport 1.

```
Orion_B54Q(config)# interface Aggregateport 1
Orion_B54Q(config-if-Aggregateport 1)#
```

The following example enters configuration mode on GigabitEthernet 1/2.

```
Orion_B54Q(config)# interface GigabitEthernet 1/2
Orion_B54Q(config-if-GigabitEthernet 1/2)#
```

The following example configuration mode on VLAN 1.

```
Orion_B54Q(config)# interface vlan 1
Orion_B54Q(config-if-VLAN 1)#
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.11 interface range

Use this command to enter interface configuration mode on multiple interfaces.

interface range { *port-range* | **macro** *macro_name* }

Use this command to define the macro name of the **interface range** command.

define interface-range *macro_name*

Parameter Description

Parameter	Description
port-range	The interface type and ID range, entered in the form of *interface-type slot-number/interface-number*. The interface can be either an Ethernet physical interface or a loopback interface.
macro *macro_name*	The macro name which represents the interface range.

Defaults The **interface range** command is disabled by default.

Command Mode Global configuration mode

Usage Guide Use the define interface-range command to define a range of interfaces as the macro name and then use the **interface** range macro macro_name command to enter interface configuration mode on multiple interfaces.

Configuration Examples The following example enters interface configuration mode on multiple interfaces by setting the interface range.

```
Orion_B54Q(config)# interface range gigabitEthernet 0/0, 0/2
Orion_B54Q(config-if-range)# bandwidth 100
```

The following example enters interface configuration mode on multiple interfaces by defining the macro name.

```
Orion_B54Q(config)# define interface-range route1 gigabitEthernet 0/0-2
Orion_B54Q(config)# interface range macro route1
Orion_B54Q(config-if-range)# bandwidth 100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.12 load-interval

Use this command to set the interval for calculating load on the interface. Use the **no** form of this command to restore the default setting.

load-interval *seconds*

no load-interval

Parameter Description

Parameter	Description
seconds	In the range from 5 to 600 in the unit of seconds.

Defaults The default is 10.

Command Mode Interface configuration mode

Usage Guide This command is used to set the interval for calculating load on the interface. In general, the numbers of incoming and outgoing packets and bytes are calculated every 10 seconds. For example, if the parameter is set to 180 seconds, the following outcome is displayed when the **show interface gigabitEthernet 0/1** command is run.

```
3 minutes input rate 15 bits/sec, 0 packets/sec
3 minutes output rate 14 bits/sec, 0 packets/sec
```

Configuration Examples The following example sets the interval for calculating load on interface GigabitEthernet 0/1 to 180 seconds.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# load-interval 180
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.13 mtu

Use this command to set the MTU supported on the interface.

mtu *num*

Parameter Description

Parameter	Description
num	64 to 9216 (or 65536, which varies by products)

Defaults The default is 1500.

Command Mode Interface configuration mode.

Usage Guide This command is used to set the maximum transmission unit (MTU) supported on the interface.

Configuration Examples The following example sets the MTU supported on interface gigabitethernet 1/1 to 9216.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# mtu 9216
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.14 protected-ports route-deny

Use this command to configure L3 routing between the protected ports. Use the **no** form of this command to restore the default setting.

protected-ports route-deny

no protected-ports route-deny

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default..

Command Mode Global configuration mode.

Usage Guide The ports that are set as the protected ports can route on L3. Use this command to deny the L3 communication between protected ports. Use the **show running-config** command to display configuration.

Configuration Examples The following example configures L3 routing between the protected ports.

```
Orion_B54Q(config)# protected-ports route-deny
```

Related Commands

Command	Description
show running-config	Displays the protected ports route-deny configuration.

Platform Description N/A

1.15 shutdown

Use this command to disable an interface. Use the **no** form of this command to enable a disabled

port.

shutdown

no shutdown

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Interface configuration mode

Usage Guide Use this command to stop the forwarding on the interface (Gigabit Ethernet interface, Aggregate port or SVI). You can enable the port with the **no shutdown** command. If you shut down the interface, the configuration of the interface exists, but does not take effect. You can view the interface status by using the **show interfaces** command.

- If you use the script to run no shutdown frequently and rapidly, the system may prompt the interface status reversal.

Configuration Examples The following example disables an interface.

```
Orion_B54Q(config)# interface aggregateport 1
Orion_B54Q(config-if)# shutdown
```

The following example enables an interface.

```
Orion_B54Q(config)# interface aggregateport 1
Orion_B54Q(config-if)# no shutdown
```

Related Commands

Command	Description
clear interface	Resets the hardware.
show interfaces	Displays the interface information.

Platform Description N/A

1.16 snmp trap link-status

Use this command to send LinkTrap on a port. Use the **no** form of this command to disable this function.

snmp trap link-status

no snmp trap link-status

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default

Command Mode Interface configuration mode.

Usage Guide For an interface (for instance, Ethernet interface, AP interface, and SVI interface), this command sets whether to send LinkTrap on the interface. If the function is enabled, the SNMP sends the LinkTrap when the link status of the interface changes.

Configuration Examples The following example disables the interface from sending LinkTrap on the interface.

```
Orion_B54Q(config)# interface gigabitEthernet 1/1
Orion_B54Q(config-if)# no snmp trap link-status
```

The following example enables the interface to forward Link trap.

```
Orion_B54Q(config)# interface gigabitEthernet 1/1
Orion_B54Q(config-if)# snmp trap link-status
```

Related Commands

Command	Description
snmp trap link-status	Enables the interface to send LinkTrap on the interface.
no snmp trap link-status	Disables the interface from sending LinkTrap on the interface.

Platform Description N/A

1.17 snmp-server if-index persist

Use this command to set the interface index persistence. The interface index remains the same after the device is restarted.

snmp-server if-index persist

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Global configuration mode

Mode

Usage Guide After this command is configured, all interface indexes are saved in the configuration file. After the device is restarted, interface indexes remain the same as before.

Configuration Examples The following example enables the interface index persistence.

```
Orion_B54Q(config)# snmp-server if-index persist
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.18 speed

Use this command to configure the speed on the port. Use the **no** form of this command to restore the default setting.

speed [**10 | 100 | 1000 | 10G | 40G | auto**]

Parameter Description

Parameter	Description
10	The transmission rate of the interface is 10Mbps.
100	The transmission rate of the interface is 100Mbps.
1000	The transmission rate of the interface is 1000Mbps.
10G	The transmission rate of the interface is 10Gbps.
40G	The transmission rate of the interface is 40Gbps.
auto	Self-adaptive

Defaults The default is **auto**.

Command Mode Interface configuration mode.

Usage Guide If an interface is the member of an aggregate port, the rate of the interface depends on the rate of the aggregate port. You can set the rate of the interface, but it does not take effect until the interface exits the aggregate port. Use **show interfaces** to display configuration. The rate varies by interface types. For example, you cannot set the rate of a SFP interface to 10M or 100M.

Configuration Examples The following example sets the speed on interface gigabitethernet 1/1 to 100Mbps.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# speed 100
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.19 split interface

Use this command to split a 40G interface into four 10G interfaces. Use the **no** form of this command to restore the default setting.

split interface FortyGigabitEthernet *interface-number*

no split interface FortyGigabitEthernet *interface-number*

Parameter Description

Parameter	Description
interface-number	Specifies the interface number.

Defaults By default, the interface is in the combination mode.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example splits the 40G interface 0/65 into four 10G interfaces.

```
Orion_B54Q(config-if)# split interface forty-giga 0/65
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.20 switchport

Use this command to configure a Layer 3 interface. Use the **no** form of this command to restore the default setting.

switchport

no switchport

Parameter Description	Parameter	Description
	N/A	N/A

Defaults All the interfaces are in Layer 2 mode by default.

Command Mode Interface configuration mode.

Usage Guide This command is valid only for physical interfaces. The **switchport** command is used to disable the interface and re-enable it. In this status, the device will send the information to indicate the connect status. If the interface is changed to Layer 3 mode from Layer 2, all the attributes in Layer 2 mode will be cleared.

Configuration Examples The following example configures a Layer 3 interface.

```
Orion_B54Q(config-if)# switchport
```

Related Commands	Command	Description
	show interfaces	Displays the interface information.

Platform Description N/A

1.21 switchport access

Use this command to configure an interface as a statics access port and add it to a VLAN. Use the **no** form of this command to restore the default setting.

switchport access vlan *vlan-id*

no switchport access vlan

Parameter Description	Parameter	Description
	vlan-id	The VLAN ID at which the port to be added.

Defaults By default, the switch port is an access port and the VLAN is VLAN 1.

Command Mode Interface configuration mode.

Usage Guide Enter one VLAN ID. The system will create a new one and add the interface to the VLAN if you enter a new VLAN ID. If the VLAN ID already exists, the command adds the interface to the VLAN.

If the port is a trunk port, the operation does not take effect.

Configuration Examples The following example configures interface gigabitethernet 1/1 as a statistic access port and adds it to VLAN 2.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# switchport access vlan 2
```

Related Commands

Command	Description
switchport mode	Configures the interface as Layer 2 mode (switch port mode).
switchport trunk	Configures a native VLAN and the allowed-VLAN list for the trunkport.

Platform Description N/A

1.22 switchport mode

Use this command to specify a L2 interface (switch port) mode. You can specify this interface to be an access port or a trunk port or an 802.1Q tunnel. Use the **no** form of this command to restore the default setting.

switchport mode { **access** | **trunk** }

no switchport mode

Parameter Description

Parameter	Description
access	Configures the switch port as an access port.
trunk	Configures the switch port as a trunk port.

Defaults The default is **access**.

Command Mode Interface configuration mode.

Usage Guide If a switch port mode is access port, it can be the member port of only one VLAN. Use **switchport access vlan** to specify the member of the VLAN.

A trunk port can be the member port of various VLANs defined by the allowed-VLAN list. The allowed VLAN list of the interface determines the VLANs to which the interface may belong. The trunk port is the member of all the VLANs in the allowed VLAN list. Use **switchport trunk** to define the allowed-VLANs list.

Configuratio The following example specifies a L2 interface (switch port) mode.

n Examples

```
Orion_B54Q(config-if)# switchport mode trunk
```

Related Commands

Command	Description
switchport access	Configures an interface as a statics access port and assigns it to a VLAN.
switchport trunk	Configures a native VLAN and the allowed-VLAN list for the trunk port.

Platform Description N/A

1.23 switchport protected

Use this command to configure the interface as the protected port. Use the **no** form of this command to restore the default setting.

switchport protected

no switchport protected

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide The ports that are set as the protected ports cannot switch on L2, but can route on L3. A protected port can communicate with an unprotected port. Use the **show interfaces** command to display configuration.

Configuration Examples The following example configures interface gigabitethernet 1/1 as a protected port.

```
Orion_B54Q(config)#interface gigabitethernet 1/1
Orion_B54Q(config-if)# switchport protected
```

Related Commands

Command	Description
show interfaces	Displays the interface information.

Platform Description N/A

1.24 switchport trunk

Use this command to specify a native VLAN and the allowed-VLAN list for the trunk port. Use the **no** form of this command to restore the default setting.

switchport trunk { **allowed vlan** { **all |** [**add** | **remove** | **except**] *vlan-list* } | **native vlan** *vlan-id* }

no switchport trunk { **allowed vlan** | **native vlan** }

Parameter Description

Parameter	Description
allowed vlan *vlan-list*	Configures the list of VLANs allowed on the trunk port. *vlan-list* can be a VLAN or a range of VLANs starting with the smaller VLAN ID and ending with the larger VLAN ID and being separated by hyphen, for example, 10 to 20. The segments can be separated with a comma (,), for example, 1 to 10, 20 to 25, 30, 33. all means that the allowed VLAN list contains all the supported VLANs; add means to add the specified VLAN list to the allowed VLAN list; remove means to remove the specified VLAN list from the allowed VLAN list; except means to add all the VLANs other than those in the specified VLAN list to the allowed VLAN list;
native vlan *vlan-id*	Configures the native VLAN.

Defaults The allowed VLAN list is all, the Native VLAN is VLAN1.

Command Mode Interface configuration mode.

Usage Guide Native VLAN:

A trunk port belongs to one native VLAN. A native VLAN means that the untagged packets received/sent on the trunk port belong to the VLAN. Obviously, the default VLAN ID of the interface (that is, the PVID in the IEEE 802.1Q) is the VLAN ID of the native VLAN. In addition, when frames belonging to the native VLAN are sent over the trunk port, they are untagged.

Allowed-VLAN List:

By default, a trunk port sends traffic to and received traffic from all VLANs (ID 1 to 4094). However, you can prevent the traffic from passing over the trunk by configuring allowed VLAN lists on a trunk.

Use show interfaces switchport to display configuration.

Configuration Examples The following example removes port 1/15 from VLAN 2.

```
Orion_B54Q(config)# interface fastethernet 1/15
Orion_B54Q(config-if)# switchport trunk allowed vlan remove 2
Orion_B54Q(config-if)# end
```

```
Orion_B54Q# show interfaces fastethernet1/15 switchport
Switchport is enabled
Mode is trunk port
Access vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is
1,3-4094
```

Related Commands

Command	Description
show interfaces	Displays the interface information.
switchport access	Configures an interface as a statics access port and assigns it to a VLAN.

Platform Description N/A

1.25 show interfaces

Use this command to display the interface information and optical module information.

show interfaces [*interface-type interface-number*] [**description | switchport | trunk**]

Parameter Description

Parameter	Description
interface-id interface-number	Interface (including Ethernet interface, aggregate port, SVI or loopback interface).
description	The description of the interface, including the link status.
switchport	Layer 2 interface information.
trunk	Trunk port, applicable for physical port and aggregate port.

Defaults All interface information is displayed by default.

Command Mode Privileged EXEC mode.

Usage Guide This command is used to show all basic information if no parameter is specified.
The functions of showing the optical module information, alarming the fault and diagnosing the parameters shall be used combining with the optical module of the RG network.
To show the optical module and alarm the fault and diagnose the parameters, the function of Digital Diagnostic Monitoring must be supported by the optical module.

Configuration Examples The following example displays the interface information when the Gi0/1 is a Trunk port.

```
SwitchA#show interfaces gigabitEthernet 0/1
```

```
Index(dec):1 (hex):1
GigabitEthernet 0/1 is DOWN  , line protocol is DOWN
Hardware is Broadcom 5464 GigabitEthernet
Interface address is: no ip address
  MTU 1500 bytes, BW 1000000 Kbit
  Encapsulation protocol is Bridge, loopback not set
  Keepalive interval is 10 sec , set
  Carrier delay is 2 sec
  RXload is 1 ,Txload is 1
  Queueing strategy: FIFO
    Output queue 0/0, 0 drops;
    Input queue 0/75, 0 drops
  Switchport attributes:
    interface's description:""
    medium-type is copper
    lastchange time:0 Day: 0 Hour: 0 Minute:13 Second
    Priority is 0
    admin duplex mode is AUTO, oper duplex is Unknown
    admin speed is AUTO, oper speed is Unknown
flow receive control admin status is OFF,flow send control admin status is
OFF,flow receive control oper status is Unknown,flow send control oper
status is Unknown
broadcast Storm Control is OFF,multicast Storm Control is OFF,unicast
Storm Control is OFF
 Port-type: trunk
   Native vlan:1
Allowed vlan lists:1-4094
Active vlan lists:1, 3-4
  5 minutes input rate 0 bits/sec, 0 packets/sec
  5 minutes output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer, 0 dropped
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
    0 packets output, 0 bytes, 0 underruns , 0 dropped
0 output errors, 0 collisions, 0 interface resets
```

The following example displays the interface information when the Gi0/1 is an Access port.

```
SwitchA#show interfaces gigabitEthernet 0/1
Index(dec):1 (hex):1
GigabitEthernet 0/1 is DOWN  , line protocol is DOWN
Hardware is Broadcom 5464 GigabitEthernet
Interface address is: no ip address
  MTU 1500 bytes, BW 1000000 Kbit
  Encapsulation protocol is Bridge, loopback not set
```

```
  Keepalive interval is 10 sec , set
  Carrier delay is 2 sec
  RXload is 1 ,Txload is 1
  Queueing strategy: FIFO
    Output queue 0/0, 0 drops;
    Input queue 0/75, 0 drops
  Switchport attributes:
    interface's description:""
    medium-type is copper
    lastchange time:0 Day: 0 Hour: 0 Minute:13 Second
    Priority is 0
    admin duplex mode is AUTO, oper duplex is Unknown
    admin speed is AUTO, oper speed is Unknown
    flow receive control admin status is OFF,flow send control admin
status is OFF,flow receive control oper status is Unknown,flow send
control oper status is Unknown
broadcast Storm Control is OFF,multicast Storm Control is OFF,unicast
Storm Control is OFF
Port-type: access
Vlan id : 2
  5 minutes input rate 0 bits/sec, 0 packets/sec
  5 minutes output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer, 0 dropped
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
    0 packets output, 0 bytes, 0 underruns , 0 dropped
0 output errors, 0 collisions, 0 interface resets
```

The following example displays the layer-2 interface information when the Gi0/1 is a Hybrid port.

```
SwitchA#show interfaces gigabitEthernet 0/1
Index(dec):1 (hex):1
GigabitEthernet 0/1 is DOWN  , line protocol is DOWN
Hardware is Broadcom 5464 GigabitEthernet
Interface address is: no ip address
  MTU 1500 bytes, BW 1000000 Kbit
  Encapsulation protocol is Bridge, loopback not set
  Keepalive interval is 10 sec , set
  Carrier delay is 2 sec
  RXload is 1 ,Txload is 1
  Queueing strategy: FIFO
    Output queue 0/0, 0 drops;
    Input queue 0/75, 0 drops
  Switchport attributes:
    interface's description:""
```

```
    medium-type is copper
    lastchange time:0 Day: 0 Hour: 0 Minute:13 Second
    Priority is 0
    admin duplex mode is AUTO, oper duplex is Unknown
    admin speed is AUTO, oper speed is Unknown
    flow receive control admin status is OFF,flow send control admin
status is OFF,flow receive control oper status is Unknown,flow send
control oper status is Unknown
broadcast Storm Control is OFF,multicast Storm Control is OFF,unicast
Storm Control is OFF
Port-type: hybrid
Tagged vlan id:2
Untagged vlan id:none
  5 minutes input rate 0 bits/sec, 0 packets/sec
  5 minutes output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer, 0 dropped
    Received 0 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 abort
    0 packets output, 0 bytes, 0 underruns , 0 dropped
0 output errors, 0 collisions, 0 interface resets
```

The following example displays the layer-2 information of the Gi0/1.

```
Orion_B54Q# show interfacesgigabitEthernet 0/1 switchport
Interface Switchport ModeAccess Native Protected VLAN lists
--------- ---------- --------- ------ ------ ---------
GigabitEthernet 0/1 enabled Access 11  Disabled  ALL
```

The following example displays the MTU information on the interface GigabitEthernet 1/1.

```
Orion_B54Q#show interfaces GigabitEthernet 1/1 mtu
interface               MTU
------------------   -------
GigabitEthernet 1/1    1500
```

The following example displays the bandwidth usage on the interface GigabitEthernet 1/1.

```
Orion_B54Q#show interfaces GigabitEthernet 1/1 usage
Interface               Bandwidth          Bandwidth Usage
------------------   ---------------   -----------------
GigabitEthernet 1/1   1,000,000 Kbit      20%
```

Related Commands

Command	Description
duplex	Duplex
flowcontrol	Flow control status.
interface gigabitEthernet	Selects the interface and enter the interface configuration mode.

interface aggregateport	Creates or accesses the aggregate port, and enters the interface configuration mode.
interface vlan	Creates or accesses the switch virtual interface (SVI), and enters the interface configuration mode.
shutdown	Disables the interface.
speed	Configures the speed on the port.
switchport priority	Configures the default 802.1q interface priority.
switchport protected	Configures the interface as a protected port.

Platform Description N/A

1.26 show interfaces counters

Use this command to display the received and transmitted packet statistics.

show interfaces [*interface-type interface-number*] **counters** [**increment** | **error** | **rate** | **summary**]

Parameter Description

Parameter	Description
interface-type interface-number	(Optional) The interface type and ID.
increment	Displays the packet statistics increased during the last sample interval.
error	Displays error packet statistics.
rate	Displays packet receiving and transmitting rate.
summary	Displays packet statistics summary.

Defaults N/A

Command Mode All CLI user modes

Usage Guide If you do not specify an interface, the packet statistics on all interfaces are displayed.

Configuration Examples The following example displays packet statistics on interface GigabitEthernet 0/1.

```
Orion_B54Q#show interfaces GigabitEthernet 0/1 counters
Interface : GigabitEthernet 0/1
5 minute input rate  : 9144 bits/sec, 9 packets/sec
5 minute output rate : 1280 bits/sec, 1 packets/sec
Rxload               : 1%
InOctets             : 17310045
InPkts               : 1000(Unicast: 10%, Multicast: 10%, Broadcast: 80%)
```

```
InUcastPkts          : 100
InMulticastPkts      : 100
InBroadcastPkts      : 800
Txload               : 1%
OutOctets            : 1282535
OutPkts              : 1000(Unicast: 10%, Multicast: 10%, Broadcast: 80%)
OutUcastPkts         : 100
OutMulticastPkts     : 100
OutBroadcastPkts     : 800
Undersize packets    : 0
Oversize packets     : 0
collisions           : 0
Fragments            : 0
Jabbers              : 0
CRC alignment errors : 0
AlignmentErrors      : 0
FCSErrors            : 0
dropped packet events (due to lack of resources): 0
packets received of length (in octets):
  64:46264
  65-127: 47427
  128-255: 3478
  256-511: 658
  512-1023: 18016
  1024-1518: 125
Packet increment in last sampling interval(5 seconds):
  InOctets             : 10000
  InPkts               : 1000(Unicast: 10%, Multicast: 10%, Broadcast:
80%)
  InUcastPkts          : 100
  InMulticastPkts      : 100
  InBroadcastPkts      : 800
  OutOctets            : 10000
  OutPkts              : 1000(Unicast: 10%, Multicast: 10%, Broadcast:
80%)
  OutUcastPkts         : 100
 OutMulticastPkts     : 100
```

- Rxload refers to the receive bandwidth usage and Txload refers to the Tx bandwidth usage. InPkts is the total number of receive unicast, multicast and broadcast packets. OutPkts is the total number of transmit unicast, multicast and broadcast packets.
  Packet increment in last sampling interval (5 seconds) represents the packet statistics increased during the last sample interval (5 seconds).

The following example displays the packet statistics on interface GigabitEthernet 0/1 increased

during the last sample interval.

```
Orion_B54Q#show interfaces GigabitEthernet 0/1 counters increment
Interface : GigabitEthernet 0/1
Packet increment in last sampling interval(5 seconds):
  InOctets             : 10000
  InPkts               : 1000(Unicast: 10%, Multicast: 10%, Broadcast:
80%)
  InUcastPkts          : 100
  InMulticastPkts      : 100
  InBroadcastPkts      : 800
  OutOctets            : 10000
  OutPkts              : 1000(Unicast: 10%, Multicast: 10%, Broadcast:
80%)
  OutUcastPkts         : 100
  OutMulticastPkts     : 100
```

The following example displays error packet statistics on interface GigabitEthernet 0/1.

```
Orion_B54Q#show interfaces GigabitEthernet 0/1 counters increment
Interface    UnderSize            OverSize             Collisions
Fragments
------------ -------------------- --------------------
-------------------- --------------------
Gi0/1        0                    0                    0
0
Interface    Jabbers              CRC-Align-Err        Align-Err
FCS-Err
------------ -------------------- --------------------
-------------------- --------------------
Gi0/1        0                    0                    0
0
```

- UnderSize is the number of valid packets smaller than 64 bytes.
  OverSize is the number of valid packets smaller than 1518 bytes.
  Collisions is the number of colliding transmit packets.
  Fragments is the number of packets with CRC error or frame alignment error which are smaller than 64 bytes.
  Jabbers is the number of packets with CRC error or frame alignment error which are smaller than 1518 bytes.
  CRC-Align-Err is the number of receive packets with CRC error.
  Align_Err is the number of receive packets with frame alignment error.
  FCS-Err is the number of receive packets with FCS error.

The following example displays packet receiving and transmitting rate on interface GigabitEthernet 0/1.

```
Orion_B54Q#show interface gigabitEthernet 0/1 counters rate
Interface    Sampling Time         Input Rate           Input Rate
```

```
Output Rate           Output Rate
                                    (bits/sec)           (packets/sec)
(bits/sec)            (packets/sec)
------------ -------------------- --------------------
-------------------- -------------------- --------------------
Gi0/1         5 seconds               23391                   23
124                    0
```

- Sampling Time is the time when packets are sampled. Input rate is packet receiving rate and Output rate is packet transmitting rate.

The following example displays packet statistics summary on interface GigabitEthernet 0/1.

```
Orion_B54Q#show interface gigabitEthernet 0/1 counters summary
Interface     InOctets             InUcastPkts          InMulticastPkts
InBroadcastPkts
------------- -------------------- --------------------
-------------------- --------------------
Gi0/1         1475788005           1389                 45880503
11886621
Interface     OutOctets            OutUcastPkts         OutMulticastPkts
OutBroadcastPkts
------------- -------------------- --------------------
-------------------- --------------------
Gi0/1          6667915               6382                   31629
13410
```

- InOctets is the total number of packets received on the interface. InUcastPkts is the number of unicast packets received on the interface. InMulticastPkts is the number of multicast packets received on the interface. InBroadcastPkts is the number of broadcast packets received on the interface.

  OutOctets is the total number of packets transmitted on the interface. OutUcastPkts is the number of unicast packets transmitted on the interface. OutMulticastPkts is the number of multicast packets transmitted on the interface. OutBroadcastPkts is the number of broadcast packets transmitted on the interface.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.27 show interfaces link-state-change statistics

Use this command to display the link state change statistics, including the time and count.

show interfaces [*interface-type interface-number*] **link-state-change statistics**

Parameter Description

Parameter	Description
interface-type interface-number	The interface type and ID.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If you do not specify an interface, the link state statistics of all interfaces are displayed.

Configuration Examples The following example displays the link state statistics of interface GigabitEthernet 0/1.

```
Orion_B54Q# show interfaces GigabitEthernet 0/1 link-state-change
statistics
Interface     Link state     Link state change times      Last change time
------------  ---------      -----------------------
-------------------
Gi 0/1         down            100                          2012-
12-24 15:00:00
```

Interface	Description
Link state	Current link state.
Link state change times	The count of link state change.
Last change time	The time when the last link state change occurs.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.28 show interfaces status

Use this command to display interface status information.

show interfaces [*interface-type interface-number*] **status**

Parameter Description

Parameter	Description
interface-type interface-number	The interface type and ID.
status	Displays interface status information, including speed and duplex.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If you do not specify an interface, the status information of all interfaces is displayed.

Configuration Examples The following example displays the status information of interface GigabitEthernet 0/1.

```
Orion_B54Q#show interfaces GigabitEthernet 0/1 status
Interface              Status       Vlan     Duplex  Speed   Type
--------------------   ----------   ------   ------  ------  ------
GigabitEthernet 0/1    up             1         Full    1000M
copper
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.29 show interfaces status err-disable

Use this command to display the interface violation status.

show interfaces [*interface-type interface-number*] **status err-disable**

Parameter Description

Parameter	Description
interface-type interface-	(Optional) The interface type and ID.

number	

Defaults

Command Mode All CLI user modes

Usage Guide If you do not specify an interface, violation status of all interfaces is displayed.

Configuration Examples The following example displays the violation status of interface GigabitEthernet 0/1.

```
Orion_B54Q#show interface gigabitEthernet 0/1 status err-disabled
Interface                      Status           Reason
------------------------------ ---------------- ----------------
GigabitEthernet 0/1            err-disabled     BPDU Guard
```

- The violation status is displayed as **err-disabled**.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.30 show interfaces transceiver

Use this command to display transceiver information of the interface.

show interfaces [*interface-type interface-number*] **transceiver** [**alarm** | **diagnosis**]

Parameter Description

Parameter	Description
interface-type interface-number	The interface type and ID.
transceiver	Displays the transceiver information.
alarm	Displays the alarm message of the transceiver. If there is no alarm message, it is displayed as None.
diagnosis	Displays the diagnostic parameters of the transceiver.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If you do not specify an interface, the transceiver information of all interfaces is displayed.

Configuration Examples The following example displays the transceiver information of interface Gigabitethernet 5/4.

```
Orion_B54Q#show interfaces GigabitEthernet 5/4 transceiver
Transceiver Type    :  1000BASE-SX-SFP
Connector Type      :  LC
Wavelength(nm)      :  850
Transfer Distance   :
    50/125 um OM2 fiber
        -- 550m
    62.5/125 um OM1 fiber
        -- 270m
Digital Diagnostic Monitoring  : YES
Vendor Serial Number           : 101680093602489
```

The following example displays the alarm message of the transceiver of interface Gigabitethernet 5/4.

```
Orion_B54Q#show interfaces GigabitEthernet 5/4 transceiver alarm
gigabitEthernet 5/4 transceiver current alarm information:
RX  loss of signal
```

The following example displays the diagnostic parameters of the transceiver of interface Gigabitethernet 5/4.

```
Orion_B54Q#show interfaces GigabitEthernet 5/4 transceiver diagnosis
Current diagnostic parameters[AP:Average Power]:
Temp(Celsius)   Voltage(V)      Bias(mA)            RX power(dBm)       TX
power(dBm)
38(OK)           3.20(OK)         0.04(OK)             -
40.00(alarm)[AP]    -40.00(alarm)
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

1.31 show interfaces usage

Use this command to display bandwidth usage of the interface.

show interfaces [*interface-type interface-number*] **usage**

Parameter Description

Parameter	Description
interface-type interface-	(Optional) The interface type and ID.

number	

Defaults N/A

Command Mode All CLI user modes

Usage Guide If you do not specify an interface, the bandwidth usage of all interfaces is displayed. Bandwidth refers to the actual link bandwidth rather than the *bandwidth* parameter configured on the interface.

Configuration Examples The following example displays bandwidth usage of interface GigabitEthernet 0/1.

```
Interface                      Bandwidth     Bandwidth Usage
-------------------------------- ------------- ------------------

GigabitEthernet 0/0            1000000  Kbit 0.001840950%
```

- Bandwidth refers to the interface link bandwidth, the maximum speed of link.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2 MAC Address Commands

2.1 clear mac-address-table dynamic

Use this command to clear the dynamic MAC address.

clear mac-address-table dynamic [**address** *mac-addr* [**interface** *interface-id*] [**vlan** *vlan-id*]

Parameter Description

Parameter	Description
dynamic	Clears all the dynamic MAC addresses.
address *mac-addr*	Clears the specified dynamic MAC address.
interface *interface-id*	Clears all the dynamic MAC addresses of the specified interface.
vlan *vlan-id*	Clears all the dynamic MAC addresses of the specified VLAN, in the range from 1 to 4094.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide Use the **show mac-address-table dynamic** command to display all the dynamic MAC addresses.

Configuration Examples The following command clears all the dynamic MAC addresses.

```
Orion_B54Q# clear mac-address-table dynamic
```

Related Commands

Command	Description
show mac-address-table dynamic	Displays dynamic MAC address.

Platform Description N/A

2.2 mac-address-learning (global)

Use this command to enable MAC address learning globally. Use the **no** or **default** form of this command to restore the default setting.

mac-address-learning enable

Use this command to disable MAC address learning globally.

mac-address-learning disable

Use this command to restore MAC address learning globally.

default mac-address-learning

Parameter Description	Parameter	Description
	enable	Enables MAC address learning globally.
	disable	Disables MAC address learning globally.

Defaults The **mac-address-learning enable** command is enabled by default.

Command Mode Global configuration mode

Usage Guide When this function is enabled, the MAC address is learned in global configuration mode the same as learned in interface configuration mode.

Configuration Examples The following example disables MAC address learning globally.

```
Orion_B54Q(config)# mac-address-learning disable
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

2.3 mac-address-learning

Use this command to enable the port address learning. Use the **no** form of this command to restore the default setting.

mac-address-learning

no mac-address-learning

Parameter Description	Parameter	Description
	N/A	N/A

Defaults The address learning function is enabled.

Command Mode Interface configuration mode.

Usage Guide MAC address learning cannot be disabled on the port where the security function is enabled. The security function cannot be configured on the port where address learning is disabled.

Configuratio The following example disables the port address learning function.

n Examples

```
Orion_B54Q(config-if)# no mac-address-learning
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2.4 mac-address-table aging-time

Use this command to specify the aging time of the dynamic MAC address. Use the **no** form of the command to restore the default setting.

mac-address-table aging-time *seconds*

no mac-address-table aging-time

Parameter Description

Parameter	Description
seconds	Aging time of the dynamic MAC address (in seconds). The time range depends on the switch.

Defaults The default is 300.

Command Mode Global configuration mode.

Usage Guide Use **show mac-address-table** aging-time to display configuration.

Use **show mac-address-table dynamic** to display the dynamic MAC address table.

Configuration Examples The following example sets the aging time of the dynamic MAC address to 150 seconds.

```
Orion_B54Q(config)# mac-address-table aging-time 150
```

Related Commands

Command	Description
show mac-address-table aging-time	Displays the aging time of the dynamic MAC address.
show mac-address-table dynamic	Displays dynamic MAC address.

Platform Description N/A

2.5 mac-address-table filtering

Use this command to configure the filtering MAC address. Use the **no** form of the command to restore the default setting.

mac-address-table filtering *mac-address* **vlan** *vlan-id*

no mac-address-table filtering *mac-address* **vlan** *vlan-id*

Parameter Description

Parameter	Description
mac-address	Filtering Address
vlan-id	VLAN ID, in the range from 1 to 4094.

Defaults No filtering address is configured by default.
When configuring this command without the **source** or **destination** specified, the frame received in the specified VLAN, which has the same source/destination MAC address with the specified MAC address, will be filtered.

Command Mode Global configuration mode.

Usage Guide The filtering MAC address shall not be a multicast address. Use the **show mac-address-table filtering** command to display the filtering MAC addresses.

Configuration Examples The following example configures the filtering MAC address for VLAN 1.

```
Orion_B54Q(config)# mac-address-table filtering 00d0f8000000 vlan 1
```

Related Commands

Command	Description
clear mac-address-table filtering	Clears the filtering MAC address.

Platform Description N/A

2.6 mac-address-table notification

Use this command to enable the MAC address notification function. Use The **no** form of the command to restore the default setting.
mac-address-table notification [**interval** *value* | **history-size** *value*]
no mac-address-table notification [**interval** | **history-size**]

Parameter Description

Parameter	Description
interval *value*	Sets the interval of sending the MAC address trap message, 1 second by default.
history-size *value*	Sets the maximum number of the entries in the MAC address notification table, 50 entries by default.

Defaults By default, the interval is 1 and the maximum number of the entries in the MAC address notification table is 50.

Command Global configuration mode.

Mode

Usage Guide The MAC address notification function is specific for only dynamic MAC address and secure MAC address. No MAC address trap message is generated for static MAC addresses. In the global configuration mode, you can use the **snmp-server enable traps mac-notification** command to enable or disable the switch to send the MAC address trap message.

Configuration Examples The following example enables the MAC address notification function.

```
Orion_B54Q(config)# mac-address-table notification
Orion_B54Q(config)# mac-address-table notification interval 40
Orion_B54Q(config)# mac-address-table notification history-size 100
```

Related Commands

Command	Description
snmp-server enable traps	Sets the method of handling the MAC address trap message..
show mac-address-table notification	Displays the MAC address notification configuration and the MAC address trap notification table.
snmp trap mac-notification	Enables the MAC address trap notification function on the specified interface.

Platform Description N/A

2.7 mac-address-table static

Use this command to configure a static MAC address. Use the **no** form of the command to restore the default setting.

mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

no mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

Parameter Description

Parameter	Description
mac-addr	Destination MAC address of the specified entry
vlan-id	VLAN ID of the specified entry, in the range from 1 to 4094.
interface-id	Interface (physical interface or aggregate port) that packets are forwarded to

Defaults No static MAC address is configured by default.

Command Mode Global configuration mode.

Usage Guide A static MAC address has the same function as the dynamic MAC address that the switch learns. Compared with the dynamic MAC address, the static MAC address will not be aged out. It can only be configured and removed by manual. Even if the switch is reset, the static MAC address will not be lost. A static MAC address shall not be configured as a multicast address. Use show mac-address-

table static to display the static MAC address.

Configuration Examples The following example configures a static MAC address.

```
Orion_B54Q(config)# mac-address-table static 00d0.f800.073c vlan 4
interface gigabitethernet 1/1
```

Related Commands

Command	Description
show mac-address-table static	Displays the static MAC address.

Platform Description N/A

2.8 max-dynamic-mac-count

Use this command to set the maximum number of MAC address learned dynamically on the VLAN or interface. Use the **no** or **default** form of this command to restore the default setting.

max-dynamic-mac-count *num*

no max-dynamic-mac-count

default max-dynamic-mac-count

Parameter Description

Parameter	Description
num	Sets the maximum number of MAC addresses.

Defaults The maximum number is not set by default.

Command Mode VLAN configuration mode / Interface configuration mode

Usage Guide This command is used to set the maximum number of MAC addresses learned dynamically on the VLAN or interface.

If the number of MAC addresses dynamically learned on the VLAN or interface reaches the upper limit, MAC address learning is disabled on the VLAN or interface.

If the number of MAC addresses reaches the upper limit when this command is configured, the surplus MAC addresses are not cleared. Instead, they remain and then age. MAC address learning is disabled on the VLAN or interface.

Use the **show mac-address-table max-dynamic-mac-count** command to display the maximum number of MAC addresses learned dynamically on the VLAN or interface.

Configuration Examples The following example sets the maximum number of MAC addresses dynamically learned on VLAN 1.

```
Orion_B54Q#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
```

```
Orion_B54Q(config)#vlan 1
Orion_B54Q(config-vlan)#max-dynamic-mac-count 160
```

The following example sets the maximum number of MAC addresses dynamically learned on interface GigabitEthernet 0/1.

```
Orion_B54Q#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Orion_B54Q(config)#interface GigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#max-dynamic-mac-count 160
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2.9 show mac-address-learning

Use this command to display the MAC address learning.

show mac-address-learning

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 MAC address learning.

```
Orion_B54Q# show mac-address-learning
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2.10 show mac-address-table

Use this command to display all types of MAC addresses (including dynamic address, static address

and filter address).

show mac-address-table [**address** *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

Parameter Description

Parameter	Description
address *mac-addr*	The MAC address.
interface *interface-id*	The Interface ID.
vlan *vlan-id*	The VLAN ID, in the range from 1 to 4094.

Defaults N/A

Command Mode All modes

Usage Guide N/A

Configuration Examples The following example displays the MAC address.

```
Orion_B54Q# show mac-address-table address 00d0.f800.1001
Vlan        MAC Address          Type     Interface
-------    ------------       --------   --------
1           00d0.f800.1001       STATIC  GigabitEthernet 1/1
```

Field	Description
Vlan	The interface address.
MAC Address	The MAC address.
Type	The MAC address type.
Interface	The interface corresponding to the MAC address.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

2.11 show mac-address-table aging-time

Use this command to display the aging time of the dynamic MAC address.

show mac-address-table aging-time

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 aging time of the dynamic MAC address.

```
Orion_B54Q# show mac-address-table aging-time
Aging time  : 300
```

Related Commands

Command	Description
mac-address-table aging-time	Sets the aging time of the dynamic MAC address.

Platform Description N/A

2.12 show mac-address-table count

Use this command to display the number of address entries in the address table.

show mac-address-table count [**interface** *interface-id* | **vlan** *vlan-id*]

Parameter Description

Parameter	Description
interface *interface-id*	Interface ID
vlan *vlan-id*	VLAN ID, in the range from 1 to 4094.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide The **show mac-address-table count** command is used to display the number of entries based on the type of MAC address entry.

The **show mac-address-table count interface** command is used to display the number of entries based on the interface associated with the MAC address entry.

The **show mac-address-table count vlan** command is used to display the number of entries based on the VLAN of MAC address entries.

Configuration Examples The following example displays the number of MAC address entries.

```
Orion_B54Q# show mac-address-table count
Dynamic Address Count : 51
Static Address Count : 0
Filter Address Count : 0
```

```
Total Mac Addresses  : 51
```

Total Mac Address Space Available: 8139The following example displays the number of MAC address in VLAN 1.

```
Orion_B54Q# show mac-address-table count vlan 1
Dynamic Address Count : 7
Static Address Count : 0
Filter Address Count : 0
Total Mac Addresses   : 7
```

The following example displays the number of MAC addresses on interface g0/1.

```
Orion_B54Q# show mac-address-table interface g0/1
Dynamic Address Count : 10
Static Address Count : 0
Filter Address Count : 0
Total Mac Addresses   : 10
```

Related Commands

Command	Description
show mac-address-table static	Displays the static address.
show mac-address-table filtering	Displays the filtering address.
show mac-address-table dynamic	Displays the dynamic address.
show mac-address-table address	Displays all the address information of the specified address.
show mac-address-table interface	Displays all the address information of the specified interface.
show mac-address-table vlan	Displays all the address information of the specified vlan.

Platform Description N/A

2.13 show mac-address-table dynamic

Use this command to display the dynamic MAC address.

show mac-address-table dynamic [**address** *mac-add r*] [**interface** *interface-id*] [**vlan** *vlan-id*]

Parameter Description

Parameter	Description
mac-addr	Destination MAC address of the entry
vlan-id	VLAN of the entry, in the range from 1 to 4094.
interface-id	Interface that the packet is forwarded to. It may be a physical port or an aggregate port

Defaults All the MAC addresses are displayed by default.

Command Privileged EXEC mode.

Mode

Usage Guide N/A

Configuration Examples The following example displays the dynamic MAC address.

```
Orion_B54Q# show mac-address-table dynamic
Vlan   MAC Address     Type   Interface
------------------------ -------- -------------------
1   0000.0000.0001    DYNAMIC gigabitethernet 1/1
1   0001.960c.a740    DYNAMIC gigabitethernet 1/1
1   0007.95c7.dff9    DYNAMIC gigabitethernet 1/1
1   0007.95cf.eee0    DYNAMIC gigabitethernet 1/1
1   0007.95cf.f41f    DYNAMIC gigabitethernet 1/1
1   0009.b715.d400    DYNAMIC gigabitethernet 1/1
1   0050.bade.63c4    DYNAMIC gigabitethernet 1/1
```

Related Commands

Command	Description
clear mac-address-table dynamic	Clears the dynamic MAC address.

Platform Description N/A

2.14 show mac-address-table filtering

Use this command to display the filtering MAC address.

show mac-address-table filtering [**ddr** *mac-addr*] [**vlan** *vlan-Id*]

Parameter Description

Parameter	Description
mac-addr	Destination MAC address of the entry
vlan-id	VLAN ID of the entry, in the range from 1 to 4094.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the filtering MAC address.

```
Orion_B54Q# show mac-address-table filtering
Vlan    MAC Address    Type   Interface
------- ----------------- ------- -----------
 1    0000.2222.2222   FILTER Not available
```

Related Commands	Command	Description
	mac-address-table filtering	Configures the filtering MAC address.

Platform Description N/A

2.15 show mac-address-table max-dynamic-mac-count

Use this command to display the maximum number of dynamic MAC addresses learned on the VLAN or interface.

show mac-address-table max-dynamic-mac-count { **vlan** [*vlan-id*] | **interface** [*interface-id*] }

Parameter Description

Parameter	Description
vlan	Displays the dynamic MAC address learned on all VLANs which are configured with the maximum number of dynamic MAC address learning.
vlan-id	Displays the dynamic MAC address learned on the specified VLAN.
interface	Displays the dynamic MAC address learned on all interfaces which are configured with the maximum number of dynamic MAC address learning.
interface-id	Displays the dynamic MAC address learned on the specified interface.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays the MAC address learned on all VLANs which are configured with the maximum number of dynamic MAC addresses.

```
Orion_B54Q#show mac-address-table max-dynamic-mac-count vlan
Vlan Limit   MAC count Learning
---- ------- --------- --------
1    160        6         YES
```

The following example displays the MAC address learned dynamically on the specified VLAN.

```
Orion_B54Q#show mac-address-table max-dynamic-mac-count vlan 1
Vlan Limit   MAC count Learning
---- ------- --------- --------
```

```
1     160         6          YES
```

Field	Description
Vlan	The VLAN ID.
Limit	The maximum number of MAC addresses.
MAC count	The number of MAC address learned dynamically on the VLAN.
Learning	Whether MAC address learning is disabled on the VLAN.

The following example displays the MAC address learned on all interfaces which are configured with the maximum number of the dynamic MAC address.

```
Orion_B54Q#show mac-address-table max-dynamic-mac-count interface
Interface               Limit   MAC count Learning
----------------------- ------- --------- --------
GigabitEthernet 0/1       160       6           YES
```

The following example displays the MAC address learned dynamically on the specified interface.

```
Orion_B54Q#show mac-address-table max-dynamic-mac-count interface
GigabitEthernet 0/1
Interface               Limit   MAC count Learning
----------------------- ------- --------- --------
GigabitEthernet 0/1       160       6           YES
```

Field	Description
Interface	The Interface ID
Limit	The maximum number of MAC addresses.
MAC count	The number of MAC address learned dynamically on the interface.
Learning	Whether MAC address learning is disabled on the interface

Related Commands	**Command**	**Description**
	N/A	N/A

Platform Description N/A

2.16 show mac-address-table interface

Use this command to display all the MAC addresses on the specified interface including static and dynamic MAC address

show mac-address-table interface [*interface-id*] [**vlan** *vlan-id*]

Parameter Description	**Parameter**	**Description**
	interface-id	Displays the MAC address information of the specified Interface

	(physical interface or aggregate port).
vlan-id	VLAN ID of the entry, in the range from 1 to 4094..

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays all the MAC addresses on interface gigabitethernet 1/1.

```
Orion_B54Q# show mac-address-table interface
gigabitethernet 1/1
Vlan  MAC Address  Type   Interface
----- ------------- -------- ---------------
1   00d0.f800.1001 STATIC  gigabitethernet 1/1
1   00d0.f800.1002 STATIC  gigabitethernet 1/1
1   00d0.f800.1003 STATIC  gigabitethernet 1/1
1   00d0.f800.1004 STATIC  gigabitethernet 1/1
```

Related Commands

Command	Description
show mac-address-table static	Displays the static MAC address.
show mac-address-table filtering	Displays the filtering MAC address.
show mac-address-table dynamic	Displays the dynamic MAC address.
show mac-address-table address	Displays all types of MAC addresses.
show mac-address-table vlan	Displays all types of MAC addresses of the specified VLAN.
show mac-address-table count	Displays the address counts in the MAC address table.

Platform Description N/A

2.17 show mac-address-table notification

Use this command to display the MAC address notification configuration and the MAC address notification table.

show mac-address-table notification [**interface** [*interface-id*] | **history**]

Parameter Description

Parameter	Description
interface	Displays the MAC address notification configuration on all interfaces.
interface *interface-id*	Displays the MAC address notification configuration on a specific interface.

history	Displays the MAC address notification history.

Defaults The MAC address notification configuration is displayed by default.

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the MAC address notification configuration and the MAC address notification table.

```
Orion_B54Q# show mac-address-table notification interface
Interface     MAC Added Trap MAC Removed Trap
---------     --------------    --------------
GigabitEthernet1/14  Disabled     Disabled
Orion_B54Q# show mac-address-table notification
MAC Notification Feature: Disabled
Interval between Notification Traps: 1 secs
Maximum Number of entries configured in History Table:1
Current History Table Length: 0
Orion_B54Q# show mac-address-table notification history
History Index: 0
MAC Changed Message:
Operation:ADD Vlan: 1 MAC Addr: 00f8.d012.3456 GigabitEthernet 3/1
```

Related Commands

Command	Description
mac-address-table notification	Enables MAC address notification.
snmp trap mac-notification	Enables the MAC address trap notification function on the specified interface.

Platform Description N/A

2.18 show mac-address-table static

Use this command to display the static MAC address.

show mac-address-table static [**addr** *mac-addr*] [**interface** *interface-Id*] [**vlan** *vlan-id*]

Parameter Description

Parameter	Description
mac-addr	Destination MAC address of the entry
vlan-id	VLAN ID of the entry, within the range from 1 to 4094.
interface-id	Interface of the entry physical interface or aggregate port

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the static MAC addresses

```
Orion_B54Q# show mac-address-table static
Vlan    MAC Address     Type   Interface
---------- ------------------- -------- ---------
1  00d0.f800.1001  STATIC  gigabitethernet 1/1
1  00d0.f800.1002  STATIC  gigabitethernet 1/1
1  00d0.f800.1003  STATIC  gigabitethernet 1/1
```

Related Commands

Command	Description
mac-address-table static	Configures the static MAC address.

Platform Description N/A

2.19 show mac-address-table vlan

Use this command to display all addresses of the specified VLAN.

show mac-address-table vlan [*vlan-id*]

Parameter Description

Parameter	Description
vlan-id	VLAN ID of the entry, within the range from 1 to 4094.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays all addresses of the specified VLAN.

```
Orion_B54Q# show mac-address-table vlan 1
Vlan  MAC Address    Type    Interface
----- -------------  ------- ------------------
1   00d0.f800.1001  STATIC  gigabitethernet 1/1
1   00d0.f800.1002  STATIC  gigabitethernet 1/1
1   00d0.f800.1003  STATIC  gigabitethernet 1/1
```

Related Commands

Command	Description
show mac-address-table static	Displays static addresses.
show mac-address-table filtering	Displays filtered addresses.
show mac-address-table dynamic	Displays dynamic addresses.
show mac-address-table address	Displays all address information about the specified address.
show mac-address-table interface	Displays all address information about the specified interface.
show mac-address-table count	Displays the number of addresses in the address table.

Platform Description N/A

2.20 snmp trap mac-notification

Use this command to enable the MAC address trap notification on the specified interface. Use The **no** form of the command to restore the default setting.

snmp trap mac-notification { **added** | **removed** }

no snmp trap mac-notification { **added** | **removed** }

Parameter Description

Parameter	Description
added	Notifies when a MAC address is added.
removed	Notifies when a MAC address is removed

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide Use **show mac-address-table notification interface** to display configuration.

Configuration Examples The following example enables the MAC address trap notification on interface gigabitethernet 1/1.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# snmp trap mac-notification added
```

Related Commands

Command	Description
mac-address-table notification	Enables MAC address notification.
show mac-address-table notification	Displays the MAC address notification configuration and the MAC address notification table.

Platform N/A

Description

2.21 aggregateport-admin vlan

Use this command to manage VLAN through an AP port. Use The **no** or **default** form of the command to restore the default setting.
aggregateport-admin vlan *vlan-list*
no aggregateport-admin vlan *vlan-list*
default aggregateport-admin vlan *vlan-list*

Parameter Description

Parameter	Description
vlan-list	Specifies the VLAN list.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide When an AP port receives VLAN management packets, they are processed as management packets. The other packets are processed as data packets.

Configuration Examples The following example manages VLAN through an AP port.

```
Orion_B54Q(config)# aggregateport-admin vlan 1-20
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3 Aggregate Port Commands

3.1 aggregateport capacity mode

Use this command to configure the AP capacity mode. Use the **no** form of this command to restore the default setting, Use the **no** form of this command to restore the default setting,

aggregateport capacity mode *capacity-mode*

no aggregateport capacity mode

Parameter Description

Parameter	Description
capacity-mode	Configures the capacity mode.

Defaults The default *capacity-mode* varies with the device.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples The following example configures the the capacity mode.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# aggregateport capacity mode 256*8
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.2 aggregateport load-balance

Use this command to configure a global load-balance algorithm for aggregate ports or a load-balance algorithm for an aggregate port . Use the **no** form of this command to return the default setting.

aggregateport load-balance { **dst-mac** | **src-mac** | **src-dst-mac** | **dst-ip** | **src-ip** | **src-dst ip** | s **src-dst-ip-l4port** | **enhanced profile profile-name** | **src- l4port** | **dst-l4port** | **src-dst-l4port** | **src-ip-src-l4port** | **src-ip-dst-l4port** | **dst-ip-src-l4port** | **dst-ip-dst-l4port** | **src-ip-src-dst-l4port** | **dst-ip-src-dst-l4port** | **src-dst-ip-src-l4port** | **src-dst-ip-dst-l4port** | **src-port** | **mpls-label** | **round-robin}**

no aggregateport load-balance

Parameter Description

Parameter	Description
dst-mac	Load balance based on the destination MAC addresses of the incoming packets. For all the links of an aggregate port, the messages with the same destination MAC addresses are sent to the same port, and those with different destination MAC addresses are sent to different ports.
src-mac	Load balance based on the source MAC addresses of the incoming packets. For all the links of an aggregate port, the messages from different addresses are distributed to different ports, and those from the same addresses are distributed to the same port.
src-dst-ip	Load balance based on the source IP address and destination IP address. Packets with different source and destination IP address pairs are forwarded through different ports. The packets with the same source and destination IP address pairs are forwarded through the same links. At layer 3, this load balancing style is recommended.
dst-ip	Load balance based on the destination IP addresses of the incoming packets. For all the links of an aggregate port, the messages with the same destination IP addresses are sent to the same port, and those with different destination IP addresses are sent to different ports.
src-ip	Load balance based on the source IP addresses of the incoming packets. For all the links of an aggregate port, the messages from different addresses are distributed to different ports, and those from the same addresses are distributed to the same port.
src-dst-mac	Load balance based on the source and destination MAC addresses. Packets with different source and destination MAC address pairs are forwarded through different ports. The packets with the same source and destination MAC address pairs are forwarded through the same port.
src-dst-ip-l4port	Load balance based on the source IP address, destination IP address, L4 source port number and L4 destination port number.
enhanced profile	Load balance based on the packet type
src- l4port	Load balance based on the L4 source port number.
dst- l4port	Load balance based on the L4 destination port number.
src-dst-l4port	Load balance based on the L4 source port number and L4 destination port number.
src-ip-src-l4port	Load balance based on the source IP address and the L4 source port number.
src-ip-dst-l4port	Load balance based on the source IP address and the L4 destination port number.
dst-ip-src-l4port	Load balance based on the destination IP address and the L4 source port number.
dst-ip-dst-	Load balance based on the destination IP address and the L4 destination port

l4port	number.
src-ip-src-dst-l4port	Load balance based on the source IP address, L4 source port number and L4 destination port number.
dst-ip-src-dst-l4port	Load balance based on the destination IP address, L4 source port number and L4 destination port number.
src-dst-ip-src-l4port	Load balance based on the source IP address, the destination IP address and L4 source port number.
src-dst-ip-dst-l4port	Load balance based on the source IP address, the destination IP address and L4 destination port number.
src-port	Load balance based on the source port.
mpls-label	Load balance based on MPLS label.
round-robin	Load balance based on round robin.

Defaults The default load balance mode is **src-dst-mac** for the L2 AP port and **src-dst-ip** for the L3 AP port . For the CB-card-loaded device supporting enhanced profile, load is balanced over AP according to packet type based the enhanced profile.

Command Mode Global configuration mode/Interface configuration mode

Usage Guide Use the **show aggregateport** command to display load-balance configuration.

Configuration Examples The following example configures a load-balance algorithm globally based on the destination MAC address.

```
Orion_B54Q(config)# aggregateport load-balance dst-mac
```

Related Commands

Command	Description
show aggregateport load-balance	Displays aggregate port configuration.

Platform Description N/A

3.3 aggregateport member linktrap

Use this command to send LinkTrap to aggregate port members. Use the **no** form of this command to restore the default setting.

aggregateport member linktrap

no aggregateport member linktrap

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide This function cannot be enabled by running the **snmp trap link-status** command in interface configuration mode.

Configuration Examples The following example enables the LinkTrap function on the aggregate port members.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# aggregateport member linktrap
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.4 aggregateport minimum member

Use this command to set the minimum number of AP member ports. Use the **no** form of this command to restore the default setting.

aggregateport minimum member *number*

no aggregateport minimum member *number*

Parameter Description

Parameter	Description
number	The minimum number of AP member ports

Defaults The default is 0.

Command Mode Interface configuration mode

Usage Guide N/A

Configuration Examples The following example sets the minimum number of AP member ports to 2.

```
Orion_B54Q(config)# interface GigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# port-group 1 mode active
Orion_B54Q(config-if-GigabitEthernet 0/1)# aggregateport minimum member 2
Orion_B54Q(config-if-GigabitEthernet 0/1)# end
Orion_B54Q# show interface aggregateport 1
```

```
 …
 Aggregate Port Informations:
       Aggregate Number: 1
       Name: "AggregatePort 1"
       Members: (count=1)
       Primary Port: GigabitEthernet 0/1
       GigabitEthernet 0/1         Link Status: Up    Lacp Status: susp
…
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.5 aggregateport primary-port

Use this command to configure the AP member port as a primary port. Use the **no** form of this command to restore the default setting.

aggregateport primary-port

no aggregateport primary-port

Parameter Description

Parameter	Description
N/A	N/A

Defaults The AP member port is not a primary port by default.

Command Mode Interface configuration mode

Usage Guide Only one primary port can be configured for an aggregate port.

Configuration Examples The following example configures GigabitEthernet 0/1 as a primary port.

```
Orion_B54Q(config)# interface GigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# port-group 1 mode active
Orion_B54Q(config-if-GigabitEthernet 0/1)# aggregateport primary-port
Orion_B54Q(config-if-GigabitEthernet 0/1)# end
Orion_B54Q# show interface aggregateport 1
 …
 Aggregate Port Informations:
```

```
        Aggregate Number: 1
        Name: "AggregatePort 1"
        Members: (count=1)
        Primary Port: GigabitEthernet 0/1
        GigabitEthernet 0/1         Link Status: Up    Lacp Status: bndl
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.6 fcoe field

Use this command to set the load balance mode of FCOE packets for the specified template. Use the **no** form of this command to restore the default setting.

fcoe field [**vlan**] [**src-port**] [**dst-port**] [**src-id**] [**dst-id**] [**rx-id**] [**ox-id**] [**fabric-id**]

no fcoe field

Parameter Description

Parameter	Description
vlan	Load balance based on VLAN ID of FCOE packets.
src-port	Load balance based on the source port number of FCOE packets.
dst-port	Load balance based on the destination port number of FCOE packets.
src-id	Load balance based on the source ID of FCOE packets.
dst-id	Load balance based on the destination ID of FCOE packets.
rx-id	Load balance based on the Responder Exchange ID of FCOE packets.
ox-id	Load balance based on the Originator Exchange ID of FCOE packets.
fabric-id	Load balance based on the Fabric ID of the FC network of FCOE packets..

Defaults The default load balance mode is **src-id**, **dst-id** and **ox-id**.

Command Mode Enhanced template configuration mode

Usage Guide The enhance template should be configured first.

Configuration Examples The following example sets the load balance mode for FCOE packets to **src-id** and **src-port**.

```
Orion_B54Q(config)# load-balance-profile apl
Orion_B54Q(config-load-balance-profile)# fcoe field src-id src-port
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

3.7 interfaces aggregateport

Use this command to create the aggregate port or enter interface configuration mode of the aggregate port. Use the **no** form of this command to restore the default setting.

interfaces aggregateport *ap-number*

no interfaces aggregateport *ap-number*

Parameter Description	Parameter	Description
	ap-number	Aggregate port number.

Defaults The aggregate port is not created by default.

Command Mode Global configuration mode

Usage Guide If the aggregate port is created, this command is used to enter the interface configuration mode. Otherwise, this command is used to create the aggregate port and then enter its interface configuration mode.

Configuration Examples The following example creates AP 5 and enters its interface configuration mode.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# interfaces aggregateport 5
Orion_B54Q(config-if-Aggregateport 5)# end
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

3.8 ipv4 field

Use this command to configure the IPv4 load balance mode for a specified profile. Use the **no** form of this command to restore the default setting.

ipv4 field [**src-ip**] [**dst-ip**] [**protocol**] [**l4-src-port**] [**l4-dst-port**] [**vlan**] [**src-port**] **[dst-port] [l2-etype] [src-mac] [dst-mac]**

no ipv4 field

Parameter Description

Parameter	Description
src-ip	Load balance based on the source IP address of theIPv4 packet.
dst-ip	Load balance based on the destination IP address of the IPv4 packet.
protocol	Load balance based on the protocol type of the IPv4 packet.
l4-src-port	Load balance based on the L4 source port number of the IPv4 packet.
l4-dst-port	Load balance based on the L4 destination port number of the IPv4 packet.
vlan	Load balance based on the VLAN ID of the IPv4 packet.
src-port	Load balance based on the source port number of the IPv4 packet.
dst-port	Load balance based on the destination port number of the IPv4 packet.
l2-etype	Load balance based on the Ethernet type of the IPv4 port.
src-mac	Load balance based on the source MAC address of the IPv4 packet.
dst-mac	Load balance based on the destination MAC address of the IPv4 packet.

Defaults The default load balance mode is **src-ip** and **dst-ip**.

Command Mode Load balance profile configuration mode

Usage Guide You need to configure the load balance profile first.

Configuration Examples The following example sets the IPv4 load balance mode for profile apl to **src-ip**.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)# load-balance-profile apl
Orion_B54Q(config-load-balance-profile)# ipv4 field src-ip
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.9 ipv6 field

Use this command to configure the IPv6 load balance mode for a specified profile. Use the **no** form of this command to restore the default setting.

ipv6 field [**src-ip**] [**dst-ip**] [**protocol**] [**l4-src-port**] [**l4-dst-port**] [**vlan**] [**src-port**] **[dst-port]** [**l2-etype**] [**src-mac**] [**dst-mac**]

no ipv6 field

Parameter Description

Parameter	Description
src-ip	Load balance based on the source IP addresses of the IPv6 packets.
dst-ip	Load balance based on the destination IP addresses of the IPv6 packets.
protocol	Load balance based on the protocol types of the IPv6 packets.
l4-src-port	Load balance based on the L4 source port numbers of the IPv6 packets.
l4-dst-port	Load balance based on the L4 destination port numbers of the IPv6 packets.
vlan	Load balance based on the VLAN ID of the IPv6 packets.
src-port	Load balance based on the source port numbers of the IPv6 packets.
dst-port	Load balance based on the destination port number of the IPv4 packet.
l2-etype	Load balance based on the Ethernet type of the IPv4 port.
src-mac	Load balance based on the source MAC address of the IPv4 packet.
dst-mac	Load balance based on the destination MAC address of the IPv4 packet.

Defaults The default load balance mode is **src-ip** and **dst-ip**.

Command Mode Load balance profile configuration mode

Usage Guide You need to configure the load balance profile first.

Configuration Examples The following example sets the load balance mode of IPv6 packets to **src-ip**.

```
Orion_B54Q(config)# load-balance-profile apl
Orion_B54Q(config-load-balance-profile)# ipv6 field src-ip
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.10 l2 field

Use this command to configure the load balance mode of L2 packets for a specified profile. Use the **no** form of this command to restore the default setting.

l2 field [**src-mac**] [**dst-mac**] [**l2-protocol**] [**vlan**] [**src-port**] **[dst-port]**

no l2 field

Parameter Description

Parameter	Description
src-mac	Load balance based on the source MAC address of the L2 packet.
dst-mac	Load balance based on the destination MAC address of the L2 packets.
l2-protocol	Load balance based on the L2 protocol type of the L2 packet.
vlan	Load balance based on the VLAN ID of the L2 packet.
src-port	Load balance based on the source port number of the L2 packet.
dst-port	Load balance based on the destination port number of the L2 packet.

Defaults The default load balance mode is **src-mac**, **dst-mac**, and **vlan**.

Command Mode Load balance profile configuration mode

Usage Guide You need to configure the load balance profile first.

Configuration Examples The following example sets the load balance mode of L2 packets to **src-mac** and **src-prot**.

```
Orion_B54Q(config)# load-balance-profile apl
Orion_B54Q(config-load-balance-profile)# l2 field src-mac src-port
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.11 lacp port-priority

Use this command to set the priority of the LACP AP member port. Use the **no** form of this command to restore the default setting.

lacp port-priority *port-priority*

no lacp port-priority

Parameter

Parameter	Description

Description

port-priority	The LACP port priority, in the range from 0 to 65535.

Defaults The default is 32768.

Command Mode Interface configuration mode

Usage Guide N/A

Configuration Examples This example sets the LACP port priority of interface Gi0/1 to 4096.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# lacp port-priority 4096
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.12 lacp short-timeout

Use this command to configure the short-timeout mode for the LACP AP member port. Use the no form of this command to restore the default setting.

lacp short-timeout

no lacp short-timeout

Parameter Description

Parameter	Description
N/A	N/A

Defaults The default is long-timeout mode.

Command Mode Interface configuration mode

Usage Guide In long-timeout mode, the port sends an LACP packet every 30 seconds. If the packet is not received in 90 seconds, the connection times out.

In short-timeout mode, the port sends an LACP packet every 1 second. If the packet is not received in 3 seconds, the connection times out.

Configuration Examples The following example configures the short-timeout mode for the LACP AP member port.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# lacp short-timeout
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.13 load-balance-profile

Use this command to rename a load balance enhanced profile and apply the profile. Use the **no** form of this command to restore the load balance configuration without changing the profile name. Use the **default** form of this command to restore the default setting.

load-balance-profile *profile-name*

no load-balance-profile *profile-name*

no load-balance-profile

Parameter Description

Parameter	Description
profile-name	Specifies the profile name, which contains up to 31 characters.

Defaults The default *profile-name* is default.

Command Mode Global configuration mode.

Usage Guide By default, the device is configured with an enhanced profile named default. Use the **load-balance-profile default** command to enter the enhanced profile configuration mode. You can change the profile name by using the **load-balance-profile** *profile-name* command.

Configuration Examples The following example creates a load balance profile named **apl**.

```
Orion_B54Q(config)# load-balance-profile apl
Warning: The profile default has been used,  and this command will rename
it. Continue? [Y/N]:y
Orion_B54Q(config-load-balance-profile)#
```

Related Commands

Command	Description
N/A	N/A

Platform N/A

Description

3.14 mpls field

Use this command to configure the load balance mode of MPLS packets in a specified load balance enhanced profile. Use the **no** form of this command to restore the default setting.

mpls field [**top-label**] [**2nd-label**] [**3rd-label**] [**src-ip**] [**dst-ip**] [**vlan**] [**src-port**] [dst-port] [src-mac] [dst-mac] [protocol] [l4-src-port] [**l4-dst-port**] [**l2-etype**]

no mpls field

Parameter Description

Parameter	Description
top-label	Load balance based on the destination top labels of the MPLS packets.
2nd-label	Load balance based on the destination second labels of the MPLS packets.
src-ip	Load balance based on the source IP addresses of the MPLS packets.
dst-ip	Load balance based on the destination IP addresses of the MPLS packets.
vlan	Load balance based on the VLANs of the MPLS packets.
src-port	Load balance based on the source port numbers of the MPLS packets.
3rd-label	Load balance based on the destination second labels of the MPLS packets
dst-port	Load balance based on the destination port of the MPLS packets.
src-mac	Load balance based on the source MAC address of the MPLS packets.
dst-mac	Load balance based on the destination MAC address of the MPLS packets.
protocol	Load balance based on the protocol type of the MPLS packets.
l4-src-port	Load balance based on the L4 source port number of the MPLS packets.
l4-dst-port	Load balance based on the L4 destination port number of the MPLS packets.
l2-etype	Load balance based on the Ethernet type of the MPLS packets.

Defaults The default load balance mode is **top-label** and **2nd-label**.

Command Mode Load balance enhanced profile configuration mode.

Usage Guide Use the **show load-balance-profile** command to display the load balance mode configuration.

Configuration Examples The following example sets the load balance mode of MPLS packets to **top-label** and **src-ip**.

```
Orion_B54Q(config-load-balance-profile)# mpls field top-label src-ip
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.15 port-group

Use this command to assign a physical interface to be a member port of a static aggregate port or an LACP aggregate port. Use the **no** form of this command to restore the default setting.

port-group *port-group-number*

port-group *key-number* **mode** { **active** | **passive** }

no port-group

Parameter Description

Parameter	Description
port-group-number	Member group ID of an aggregate port, the interface number of the aggregate port.
key-number	Member group ID of an LACP aggregate port, the interface number of the LACP aggregate port.
active	Places a port into an active negotiating state, in which the port initiates negotiations with remote ports by sending LACP packets.
passive	Places a port into a passive negotiating state, in which the port responds to LACP packets it receives but does not initiate LACP negotiation.

Defaults By default, the physical port does not belong to any aggregate port.

Command Mode Interface configuration mode.

Usage Guide All the members of an aggregate port belong to a VLAN or configured to be trunk ports. The ports belonging to different native VLANs cannot form an aggregate port.

Configuration Examples The following example specifies the Ethernet interface 1/3 as a member of the static AP 3.

```
Orion_B54Q(config)# interface gigabitethernet 1/3
Orion_B54Q(config-if-GigabitEthernet 1/3)# port-group 3
```

The following example specifies the Ethernet interface 2/3 as a member of the LACP AP4 and set the aggregation mode to active.

```
Orion_B54Q(config)# interface gigabitethernet 2/3
Orion_B54Q(config-if-GigabitEthernet 2/3)# port-group 4 mode active
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.16 show aggregateport

Use this command to display the aggregate port configuration.

show aggregateport { [*aggregate-port-number*] **summary** | **load-balance** }

Parameter Description

Parameter	Description
aggregate-port-number	Number of the aggregate port.
load-balance	Displays the load-balance algorithm on the aggregate port.
summary	Displays the summary of the aggregate port.

Defaults N/A

Command Mode Any mode

Usage Guide If the aggregate port number is not specified, all the aggregate port information will be displayed.

Configuration Examples The following example displays the aggregate port configuration.

```
Orion_B54Q# show aggregateport 1 summary
AggregatePort  MaxPorts        SwitchPort Mode    Load balance
Ports
-------------  --------------- ---------- ------
---------------------------- ------------------------
Ag1         8          Enabled    ACCESS  dst-mac              Gi0/2
```

Related Commands

Command	Description
aggregateport load-balance	Configures a load-balance algorithm of AP.

Platform Description N/A

3.17 show lacp summary

Use this command to display the LACP aggregation information.

show lacp summary [*key*]

Parameter Description

Parameter	Description
key	Specifies the aggregation group id to show. If it is not specified, all aggregation group information is displayed by default.

Defaults N/A

Command Mode Any mode.

Usage Guide N/A

Configuration Examples The following example displays the LACP aggregation information.

```
Orion_B54Q(config)# show lacp summary 3
System Id:32768, 00d0.f8fb.0002
Flags:  S - Device is requesting Slow LACPDUs
F - Device is requesting Fast LACPDUs.
A - Device is in active mode.        P - Device is in passive mode.
Aggregate port 3:
Local information:
                            LACP port       Oper    Port     Port
Port     Flags     State     Priority        Key     Number   State
---------------------------------------------------------------------
Gi0/1     SA        bndl        4096         0x3     0x1      0x3d
Gi0/2     SA        bndl        4096         0x3     0x2      0x3d
Gi0/3     SA        bndl        4096         0x3     0x3      0x3d
Partner information:
                  LACP port                  Oper    Port     Port
Port     Flags     Priority      Dev ID       Key     Number   State
---------------------------------------------------------------------
Gi0/1     SA        61440     00d0.f800.0002   0x3     0x1      0x3d
Gi0/2     SA        61440     00d0.f800.0002   0x3     0x2      0x3d
Gi0/3     SA        61440     00d0.f800.0002   0x3     0x3      0x3d
```

Field	Description
Local information	Displays the local LACP information.
Port	Displays the system port ID.
Flags	Displays the port state flag: “S” indicates that the LACP is stable and in the state of periodically sending the LACPPDU; “A” indicates that the port is in the active mode.
State	Show the port aggregation information: “bndl” indicates that the port is aggregated; “Down” represents the disconnection port state; “susp” indicates that the port is not aggregated.
LACP Port Priority	Displays the LACP port priority.
Oper Key	Displays the port operation key.
Port Number	Displays the port number.

Port State	Displays the flag bit for the LACP port state.
Partner information	Partly Displays the LACP information of the peer port.
Dev ID	Partly Displays the system MAC information of the peer device.

Related Commands

Command	Description
port-group *key* **mode**	Enables the LACP on the port and specifies the aggregation group ID and operation mode.

Platform Description N/A

3.18 show load-balance-profile

Use this command to display the enhanced profile.

show load-balance-profile [*profile-name*]

Parameter Description

Parameter	Description
profile-name	Specifies the profile name.

Defaults -

Command Mode Any mode.

Usage Guide All enhanced profiles are displayed if the profile name is not specified.

Configuration Examples The following example displays configuration information in profile **module0**.

```
Orion_B54Q# show load-balance-profile  module0
Load-balance-profile: module0
Packet    Hash Field:
IPV4: src-ip dst-ip
IPV6: src-ip dst-ip
L2  : src-mac dst-mac vlan
MPLS: top-labe l2nd-label
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.19 show aggregateport capacity

Use this command to display the AP capacity mode and the AP number.

show aggregateport capacity

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Any mode

Usage Guide N/A

Configuration Examples The following example displays the AP capacity mode and the AP number.

```
Orion_B54Q# show aggregateport capacity
AggregatePort Capacity Information:
Configuration Capacity Mode: 128*16.
Effective Capacity Mode    : 256*8.
Available Capacity         : 128*8.
Total Number: 128, Used: 1, Available: 127.
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

3.20 trill field

Use this command to configure the load balance mode of TRILL packets for a specified profile. Use the **no** form of this command to restore the default setting.

trill field [**vlan**] [**src-ip**] [**dst-ip**] [**src-port**] [**dst-port**] [**src-mac**] [**dst-mac**] [**l4-src-port**] [**l4-dst-port**] [**l2-etype**] [**protocol**] [**ing-nick**] [**egr-nick**]

no mpls field

Parameter

Parameter	Description

Description

vlan	Load balance based on the VLAN ID of the TRILL packet.
src-ip	Load balance based on the source IP address of the TRILL packet.
dst-ip	Load balance based on the destination IP address of the TRILL packet.
src-port	Load balance based on the source port number of the TRILL packet.
dst-port	Load balance based on the destination port number of the TRILL packet.
src-mac	Load balance based on the source MAC address of the TRILL packet.
dst-mac	Load balance based on the destination MAC address of the TRILL packet.
l4-src-port	Load balance based on the L4 source port number of the TRILL packet.
l4-dst-port	Load balance based on the L4 destination port number of the TRILL packet.
l2-etype	Load balance based on the Ethernet type of the TRILL packet.
protocol	Load balance based on the protocol type of the TRILL packet.
ing-nick	Load balance based on Ingress Rbridge Nickname of the TRILL packet.
egr-nick	Load balance based on Egress Rbridge Nickname of the TRILL packet.

Defaults The default load balance mode is **src-mac, dst-mac** and **vlan**.

Command Mode Load balance template configuration mode

Usage Guide You need to configure the load balance profile first.

Configuration Examples The following example sets the load balance mode of TRILL packets for profile apl to **src-mac** and **src-port**.

```
Orion_B54Q(config)# load-balance-profile apl
Orion_B54Q(config-load-balance-profile)# trill field src-mac src-port
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

4 ECMP Cluster Commands

4.1 ecmp cluster enable

Use this command to enable ECMP cluster. Use the **no** form of this command to disable ECMP cluster.

ecmp cluster enable

Parameter Description

Parameter	Description
-	-

Defaults The **ECMP cluster** function is disabled by default.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples

1. Enable ECMP cluster.

```
Orion_B54Q#configure
Enter configuration commands, one per line.  End with CNTL/Z.
Orion_B54Q(config)#ecmp cluster enable
```

2. Disable ECMP cluster.

```
Orion_B54Q#configure
Enter configuration commands, one per line.  End with CNTL/Z.
Orion_B54Q(config)#no ecmp cluster enable
```

Verification Run the **show run** command to display ECMP cluster configuration.

Platform N/A

5 VLAN Commands

5.1 add

Use this command to add one or a group Access interface into current VLAN. Use the **no** or **default** form of the command to remove the Access interface.
add interface { *interface-id* | **range** *interface-range* }
no add interface { *interface-id* | **range** *interface-range* }
default add interface { *interface-id* | **range** *interface-range* }

Parameter Description

Parameter	Description
interface-id	Layer-2 Ethernet interface or layer-2 AP port.
range *interface-range*	Range of the Layer-2 Ethernet interface or layer-2 AP port.

Defaults All layer-2 Ethernet interfaces are in the VLAN1.

Command mode VLAN configuration mode.

Usage Guide This command is only valid for the access port.
The configuration of this command is the same as specifying the VLAN to which interface belongs in the interface configuration mode (that is the **switchport access vlan** *vlan-id* command). For the two commands of adding the interface to the VLAN, the command configured later will overwrite the one configured before and take effect.
The configuration of adding the layer-2 AP into current VLAN through this command will only take effect for the layer-2 AP port, but not for the member port of the layer-2 AP port.

Configuration Examples The following example adds the interface GigabitEthernet 0/10 to VLAN20.

```
Orion_B54Q# configure terminal
SwitchA(config)#vlan 20
SwitchA(config-vlan)#add interface GigabitEthernet 0/10
Orion_B54Q# show interface GigabitEthernet 0/10 switchport
Interface  Switchport   Mode  Access  Native Protected  VLAN lists
---------  --------       -----  -----  ---- ---------- -------
GigabitEthernet 0/10 enabled  ACCESS  20   1   Disabled  ALL
```

The following example adds the interface range GigabitEthernet 0/1-10 to VLAN200.

```
Orion_B54Q# configure terminal
SwitchA(config)#vlan 200
SwitchA(config-vlan)#add interface range GigabitEthernet 0/1-10
```

```
Orion_B54Q# show vlan
SwitchA#show vlan
VLAN Name         Status                        Ports
---- -------    ------------    ----------------------------
1 VLAN0001    STATIC   Gi0/11,Gi0/12,Gi0/13,Gi0/14,Gi0/15,
Gi0/16,Gi0/17,Gi0/18,Gi0/19,Gi0/20,Gi0/21, Gi0/22, Gi0/23, Gi0/24
200 VLAN0200 STATIC  Gi0/1,Gi0/2,Gi0/3,Gi0/4,Gi0/5,
Gi0/6,Gi0/7,Gi0/8,Gi0/9,Gi0/10
```

The following example adds the AggregatePort10 to VLAN20.

```
Orion_B54Q# configure terminal
SwitchA(config)#vlan 20
SwitchA(config-vlan)#add interface aggregateport 10
Orion_B54Q# show interface aggregateport 10 switchport
Interface  Switchport   Mode  Access  Native Protected  VLAN lists
----------  --------       -----  -----  ---- ---------- -------
AggregatePort 10 enabled  ACCESS  20   1   Disabled  ALL
```

Related Commands

Command	Description
show interface *interface-id* **switchport**	Displays the layer-2 interfaces.

Platform Description N/A

5.2 name

Use this command to specify the name of a VLAN. Use the **no** or **default** form of this command to restore the default setting.

name *vlan-name*

no name

default name

Parameter Description

Parameter	Description
vlan-name	VLAN name

Defaults The default name of a VLAN is the combination of “VLAN” and VLAN ID, for example, the default name of the VLAN 2 is “VLAN0002”.

Command mode VLAN configuration Mode.

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config)# vlan 10
Orion_B54Q(config-vlan)# name vlan10
```

Related Commands

Command	Description
show vlan	Displays member ports of the VLAN.

Platform Description N/A

5.3 show vlan

Use this command to display member ports of the VLAN.

show vlan [**id** *vlan-id*]

Parameter Description

Parameter	Description
vlan-id	VLAN ID

Defaults N/A

Command mode All modes

Usage Guide To return to the privileged EXEC mode, input **end** or pressing **Ctrl+C**.
To return to the global configuration mode, input **exit**.

Configuration Examples

```
Orion_B54Q# show vlan id 1
VLAN Name       Status    Ports
---------- ------------- ------------
1   VLAN0001         STATIC    Fa0/1, Fa0/2
```

Related Commands

Command	Description
name	VLAN name.
switchport access	Adds the interface to a VLAN.

Platform Description N/A

5.4 switchport access

Use this command to configure an interface as a static access port and assign it to a VLAN. Use the **no** form of the command to assign the port to the default VLAN.

switchport access vlan *vlan-id*

no switchport access vlan

Parameter Description

Parameter	Description
vlan-id	The VLAN ID at which the port to be added.

Defaults By default, the switch port is an access port and the VLAN is VLAN 1.

Command mode Interface configuration mode.

Usage Guide Enter one VLAN ID. The system will create a new one and add the interface to the VLAN if you enter a new VLAN ID. If the VLAN ID already exists, the command adds the port to the VLAN.
If the port is a trunk port, the operation does not take effect.

Configuration Examples

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# switchport access vlan 2
```

Related Commands

Command	Description
switchport mode	Specifies the interface as Layer 2 mode (switch port mode).
switchport trunk	Specifies a native VLAN and the allowed-VLAN list for the trunkport.

Platform Description N/A

5.5 switchport mode

Use this command to specify a L2 interface (switch port) mode. You can specify this interface to be an access port or a trunk port or an 802.1Q tunnel. Use the **no** form of this command to restore the default setting.

switchport mode { **access** | **trunk** | **hybrid** | **uplink** | **dot1q-tunnel** }

no switchport mode

Parameter

Parameter	Description

Description

access	Configures the switch port as an access port.
trunk	Configures the switch port as a trunk port.
hybrid	Configures the switch port as a hybrid port.
uplink	Configures the switch port as an uplink port.
dot1q-tunnel	Configures the switch port as a 802.1Q tunnel port.

Defaults By default, the switch port is an access port.

Command mode Interface configuration mode.

Usage Guide If a switch port mode is access port, it can be the member port of only one VLAN. Use the **switchport access vlan** command to specify the member of the VLAN.
A trunk port can be the member port of various VLANs defined by the allowed-VLAN list. The allowed VLAN list of the interface determines the VLANs to which the interface may belong. The trunk port is the member of all the VLANs in the allowed VLAN list. Use the **switchport trunk** command to define the allowed-VLANs list.

Configuration Examples

```
Orion_B54Q(config-if)# switchport mode trunk
```

Related Commands

Command	Description
switchport access	Configures an interface as a statics access port and assigns it to a VLAN.
switchport trunk	Specifies a native VLAN and the allowed-VLAN list for the trunkport.

Platform Description N/A

5.6 switchport hybrid allowed

Use this command to add the port to the VLAN or remove the port from the VLAN, Use the **no** or **default** form of this command to restore the default setting.
switchport hybrid allowed vlan { { [**add** | **only**] **tagged** *vlist* | [**add**] **untagged** *vlist* } | **remove** *vlist* }
no switchport hybrid allowed vlan
default switchport hybrid allowed vlan

Parameter Description

Parameter	Description

add	Adds the port to the VLAN.
only	Adds the port to the VLAN and removes the port from the VLANs not on the VLAN list.
tagged	Adds the port to the VLAN and the VLAN packets going out on the port are tagged with VLAN ID.
untagged	Adds the port to the VLAN and the VLAN packets going out on the port are not tagged with VLAN ID.
remove	Removes the port from the VLAN.
vlist	Specifies the VLAN.

Defaults By default, the hybrid port is in all VLANs. All VLAN packets (except native VLAN packets) going out on the port are tagged with VLAN ID. Native VLAN packets are not tagged with VLAN ID.

Command mode Interface configuration mode

Usage Guide N/A

Configuration Examples The following example adds the hybrid port to VLAN 20 and VLAN 30 and the VLAN packets going out on the port are not tagged with VLAN ID.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)# switchport mode hybrid
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid allowed vlan
untagged 20
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid allowed vlan
add untagged 30
```

The following example adds the hybrid port to VLAN 40 and VLAN 50 and the VLAN packets going out on the port are tagged with VLAN ID,

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport mode hybrid
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid allowed vlan
tagged 40
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid allowed vlan
tagged 50
```

The following example removes the hybrid port from VLAN 20.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport mode hybrid
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid
allowed vlan remove 20
```

The following example adds the hybrid port to VLAN 20 and deletes all the other VLANs. The VLAN

packets going out on the port are tagged with VLAN ID.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport mode hybrid
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid
allowed vlan only tagged 20
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.7 switchport hybrid native

Use this command to configure the native VLAN for the hybrid port. Use the **no** or **default** form of this command to restore the default setting.

switchport hybrid native vlan *vlan-id*

no switchport hybrid native vlan

default switchport hybrid native vlan

Parameter Description

Parameter	Description
vlan-id	Configures the native VLAN for the hybrid port.

Defaults The default is VLAN 1.

Command mode Interface configuration mode

Usage Guide Native VLAN packets going out on the hybrid port are not tagged with VLAN ID. Packets not tagged with VLAN ID coming in on the hybrid port are taken as native VLAN packets.

Configuration Examples The following example configures VLAN 20 as the native VLAN for hybrid port GigabitEthernet 0/1.

```
Orion_B54Q(config-if-GigabitEthernet 0/1)#interface gigabitEthernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport mode hybrid
Orion_B54Q(config-if-GigabitEthernet 0/1)#switchport hybrid
native vlan 20
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.8 switchport trunk allowed vlan

Use this command to add the trunk/uplink port to the VLAN or remove a trunk/uplink port from the VLAN. Use the **no** or **default** form of the command to restore the default setting.

switchport trunk allowed vlan { **all** | { **add** *vlan-list* | **remove** *vlan-list* | **except** *vlan-list* | **only** *vlan-list* } }

no switchport trunk allowed vlan

default switchport trunk allowed vlan

Parameter Description

Parameter	Description
all	Adds the trunk/uplink port to all VLANs.
add	Adds the trunk/uplink port to the VLAN.
remove	Removes the trunk/uplink port from the VLAN port.
except	Removes the trunk/uplink port from the VLAN and adds the port to all the other VLANs.
only	Adds the trunk/uplink port to the specified VLAN and removes the port from the VLANs not on the VLAN list.
vlan-list	Specifies the VLAN.

Defaults The trunk/unlink port is in all VLANs by default.

Command mode Interface configuration mode.

Usage Guide A trunk/uplink port transmits all VLAN (1-4094) data by default. You can block some VLAN data by configuring this command. Use the **show interfaces** command to display configuration.

Configuration Examples The following example removes trunk port GigabitEthernet 0/10 from VLAN 2.

```
Orion_B54Q(config)# interface gigabitEthernet 0/10
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport mode trunk
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport trunk allowed vlan
remove 2
```

The following example removes trunk port GigabitEthernet 0/10 from VLAN 2.

```
Orion_B54Q(config)# interface gigabitEthernet 0/10
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport trunk allowed vlan
except 10
```

The following example removes uplink port GigabitEthernet 0/10 from VLAN 10.

```
Orion_B54Q(config)# interface gigabitEthernet 0/10
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport mode uplink
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport trunk allowed vlan
remove 10
```

The following example adds uplink port GigabitEthernet 0/10 to all VLANs except VLAN10.

```
Orion_B54Q(config)# interface gigabitEthernet 0/10
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport trunk
allowed vlan except 10
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.9 switchport trunk native vlan

Use this command to configure the native VLAN for the trunk/uplink port. Use the **no** or **default** form of this command to restore the default setting.

switchport trunk native vlan *vlan-id*
no switchport trunk native vlan
default switchport trunk native vlan

Parameter Description

Parameter	Description
vlan-id	Native VLAN ID.

Defaults By default, the native VLAN for the trunk/uplink port is VLAN 1.

Command mode Interface configuration mode

Usage Guide After this function is enabled, packets not tagged with VLAN ID are taken as native VLAN packets. Tags are removed from native VLAN packets going out on the trunk port.

Configuration Examples The following example configures VLAN 10 as the native VLAN for trunk port GigabitEthernet 0/10.

```
Orion_B54Q(config)#interface gigabitEthernet 0/10
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport mode trunk
Orion_B54Q(config-if-GigabitEthernet 0/10)# switch trunk native vlan 10
```

The following example configures VLAN 10 as the native VLAN for unlink port GigabitEthernet 0/10.

```
Orion_B54Q(config)#interface gigabitEthernet 0/10
Orion_B54Q(config-if-GigabitEthernet 0/10)# switchport mode uplink
Orion_B54Q(config-if-GigabitEthernet 0/10)# switch trunk native vlan 10
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

5.10 vlan

Use this command to enter the VLAN configuration mode. Use the **no** or **default** form of this command to restore the default setting.

vlan { *vlan-id* | **range** *vlan-range* }

no vlan { *vlan-id* | **range** *vlan-range* }

default vlan { *vlan-id* | **range** *vlan-range* }

Parameter Description

Parameter	Description
vlan-id	VLAN ID Default VLAN (VLAN 1) cannot be removed.
vlan-range	VLAN ID range.

Defaults The default is static VLAN.

Command mode Global configuration mode.

Usage Guide To return to the privileged EXEC mode, input **end** or pressing **Ctrl+C**.

To return to the global configuration mode, input **exit.**

Configuration Examples

```
Orion_B54Q(config)# vlan 1
Orion_B54Q(config-vlan)#
```

Related Commands

Command	Description
show vlan	Displays member ports of the VLAN.

Platform N/A

Description

6 MAC VLAN Commands

6.1 mac-vlan enable

Use this command to enable the MAC VLAN function on the port.
Use the **no** form or **default** form of this command to restore the default setting.
mac-vlan enable
no mac-vlan enable
default mac-vlan enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, MAC VLAN is disabled.

Command mode Interface configuration mode

Usage Guide The MAC VLAN entries configured globally will not take effect on the port unless the MAC VLAN function is enabled on this port.
The MAC VLAN function can be enabled on the hybrid port only.

Configuration Examples The following example enables MAC VLAN.

```
Orion_B54Q(config-if-interface-id)# mac-vlan enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.2 mac-vlan mac-address

Use this command to configure the static MAC VLAN entries.
Use the **no** form or **default** form of this command to restore the default setting.
mac-vlan mac-address *mac-address* [**mask** *mac-mask*] **vlan** *vlan-id* [**priority** *pri_val*]
no mac-vlan mac-address *mac-address* [**mask** *mac-mask*] **vlan** *vlan-id* [**priority** *pri_val*]
default mac-vlan mac-address *mac-address* [**mask** *mac-mask*] **vlan** *vlan-id* [**priority** *pri_val*]

Parameter Description

Parameter	Description
mac-address *mac-address*	Specifies the MAC address.
mask *mac-mask*	Specifies the MAC address mask, with the high bits being all 1 in binary. This field is full of F by default.
vlan *vlan-id*	Specifies the VLAN corresponding to the MAC address. The range is from 1 to 4,094.
priority *pri_val*	Specifies the 802.1p priority of the VLAN corresponding to the MAC address. The range is from 0 to 7. The default value is 0.

Defaults No static MAC VLAN entry is configured by default.

Command mode Global configuration mode

Usage Guide Use this command to configure a static MAC VLAN entry including the MAC address, VLAN ID and VLAN priority. Use the **no** form of this command to remove the static MAC VLAN entry.

Configuration Examples The following example configures a static MAC VLAN entry.

Orion_B54Q(config)# mac-vlan mac-address 0001.0001.0001 vlan 100 priority 3

```
Orion_B54Q(config)# mac-vlan mac-address 0002.0002.0000 mask
ffff.ffff.0000 vlan 200 priority 5
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.3 show mac-vlan

Use this command to display the MAC VLAN entryies.

show mac-vlan { **all** | **dynamic** | **static** | **vlan** *vlan-id* | **mac-address** *mac-address* [**mask** *mac-mask*] }

Parameter Description

Parameter	Description
all	Displays all MAC VLAN entries.
dynamic	Displays the dynamic MAC VLAN entries.
static	Displays the static MAC VLAN entries.
mac-address	Displays the MAC VLAN entry of the specified MAC address.

mask mac-mask	Displays the MAC VLAN entry of the specified MAC address range.
vlan vlan-id	Displays the MAC VLAN entries of the specified VLAN.

Defaults N/A

Command mode Privileged EXEC modeAll configuration modes

Usage Guide If the **mac-address** parameter is specified without the **mask** parameter, the MAC-VLAN entry of the single MAC address is displayed.
If parameters both of **mac-address** and **mask** are specified, the MAC-VLAN entries in the specified MAC address range are displayed.

Configuration Examples The following example displays all MAC VLAN entries.

```
Orion_B54Q# show mac-vlan all
The following MAC VLAN addresses exist:
S: Static   D: Dynamic
MAC ADDR           MASK             VLAN ID   PRIO   STATE
-------------------------------------------------------
0011.1100.0000   ffff.ff00.0000   100       1      S
0022.2222.0000   ffff.ffff.0000   200       2      S
0000.0000.0003   ffff.ffff.ffff   300       3      D
0000.0000.0004   ffff.ffff.ffff   400       4      D
0000.0000.0005   ffff.ffff.ffff   500       5      S&D
0000.0000.0006   ffff.ffff.ffff   600       6      S
0000.0000.0007   ffff.ffff.ffff   700       7      S&D
Total MAC VLAN address count: 7
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

6.4 show mac-vlan interface

Use this command to display the interfaces which are enabled with MAC VLAN.
show mac-vlan interface

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command mode Privileged EXEC modeAll configuration modes

Usage Guide Use this command to verify whether the MAC VLAN function is enabled on the interface.

Configuration Examples The following example displays the interfaces which are enabled with MAC VLAN.

```
Orion_B54Q# show mac-vlan interface
MAC VLAN is enabled on following interface:
  ---------------------------------------
  fastethernet 0/3
  fastethernet 0/10
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

7 Super-VLAN Commands

7.1 subvlan

Use this command to set the sub VLAN of for this the super VLAN or delete . Use the **no** form of this command to disbale this function. Use the **default** form of this command to restore the default settingsub VLAN.
subvlan *vlan-id-list*
no subvlan [*vlan-id-list*]
default subvlan [*vlan-id-list*]

Parameter Description

Parameter	Description
vlan-id-list	Sub VLAN ID of the VLAN. Multiple VLANs are supported.

Defaults N/ANo super VLAN is set by default.

Command mode VLAN configuration Mode.

Usage Guide Use the **no subvlan** command to delete all sub VLANs of this super VLAN.

Configuration Examples The following example sets the sub VLAN for the super VLAN.

```
Orion_B54Q(config)# vlan 3
Orion_B54Q(config-vlan)# supervlan
Orion_B54Q(config-vlan)# subvlan 5
Orion_B54Q(config-vlan)# subvlan 7-19
```

Related Commands

Command	Description
show supervlan	Show Displays the super VLAN information.

Platform Description N/A

7.2 subvlan-address-range

Use this command to set the IP address range of the sub VLAN. Use the **no** form of this command to disbale this function. Use the **default** form of this command to restore the default setting.
subvlan-address-range *start-ip end-ip*

no subvlan-address-range
default subvlan-address-range

Parameter Description

Parameter	Description
start-ip	The start IP address of this sub VLAN
end-ip	The end IP address of this sub VLAN

Defaults N/ANo IP address range is set by default.

Command mode VLAN configuration Mode.

Usage Guide To return to the privileged EXEC mode, input **end** or press **Ctrl+C**.
To return to the global configuration mode, input **exit**.

Configuration Examples The following example sets the IP address range for the sub VLAN.

```
Orion_B54Q(config)# vlan 3
Orion_B54Q(config-vlan)# subvlan-address-range
192.168.3.10 192.168.3.100
```

Related Commands

Command	Description
show supervlan	Show Displays the super VLAN information.

Platform Description N/A

7.3 supervlan

Use this command to set the VLAN as a super VLAN. Use the **no** form of this command to disbale this function. Use the **default** form of this command to restore the default setting.
supervlan
no supervlan
default supervlan

Parameter Description

Parameter	Description
N/A	N/A

Defaults No super VLAN is set by default.N/A

Command VLAN configuration Mode.

mode

Usage Guide To return to the privileged EXEC mode, input **end** or press **Ctrl+C**.
To return to the global configuration mode, input **exit**.N/A

Configuration Examples The following example sets the VLAN as a super VLAN.

```
Orion_B54Q(config)# vlan 3
Orion_B54Q(config-vlan)# supervlan
```

Related Commands

Command	Description
show supervlan	Show Displays the super VLAN information.

Platform Description N/A

7.4 proxy-arp

Use this command to enable the proxy ARP agent function of for a VLAN. Use the **no** form of this command to disable this function. Use the **default** form of this command torestore the default setting.
proxy-arp
no proxy-arp
default proxy-arp

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/AThis function is enabled by default.

Command mode VLAN configuration Mode.

Usage Guide To return to the privileged EXEC mode, input **end** or press **Ctrl+C**.
To return to the global configuration mode, input **exit**.Super VLAN and sub VLAN must be both enabled with proxy ARP.

Configuration Examples The following example enables the proxy ARP function for VLAN 3.

```
Orion_B54Q(config)# vlan 3
Orion_B54Q(config-vlan)# proxy-arp
```

The following example disables the proxy ARP function for VLAN 3.

```
Orion_B54Q(config)# vlan 3
Orion_B54Q(config-vlan)# no proxy-arp
```

Related Commands

Command	Description
show supervlan	Show Displays the super VLAN information.

Platform Description N/A

7.5 show supervlan

Use this command to show display the configuration of the super VLAN and its sub VLANs.

show supervlan

show supervlan id *vlan-id*

Parameter Description

Parameter	Description
vlan-id	VLAN ID

Defaults N/A

Command mode Privileged EXEC mode.Any mode

Usage Guide N/A

Configuration Examples The following example displays the configuration of super VLAN 2.

```
SwitchA(config-if-range)# show supervlan 2
supervlan id  supervlan arp-proxy  subvlan id  subvlan arp-proxy  subvlan
ip range
------------  -------------------  ----------  -----------------
---------
           2          ON           10             ON
192.168.196.10 - 192.168.196.50
                                    20             ON
192.168.196.60 - 192.168.196.100
                                    30             ON
192.168.196.110 - 192.168.196.150Orion_B54Q# show supervlan
supervlan id  supervlan arp-agent  subvlan id  subvlan arp-agent  subvlan
ip range
-------    ----------  -------------    -----------------
3                  ON           4                  ON
```

5 ONThe following example displays the configuration of all super VLANs.

```
SwitchA(config-if-range)# show supervlan
supervlan id  supervlan arp-proxy  subvlan id  subvlan arp-proxy  subvlan
ip range
------------  -------------------  ----------  -----------------
---------
           2           ON           10              ON
192.168.196.10 - 192.168.196.50
                                    20              ON
192.168.196.60 - 192.168.196.100
                                    30              ON
192.168.196.110 - 192.168.196.150
           6           ON           7               ON
                                    8               ON
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

8 Protocol VLAN Commands

8.1 protocol-vlan ipv4 addr mask addr vlan id

Use this command to configure VLAN for the specified subnet.

protocol-vlan ipv4 *addr* **mask** *addr* **vlan** *id*

Use this command to remove VLAN configuration for the specified subnet.

no protocol-vlan ipv4 *addr* **mask** *addr*

Use this command to remove VLAN configuration for all subnets.

no protocol-vlan ipv4

Parameter Description

Parameter	Description
addr	IP address in the x.x.x.x format.
id	VLAN ID, the maximal VLAN the product supports

Defaults N/A

Command mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example configures VLAN 100 for the specified subnet.

```
Orion_B54Q(config)# protocol-vlan ipv4 192.168.100.3 mask 255. 255.255.0
vlan 100
```

Related Commands

Command	Description
show protocol-vlan ipv4	N/A
no protocol-vlan ipv4 *addr* **mask** *addr*	N/A
no protocol-vlan ipv4	N/A

Platform Description N/A

8.2 protocol-vlan ipv4

Use this command to enable subnet VLAN. Use the **no** form of this command to restore the default setting.

protocol vlan ipv4

no protocol vlan ipv4

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the subnet VLAN.

```
Orion_B54Q(config-if)# protocol vlan ipv4
```

Related Commands

Command	Description
no protocol-vlan ipv4	N/A

Platform Description N/A

8.3 protocol-vlan profile (in global configuration mode)

Use this command to configure the profile for the VLAN.

protocol-vlan profile *num* **frame-type** *type* **ether-type** *type*

protocol-vlan profile *num* **frame-type LLC DSAP** *value* **SSAP** *value*

Use this command to delete the specified profile.

no protocol-vlan profile *num*

Use this command to delete all profiles.

no protocol-vlan profile

Parameter Description

Parameter	Description
num	Profile indexes
type	Type of message and Ethernet
value	Service access point type.

Defaults N/A

Command mode Global configuration mode.

Usage Guide This function is disabled by default.

Configuration Examples The following example configures the profile for the VLAN.

```
Orion_B54Q(config)# protocol-vlan  profile 1 frame-type ETHERII ether-type aarp
Orion_B54Q(config)# protocol-vlan  profile 2 frame-type LLC DSAP 255 SSAP 255
```

Related Commands

Command	Description
show protocol-vlan profile	N/A
show protocol-vlan profile *num*	N/A
no protocol-vlan profile	N/A
no protocol-vlan profile *num*	N/A

Platform Description N/A

8.4 protocol-vlan profile (in interface configuration mode)

Use this command to apply some profile to an interface.

protocol-vlan profile *num* **vlan** *id*

Use this command to clear the specified profile on the port.

no protocol-vlan profile *id*

Use this command to clear all profiles on the port.

no protocol-vlan profile

Parameter Description

Parameter	Description
num	Profile indexes
id	VLAN ID, the maximal VLAN the product supports.

Defaults This function is disabled by default.

Command mode Interface EXEC mode.

Usage Guide N/A

Configuratio The following example applies profile 1 to VLAN 101.

n Examples

```
Orion_B54Q(config-if)# protocol-vlan profile 1 vlan 101
```

Related Commands

Command	Description
show protocol-vlan profile	N/A
show protocol-vlan profile *num*	N/A
no protocol-vlan profile	N/A
no protocol-vlan profile *num*	N/A

Platform Description N/A

8.5 show protocol-vlan

Use this command to display a protocol VLAN.

show protocol-vlan [**profile** [*id*] | **ipv4**]

Parameter Description

Parameter	Description
id	Profile index.

Defaults N/A

Command mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the configuration of protocol VLAN.

```
Orion_B54Q#show protocol-vlan

ip              mask            vlan
--------------- --------------- ----
1.2.1.0         255.255.255.0   5

interface            ipv4 status
-------------------- -----------
Gi0/1                enable

profile frame-type       ether-type/DSAP+SSAP   interface       vlan
------- ---------------- ---------------------- --------------- ----
1       ETHERII          0x5fa
                                                Gi0/1           12
```

Related Commands

Command	Description
N/A	N/A

Platform Description

9 Private VLAN Commands

9.1 debug bridge pvlan

Use this command to enable private VLAN debugging. Use the **no** or **default** form of this command to restore the default setting.

debug bridge pvlan

no debug bridge pvlan

Parameter Description

Parameter	Description
N/A	N/A

Defaults Debugging is disabled by default.

Command mode Privileged EXEC mode

Usage Guide Debugging information includes error and prompt messages appearing during private VLAN configuration.

This command can be used to troubleshoot VLAN and interface configuration failure.

- With private VLAN debugging enabled, all super VLAN configuration and packet processing on SVI is displayed.
- Debugging information helps troubleshooting and fault location.

Configuration Examples The following example enables private VLAN debugging.

```
Orion_B54Q# debug bridge pvlan
```

The following example disables private VLAN debugging.

```
Orion_B54Q# no debug bridge pvlan
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

9.2 private-vlan

Use this command to configure the private VLAN feature. Use the **no** or **default** form of this command to restore the default setting.

private-vlan { **community** | **isolated** | **primary** }

no private-vlan { **community** | **isolated** | **primary** }

default private-vlan { **community** | **isolated** | **primary** }

Parameter Description

Parameter	Description
community	Sets the community VLAN.
isolated	Sets the isolated VLAN.
primary	Sets the primary VLAN.

Defaults No private VLAN feature is configured by default.

Command mode VLAN configuration mode

Usage Guide N/A

Configuration Examples The following example configures the private VLAN feature.

```
Orion_B54Q(config)#vlan 90
Orion_B54Q(config-vlan)#private-vlan primary
Orion_B54Q(config-vlan)#vlan 91
Orion_B54Q(config-vlan)#private-vlan isolated
Orion_B54Q(config-vlan)#vlan 92
Orion_B54Q(config-vlan)#private-vlan community
```

The following example disables the private VLAN feature using the **no private-vlan** command.

```
Orion_B54Q(config)#vlan 90
Orion_B54Q(config-vlan)#no private-vlan primary
Orion_B54Q(config-vlan)#vlan 91
Orion_B54Q(config-vlan)#no private-vlan isolated
Orion_B54Q(config-vlan)#vlan 92
Orion_B54Q(config-vlan)#no private-vlan community
```

The following example disables the private VLAN feature using the **default private-vlan** command.

```
Orion_B54Q(config)#vlan 90
Orion_B54Q(config-vlan)#default private-vlan primary
Orion_B54Q(config-vlan)#vlan 91
Orion_B54Q(config-vlan)#default private-vlan isolated
Orion_B54Q(config-vlan)#vlan 92
Orion_B54Q(config-vlan)#default private-vlan community
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

9.3 private-vlan association

Use this command to associate the secondary VLAN with the primary commandVLAN on layer 2.
Use the **no** or **default** form of this command to restore the default setting.
private-vlan association { *svlist* | **add** *svlist* | **remove** *svlist* }
no private-vlan association
default private-vlan association

Parameter Description

Parameter	Description
svlist	The secondary VLAN list
add *svlist***no**	Removes the association between the primary VLAN and all the secondary VLANs.Adds the associated secondary VLAN.
remove *svlist*	Removes the associated secondary VLAN.

Defaults No association.This function is disabled by default.

Command mode Primary VLAN configuration Mode.

Usage Guide N/A

Configuration Examples The following example associates the secondary VLAN with the primary VLAN on layer 2.

```
Orion_B54Q(config)# vlan 22
Orion_B54Q(config-vlan)# private-vlan association add 24-26
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.1 and later. N/A

9.4 private-vlan mapping

Use this command to associate the secondary VLAN with the primary VLAN on layer 3map the secondary VLAN to the L3 SVI interface. Use the **no** or **default** form of this command to restore the default setting.

private-vlan mapping { *svlist* | **add** *svlist* | **remove** *svlist* }

no private-vlan mapping

default private-vlan mapping

Parameter Description

Parameter	Description
svlist	Secondary VLAN list.
add *svlist***no**	Adds the associated secondary VLAN.Deletes the mapping.
remove *svlist*	Removes the associated secondary VLAN.

Defaults This function is disabled by default.N/A

Command mode The interface mode corresponding to the primary VLANInterface configuration mode

Usage Guide N/A

Configuration Examples The following example associates the secondary VLAN with the primary VLAN on layer 3.

```
Orion_B54Q(config)# interface vlan 22
Orion_B54Q(config-if)# private-vlan mapping add 24-26
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.1 and later. N/A

9.5 private-vlan *type*

Use this command to configure the VLAN as the private VLAN.

private-vlan { **community | isolated | primary** }

no private-vlan { **community | isolated | primary** }

Parameter Description

Parameter	Description
community	Configures it as the community VLAN.

isolated	Configures it as the isolated VLAN.
primary	Configures it as the primary VLAN.
no	Deletes the corresponding private VLAN configuration.

Defaults No private VLAN is configured.

Command mode VLAN configuration Mode.

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config)# vlan 22
Orion_B54Q(config-vlan)# private-vlan primary
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.1 and later.

9.6 switchport mode private-vlan

Use this command to declare the private VLAN mode of the interface. Use the **no** or **default** form of this command to restore the default setting.

switchport mode private-vlan { **host** | **promiscuous** }

no switchport mode

default switchport mode

Parameter Description

Parameter	Description
host	Host mode of the private VLAN
promiscuous	Promiscuous mode of the private VLAN
no	Deletes the private VLAN configuration of the port.

Defaults N/AThe port is an access port by default.

Command mode Interface configuration mode.

Usage Guide N/A

Configuratio The following example declares the private VLAN mode of the interface.

n Examples

```
Orion_B54Q(config)# interface gigabitEthernet0/2
Orion_B54Q(config-if)# switchport mode private-vlan host
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.1 and later. N/A

9.7 switchport private-vlan association trunk

Use this command to associate the trunk port in the private VLAN mode, which is associated with the primary VLAN and the secondary VLAN.

switchport private-vlan association trunk *p_vid s_vid*

no switchport private-vlan association trunk

Parameter Description

Parameter	Description
p_vid	Primary VID.
s_vid	Secondary VID
no	Deletes the host port from the private VLAN.

Defaults N/A

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config)# interface gigabitEthernet 0/2
Orion_B54Q(config-if)# switchport mode trunk
Orion_B54Q(config-if)# switchport private-vlan association trunk 202 203
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.4 (3) and later.

9.8 switchport private-vlan host-association

Use this command to associate the primary VLAN, which is associated with the private VLAN mode of the interface, with the secondary VLAN. Use the **no** or **default** form of this command to restore the default setting.

switchport private-vlan host-association *p_vid s_vid*

no switchport private-vlan host-association

default switchport private-vlan host-association

Parameter Description

Parameter	Description
p_vid	Primary VID.
s_vid	Secondary VID
no	Deletes the host port from the private VLAN.

Defaults N/AThis function is disabled by default.

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example associates the secondary VLAN with the primary VLAN on the host port.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode private-vlan host
Orion_B54Q(config-if)# switchport private-vlan host-association 22 23
Orion_B54Q(config-if)# default switchport private-vlan host-asscioation
Orion_B54Q(config-if)# switchport private-vlan host-association 22
25Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode private-vlan host
Orion_B54Q(config-if)# switchport private-vlan host-association 22 23
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.1 and later. N/A

9.9 switchport private-vlan mapping

Use this command to configure the promiscuous secondary VLANs that the promiscuous mode of

the private VLAN maps for the hybrid port. Use the **no** or **default** form of this command to restore the default setting.

switchport private-vlan mapping *p_vid* { *svlist* | **add** *svist* | **remove** *svlist* }

no switchport private-vlan mapping

default switchport private-vlan mapping

Parameter Description

Parameter	Description
p_vid	Primary VID
svlist	Secondary VLAN list.
no	Removes all the promiscuous secondary VLANs.

Defaults No promiscuous secondary VLAN is configuredThis function is disabled by default.

Command mode Hybrid interface configuration mode of private VLAN

Usage Guide N/A

Configuration Examples The following example configures the secondary VLAN for the hybrid port.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode private-vlan
promiscuous
Orion_B54Q(config-if)# switchport private-vlan mapping 22 add 23-25
```

Related Commands

Command	Description
show vlan private-vlan	N/A

Platform Description The software version must be NOS10.1 and later. N/A

9.10 switchport private-vlan promiscuous trunk

Use this command to configure the ports as a promiscuous trunk port, which is associated with the L2 port and the private VLAN. Multiple pairs are allowed to associate.

switchport private-vlan promiscuous trunk *p_vid_s_list*

no switchport private-vlan promiscuous trunk *p_vid_s_list*

Parameter Description

Parameter	Description
p_vid	Primary VID
svlist	Secondary VLAN list.

no	Removes all the relationships between the layer-2 ports and private VLANs.

Defaults N/A

Command mode Interface configuration mode

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config)# interface gigabitEthernet 0/2
Orion_B54Q(config-if)# switchport mode trunk
Orion_B54Q(config-if)# switchport private-vlan promiscuous trunk 202 203
```

Related Commands

Command	Description
N/A	N/A

Platform Description The software version must be NOS10.4 (3) and later.

9.11 show vlan private-vlan

Use this command to Show display the configuration of private VLAN configuration.
show vlan private-vlan [**community** | **primary** | **isolated**]

Parameter Description

Parameter	Description
primary	DisplaysShows the primary VLAN information.
community	DisplaysShows the community VLAN information.
isolated	DisplaysShows the isolated VLAN information.

Defaults No private VLAN is configured.N/A

Command mode Privileged EXEC mode.All modes

Usage Guide N/A

Configuration Examples The following example displays the private VLAN configuration.

```
Orion_B54Q# show vlan private-vlan
```

Related

Command	Description

Commands

N/A	N/A

Platform Description The software version must be NOS10.1 and later. N/A

9.12 switchport hybrid allowed vlan

Use this command to configure the output rules of a hybrid port.

switchport hybrid allowed vlan [[**add**] [**tagged** | **untagged**] | **remove**] v*list*

no switchport hybrid allowed vlan

Parameter Description

Parameter	Description
no	Restores the output rules of the hybrid port to the default settings.

Defaults No output rules are configured.

Command mode Interface mode.

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config-if)# switchport hybrid allowed vlan add untagged 3-5
```

Related Commands

Command	Description
N/A	N/A

Platform Description The software version must be NOS10.1 and later.

9.13 switchport hybrid native vlan

Use this command to configure the default VLAN of a hybrid port.

switchport hybrid native vlan *vid*

no switchport hybrid native vlan

Parameter

Parameter	Description

Description

no	Restores the hybrid port to the default VLAN.

Defaults No default VLAN is configured.

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config-if)# switchport hybrid native vlan 3
```

Related Commands

Command	Description
N/A	N/A

Platform Description The software version must be NOS10.1 and later.

9.14 switchport mode hybrid

Use this command to configure the port as a hybrid port.

switchport mode hybrid

no switchport mode

Parameter Description

Parameter	Description
no	Deletes the hybrid port.

Defaults No hybrid port is configured.

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples

```
Orion_B54Q(config-if)# switchport mode hybrid
```

Related Commands

Command	Description
N/A	N/A

Platform Description The software version must be NOS10.1 and later.

10 MSTP Commands

10.1 bpdu src-mac-check

Use this command to enable the BPDU source MAC address check function on the interface. Use the **no** form of this command to restore the default setting.

bpdu src-mac-check H.H.H

no bpdu src-mac-check

Parameter Description

Parameter	Description
H.H.H	Indicates that only the BPDU messages from this MAC address are received.
no	Indicate that the BPDU messages from any MAC address are received.

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the BPDU source MAC address check function on the interface.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# bpdu src-mac-check 00d0.f800.1e2f
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.2 bridge-frame forwarding protocol bpdu

Use this command to enable BPDU transparent transmission. Use the **no** form of this command to restore the default setting.

bridge-frame forwarding protocol bpdu

no bridge-frame forwarding protocol bpdu

Parameter Description	Parameter	Description
	N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide In the IEEE 802.1Q standard, 01-80-C2-00-00-00, the destination MAC address of BPDU frames, is reserved. Devices following the IEEE 802.1Q standard don't forward BPDU frames. In real network deployment, devices may be required to support BPDU transparent transmission. For example, when a device is not enabled with STP, BPDU transparent transmission can help implement STP calculation.
BPDU transparent transmission works only when STP is disabled.

Configuration Examples The following example enables BPDU transparent transmission.

```
Orion_B54Q(config)# bridge-frame forwarding protocol bpdu
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

10.3 clear spanning-tree counters

Use this command to clear the statistics of STP transceived packets.
clear spanning-tree detected-protocols [**interface** *interface-id*]

Parameter Description	Parameter	Description
	interface-id	ID of the interface

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example clears the statistics of STP transceived packets.

```
Orion_B54Q# clear spanning-tree counters
```

Related Commands

Command	Description
show spanning-tree counters	Displays the statistics of STP transceived packets.

Platform Description N/A

10.4 clear spanning-tree detected-protocols

Use this command to force the interface to send the RSTP BPDU message and check the BPDU messages.

clear spanning-tree detected-protocols [**interface** *interface-id*]

Parameter Description

Parameter	Description
interface-id	ID of the interface

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples

```
Orion_B54Q# clear spanning-tree detected-protocols
```

Related Commands

Command	Description
show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.5 clear spanning-tree mst topochange record

Use this command to clear STP topology change record.

clear spanning-tree mst *instance-id* **topochange record**

Parameter Description

Parameter	Description
instance-id	Instance ID. For STP and RSTP protocols, only instance 0 is valid.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example clears STP topology change record.

```
Orion_B54Q# show spanning-tree mst 0 topochange record
Topology change information on mst 0:
 Time                Interface           Old status   New status   Type
 ------------------- ------------------- ------------ ------------
----------------
 2013.5.1 4:18:46    GI0/6               Learning     Forwarding   Normal
Orion_B54Q# clear spanning-tree mst 0 topochange record
Orion_B54Q# show spanning-tree mst 0 topochange record
%There's no topology change information has been record on mst
0.
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.6 l2protocol-tunnel stp

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

l2protocol-tunnel stp

no l2protocol-tunnel stp

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Global configuration mode

Usage Guide If you want to BPDU TUNNEL globally, enable BPDU TUNNEL on the interface first.

Configuration Examples The following example enables BPDU TUNNEL globally.

```
Orion_B54Q(config)# l2protocol-tunnel stp
Orion_B54Q(config)# show l2protocol-tunnel stp

L2protocol-tunnel: stp Enable
L2protocol-tunnel destination mac address: 01d0.f800.0005
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.7 l2protocol-tunnel stp enable

Use this command to enable BPDU TUNNEL on the interface. Use the **no** form of this command to disable this function.

l2protocol-tunnel stp enable

no l2protocol-tunnel stp enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Interface configuration mode

Usage Guide If you want to BPDU TUNNEL globally, enable BPDU TUNNEL on the interface first.

Configuration Examples The following example enables BPDU TUNNEL on the interface.

```
Orion_B54Q(config-if-interface-id)# l2protocol-tunnel stp enable
Orion_B54Q(config-if-interface-id)# show l2protocol-tunnel stp
```

```
L2protocol-tunnel: stp Enable
L2protocol-tunnel destination mac address: 01d0.f800.0005
GigabitEthernet 0/1 l2protocol-tunnel stp enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.8 l2protocol-tunnel stp tunnel-dmac

Use this command to configure the STP address for transparent transmission through BPDU TUNNEL. Use the **no** form of this command to restore the default setting.

l2protocol-tunnel stp tunnel-dmac *mac-address*

no l2protocol-tunnel stp tunnel-dmac

Parameter Description

Parameter	Description
mac-address	The STP address for transparent transmission.

Defaults The defualt is 01d0.f800.0005.

Command Mode Global configuration mode

Usage Guide The available STP address includes 01d0.f800.0005, 011a.a900.0005, 010f.e200.0003, 0100.0ccd.cdd0, 0100.0ccd.cdd1, and 0100.0ccd.cdd2.

Configuration Examples The following example configures the STP address for transparent transmission through BPDU TUNNEL.

```
Orion_B54Q(config)# l2protocol-tunnel stp tunnel-dmac 011a.a900.0005
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.9 show l2protocol-tunnel stp

Use this command to display BPDU TUNNEL configuration.

show l2protocol-tunnel stp

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 BPDU TUNNEL configuration.

```
Orion_B54Q# show l2protocol-tunnel stp

L2protocol-tunnel: stp Enable
L2protocol-tunnel destination mac address:011a.a900.0005
GigabitEthernet 0/1 l2protocol-tunnel stp enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.10 show spanning-tree

Use this command to display the global spanning-tree configuration.

show spanning-tree [summary | forward-time | hello-time | max-age | inconsistentports| tx-hold-count | pathcost method | max_hops | counters]

Parameter Description

Parameter	Description
summary	Displays the information of MSTP instances and forwarding status of the interfaces.
inconsistentports	Displays the block port due to root guard or loop guard.
forward-time	Displays BridgeForwardDelay.

hello-time	Displays BridgeHelloTime.
max-age	Displays BridgeMaxAge.
max-hops	Displays the maximum hops of an instance.
tx-hold-count	Displays TxHoldCount.
pathcost method	Displays the method used for calculating path cost.
counters	Displays the statistics of STP transceived packets.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the global spanning-tree configuration.

```
Orion_B54Q# show spanning-tree hello-time
```

Related Commands

Command	Description
spanning-tree pathcost method	Sets the pathcost method.
spanning-tree forward-time	Sets BridgeForwardDelay.
spanning-tree hello-time	Sets BridgeHelloTime.
spanning-tree max-age	Sets BridgeMaxAge.
spanning-tree max-hops	Sets the maximum hops of an instance.
spanning-tree tx-hold-count	Displays TxHoldCount.

Platform Description N/A

10.11 show spanning-tree interface

Use this command to display the STP configuration of the interface, including the optional spanning tree.

show spanning-tree interface *interface-id* [{ **bpdufilter** | **portfast** | **bpduguard** | **link-type** }]

Parameter Description

Parameter	Description
interface-id	Interface ID
bpdufilter	Displays the status of BPDU filter.
portfast	Displays the status of portfast.
bpduguard	Displays the status of BPDU guard.
link-type	Displays the link type of an interface.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the STP configuration of the interface.

```
Orion_B54Q#  show spanning-tree interface gigabitethernet 1/5
```

Related Commands

Command	Description
spanning-tree bpdufilter	Enables the BPDU filter feature someone the interface.
spanning-tree portfast	Enables the portfast on the interface.
spanning-tree bpduguard	Enables the BPDU guard on the interface.
spanning-tree link-type	Sets the link type of the interface to point-to-point.

Platform Description N/A

10.12 show spanning-tree mst

Use this command to display the information of MST and instances.

show spanning-tree mst { **configuration** | *instance-id* [**interface** *interface-id*] }

Parameter Description

Parameter	Description
configuration	The MST configuration of the equipment.
instance-id	Instance number
interface-id	Interface number

Defaults All the instances are displayed by default.

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide N/A

Configuration Examples The following example displays the information of MST and instances.

```
Orion_B54Q# show spanning-tree mst configuration
```

```
Multi spanning tree protocol : Enable
Name     : test
Revision : 0
Instance  Vlans Mapped
-------- ---------------------------------------
0        : 2-4094
1        : 1
```

Field Description

Field	Description
Multi spanning tree protocol	Enables MSTP protocol.
Name	Name of the MST region
Revision	Revision of the MST region
Instance Vlans Mapped	Mapping relation between the instance and VLAN

Related Commands

Command	Description
spanning-tree mst configuration	Configures the MST region.
spanning-tree mst cost	Displays the path cost of the instance.
spanning-tree mst max-hops	Displays the maximum hops of the instance.
spanning-tree mst priority	Displays the equipment priority of the instance.
spanning-tree mst port-priority	Displays the port priority of the instance.

Platform Description N/A

10.13 show spanning-tree mst topochange record

Use this command to display the STP topology change record.

show spanning-tree mst *instance-id* **topochange record**

Parameter Description

Parameter	Description
instance-id	Instance ID.

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 STP topology change record of instance 0.

```
Orion_B54Q# show spanning-tree mst 0 topochange record
Topology change information on mst 0:
 Time                Interface           Old status   New status   Type
 ------------------- ------------------- ------------ ------------
----------------
 2013.5.1 4:18:46    GI0/6               Learning     Forwarding   Normal
```

Field	Description
Time	The time when the topology changes.
Interface	The interface whose topology changes.
Old status	Old STP status on the interface.
New status	New STP status on the interface.
Type	Topology change may be caused by the following causes: Normal: UP/DOWN state change on the interface, LoopGuard Block: Loop-inconsistence causes the interface to be blocked. RootGuard Block: Root-inconsistence causes the interface to be blocked. Inferior Block: Receiving inferior BPDU frames causes the interface to be blocked. LoopGuard Unblock: The interface returns to Forward status from loop-inconsistence. RootGuard Unblock: The interface returns to Forward status from root-inconsistence. Inferior Unblock-The interface returns to Forward status after not receiving inferior BPDU frames.

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

10.14 spanning-tree

Use this command to enable MSTP and configure its basic settings globally. The **no** form of the command disables the spanning-tree function. The **no** form of the command with parameters only

restores the corresponding parameters to the default values, but does not disable the spanning-tree function.

spanning-tree [**forward-time** *seconds* | **hello-time** *seconds* | **max-age** *seconds*]

no spanning-tree [**forward-time** | **hello-time** | **max-age**]

Parameter Description

Parameter	Description
forward-time *seconds*	Interval at which the port status changes, in the range from 4 to 30 in the unit of seconds. The default is 15.
hello-time *seconds*	Interval at which the switch sends the BPDU message, in the range from 1 to 10 in the unit of seconds. The default is 2.
max-age *seconds*	Maximum aging time of the BPDU message, in the range from 6 to 40 in the unit of seconds. The default is 20.

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide The values of **forward-time, hello time** and **max-age** are interrelated. Modifying one of these three parameters will affect the others. There is a restricted relationship among the above three values.

2*(Hello Time+1.0snd) <= Max-Age Time <= 2*(Forward-Delay–1.0snd)

If the values do not according with the condition, the settings do not work.

Configuration Examples The following example enables the spanning-tree function.

```
Orion_B54Q(config)# spanning-tree
```

The following example configures the BridgeForwardDelay.

```
Orion_B54Q(config)# spanning-tree  forward-time 10
```

Related Commands

Command	Description
show spanning-tree	Displays the global STP configuration.
spanning-tree mst cost	Sets the PathCost of an STP interface.
spanning-tree tx-hold-count	Sets the global TxHoldCount of STP.

Platform Description N/A

10.15 spanning-tree autoedge

Use this command to enable Autoedge on the interface. Use the **disabled** form of this command to disable this function.

spanning-tree autoedge [**disabled**]

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables Autoedge on the interface.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree autoedge disabled
```

Related Commands

Command	Description
show spanning-tree interface	Displays the STP configuration information of the interface.

Platform Description N/A

10.16 spanning-tree bpdufilter

Use this command to enable BPDU filter on the interface. You can use the **enabled** or **disabled** option of the command to enable or disable the BPDU filter function on the interface.

spanning-tree bpdufilter [**enabled** | **disabled**]

Parameter Description

Parameter	Description
enabled	Enables BPDU filter on the interface.
disabled	Disables BPDU filter on the interface.

Defaults This function is disabled by default,

Command Mode Interface configuration mode.

Usage Guide N/A

Configuratio The following example enables BPDU filter on the interface.

n Examples

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree bpdufilter enable
```

Related Commands

Command	Description
show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.17 spanning-tree bpduguard

Use this command to enable the BPDU guard function on the interface. You can use the **enabled** or **disabled** option of the command to enable or disable the BPDU guard function on the interface.

spanning-tree bpduguard [**enabled** | **disabled**]

Parameter Description

Parameter	Description
enabled	Enables BPDU guard on the interface.
disabled	Disables BPDU guard on the interface.

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the BPDU guard function on the interface.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree bpduguard enable
```

Related Commands

Command	Description
show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.18 spanning-tree compatible enable

Use this command to send the message selectively carried with MSTI according to the interface

attribute of current port to realize interconnection with other vendors. Use the **no** form of this command to restore the default setting.

spanning-tree compatible enable

no spanning-tree compatible enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default. .

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example sends the message selectively carried with MSTI according to the interface attibute of current port to realize interconnection with other vendors.

```
Orion_B54Q(config)# spanning-tree compatible enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.19 spanning-tree guard loop

Use this command to enable **loop guard** on the interface to prevent the root port or backup port from generating loop since they can not receive bpdu. Use the **no** form of this command to disable **loop guard**.

spanning-tree guard loop

no spanning-tree guard loop

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables **loop guard** on the interface.

```
Orion_B54Q(config)# spanning-tree guard loop
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.20 spanning-tree guard none

Use this command to disable **guard** on the interface. Use the **no** form of this command to enable this function

spanning-tree guard none

no spanning-tree guard none

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example disables **guard** on the interface.

```
Orion_B54Q(config)# spanning-tree guard none
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.21 spanning-tree guard root

Use this command to enable **root guard** on the interface to prevent the change of current root bridge position because of error configuration and illegal packet attack. Use the **no** form of this command to restore the default setting.

spanning-tree guard root

no spanning-tree guard root

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables **root guard** on the interface.

```
Orion_B54Q(config)# spanning-tree guard root
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.22 spanning-tree ignore tc

Use this command to enable the tc filtering on the interface. Use the **no** form of this command to restore the default setting. With tc filtering enabled, the TC packets received on the interface will not be processed.

spanning-tree ignore tc

no spanning-tree ignore tc

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the tc filtering on the interface.

```
Orion_B54Q(config-if)# spanning-tree ignore tc
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.23 spanning-tree link-type

Use this command to configure the link type of the interface. Use the **no** form of this command to restore the default setting.

spanning-tree link-type [**point-to-point** | **shared**]

no spanning-tree link-type

Parameter Description

Parameter	Description
point-to-point	Sets the link type of the interface to point-to-point.
shared	Forcibly sets the link type of the interface to shared.

Defaults For a full-duplex interface, its link type is set to point-to-point link; for a half-duplex interface, its link type is set to shared.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example configures the link type of the interface.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree link-type
point-to-point
```

Related Commands

Command	Description

show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.24 spanning-tree loopguard default

Use this command to enable **loop guard** globally to prevent the root port or backup port from generating loop since they cannot receive bpdu. Use the **no** form of this command to restore the default setting.

spanning-tree loopguard default

no spanning-tree loopguard default

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example enables **loop guard** globally to prevent the root port or backup port from generating loop since they cannot receive bpdu.

```
Orion_B54Q(config)# spanning-tree loopguard default
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.25 spanning-tree max-hops

Use this command to set the maximum number of hops(Max-hopsCount) of the BPDU message in the global configuration mode, the number of hops in a region that the BPDU message passes before being dropped. This parameter takes effect for all instances. Use the **no** form of this command to restore the default setting.

spanning-tree max-hops *hop-count*

no spanning-tree max-hops

Parameter Description

Parameter	Description
hop-count	Number of hops in a region that the BPDU message passes before being dropped. The range is 1 to 40 hops.

Defaults The default is 20 hops.

Command Mode Global configuration mode.

Usage Guide In the region, the BPDU message sent by the root bridge includes a Hot Count field. When the BPDU message passes a device, the Hop Count is decreased by 1 until it reaches 0, which indicates the BPDU message times out. The device will drop the BPDU message whose Hop Count is 0. Changing the max-hops command affects all instances.

Configuration Examples This example sets the max-hops of the spanning tree to 10 for all instances.

```
Orion_B54Q(config)# spanning-tree  max-hops 10
```

You can verify your setting by entering the **show spanning-tree mst** command in the privileged EXEC mode.

Related Commands

Command	Description
show spanning-tree	Displays the MSTP information.

Platform Description N/A

10.26 spanning-tree mode

Use this command to set the STP version. Use the **no** form of the command to restore the default setting.

spanning-tree mode [**stp** | **rstp** | **mstp**]

no spanning-tree mode

Parameter Description

Parameter	Description
stp	Spanning tree protocol(IEEE 802.1d)
rstp	Rapid spanning tree protocol(IEEE 802.1w)
mstp	Multiple spanning tree protocol(IEEE 802.1s)

Defaults The default is **mstp**.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the STP version.

```
Orion_B54Q(config)# spanning-tree mode stp
```

Related Commands

Command	Description
show spanning-tree	Displays the spanning-tree configuration.

Platform Description N/A

10.27 spanning-tree mst configuration

Use this command to enter the MST configuration mode in the global configuration mode and configure the MSTP region. Use the **no** form of the command to restore the default setting.

spanning-tree mst configuration

no spanning-tree mst configuration

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, all VLANs are mapped to the instance 0, *name* is empty, and *revision* is 0.

Command Mode Global configuration mode.

Usage Guide To return to the privileged EXEC mode, enter end or Ctrl+C.

To return to the global configuration mode, enter exit.

After entering the MST configuration mode, you can use the following commands to configure parameters:

instance instance-id vlan vlan-range: Adds the VLANs to the MST instance. The range of instance-id is 0 to 64 and the range of VLAN is 1 to 4095. The vlan-range can be a collection of some inconsecutive VLANs separated with comma or some consecutive VLANs in the form of start VLAN number–end VLAN number. For example, instance 10 vlan 2,3,6-9 means that VLANs 2, 3, 6, 7, 8, 9 are added to instance 10. By default, all VLANs are in Instance0. To remove a VLAN from an instance, use the no form of the command: no instance instance-id [vlan vlan-range]. (In this case, the range of instance is 1 to 64).

name name: Specify the MST name, a string of up to 32 characters. You can use the no name command to restore it to the default setting.
revision version: Set the MST versions in the range 0 to 65535. You can use the no name command to restore it the default setting.
show spanning-tree mst configuration: Shows the information of the MST region.

Configuration Examples

This example enters the MST configuration mode, and maps VLANs 3. 5 to 10 to MST instance 1:

```
Orion_B54Q(config)# spanning-tree mst configuration
Orion_B54Q(config-mst)# instance 1 vlan  3, 5-10
Orion_B54Q(config-mst)# name region 1
Orion_B54Q(config-mst)# revision  1
Orion_B54Q(config-mst)# show spanning-tree mst configuration
MST configuration
Name [region1]
Revision 1
Instance  Vlans Mapped
----------  --------------------
0        1-2,4,11-4094
1        3,5-10
---------------------------------
Orion_B54Q(config-mst)# exit
Orion_B54Q(config)#
```

The following example removes VLAN 3 from instance 1.

```
Orion_B54Q(config-mst)# no instance 1 vlan 3
```

The following example deletes instance 1.

```
Orion_B54Q(config-mst)# no instance 1
```

You can verify your settings by entering the **show** command of the MST configuration commands.

Related Commands

Command	Description
show spanning-tree mst	Displays the MST region configuration.
instance *instance-id* **vlan** *vlan-range*	Adds VLANs to the MST instance.
name	Configures the name of MST.
revision	Configures the version of MST.

Platform Description

N/A

10.28 spanning-tree mst cost

Use this command to set the path cost of an instance in the interface configuration mode. Use the **no** form of the command to restore the default setting.
spanning-tree [**mst** *instance-id*] **cost** *cost*

no spanning-tree [**mst** *instance-id*] *cost*

Parameter Description

Parameter	Description
instance-id	Instance ID in the range from 0 to 64.
cost	Path cost in the range from 1 to 200,000,000.

Defaults The default instance-id is 0.
The default value is calculated by the link rate of the interface automatically.
1000 Mbps—20000
100 Mbps—200000
10 Mbps—2000000

Command Mode Interface configuration mode.

Usage Guide A higher cost value means a higher path cost.

Configuration Examples This example sets the path cost to 400 on the interface associated with instances 3.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree mst 3 cost 400
```

You can verify your settings by entering the **show spanning-tree mst interface** *interface-id* command in the privileged EXEC mode.

Related Commands

Command	Description
show spanning-tree mst	Displays the MSTP information of an interface.
spanning-tree mst port-priority	Configures the priority of an interface.
spanning-tree mst priority	Configures the priority of an instance.

Platform Description N/A

10.29 spanning-tree mst port-priority

Use this command to configure the interface priority for different instances in the interface configuration mode. It will determine which interface of a loop in a region is in charge of forwarding. Use the **no** form of this command to restore the default setting.
spanning-tree [**mst** *instance-id*] **port-priority** *priority*
no spanning-tree [**mst** *instance-id*] **port-priority**

Parameter Description

Parameter	Description

Instance-id	Instance ID, in the range of 0 to 64
priority	Interface priority. Sixteen integers are available: 0, 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, 240, which are the multiples of 16.

Defaults The default instance-id is 0.
The default priority is 128.

Command Mode Interface configuration mode.

Usage Guide When a loop occurs in the region, the interface of the higher priority will be in charge of forwarding. If all interfaces have the same priority value, the interface of the smaller number will be in charge of the forwarding.

Configuration Examples This example sets the priority of **gigabitethernet 1/1** to 10 in instance 20.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree mst 20 port-priority 0
```

You can verify your settings by entering the **show spanning-tree mst** *instance-id* privileged command.

Related Commands

Command	Description
show spanning-tree mst	Displays the MSTP information of an interface.
spanning-tree mst cost	Sets the path cost.
spanning-tree mst priority	Sets the device priority for different instances.

Platform Description N/A

10.30 spanning-tree mst priority

Use this command to set the device priority for different instances in the global configuration mode.
Use the **no** form of this command to restore the default setting.
spanning-tree [**mst** *instance-id*] **priority** *priority*
no spanning-tree [**mst** *instance-id*] **priority**

Parameter Description

Parameter	Description
instance-id	Instance ID, in the range of 0 to 64
priority	Device priority. Sixteen integers are available: 0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152,53248, 57344 and 61440, which are all multiples of 4096.

Defaults The default instance ID is 0.
The default device priority is 32768.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the device priority of the Instance to 8192.

```
Orion_B54Q(config-if)# spanning-tree mst 20 priority 8192
```

You can verify your settings by entering the **show spanning-tree mst** instance **interface** *instance-id* command in the privileged EXEC mode.

Related Commands

Command	Description
show spanning-tree mst	Displays the MSTP information of an interface.
spanning-tree mst cost	Sets path cost.
spanning-tree mst port-priority	Sets the port priority of an instance.

Platform Description N/A

10.31 spanning-tree pathcost method

Use this command to configure the path cost of the port. Use the **no** form of this command to restore the default setting.

spanning-tree pathcost method { { **long** [**standard** } | **short** }

no spanning-tree pathcost method

Parameter Description

Parameter	Description
Long [**standard**]	Adopts the 802.1t standard to configure path cost. The standard indicates that use the expression recommended by the standard to calculate the cost value.
short	Adopts the 802.1d standard to configure path cost.

Defaults 802.1T standard is adopted to set path cost by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example configures the path cost of the port.

```
Orion_B54Q(config-if)# spanning-tree pathcost method long
```

Related Commands

Command	Description
show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.32 spanning-tree portfast

Use this command to enable the portfast on the interface. Use the disabled form of this command to restore the default setting,

spanning-tree portfast [**disabled**]

Parameter Description

Parameter	Description
disabled	Disables the portfast on the interface.

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the portfast on the interface.

```
Orion_B54Q(config)# interface gigabitethernet 1/1
Orion_B54Q(config-if)# spanning-tree portfast
```

Related Commands

Command	Description
show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.33 spanning-tree portfast bpdufilter default

Use this command to enable the BPDU filter function globally. You can use the **no** form of the

command to restore the default setting.

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default,

Command Mode Global configuration mode.

Usage Guide Once the BPDU filter is enabled, the BPDU message is neither received nor sent on the interface. Use the show spanning-tree command to display the configuration.

Configuration Examples The following example enables the BPDU filter function globally.

```
Orion_B54Q(config)# spanning-tree portfast bpdufilter default
```

Related Commands

Command	Description
show spanning-tree interface	Displays the global STP configuration.

Platform Description N/A

10.34 spanning-tree portfast bpduguard default

Use this command to enable the GPDU guard globally. Use the **no** form of this command to restore the default setting,

spanning-tree portfast bpduguard default

no spanning-tree portfast bpduguard default

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide Once the BPDU guard is enabled on the interface, it will enter the error-disabled status if the BPDU

message arrives at the interface. Use the **show spanning-tree** command to display the configuration.

Configuration Examples The following example enables the GPDU guard globally.

```
Orion_B54Q(config)# spanning-tree portfast bpduguard
default
```

Related Commands

Command	Description
show spanning-tree interface	Displays the global STP configuration.

Platform Description N/A

10.35 spanning-tree portfast default

Use this command to enable the portfast feature on all interfaces globally. Use the **no** form of this command to restore the default setting.

spanning-tree portfast default

no spanning-tree portfast default

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the portfast feature on all interfaces globally.

```
Orion_B54Q(config)# spanning-tree portfast default
```

Related Commands

Command	Description
show spanning-tree interface	Displays the global STP configuration.

Platform Description N/A

10.36 spanning-tree reset

Use this command to restore the **spanning-tree** configuration to the default setting.

spanning-tree reset

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example restores the **spanning-tree** configuration to the default setting.

```
Orion_B54Q(config)# spanning-tree reset
```

Related Commands

Command	Description
show spanning-tree	Displays the global STP configuration.
show spanning-tree interface	Displays the STP configuration of the interface.

Platform Description N/A

10.37 spanning-tree tc-guard

Use this command to enable **tc-guard** on the interface to prevent the spread of TC messages. Use the **no** form of this command to disable this function on the interface.

spanning-tree tc-guard

no spanning-tree tc-guard

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example enables **tc-guard** on the interface to prevent the spread of TC messages.

```
Orion_B54Q(config)# spanning-tree tc-guard
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.38 spanning-tree tc-protection

Use this command to enable **tc-protection** globally. Use The **no** form of this command to disable this function.

spanning-tree tc- protection

no spanning-tree tc- protection

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example enables **tc-protection** globally.

```
Orion_B54Q(config)# spanning-tree tc-protection
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.39 spanning-tree tc-protection tc-guard

Use this command to enable tc-guard to prevent TC packets from being flooded. Use the **no** form of this command to restore the default setting.

spanning-tree tc-protection tc-guard

no spanning-tree tc-protection tc-guard

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example enables tc-guard to prevent TC packets from being flooded.

```
Orion_B54Q(config)# spanning-tree tc-protection tc-guard
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

10.40 spanning-tree tx-hold-count

Use this command to configure the TxHoldCount of the STP, the maximum number of the BPDU messages sent in one second. Use the **no** form of this command to restore the default setting.

spanning-tree tx-hold-count *tx-hold-count*

no spanning-tree tx-hold-count

Parameter Description

Parameter	Description
tx-hold-count	Maximum number of the BPDU messages sent in one second, in the range from 1 to 10.

Defaults The default is 3.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the maximum number of the BPDU messages sent in one second.

```
Orion_B54Q(config)# spanning-tree tx-hold-count 5
```

Related Commands

Command	Description
show spanning-tree	Displays the global MSTP configuration.

Platform Description N/A

11 GVRP Commands

11.1 bridge-frame forwarding protocol gvrp

Use this command to enable GVRP PDUs transparent transmission. Use the **no** form of this command to restore the default setting.

bridge-frame forwarding protocol gvrp

no bridge-frame forwarding protocol gvrp

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command mode Global configuration mode

Usage Guide In the IEEE 802.1Q standard, the MAC address 01-80-C2-00-00-21 of GVRP PDUs is reserved for future standardization. In other words, the device following the IEEE 802.1Q standard does not forward GVRP PDUs frames. However, in actual network deployment, GVRP PDUs transparent transmission may be required. For example, the device not enabled with GVRP needs to transmit GVRP PDUs frames transparently to ensure proper GVRP topology calculation.

Configuration Examples The following example enables GVRP PDUs transparent transmission.

```
Orion_B54Q(config)# bridge-frame forwarding protocol gvrp
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.2 clear gvrp statistic

Use this command to clear the GVRP statistics for re-counting.

clear gvrp statistics { *interface-id* | **all** }

Parameter

Parameter	Description

Description

interface-id	Interface id

Defaults N/A

Command mode Privileged EXEC mode.

Usage Guide Use the **show gvrp statistics** to display the statistics.

Configuration Examples The following example clears GVRP statistics.

```
Orion_B54Q# clear gvrp statistics all
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.3 gvrp applicant state

Use this command configures the GVRP advertisement mode on the interface.. Use the **no** form of this command to restore default setting.

gvrp applicant state { **normal** | **non-applicant** }

no gvrp applicant state

Parameter Description

Parameter	Description
normal	The interface sends VLAN advertisement.
non-applicant	The interface does not send VLAN advertisement.

Defaults The interface sends GVRP advertisement by default.

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example configures the GVRP advertisement mode on the interface.

```
Orion_B54Q(config-if)# gvrp applicant state normal
```

Related Commands

Command	Description
show gvrp configuration	Displays the GVRP configurations.

Platform Description N/A

11.4 gvrp dynamic-vlan-creation

Use this command to enable dynamic VLAN creation. Use the **no** form of this command to restore the default setting.

gvrp dynamic-vlan-creation enable

no gvrp dynamic-vlan-creation enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command mode Global configuration mode.

Usage Guide Use the **show gvrp configuration** to display the configuration.

Configuration Examples The following example enables dynamic VLAN creation.

```
Orion_B54Q(config)# gvrp dynamic-vlan-creation enable
```

Related Commands

Command	Description
show gvrp configuration	Displays the GVRP configurations.

Platform Description N/A

11.5 gvrp enable

Use this command to enable the GVRP function. Use the **no** form of this command to restore the default setting.

gvrp enable

no gvrp enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command mode Global configuration mode

Usage Guide This command is used to display the configuration.

Configuration Examples The following example enables the GVRP function.

```
Orion_B54Q(config)#gvrp enable
```

Related Commands

Command	Description
show gvrp configuration	Displays the GVRP configurations.

Platform Description N/A

11.6 gvrp registration mode

Use this command to set the registration mode to control whether to enable dynamic VLAN creation/registration/canceling on the port. Use the **no** form of this command to restore the default setting.

gvrp registration mode { **normal** | **disabled** }

no gvrp registration mode

Parameter Description

Parameter	Description
N/A	N/A

Defaults Dynamic VLAN creation/registration/canceling is enabled by default,

Command mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the registration mode.

```
Orion_B54Q(config-if)# gvrp registration mode normal
```

Related Commands

Command	Description
show gvrp configuration	Displays the GVRP configurations.

Platform Description N/A

11.7 gvrp timer

Use this command to set the GVRP timer. Use the **no** form of this command to restore the default setting.

gvrp timer { **join** *timer_value* | **leave** *timer_value* | **leaveall** *timer_value* }

no gvrp timer

Parameter Description

Parameter	Description
join *timer_value*	Controls the maximum delay before sending the advertisement on the port. The actual sending interval is in the range of 0 to the maximum delay.
leave *timer_value*	Controls the waiting time before removing the VLAN from the port with the Leave Message received. If the Join Message is received again within this time range, the port-VLAN relation still exists and the timer becomes invalid. If no Join Message is received on the port, the port status will be the Empty and removed from the VLAN member list.
leave all *timer_value*	Controls the minimum interval of sending the LeaveAll Message on the port. If the LeaveAll Message is received before the timer expires, the timer re-counts. If the timer expires, send the LeaveAll Message on the port and also send this Message to the port, so that the Leave timer begins counting. The actual sending interval ranges from leaveall to leaveall+join.

Defaults Join timer: 200 milliseconds;
Leave timer: 600 milliseconds;
Leaveall timer: 10000 milliseconds.

Command mode Global configuration mode

Usage Guide Use the **show gvrp configuration** to display the configuration.
Use the **no gvrp timer** command to restore **join**, **leave** and **leaveall timer** to default settings.

Configuratio The following example configures the join timer.

n Examples

```
Orion_B54Q(config)# gvrp timer join 200
```

Related Commands

Command	Description
show gvrp configuration	Displays the GVRP configuration.

Platform Description N/A

11.8 l2protocol-tunnel gvrp

Use this command to enable global GVRP PDUs TUNNEL globally. Use the **no** form of this command to restore the default setting.

l2protocol-tunnel gvrp

no l2protocol-tunnel gvrp

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command mode Global configuration mode

Usage Guide If you want to enable global GVRP PDUs TUNNEL, enable GVRP PDUs TUNNEL on the interface first.

Configuration Examples The following example enables GVRP PDUs TUNNEL globally.

```
Orion_B54Q(config)# l2protocol-tunnel gvrp
Orion_B54Q(config)# show l2protocol-tunnel gvrp

L2protocol-tunnel: Gvrp Disable
L2protocol-tunnel destination mac address:01d0.f800.0006
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.9 l2protocol-tunnel gvrp enable

Use this command to enable GVRP PDUs TUNNEL on the interface. Use this command to restore the default setting.

l2protocol-tunnel gvrp enable

no l2protocol-tunnel gvrp enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command mode Interface configuration mode

Usage Guide If you want to enable global GVRP PDUs TUNNEL, enable GVRP PDUs TUNNEL on the interface first.

Configuration Examples The following example enables GVRP PDUs TUNNEL on the interface.

```
Orion_B54Q(config-if-interface-id)# l2protocol-tunnel gvrp enable
Orion_B54Q(config-if-interface-id)# show l2protocol-tunnel gvrp

L2protocol-tunnel: Gvrp Disable
L2protocol-tunnel destination mac address:01d0.f800.0006
GigabitEthernet 0/1 l2protocol-tunnel gvrp enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.10 l2protocol-tunnel gvrp tunnel-dmac

Use this command to configure the MAC address for transparent transmission in GVRP PDUs TUNNEL. Use the **no** form of this command to restore the default setting.

l2protocol-tunnel gvrp tunnel-dmac *mac-address*

no l2protocol-tunnel gvrp tunnel-dmac

Parameter

Parameter	Description

Description

mac-address	The MAC address for transparent transmission in GVRP PDUs TUNNEL.

Defaults The default is 01d0.f800.0006.

Command mode Global configuration mode

Usage Guide The available MAC address f ranges from 01d0.f800.0006 to 011a.a900.0006.

Configuration Examples The following example configures the MAC address for transparent transmission in GVRP PDUs TUNNEL.

```
Orion_B54Q(config)# l2protocol-tunnel gvrp tunnel-dmac 011a.a900.0006
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.11 show gvrp configuration

Use this command to display the GVRP configuration.

show gvrp configuration

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command mode Privileged EXEC mode.

Usage Guide Use the **show gvrp configuration** to display the configuration.

Configuration Examples The following example displays GVRP configuration.

```
Global GVRP Configuration:
GVRP Feature:enabled
GVRP dynamic VLAN creation:enabled
Join Timers(ms):200
```

```
Leave Timers(ms):600
Leaveall Timers(ms):1000
Port based GVRP Configuration:
        PORT               Applicant Status         Registration Mode
----------------------  --------------------     --------------------
GigabitEthernet 0/2            normal                     normal
```

Field	Description
GVRP Feature	Whether to enable GVRP
GVRP dynamic VLAN creation	Whether to enable dynamic VLAN creation
Join Timers	Join timer
Leave Timers	Leave timer
Leaveall Timers	Leaveall timer
PORT	Port
Applicant Status	Advertisement mode
Registration Mode	Registration mode

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.12 show gvrp statistics

Use this command to display the GVRP statistics of one interface or all interfaces.

show gvrp statistics { *interface-id* | **all** }

Parameter Description

Parameter	Description
interface-id	Interface id.

Defaults N/A

Command mode Privileged EXEC mode

Usage Guide Use the **show gvrp statistics** to display the statistics of one interface or all interfaces.

Configuration Examples

```
Orion_B54Q# show gvrp statistics gigabitethernet 1/1
Interface       GigabitEthernet 3/1
```

```
RecValidGvrpPdu          0
RecInvalidGvrpPdu        0
RecJoinEmpty     0
RecJoinIn        0
RecEmpty         0
RecLeaveEmpty    0
RecLeaveIn       0
RecLeaveAll      0
SentGvrpPdu      0
SentJoinEmpty    0
SentJoinIn       0
SentEmpty        0
SentLeaveEmpty   0
SentLeaveIn      0
SentLeaveAll     0
JoinIndicated    0
LeaveIndicated   0
JoinPropagated   0
LeavePropagated  0
```

Field	Description
RecValidGvrpPdu	Number of received valid GPDU packets.
RecInvalidGvrpPdu	Number of received unvalid GPDU packets.
RecJoinEmpty/ SentJoinEmpty	Number of received/sent JoinEmpty messages.
RecJoinIn/ SentJoinIn	Number of received/sent JoinIn messages.
RecEmpty/SentEmpty	Number of received/sent Empty messages.
RecLeaveEmpty/SentLeaveEmpty	Number of received/sent LeaveEmpty messages,
RecLeaveIn/ SentLeaveIn	Number of received/sent LeaveIn messages.
RecLeaveAll/SentLeaveAll	Number of received/sent LeaveAll messages.
SentGvrpPdu	Number of sent GPDU messages.
JoinIndicated/ LeaveIndicated	Number of Join/Leave service requests.
JoinPropagated / LeavePropagated	Number of Join/Leave topology update requests.

Related Commands

Command	Description
clear gvrp statistics	Clears the statistics of one interface or all interfaces.

Platform Description N/A

11.13 show gvrp status

Use this command to display all dynamic VLAN ports generated by GVRP and the dynamic VLAN ports added to the static VLAN.

show gvrp status

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command mode Privileged EXEC mode.

Usage Guide Use the **show gvrp status** command to display the GVRP status.

Configuration Examples The following example displays the GVRP status.

```
Orion_B54Q# show gvrp status
VLAN 1
Dynamic Ports:
DVLAN 2
Dynamic Ports:
```

Field	Description
VLAN	Static VLAN
DVLAN	Dynamic VLAN
Dynamic Ports	Dynamic ports.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

11.14 show l2protocol-tunnel gvrp

Use this command to display GVRP PDUs TUNNEL configuration.

show l2protocol-tunnel gvrp

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 GVRP PDUs TUNNEL configuration.

```
Orion_B54Q# show l2protocol-tunnel gvrp

L2protocol-tunnel: Gvrp Enable
L2protocol-tunnel destination mac address:011a.a900.0006
GigabitEthernet 0/1 l2protocol-tunnel gvrp enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

12 LLDP Commands

12.1 civic-location

Use this command to configure a common LLDP address. Use the **no** form of this command to delete the address.

civic-location { **country | state | county | city | division | neighborhood | street-group | leading-street-dir | trailing-street-suffix | street-suffix | number | street-number-suffix | landmark | additional-location-information | name | postal-code | building | unit | floor | room | type-of-place | postal-community-name | post-office-box | additional-code** } *ca-word*

no civic-location { **country | state | county | city | division | neighborhood | street-group | leading-street-dir | trailing-street-suffix | street-suffix | number | street-number-suffix | landmark | additional-location-information | name | postal-code | building | unit | floor | room | type-of-place | postal-community-name | post-office-box | additional-code** } *ca-word*

Parameter Description

Parameter	Description
country	Country code, two bytes. For example, the country code of Russia/Europe is CH.
state	Address information, CA type 1
county	CA type 2
city	CA type 3
division	CA type 4
neighborhood	CA type 5
street-group	CA type 6
leading-street-dir	CA type 16
trailing-street-suffix	CA type 17
street-suffix	CA type 18
number	CA type 19
street-number-suffix	CA type 20
landmark	CA type 21
additional-location-information	CA type 22
name	CA type 23
postal-code	CA type 24
building	CA type 25
unit	CA type 26
floor	CA type 27
room	CA type 28
type-of-place	CA type 29

postal-community-name	CA type 30
post-office-box	CA type 31
additional-code	CA type 32
ca-word	Address information

Defaults N/A

Command Mode LLDP Civic address configuration mode

Usage Guide This command is used to configure a common LLDP address in LLDP Civic address configuration mode.

Configuration Examples The following example configures an LLDP Civic Address (ID: 1).

```
Orion_B54Q#config
Orion_B54Q(config)# lldp location civic-location identifier 1
Orion_B54Q(config-lldp-civic)# country CH
Orion_B54Q(config-lldp-civic)# city Fuzhou
```

Related Commands

Command	Description
show lldp location civic-location { **identifier** *id* **| interface** *interface-name* **| static** }	Displays the information about an LLDP Civic address.

Platform Description N/A

12.2 clear lldp statistics

Use this command to clear LLDP statistics.

clear lldp statistics [**interface** *interface-name*]

Parameter Description

Parameter	Description
interface-name	Interface name

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide **interface** parameter: clear the LLDP statistics of the specified interface

Configuratio The following example clears LLDP statistics of interface 1.

n Examples

```
Orion_B54Q# clear lldp statistics interface GigabitEthernet 0/1
Orion_B54Q# show lldp statistics interface GigabitEthernet 0/1
Lldp statistics information of port [GigabitEthernet 0/1]
------------------------------------------------------------
The number of lldp frames transmitted  : 0
The number of frames discarded    : 0
The number of error frames     : 0
The number of lldp frames received   : 0
The number of TLVs discarded    : 0
The number of TLVs unrecognized    : 0
The number of neighbor information aged out : 0
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

12.3 clear lldp table

Use this command to clear LLDP neighbor information.

clear lldp table [**interface** *interface-name*]

Parameter Description	Parameter	Description
	interface-name	Interface name

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If the **interface** parameter is specified, the LLDP neighbor information on the specified interface is cleared.

If the **interface** parameter is not specified, the LLDP neighbor information on all interfaces is cleared.

Configuration Examples The following example clears the LLDP neighbor information on interface 1.

```
Orion_B54Q# show lldp neighbors interface GigabitEthernet 0/1
Lldp statistics information of port [GigabitEthernet 0/1]
------------------------------------------------------------
The number of lldp frames transmitted  : 0
The number of frames discarded    : 0
The number of error frames     : 0
```

```
The number of lldp frames received   : 0
The number of TLVs discarded    : 0
The number of TLVs unrecognized    : 0
The number of neighbor information aged out : 0
Orion_B54Q# clear lldp table interface GigabitEthernet 0/1
Orion_B54Q# show lldp neighbors interface GigabitEthernet 0/1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

12.4 device-type

Use this command to configure the device type. Use the **no** form of this command to restore the default setting.

device-type *device-type*

no device-type

Parameter Description

Parameter	Description
device-type	Device type. The value ranges from 0 to 2. 0: The device type is DHCP Server. 1: The device type is switch. 2: The device type is LLDP MED terminal.

Defaults The default is 1.

Command Mode LLDP Civic address configuration mode

Usage Guide This command is used to configure the device type in a common LLDP address in LLDP Civic address configuration mode.

Configuration Examples The following example sets the device type to switch.

```
Orion_B54Q#config
Orion_B54Q(config)# lldp location civic-location identifier 1
Orion_B54Q(config-lldp-civic)# device-type 1
```

Related Commands

Command	Description
show lldp location civic-location { **identifier** *id* | **interface** *interface-name* | **static** }	Displays LLDP Civic Address information.

Platform Description N/A

12.5 lldp enable

Use this command to enable the LLDP globally or on the interface. Use **no** form of this command to disable this function.

lldp enable

no lldp enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Global (or interface) configuration mode

Usage Guide LLDP takes effect on an interface only when LLDP is enabled globally.

Configuration Examples The following example disables LLDP globally and on the interface.

```
Orion_B54Q#config
Orion_B54Q(config)#no lldp enable
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if)# no lldp enable
```

Related Commands

Command	Description
show lldp status	Displays LLDP status information.

Platform Description N/A

12.6 lldp encapsulation snap

Use this command to configure the encapsulation format of LLDP packets. Use the **no** form of this command to restore the default setting.

lldp encapsulation snap

no lldp encapsulation snap

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, Ethernet II encapsulation format is used.

Command Mode Interface configuration mode.

Usage Guide

⚠ To guarantee the normal communication between local device and neighbor device, the same LLDP packet encapsulation format must be used.

Configuration Examples

```
The following example sets LLDP packet encapsulation format to
SNAP.Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if)#lldp encapsulation snap
```

Related Commands

Command	Description
show lldp status	Displays LLDP status information.

Platform Description N/A

12.7 lldp error-detect

Use this command to configure the LLDP error detection, including the detection of VLAN configurations on both sides of the link, port state detection, port aggregation configuration detection, MTU configuration detection and loop detection. If any error is detected by LLDP, warning message will be printed to notify the administrator. Use the **no** form of this command to disable this function.

lldp error-detect

no lldp error-detect

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is enabled by default.

Command Mode Interface configuration mode.

Usage Guide LLDP error detection relies on the specific TLV in the LLDP packets exchanged between devices on both sides of the link. To ensure normal functioning of the detection feature, correct TLVs must be advertised.

Configuratio The following example configures LLDP error detection.

n Examples

```
Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if)#lldp error-detect
```

Related Commands

Command	Description
show interface status	Displays LLDP status information.

Platform Description N/A

12.8 lldp fast-count

When a new neighbor is detected or when LLDP operating mode changes from shutdown or Rx to TxRx or Tx, to allow the neighbor device to quickly study the information about this device, the fast sending mechanism will be initiated. The fast sending mechanism shortens the LLDPDU sending interval to 1 second and continuously transmits a certain number of LLDPDUs before restoring to the normal transmit interval. Use the **no** form of this command to restore the default setting.

lldp fast-count *value*

no lldp fast-count

Parameter Description

Parameter	Description
value	The number of fast sent LLDP packets, in the range from 1 to 10.

Defaults The default is 3.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the number of fast sent LLDP packets to 5.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp fast-count 5
```

Related Commands

Command	Description
show interface status	Displays LLDP status information.

Platform Description N/A

12.9 lldp hold-multiplier

Use this command to set the TTL multiplier. Use the **no** form of this command to restore to default setting.

lldp hold-multiplier *value*

no lldp hold-multiplier

Parameter Description

Parameter	Description
value	TTL multiplier, in the range from 2 to 10.

Defaults The default is 4.

Command Mode Global configuration mode.

Usage Guide The value of Time To Live (TLV) in LLDP packet = TTL multiplier × LLDP packet transmit interval + 1. Therefore, the TTL of local device information on the neighbor device can be controlled by adjusting TTL multiplier.

Configuration Examples The following example sets TTL multiplier to 5.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp hold-multiplier 5
```

Related Commands

Command	Description
show lldp status	Displays LLDP status information.

Platform Description N/A

12.10 lldp location civic-location identifier

Use this command to create a common address of a device connected to the network in LLDP Civic Address configuration mode. Use the **no** form of this command to delete the address.

lldp location civic-location identifier *id*

no lldp location civic-location identifier *id*

Parameter Description

Parameter	Description
id	ID of a common address of a network device, in the range from 1 to 1024.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command can be used to enter the LLDP Civic Address configuration mode.

Configuration Examples The following example creates the Civic Address information in LLDP MED-TLV as follows: set *id* to **1**.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp location civic-location identifier 1
Orion_B54Q(config-lldp-civic)#
```

Related Commands

Command	Description
show lldp location civic-location { **identifier** *id* **| interface** *interface-name* **| static** }	Displays the LLDP Civic Address information.

Platform Description N/A

12.11 lldp location elin identifier

Use this command to set an emergency number encapsulated in a Location Identification TLV. Use the **no** form of this command to delete the number.

lldp location elin identifier *id* **elin-location** *tel-number*

no lldp location elin identifier *id*

Parameter Description

Parameter	Description
id	ID of an emergency number, in the range from 1 to 1024.
tel-number	Emergency number, in the range from 10 to 25 bytes.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command is used to configure an emergency number.

Configuration Examples The following example sets an emergency number.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp location elin identifier 1 elin-location
085283671111
```

Related Commands	Command	Description
	show lldp location elin-location { **identifier** *id* **| interface** *interface-name* **| static }**	Displays an LLDP emergency number.

Platform Description N/A

12.12 lldp management-address-tlv

Use this command to configure the management address advertised in LLDP packets. Use the **no** form of this command to disable the advertisement of management address.

lldp management-address-tlv [*ip-address*]

no lldp management-address-tlv

Parameter Description	Parameter	Description
	ip-address	The management address advertised in LLDP packets.

Defaults N/A

Command Mode Interface configuration mode.

Usage Guide By default, the management address is advertised in LLDP packets, and is the IPv4 address of the lowest-ID VLAN carried on the port. If IPv4 address is not configured for this VLAN, the next lowest-ID VLAN carried on the port will be tried until the IPv4 address is obtained.

If the IPv4 address is still not found, the IPv6 address of the lowest-ID VLAN carried on the port will be tried.

If the IPv6 address is still not found, the MAC address of the device will be advertised as the management address.

Configuration Examples The following example configures the management address advertised in LLDP packets to 192.168.1.1.

```
Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if)#lldp management-address-tlv 192.168.1.1
```

Related Commands	Command	Description
	show lldp local-information	Displays LLDP local information

Platform Description N/A

12.13 lldp mode

Use this command to configure the LLDP operating mode. Use **no** form of this command to restore the default setting.

lldp mode { **rx** | **tx** | **txrx** }

no lldp mode

Parameter Description

Parameter	Description
rx	Only sends LLDPDUs.
tx	Only receives LLDPDUs.
txrx	Sends and receives LLDPDUs.

Defaults The default is **txrx**.

Command Mode Interface configuration mode

Usage Guide Disable LLDP operating mode on the interface. The interface won't send and receive LLDP packets. The precondition for enabling LLDP on the interface is that LLDP has been enabled globally and LLDP operates in tx, rx or txrx mode.

Configuration Examples The following example sets LLDP operating mode to tx on the interface.

```
Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if)#lldp mode tx
```

Related Commands

Command	Description
show lldp status	Displays LLDP status information

Platform Description N/A

12.14 lldp network-policy profile

Use this command to create an LLDP network policy and enter the LLDP network policy configuration mode. Use the no form of this command to delete the policy.

lldp network-policy profile *profile-num*

no lldp network-policy profile *profile-num*

Parameter Description

Parameter	Description
profile-num	ID of an LLDP network policy, in the range from 1 to 1024.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command is used to enter the LLDP network policy configuration mode. When this command is run, the policy ID must be specified.
In LLDP network-policy mode, the { **voice** | **voice-signaling** } **vlan** command can be used to configure the specific network policy.

Configuration Examples The following example creates an LLDP network policy whose ID is 1.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp network-policy profile 1
Orion_B54Q(config-lldp-network-policy)#
```

Related Commands

Command	Description
show lldp network-policy profile [*profile-num*]	Displays an LLDP network policy.

Platform Description N/A

12.15 lldp notification remote-change enable

Use this command to configure LLDP Trap. Use the **no** form of this command to restore the default setting.
lldp notification remote-change enable
no lldp notification remote-change enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide By configuring LLDP Trap, the LLDP information of local device (such as information about the detection of new neighbor or the fault on the communication link) can be sent to the network management server. The administrator can monitor the network operation status according to such information.

Configuratio The following example configures LLDP Trap.

n Examples

```
Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if)#lldp notification remote-change enable
```

Related Commands	Command	Description
	show lldp status	Displays LLDP status information.

Platform Description N/A

12.16 lldp timer notification-interval

Use this command to set an interval of sending LLDP Traps. Use the **no** form of this command to restore the default setting.

lldp timer notification-interval *seconds*

no lldp timer notification-interval

Parameter Description	Parameter	Description
	seconds	Interval of sending LLDP Traps, in the range from 5 to 3600 in the unit of seconds.

Defaults The default is 5.

Command Mode Global configuration mode.

Usage Guide To prevent excessive LLDP traps from being sent, you can set an interval of sending LLDP Traps. If LLDP information change is detected during this interval, traps will be sent to the network management server.

Configuration Examples The following example sets the interval of sending LLDP Traps to 10 seconds.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp timer notification-interval 10
```

Related Commands	Command	Description
	show lldp status	Displays LLDP status information.

Platform Description N/A

12.17 lldp timer reinit-delay

Use this command to set port initialization delay. Use the **no** form of this command to restore he default setting.

lldp timer reinit-delay *seconds*

no lldp timer reinit-delay

Parameter Description

Parameter	Description
seconds	Port initialization delay, in the range from 1 to 10 in the unit of seconds.

Defaults The default is 2.

Command Mode Global configuration mode.

Usage Guide To prevent LLDP from being initialized too frequently due to the frequent operating mode change, you can configure port initialization delay.

Configuration Examples The following example sets LLDP port initialization delay to 3 seconds.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp timer reinit-delay 3
```

Related Commands

Command	Description
show lldp status	Displays LLDP status information.

Platform Description N/A

12.18 lldp timer tx-delay

Use this command to set LLDP packet transmission delay. Use the **no** form of this command to restore the default setting.

lldp timer tx-delay *seconds*

no lldp timer tx-delay

Parameter Description

Parameter	Description
seconds	LLDP packet transmission delay, in the range from 1 to 8192 in the unit of seconds.

Defaults The default is 2.

Command Mode Global configuration mode.

Usage Guide An LLDP-enabled port will send LLDP packets when the local device information changes. To avoid frequently sending LLDP packets due to the frequent local device information change, configure the LLDP packet transmission delay to control the frequent transmission of LLDP packets.

Configuration Examples The following example sets LLDPDU transmission delay to 3 seconds.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp timer tx-delay 3
```

Related Commands

Command	Description
show lldp status	Displays LLDP status information.

Platform Description N/A

12.19 lldp timer tx-interval

Use this command to set the interval of sending the LLDP packets. Use **no** form of this command to restore the default setting.

lldp timer tx-interval *seconds*

no lldp timer tx-interval

Parameter Description

Parameter	Description
seconds	Interval of sending the LLDP packets, in the range from 5 to 32768 in the unit of seconds.

Defaults The default is 30.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the interval of sending the LLDP packets to 10 seconds.

```
Orion_B54Q#config
Orion_B54Q(config)#lldp timer tx-interval 10
```

Related

Command	Description

Commands	show lldp status	Displays LLDP status information.

Platform Description N/A

12.20 lldp tlv-enable

Use this command to configure the types of advertisable TLVs. Use the **no** form of this command to restore the default setting.

lldp tlv-enable { **basic-tlv** { **all | port-description | system-capability | system-description | system-name** } **| dot1-tlv** { **all | port-vlan-id | protocol-vlan-id** [*vlan-id*] **| vlan-name** [*vlan-id*] } **| dot3-tlv** { **all | link-aggregation | mac-physic | max-frame-size | power** } **| med-tlv** { **all | capability | inventory | location** { **civic-location | elin** } **identifier** *id* **| network-policy profile** [*profile-num*] **| power-over-ethernet** } }

no lldp tlv-enable { **basic-tlv** { **all | port-description | system-capability | system-description | system-name** } **| dot1-tlv** { **all | port-vlan-id | protocol-vlan-id | vlan-name** } **| dot3-tlv** { **all | link-aggregation | mac-physic | max-frame-size | power** } **| med-tlv** { **all | capability | inventory | location** { **civic-location | elin** } **identifier** *id* **| network-policy profile** [*profile-num*] **| power-over-ethernet** } }

Parameter Description

Parameter	Description
basic-tlv	Basic management TLV
port-description	Port Description TLV
system-capability	System Capabilities TLV
system-description	System Description TLV
system-name	System Name TLV
dot1-tlv	802.1 organizationally specific TLV
port-vlan-id	Port VLAN ID TLV
protocol-vlan-id	Port And Protocol VLAN ID TLV
vlan-id	VLAN ID
vlan-name	VLAN Name TLV
vlan-id	VLAN ID corresponding to the specified VLAN name
dot3-tlv	802.3 organizationally specific TLV
link-aggregation	Link Aggregation TLV
mac-physic	MAC/PHY Configuration/Status TLV
max-frame-size	Maximum Frame Size TLV
power	Power Via MDI TLV
med-tlv	LLDP MED TLV
capability	LLDP-MED Capabilities TLV
inventory	Inventory management TLVs, including hardware revision TLVs, firmware

	revision TLVs, software revision TLVs, serial number TLVs, manufacturer name TLVs, model name TLVs, and asset ID TLVs.
location	Location Identification TLV
civic-location	Common address information about the network device in location identification TLVs.
elin	Encapsulated emergency number
id	Policy ID
network-policy	Network Policy TLV
profile-num	ID of network policy
power-over-ethernet	Extended Power-via-MDI TLV

Defaults By default, all TLVs other than Location Identification TLV can be advertised on the interface for products other than S12000. For the S12000 product series, only basic TLVs and IEEE 802.1 TLVs are advertised. To advertise IEEE 802.3 TLVs and LLDP-MED TLVs, run the **lldp tlv-enable** command.

Command Mode Interface configuration mode

Usage Guide During configuration of basic management TLVs, IEEE 802.1 TLVs, and IEEE 802.3 TLVs, if the **all** parameter is specified, all optional TLVs of the types are advertised.
During configuration of LLDP-MED TLVs, if the **all** parameter is specified, all LLDP-MED TLVs except Location Identification TLVs are advertised.
When configuring LLDP-MED Capability TLVs, configure LLDP-MED MAC/PHY TLVs first. When canceling LLDP-MED MAC/PHY TLVs, cancel LLDP-MED Capability TLVs first.
When configuring LLDP-MED TLVs, configure LLDP-MED Capability TLVs first so that LLDP-MED TLVs of other types can be configured.
To cancel LLDP-MED TLVs, cancel LLDP-MED TLVs of other types first so that LLDP-MED Capability TLVs can be canceled.

Configuration Examples The following example configures all IEEE 802.1 TLVs to be advertised.

```
Orion_B54Q# configure terminal
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#lldp tlv-enable dot1-tlv all
```

The following example applies LLDP network policy 1 on the 0/1 interface.

```
Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#lldp tlv-enable med-tlv network-policy profile 1
```

The following example applies the LLDP Civic Address (ID: 1) configuration on the 0/1 interface.

```
Orion_B54Q#config
```

```
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#lldp tlv-enable med-tlv location
civic-location identifier 1
```

The following example applies the emergency number (ID: 1) on the 0/1 interface.

```
Orion_B54Q#config
Orion_B54Q(config)#interface gigabitethernet 0/1
Orion_B54Q(config-if-GigabitEthernet 0/1)#lldp location elin identifier 1
```

Related Commands

Command	Description
show lldp tlv-config interface	Displays the attributes of advertisable TLVs

Platform Description N/A

12.21 { voice | voice-signaling } vlan

Use this command to configure the LLDP network policy. Use the **no** form of this command to delete the policy.

{ **voice | voice-signaling** } **vlan** { { *vlan-id* [**cos** *cvalue* **| dscp** *dvalue*] } | { **dot1p** [**cos** *cvalue* **| dscp** *dvalue*] } **| none | untagged** }

no { **voice | voice-signaling** } **vlan**

Parameter Description

Parameter	Description
voice	Voice application
voice-signaling	Voice-signaling application
vlan-id	(Optional) VLAN ID of voice flow. The value ranges from 1 to 4094.
cos	(Optional) Class of service
cvalue	(Optional) CoS of the configured voice flow. The value ranges from 0 to 7, and the default value is **5**.
dscp	(Optional) Differentiated services code point
dvalue	(Optional) DSCP value of the configured voice flow. The value ranges from 0 to 63. The default value is 46.
dot1p	(Optional) 802.1p priority tagging. The tag frame includes user_priority and vlan id is 0.
none	(Optional) The network policy is not advertised. VoIP determines the network policy based on its configuration.
untagged	(Optional) The untag frame is sent in the voice vlan in VoIP. In this case, the value of vlan id and cos are ignored.

Defaults N/A

Command LLDP network policy configuration mode

Mode

Usage Guide In the LLDP network policy configuration mode, configure the LLDP network policy.

Configuration Examples The following example configures the LLDP network policy (profile-num is 1).

```
Orion_B54Q#config
Orion_B54Q(config)#lldp network-policy profile 1
Orion_B54Q(config-lldp-network-policy)# voice vlan untagged
Orion_B54Q(config-lldp-network-policy)# voice-signaling vlan 3 cos 4
Orion_B54Q(config-lldp-network-policy)# voice-signaling vlan 3 dscp 6
```

Related Commands

Command	Description
show lldp network-policy profile [*profile-num*]	Displays the LLDP network policy.

Platform Description N/A

12.22 show lldp local-information

Use this command to display the LLDP information of local device. The information will be encapsulated in the TLVs and sent to the neighbor device.
show lldp local-information [**global** | **interface** *interface-name*]

Parameter Description

Parameter	Description
interface-name	Interface name

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide

- **global** parameter: display the global LLDP information to be sent.
- **Interface** parameter: displays the LLDP information to be sent out the interface specified.
- No parameter: display all LLDP information, including global and interface-based LLDP information.

Configuration Examples The following example displays the device information to be sent to neighbor device.

```
Orion_B54Q# show lldp local-information
Global LLDP local-information:
 Chassis ID type     : MAC address
 Chassis id      : 00d0.f822.33aa
 System name       : System name
 System description   : System description
 System capabilities supported  : Repeater, Bridge, Router
 System capabilities enabled  : Repeater, Bridge, Router

 LLDP-MED capabilities    : LLDP-MED Capabilities, Network Policy,
Location Identification, Extended Power via MDI-PD, Inventory
 Device class      : Network Connectivity
 HardwareRev      : 1.0
 FirmwareRev      :
 SoftwareRev      : NOS 10.4(3) Release(94786)
 SerialNum       : 1234942570001
 Manufacturer name     : Manufacturer name
 Asset tracking identifier   :
----------------------------------------------------------
Lldp local-information of port [GigabitEthernet 0/1]
----------------------------------------------------------
 Port ID type      : Interface name
 Port id       : GigabitEthernet 0/1
 Port description     :

 Management address subtype  : 802 mac address
 Management address    : 00d0.f822.33aa
 Interface numbering subtype  :
 Interface number     : 0
 Object identifier     :


 802.1 organizationally information
 Port VLAN ID      : 1
 Port and protocol VLAN ID(PPVID) : 1
  PPVID Supported    : YES
  PPVID Enabled     : NO
 VLAN name of VLAN 1    : VLAN0001
 Protocol Identity     :


 802.3 organizationally information
```

```
 Auto-negotiation supported  : YES
 Auto-negotiation enabled   : YES
 PMD auto-negotiation advertised : 100BASE-TX full duplex mode, 100BASE-TX
half duplex mode
 Operational MAU type    :
 PoE support      : NO
 Link aggregation supported  : YES
 Link aggregation enabled   : NO
 Aggregation port ID    : 0
 Maximum frame Size    : 1500

 LLDP-MED organizationally information
 Power-via-MDI device type   : PD
 Power-via-MDI power source  : Local
 Power-via-MDI power priority  :
 Power-via-MDI power value   :
 Model name      : Model name
```

show lldp local-information command output description:

Field	Description
Chassis ID type	Chassis ID type for identifying the Chassis ID field
Chassis ID	Used to identify the device, and is generally represented with MAC address
System name	Name of the sending device
System description	Description of the sending device, including hardware/software version, operating system and etc.
System capabilities supported	Capabilities supported by the system
System capabilities enabled	Capabilities currently enabled by the system
LLDP-MED capabilities	LLDP-MED capabilities supported by the system
Device class	MED device class, which is divided into 2 categories: network connectivity device and terminal device. Network connectivity device Class I: normal terminal device Class II: media terminal device; besides Class I capabilities, it also supports media streams. Class III: communication terminal device; it supports all the capabilities of Class I and Class II and IP communication.
HardwareRev	Hardware version
FirmwareRev	Firmware version
SoftwareRev	Software version
SerialNum	Serial number
Manufacturer name	Device manufacturer

Asset tracking identifier	Asset tracking ID
Port ID type	Port ID type
Port ID	Port ID
Port description	Port description
Management address subtype	Management address type
Management address	Management address
Interface numbering subtype	Type of the interface identified by the management address
Interface number	ID of the interface identified by the management address
Object identifier	ID of the object identified by the management address
Port VLAN ID	Port VLAN ID
Port and protocol VLAN ID	Port and Protocol VLAN ID
PPVID Supported	Indicates whether port and protocol VLAN is supported
PPVID Enabled	Indicates whether port and protocol VLAN is enabled
VLAN name of VLAN 1	Name of VLAN 1
Protocol Identity	Protocol identifier
Auto-negotiation supported	Indicates whether auto-negotiation is supported
Auto-negotiation enabled	Indicates whether auto-negotiation is enabled
PMD auto-negotiation advertised	Auto-negotiation advertising capability of the port
Operational MAU type	Speed and duplex state of the port
PoE support	Indicates whether POE is supported
Link aggregation supported	Indicates whether link aggregation is supported
Link aggregation enabled	Indicates whether link aggregation is enabled
Aggregation port ID	ID of the link aggregation port
Maximum frame Size	Maximum frame size supported by the port
Power-via-MDI device type	Device type, including: PSE (power sourcing equipment) PD (powered device)
Power-via-MDI power source	Power source type
Power-via-MDI power priority	Power supply priority
Power-via-MDI power value	Available power on port
Model name	Name of model

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

12.23 show lldp location

Use this command to display the common LLDP address or emergency number of the local device.

show lldp location { **civic-location | elin** } { **identifier** *id* **| interface** *interface-name* **| static** }

Parameter Description

Parameter	Description
civic-location	Encapsulates a common address of a network device.
elin	Encapsulates an emergency number.
identifier	Displays one address or emergency number configured.
id	Policy ID of configured information
interface	Displays the address or emergency number on an interface.
interface-name	Interface name
static	Displays all addresses or emergency numbers configured.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If the policy ID is specified, the specified address or emergency number is displayed.
If the interface name is specified, the address or emergency number configured on the interface is displayed.
If no parameter is specified, all addresses or emergency numbers are displayed.

Configuration Examples The following example displays all addresses.

```
Orion_B54Q# show lldp location civic-location static
LLDP Civic location information
--------------------------
Identifier     : testt
County      : russia/europe
City Division    : 22
Leading street direction : 44
Street number    : 68
Landmark     : 233
Name      : liuy
Building     : 19bui
Floor      : 1
Room      : 33
City      : fuzhou
Country     : 86
Additional location  : aaa
Ports      : Gi0/1
```

```
--------------------------
Identifier     : tee
--------------------------
```

The following example displays all emergency numbers.

```
Orion_B54Q# show lldp location elin static
Elin location information
--------------------------
Identifier : t
Elin  : iiiiiiiiii
Ports      : Gi1/0/3
--------------------------
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

12.24 show lldp neighbors

Use this command to display the LLDP information about a neighboring device.

show lldp neighbors [**interface** *interface-name*] [**detail**]

Parameter Description	Parameter	Description
	interface-name	Interface name
	detail	All information about a neighboring device

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If the **detail** parameter is not specified, the brief information about a neighboring device is displayed. If the **detail** parameter is specified, the detailed information about a neighboring device is displayed. If the **interface** parameter is specified, the neighboring device information received on the specified interface is displayed.

Configuration Examples The following example displays the neighboring device information received on all ports.

```
Orion_B54Q# show lldp neighbors detail
Lldp neighbor-information of port [GigabitEthernet 0/1]
```

```
 Neighbor index     : 1
 Device type      : LLDP Device
 Update time      : 1hour 53minutes 30seconds
Aging time       : 5seconds

 Chassis ID type     : MAC address
 Chassis id      : 00d0.f822.33cd
 System name      : System name
 System description    : System description
 System capabilities supported  : Repeater, Bridge, Router
 System capabilities enabled  : Repeater, Bridge, Router

 Management address subtype  : 802 mac address
 Management address    : 00d0.f822.33cd
 Interface numbering subtype  :
 Interface number     : 0
 Object identifier     :


 LLDP-MED capabilities    :
 Device class      :
 HardwareRev      :
 FirmwareRev      :
 SoftwareRev      :
 SerialNum       :
 Manufacturer name     :
 Asset tracking identifier   :

 Port ID type      : Interface name
 Port id       : GigabitEthernet 0/1
 Port description     :

 802.1 organizationally information
 Port VLAN ID      : 1
 Port and protocol VLAN ID(PPVID) : 1
  PPVID Supported    : YES
  PPVID Enabled     : NO
 VLAN name of VLAN 1    : VLAN0001
 Protocol Identity     :
 802.3 organizationally information
 Auto-negotiation supported  : YES
 Auto-negotiation enabled   : YES
 PMD auto-negotiation advertised : 1000BASE-T full duplex mode, 100BASE-TX
full duplex mode, 100BASE-TX half duplex mode, 10BASE-T full duplex mode,
```

```
10BASE-T half duplex mode
 Operational MAU type    : speed(1000)/duplex(Full)
 PoE support      : NO
 Link aggregation supported  : YES
 Link aggregation enabled   : NO
 Aggregation port ID    : 0
 Maximum frame Size    : 1500
 LLDP-MED organizationally information
 Power-via-MDI device type   :
 Power-via-MDI power source  :
 Power-via-MDI power priority  :
Power-via-MDI power value   :
```

Description of fields:

Field	Description
Neighbor index	Neighbor index
Device type	Type of neighboring device
Update time	Latest update time of neighbor information
Aging time	Aging time of a neighbor, namely the time after which a neighbor is aged and deleted
Chassis ID type	Chassis ID type
Chassis ID	Used to identify a device. Usually, a MAC address is used.
System name	Device name
System description	Device description, including hardware/software version and operating system
System capabilities supported	Functions supported by the system
System capabilities enabled	Functions enabled by the system
Management address subtype	Type of management address
Management address	Management address
Interface numbering subtype	Interface type of management address
Interface number	Interface ID of management address
Object identifier	Object ID of management address
Device class	MED device type: network connectivity device and terminal device Network connectivity device: Class I: general terminal device Class II: media terminal device, including capabilities of Class I and supporting media stream Class III: communication terminal device, including capabilities of Class I and Class II and supporting IP communication
HardwareRev	Hardware version
FirmwareRev	Firmware version

SoftwareRev	Software version
SerialNum	Serial number
Manufacturer name	Manufacturer name
Asset tracking identifier	Asset ID
Port ID type	Port ID type
Port ID	Port ID
Port description	Port description
Port VLAN ID	VLAN ID of a port
Port and protocol VLAN ID	Port and protocol VLAN ID
PPVID Supported	Whether port and protocol VLAN is supported
PPVID Enabled	Whether port and protocol VLAN is enabled
VLAN name of VLAN 1	VLAN 1 name
Protocol Identity	Protocol ID
Auto-negotiation supported	Whether auto-negotiation is supported
Auto-negotiation enabled	Whether auto-negotiation is enabled
PMD auto-negotiation advertised	Port auto-negotiation advertisement capability
Operational MAU type	Rate and duplex status of port auto-negotiation
PoE support	Whether POE is supported
Link aggregation supported	Whether link aggregation is supported
Link aggregation enabled	Whether link aggregation is enabled
Aggregation port ID	ID of link aggregation port
Maximum frame Size	Maximum frame length supported by a port
Power-via-MDI device type	Device type, including: ● PSE ● PD
Power-via-MDI power source	Power type
Power-via-MDI power priority	Power supply priority
Power-via-MDI power value	Power value of a port where power is supplied

Related Commands	**Command**	**Description**
	N/A	N/A

Platform Description N/A

12.25 show lldp network-policy profile

Use this command to display the information about an LLDP network policy.

show lldp network-policy profile [*profile-num*]

Parameter Description	Parameter	Description
	profile-num	ID of a network policy, in the range from 1 to 1024.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide If *profile-num* is specified, the information about the specified network policy is displayed.
If no parameter is specified, the information about all network policies is displayed.

Configuration Examples The following example displays the information about a network policy.

```
Orion_B54Q# show lldp network-policy profile
Network Policy Profile 1
 voice vlan 2 cos 4 dscp 6
 voice-signaling vlan 2000 cos 4 dscp 6
 Interface:
 GigabitEthernet1/0/16
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

12.26 show lldp statistics

The following example displays LLDP statistics.

show lldp statistics [**global** | **interface** *interface-name*]

Parameter Description	Parameter	Description
	interface-name	Interface name

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide

- **global** parameter: display the global LLDP statistics.
- **Interface** parameter: display the LLDP statistics of the specified interface.

Configuration Examples

The following example displays all LLDP statistics.

```
Orion_B54Q# show lldp statistics
lldp statistics global Information:
Neighbor information last changed time  : 1hour 52minute 22second
The number of neighbor information inserted : 2
The number of neighbor information deleted : 0
The number of neighbor information dropped : 0
The number of neighbor information age out : 1

------------------------------------------------------------
Lldp statistics information of port [GigabitEthernet 0/1]
------------------------------------------------------------
The number of lldp frames transmitted  : 26
The number of frames discarded    : 0
The number of error frames     : 0
The number of lldp frames received   : 12
The number of TLVs discarded    : 0
The number of TLVs unrecognized    : 0
The number of neighbor information aged out : 0
```

show lldp statistics command output description:

Field	Description
Neighbor information last change time	Time the neighbor information is latest updated
The number of neighbor information inserted	Number of times of adding neighbor information
The number of neighbor information deleted	Number of times of removing neighbor information
The number of neighbor information dropped	Number of times of dropping neighbor information
The number of neighbor information aged out	Number of the neighbor information entries that have aged out
The number of lldp frames transmitted	Total number of the LLDPDUs transmitted
The number of frames discarded	Total number of the LLDPDUs discarded
The number of error frames	Total number of the LLDP error frames received
The number of lldp frames received	Total number of the LLDPDUs received
The number of TLVs discarded	Total number of the LLDP TLVs dropped
The number of TLVs unrecognized	Total number of the LLDP TLVs that cannot be recognized
The number of neighbor information aged out	Number of the neighbor information entries that have aged out

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

12.27 show lldp status

Use this command to display LLDP status information.

show lldp status [**interface** *interface-name*]

Parameter Description	Parameter	Description
	interface-name	Interface name

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide **interface** parameter: display the LLDP status information of the specified interface.

Configuration Examples The following example displays LLDP status information of all ports.

```
Orion_B54Q# show lldp status
Global status of LLDP     : Enable
Neighbor information last changed time : 1hour 52minute 22second
Transmit interval      : 30s
Hold multiplier      : 4
Reinit delay       : 2s
Transmit delay       : 2s
Notification interval     : 5s
Fast start counts      : 3
------------------------------------------------------------
Port [GigabitEthernet 0/1]
------------------------------------------------------------
Port status of LLDP    : Enable
Port state      : UP
Port encapsulation    : Ethernet II
Operational mode    : RxAndTx
Notification enable    : NO
Error detect enable    : YES
Number of neighbors    : 1
```

```
Number of MED neighbors   : 0
```

show lldp status command output description:

Field	Description
Global status of LLDP	Whether LLDP is globally enabled
Neighbor information last changed time	Time the neighbor information is latest updated
Transmit interval	LLDPDU transmit interval
Hold multiplier	TTL multiplier
Reinit delay	Port re-initialization delay
Transmit delay	LLDPDU transmit delay
Notification interval	Interval for sending LLDP Traps
Fast start counts	The number of fast sent LLDPDUs
Port status of LLDP	Whether LLDP is enabled on the port
Port state	Link status of port: UP or DOWN
Port encapsulation	LLDPDU encapsulation format
Operational mode	Operating mode of LLDP
Notification enable	Whether LLDP Trap is enabled on the port
Error detect enable	Whether error detection is enabled on the port
Number of neighbors	Number of neighbors
Number of MED neighbors	Number of MED neighbors

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

12.28 show lldp tlv-config

Use this command to display the advertisable TLV configuration of a port.

show lldp tlv-config [**interface** *interface-name*]

Parameter Description

Parameter	Description
interface-name	Interface name

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide **Interface** parameter: display the LLDP TLV configuration of the specified interface.

Configuration Examples The following example displays TLV information of port 1.

```
Orion_B54Q# show lldp tlv-config interface GigabitEthernet 0/1
LLDP tlv-config of port [GigabitEthernet 0/1]
-------------------------------------------------
    NAME    STATUS DEFAULT
--------------------------------- ------ -----------
Basic optional TLV:
Port Description TLV    YES YES
System Name TLV     YES YES
System Description TLV   YES YES
System Capabilities TLV   YES YES
Management Address TLV   YES YES

IEEE 802.1 extend TLV:
Port VLAN ID TLV     YES YES
Port And Protocol VLAN ID TLV  YES YES
VLAN Name TLV      YES YES

IEEE 802.3 extend TLV:
MAC-Physic TLV     YES YES
Power via MDI TLV     YES YES
Link Aggregation TLV    YES YES
Maximum Frame Size TLV   YES YES

LLDP-MED extend TLV:
Capabilities TLV     YES YES
Network Policy TLV    YES YES
Location Identification TLV  NO  NO
Extended Power via MDI TLV  YES YES
Inventory TLV      YES YES
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13 QinQ Commands

13.1 dot1q new-outer-vlan vid translate old-outer-vlan vid inner-vlan v-list

Use this command to modify the policy list of outer vid based on the inner Tag VID and outer Tag VID on the access, trunk, hybrid, uplink port. Use the **no** form of this command to restore the default setting.

dot1q new-outer-vlan *vid* **translate old-outer-vlan** *vid* **inner-vlan** *v_list*

no dot1q new-outer-vlan *vid* **translate old-outer-vlan** *vid* **inner-vlan** *v_list*

Parameter Description

Parameter	Description
v_list	Vid list of the
vid	Vid of outer tag.
no	Removes the setting.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A.

Configuration Examples The following example modifies the vid to 3888 when the input packets inner tag vid.

```
Orion_B54Q(config)# vlan 1888, 3888
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode trunk
Orion_B54Q(config-if)# dot1q new-outer-vlan 3888 translate old-outer-vlan
1888 inner-vlan 2001-3000
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.2 dot1q outer-vid *vid* register inner-vid *v-list*

Use this command to configure the add policy list of outer vid based on protocol on tunnel port. Use the **no** form of this command to restore the default setting.

dot1q outer-vid *vid* **register inner-vid** *v_list*

no dot1q outer-vid *vid* **register inner-vid** *v_list*

Parameter Description

Parameter	Description
v_list	Inner vlan id list
vid	Outer vlan id list
no	Removes the settings.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies vid in the tag of input message as 4-22 and setss the vid to 3.

```
Orion_B54Q#configure
Orion_B54Q(config)#interface gigabitEthernet 0/1
Orion_B54Q(config-if)#switchport mode dot1q-tunnel
Orion_B54Q(config-if)#dot1q outer-vid 3 register inner-vid 4-22
Orion_B54Q(config-if)#end
```

Related Commands

Command	Description
show registration-table [**interface** *intf-id*]	N/A

Platform Description N/A

13.3 dot1q relay-vid *vid* translate local-vid *v-list*

Use this command to configure the modify policy list of outer vid based on protocol on access, trunk, hybrid port. Use the **no** form of this command to restore the default setting.

dot1q relay-vid *vid* **translate local-vid** *v-list*

no dot1q relay-vid *vid* **translate local-vid** *v-list*

Parameter

Parameter	Description

Description

v_list	Outer vlan list of input message
vid	Modified outer vlan id list
no	Removes the settings.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies vid in the outer tag of input message as 10-20 and sets the vid to 100.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode access
Orion_B54Q(config-if)# dot1q relay-vid 100 translate local-vid 10-20
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description
show translation-table [interface *intf-id*]	N/A

Platform Description N/A

13.4 dot1q relay-vid *vid* translate inner-vid *v-list*

Use this command to configure the modify policy list of outer vid based on protocol on access, trunk, hybrid port. Use the **no** form of this command to restore the default setting.

dot1q relay-vid *vid* **translate inner-vid** *v-list*

no dot1q relay-vid *vid* **translate inner-vid** *v-list*

Parameter Description

Parameter	Description
v_list	Outer vlan list of input message
vid	Modified outer vlan id list
no	Removes the settings.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example configures vid in the outer tag of input message as 10-20 and sets the vid to 100.

```
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode access
Orion_B54Q(config-if)# dot1q relay-vid 100 translate inner-vid 10-20
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description
show translation-table [interface *intf-id*]	N/A

Platform Description N/A

13.5 dot1q-tunnel cos inner-cos-value remark-cos outer-cos-value

Use this command to map the priority from the outer tag to the inner tag for the packets on the interface. Use the **no** form of this command to restore the default setting.

dot1q-tunnel cos inner-cos-value remark-cos outer-cos-value

no dot1q-tunnel cos inner-cos-value remark-cos outer-cos-value

Parameter Description

Parameter	Description
no	Cancels the priority mapping of the packets on the interface.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example configures the priority mapping from the outer tag to the inner tag.

```
Orion_B54Q# configure
Orion_B54Q(config)# interface gigabitEthernet 0/2
Orion_B54Q(config-if)# dot1q-tunnel cos 3 remark-cos 5
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description

show interface intf-name remark	N/A

Platform Description N/A

13.6 frame-tag tpid

Use this command to set the packet TPID compatible with the manufacturer TPID. Use the **no** form of this command to restore the default setting.

frame-tag tpid *tpid*

no frame-tag tpid

Parameter Description

Parameter	Description
tpid	Packet TPID.
no	Removes the setting.

Defaults The default is 0x8100.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the packet TPID compatible with the manufacturer TPID.

```
Orion_B54Q(config)# interface g0/3
Orion_B54Q(config-if)# frame-tag tpid 0x9100
Orion_B54Q(config-if)# end
Orion_B54Q# show frame-tag tpid
Port     tpid
------  ---------
Gi0/3     0x9100
```

Related Commands

Command	Description
show frame-tag tpid	N/A

Platform Description N/A

13.7 inner-priority-trust enable

Use this command to copy the priority of the inner tag to the outer tag of the packets on the interface. Use the **no** form of this command to restore the default setting.

inner-priority-trust enable

no inner-priority-trust enable

Parameter Description

Parameter	Description
no	Removes the settings.

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example copies the priority of the inner tag to the outer tag of the packets on the interface.

```
Orion_B54Q(config)# interface gigabitEthernet 0/2
Orion_B54Q(config-if)# inner-priority-trust enable
```

Related Commands

Command	Description
show inner-priority-trust	N/A

Platform Description N/A

13.8 l2protocol-tunnel

Use this command to set the dot1q-tunnel port to receive L2 protocol message. Use the **no** form of this command to disable this function.

l2protocol-tunnel { **stp | gvrp** }

no l2protocol-tunnel { **stp | gvrp** }

Parameter Description

Parameter	Description
stp	Receives stp message.
gvrp	Receives gvrp message.
no	Removes the settings.

Defaults N/A

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example enables the function of receiving L2 protocol gvrp and stp.

```
Orion_B54Q#configure
Orion_B54Q(config)# l2protocol-tunnel stp
Orion_B54Q(config)# l2protocol-tunnel gvrp
Orion_B54Q(config)#end
```

Related Commands

Command	Description
show l2protocol-tunnel { gvrp | stp }	N/A

Platform Description N/A

13.9 l2protocol-tunnel enable

Use this command to enable transparent transmission of L2 protocol message. Use the **no** form of this command to restore the default setting.

l2protocol-tunnel { **stp | gvrp** } **enable**

no l2protocol-tunnel { **stp | gvrp** } **enable**

Parameter Description

Parameter	Description
stp	Transparently transmits stp message.
gvrp	Transparently transmits gvrp message.
no	Removes the settings.

Defaults N/A

Command Mode Intereface configuration mode.

Usage Guide N/A

Configuration Examples Here is an example of enabling transparent transmission of L2 protocol message :

```
Orion_B54Q#configure
```

```
Orion_B54Q(config)# interface fa 0/1
Orion_B54Q(config-if)# l2protocol-tunnel gvrp enable
Orion_B54Q(config-if)#end
```

Related Commands

Command	Description
show l2protocol-tunnel { gvrp | stp }	N/A

Platform Description N/A

13.10 l2protocol-tunnel tunnel-dmac

Use this command to set the MAC address for the transparent transmission of the corresponding protocol messages. Use the no form of this command to restore the default setting.

l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac** *mac-address*

no l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac** *mac-address*

Parameter Description

Parameter	Description
stp	Sets the STP transparent transmission address.
gvrp	Sets the GVRP transparent transmission address.
mac-address	Sets the transparent transmission address.
no	Restore the transparent transmission address to the default value. If OUI is 001aa9 or 00d0f8, the first three bytes of the default transparent transmission address is 01d0f8, the last three bytes is 000005 for STP and 000006 for GVRP. If OUI is not 001aa9 and 00d0f8, the first three bytes is 01d0f8, the last three bytes is 000005 for STP and 000006 for GVRP.

Defaults The first three bytes of the address are 01d0f8 and the last three bytes are 000005 for **stp** and 000006 for **gvrp** by default.

Command Mode Global configuration mode.

Usage Guide N/A

Configuration Examples The following example sets the MAC address for the L2-protocol transparent transmission function:

```
Orion_B54Q(config-if)# l2protocol-tunnel gvrp tunnel-dmac 011AA9 000005
Orion_B54Q(config-if)#end
```

Related

Command	Description

Commands		
	show l2protocol-tunnel { gvrp | stp }	N/A

Platform Description N/A

13.11 mac-address-mapping index-id source-vlan src-vlan-list destination-vlan dst-vlan-id

Use this command to copy the MAC address dynamically-learned from the source VLAN to the destination VLAN. Use the **no** form of this command to restore the default setting.
mac-address-mapping *index-id* **source-vlan** *src-vlan-list* **destination-vlan** *dst-vlan-id*
no mac-address-mapping *index-id* **source-vlan** *src-vlan-list* **destination-vlan** *dst-vlan-id*

Parameter Description

Parameter	Description
index-id	Policy ID of copying MAC addresses.
src-vlan-list	Source VLAN list of copying MAC addresses.
dst-vlan-id	Destination VLAN ID of copying MAC addresses.

Defaults This function is disabled by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example copies the MAC addresses dynamically-learned from the source VLANs 1-3 to the destination VLAN 5.

```
Orion_B54Q#configure
Orion_B54Q(config)# interface gigabitEthernet 0/2
Orion_B54Q(config-if)# mac-address-mapping 1 source-vlan  1-3 destination-vlan  5
Orion_B54Q(config-if)#end
```

Related Commands

Command	Description
show interface mac-address-mapping x	N/A

Platform Description N/A

13.12 show dot1q-tunnel

Use this command to display whether dot1q-tunnel of interface is enabled or not.

show dot1q-tunnel [**interface** *intf-id*]

Parameter Description

Parameter	Description
intf-id	The specified interface.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays whether dot1q-tunnel of interface is enabled or not.

```
Orion_B54Q# show dot1q-tunnel
Ports   Dot1q-tunnel
-----   ---------
Gi0/1    Enable
```

Related Commands

Command	Description
N/A	N/A

Platform Description

13.13 show frame-tag tpid

Use this command to display the configuration of interface tpid.

show frame-tag tpid [**interface <***intf-id***>**]

Parameter Description

Parameter	Description
intf-id	Specifies the interface.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the configuration of interface tpid.

```
Orion_B54Q# show frame-tag tpid
Ports     tpid
-----  ---------
Gi0/1    0x9100
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.14 show inner-priority-trust

Use this command to display whether the priority copy function is enabled.

show inner-priority-trust

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 whether the priority copy function is enabled.

```
Orion_B54Q# show inner-priority-trust
Port    inner-priority-trust
----    ----------
Gi0/1    enable
```

Related Commands

Command	Description
N/A	N/A

Platform

Description

13.15 show interface dot1q-tunnel

Use this command to display the VLAN configuration on the dot1q-tunnel port.

show interface [*intf-Id*] **dot1q-tunnel**

Parameter Description

Parameter	Description
intf-id	Specifies the interface.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the VLAN configuration on the dot1q-tunnel port.

```
Orion_B54Q# show interface dot1q-tunnel
Interface: Gi0/3
Native vlan: 10
Allowed vlan list: 4-6, 10, 30-60
Tagged vlan list: 4, 6, 30-60
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.16 show interface intf-name remark

Use this command to display the priority mapping configuration.

show interface intf-name remark

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 priority mapping configuration.

```
Orion_B54Q# show interface intf-name remark
Ports          Type         From value  To value
-------------- ------------ ------------ --------
Gi0/1          Cos-To-Cos  3             5
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.17 show interface mac-address-mapping

Use this command to display the MAC address mapping configuration.

show interface mac-address-mapping *index-id*

Parameter Description

Parameter	Description
index-id	Policy ID of copying MAC addresses.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays the MAC address mapping configuration.

```
Orion_B54Q# show interface mac-address-mapping 1
Ports          Destination-VID  Source-VID-list
-------------- ---------------- ---------------
Gi0/1          5                   1-3
```

Related Commands

Command	Description

N/A	N/A

Platform Description N/A

13.18 show l2protocol-tunnel

Use this command to display transparent transmission configuration of L2 protocol.

show l2protocol-tunnel { **gvrp** | **stp** }

Parameter Description

Parameter	Description
gvrp	Displays configuration of transparently transmitting gvrp protocol.
stp	Displays configuration of transparently transmitting stp protocol.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays transparent transmission configuration of L2 protocol.

```
Orion_B54Q# show l2protocol-tunnel stp
L2protocol-tunnel: Stp Enable
Orion_B54Q# show l2protocol-tunnel gvrp
L2protocol-tunnel: gvrp Disable
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.19 show registration-table

Use this command to display vid add policy list of prorocol-based dot1q-tunnel port.

show registration-table [**interface** *intf-id*]

Parameter

Parameter	Description

Description

intf-id	Specifies the interface.

Defaults Null policy list.

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays vid add policy list of prorocol-based dot1q-tunnel port.

```
Orion_B54Q# show registration-table
Ports       Type    Outer-VID  Inner-VID-list
---------   ------  ------- ------------------
Gi0/7          Add-outer  5            7-10,15,20-30
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.20 show traffic-redirect

Use this command to display flow-based vid change or add policy list.

show traffic-redirect [**interface** *intf-id*]

Parameter Description

Parameter	Description
intf-id	Specifies the interface.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays flow-based vid change or add policy list.

```
Orion_B54Q# show traffic-redirect
Ports            Type            VID   Match-filter
------------ ----------- ---- ------------
```

```
Gi0/3          Mod-outer    23   11
Gi0/3          Mod-outer    3    4
Gi0/3          Mod-outer    6    5
Gi0/3          Mod-inner    8    inner-to-8
Gi0/6          Mod-inner    9    100
Gi0/7          Nested-vid   13   nest-13
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

13.21 show translation-table

Use this command to display vid modify policy list of prorocol-based access, trunk, hybrid port.

show translation-table [**interface** *intf-id*]

Parameter Description

Parameter	Description
intf-id	Specifies the interface.

Defaults N/A

Command Mode Privileged EXEC mode.

Usage Guide N/A

Configuration Examples The following example displays vid modify policy list of prorocol-based access, trunk, hybrid port.

```
Orion_B54Q# show translation-table
Ports        Type       Relay-VID  Old-local  Local\inner-VID-list
------------ ---------- ---------- ---------- ------------------
Gi0/7        Inner-CVID 8          N/A        10-20
Gi0/7        Local-SVID 1001       N/A        30-60
Gi0/7        In+Out     8          20         50
```

Related Commands

Command	Description
N/A	N/A

Platform N/A

Description

13.22 switchport dot1q-tunnel allowed vlan

Use this command to configure the allowed VLAN of dot1q-tunnel. Use the no form of this command to restore the default setting.

switchport dot1q-tunnel allowed vlan [**add**] { **tagged|untagged** } *v_list*

switchport dot1q-tunnel allowed vlan remove *v_list*

no switchport dot1q-tunnel allowed vlan

Parameter Description

Parameter	Description
add	Add allowed VLAN.
tagged	Tag-carried.
untagged	Not tag-carried.
v_list	vlan id list.
no	Remove the settings.

Defaults The default is **untagged** 1.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies vlan 3-6 of dot1q-tunnel port as allowed VLAN and outputting the frame with tag.

```
Orion_B54Q(config)#interface gigabitEthernet 0/1
Orion_B54Q(config-if)#switchport dot1q-tunnel allowed vlan tagged 3-6
Orion_B54Q(config)#end
```

Related Commands

Command	Description
show interface dot1q-tunnel	N/A

Platform Description N/A

13.23 switchport dot1q-tunnel native vlan

Use this command to configure the default vlan id of dot1q-tunnel. Use the no form of this command to restore the default setting.

switchport dot1q-tunnel native vlan *vid*
no switchport dot1q-tunnel native vlan

Parameter Description

Parameter	Description
vid	Configures default vlan id.
no	Configures default vlan as 1.

Defaults The default is VLAN 1.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies default VLAN of dot1q-tunnel port as 8.

```
Orion_B54Q(config)#interface gigabitEthernet 0/1
Orion_B54Q(config-if)#switchport dot1q-tunnel native vlan 8
Orion_B54Q(config)#end
```

Related Commands

Command	Description
show interface dot1q-tunnel	N/A

Platform Description N/A

13.24 switchport mode dot1q-tunnel

Use this command to configure the interface as the dot1q-tunnel interface. Use the **no** form of this command to restore the default setting.
switchport mode dot1q-tunnel
no switchport mode

Parameter Description

Parameter	Description
no	Deletes the corresponding dot1q-tunnel interface configuration.

Defaults The interface is not a tunnel port by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example configures the interface as the dot1q-tunnel interface.

```
Orion_B54Q(config)# interface gi 0/1
Orion_B54Q(config-if)# switchport access vlan 22
Orion_B54Q(config-if)# switchport mode dot1q-tunnel
Orion_B54Q(config)# end
```

Related Commands

Command	Description
show vlan	N/A

Platform Description N/A

13.25 traffic-redirect access-group *acl* inner-vlan *vid* out

Use this command to configure the modification policy of inner vid based on flow for the packets outputted from the access, trunk, hybrid port. Use the **no** form of this command to restore the default setting.

traffic-redirect access-group *acl* **inner-vlan** *vid* **out**

no traffic-redirect access-group *acl* **inner-vlan**

Parameter Description

Parameter	Description
acl	Flow matching.
vid	Modified inner vid
no	Removes the settings.

Defaults N/A

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies the outer vid of outgoing messages whose source address is 1.1.1.2 as 6,

```
Orion_B54Q#configure
Orion_B54Q(config)#ip access-list standard to_6
Orion_B54Q(config-std-nacl)#permit host 1.1.1.2
Orion_B54Q(config-std-nacl)#exit
Orion_B54Q(config)# interface gigabitEthernet 0/1
```

```
Orion_B54Q(config-if)# switchport mode trunk
Orion_B54Q(config-if)# traffic-redirect access-group to_6 inner-vlan 6 out
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description
show traffic-redirect	N/A

Platform Description N/A

13.26 traffic-redirect access-group acl nested-vlan *vid* in

Use this command to configure vid add policy list based on flow on dot1q-tunne port. Use the **no** form of this command to restore the default setting.

traffic-redirect access-group *acl* **nested-vlan** *vid* **in**

no traffic-redirect access-group *acl* **nested –vlan**

Parameter Description

Parameter	Description
acl	Flow matching.
vid	vid list to be added.
no	Removes the settings.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies the vid of input message whose source address is 1.1.1.3 as 9.

```
Orion_B54Q#configure
Orion_B54Q(config)#ip access-list standard 20
Orion_B54Q(config-std-nacl)#permit host 1.1.1.3
Orion_B54Q(config-std-nacl)#exit
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode dot1q-tunnel
Orion_B54Q(config-if)# traffic-redirect access-group 20 nested-vlan 10 in
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description

show traffic-redirect	N/A

Platform Description N/A

13.27 traffic-redirect access-group acl outer-vlan *vid* in

Use this command to configure the modify policy list of outer vid based on flow on access，trunk，hybrid port. Use the **no** form of this command to restore the default setting.

traffic-redirect access-group *acl* **outer-vlan** *vid* **in**

no traffic-redirect access-group *acl* **outer-vlan**

Parameter Description

Parameter	Description
acl	Flow matching.
vid	Modified outer vid list
no	Removes the settings.

Defaults The policy list is null by default.

Command Mode Interface configuration mode.

Usage Guide N/A

Configuration Examples The following example specifies outer vid of input message whose source address is 1.1.1.1 as 3.

```
Orion_B54Q# configure
Orion_B54Q(config)#ip access-list standard 2
Orion_B54Q(config-std-nacl)# permit host 1.1.1.1
Orion_B54Q(config-std-nacl)# exit
Orion_B54Q(config)# interface gigabitEthernet 0/1
Orion_B54Q(config-if)# switchport mode trunk
Orion_B54Q(config-if)# traffic-redirect access-group 2 outer-vlan 3 in
Orion_B54Q(config-if)# end
```

Related Commands

Command	Description
show traffic-redirect	N/A

Platform Description N/A

14 Management Ethernet Interface Commands

14.1 clear arp-cache oob

Use this command to delete dynamic ARP mapping records from the ARP cache table on the MGMT interface.

clear arp-cache oob [*ip* [*mask*]]

Parameter Description

Parameter	Description
ip	IP address. The ARP entry with the specified IP address is deleted. If the keyword "trusted" is specified, the trusted ARP entries are deleted. Otherwise, dynamic ARP entries are deleted.
mask	Subnet mask, that is, subnet in which ARP entries will be deleted. The IP address must be a subnet number. If the keyword "trusted" is specified, the trusted ARP entries of the subnet are deleted. Otherwise, the dynamic ARP entries of the subnet are deleted.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to update the ARP cache table.

Configuration Examples The following example deletes all dynamic ARP mapping records from the cache table.

```
clear arp-cache oob
```

The following example deletes dynamic ARP entry 1.1.1.1.

```
clear arp-cache oob 1.1.1.1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.2 clear ipv6 neighbors oob

Use this command to clear the neighbor learned dynamically.

clear ipv6 neighbors oob

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to clear the neighbor learned dynamically on the MGMT interface.

Configuration Examples The following example clears the dynamic ARP entries on the MGMT interface.

```
Orion_B54Q# clear ipv6 neighbors oob
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.3 copy

Use this command to copy the files between the local host and the network host.

copy *source-url destination-url*

Parameter Description

Parameter	Description
source-url	Source URL to copy the destination file.
destination-url	Destination URL to copy the destination file.

Defaults N/A

Command mode Privileged EXECmode

Usage Guide The **tftp** can be specified as the prefix of the command **copy** url. Modify the prefix to **oob_tftp** for the management of the copy of files in the network node.

Configuratio The following example downloads RG0S.bin from TFTP server 192.168.1.1 on the management

n Examples network.

```
Orion_B54Q#copy oob_tftp://192.168.1.1/NOS.bin flash:NOS.bin
```

The following example downloads RG0S.bin from TFTP server 2001:1::1 on the management network.

```
Orion_B54Q# copy oob_tftp://2001:1::1/NOS.bin flash:NOS.bin
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

14.4 gateway

Use this command to configure the default gateway address for the MGMT interface.

gateway *address*

Parameter Description	Parameter	Description
	address	The default gateway address for the IPv4 communication on the MGMT interface.

Defaults No gateway is configured by default,

Command mode Interface configuration mode

Usage Guide The interface type is MGMT and the interface number is constantly 0.

Configuration Examples The following example configures the default gateway for the MGMT interface:

```
Orion_B54Q#config
Orion_B54Q(config)#interface mgmt 0
Orion_B54Q(config-if-Mgmt 0)#gateway 192.168.0.1
Orion_B54Q(config-if-Mgmt 0)#end
```

Related Commands	Command	Description
	show interface mgmt	Displays the MGMT interface configurations.

Platform Description N/A

14.5 ip address

Use this command to configure the IP address and the subnet mask for the MGMT interface.

ip address *ip-address subnet-mask*

Parameter Description

Parameter	Description
ip-address	Sets the IP address.
subnet-mask	Sets the subnet mask.

Defaults N/A

Command mode Interface configuration mode

Usage Guide The interface type is MGMT and the interface number is constantly 0.

Configuration Examples The following example configures the IP address for the MGMT interface:

```
Orion_B54Q#config
Orion_B54Q(config)#interface mgmt 0
Orion_B54Q(config-if-Mgmt 0)#ip address 192.168.0.2 255.255.255.0
Orion_B54Q(config-if-Mgmt 0)#end
```

Related Commands

Command	Description
show interface mgmt	Displays the MGMT interface configuration.

Platform Description N/A

14.6 logging server oob

Use this command to specify the MGMT interface to send a log message to the Syslog server.

logging server oob *ip-address*

Parameter Description

Parameter	Description
ip-address	Sets the IP address for the destination host.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command is only used to specify the MGMT interface to send a log message to the Syslog

server.

Configuration Examples The following example sets the Syslog server IP address to 1.1.1.1.

```
Orion_B54Q(config)# logging server oob 1.1.1.1
```

Related Commands

Command	Description
logging on	Enables the log function.
show logging	Displays log packets in the cache area and related log configuration parameters.
logging trap	Sets the level of log information that can be sent to the Syslog server.

Platform Description N/A

14.7 logging server oob ipv6

Use this command to specify the MGMT interface to send a log message to the Syslog server.

logging server oob [**ipv6**] *ipv6-address*

Parameter Description

Parameter	Description
Ipv6-address	Sets the IPv6 address for the destination host.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command is only used to specify the MGMT interface to send a log to the Syslog server.

Configuration Examples The following example sets the Syslog server IPv6 address to 1000::1.

```
Orion_B54Q(config)# logging server oob ipv6 1000::1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.8 ping oob

Use this command to detect the host connectivity on the management network.

ping oob [**ip**] *ip-address*

Parameter Description	Parameter	Description
	ip-address	Sets the IP address for the destination host.

Defaults N/A

Command mode Privileged EXEC mode

Usage Guide This command is only used to detect the connectivity between the hosts on the management network..

Configuration Examples The following example detects the connectivity between host 192.168.0.1 and the MGMT interface.

```
Orion_B54Q#ping oob 192.168.0.1
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

14.9 ping oob ipv6

Use this command to detect the IPv6 connectivity between hosts on the management network.

ping oob [**ipv6**] *ipv6-address*

Parameter Description	Parameter	Description
	Ipv6-address	Sets the IPv6 address for the destination host.

Defaults N/A

Command mode Privileged EXEC mode

Usage Guide This command is only used to detect the IPv6 connectivity between the hosts on the management network.

Configuration Examples The following example detects the connectivity between host 2001:1::1 and the MGMT interface.

```
Orion_B54Q# ping oob ipv6 2001:1::1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.10 telnet oob

Use this command to remotely log in to the host on the management network connected to the MGMT interface.

telnet oob *host*

Parameter Description

Parameter	Description
host	IP address or domain name of a host.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is used to remotely log in to the host on the management network connected to the MGMT interface.

Configuration Examples The following example logs in to host 192.168.200.1 on the management network.

```
Orion_B54Q#telnet oob 192.168.200.1
```

The following example logs in to the IPv6 host 2001:1::1 on the management network.

```
Orion_B54Q# telnet oob 2001:1::1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.11 traceroute oob

Use this command to trace the route from the MGMT interface to the connected host on the

management network.

traceroute oob [**ip**] *ip-address*

Parameter Description	Parameter	Description
	ip-address	Sets the IP address for the destination host.

Defaults N/A

Command mode Privileged EXEC mode.

Usage Guide This command is used to trace the route from the MGMT interface to the connected host on the management network.

Configuration Examples The following example traces the route to host 192.168.0.1 on the management port.

```
Orion_B54Q# traceroute oob 192.168.0.1
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

14.12 traceroute oob ipv6

Use this command to trace the route to a specified IPv6 host on the management network.

traceroute oob [**ipv6**] *ipv6-address*

Parameter Description	Parameter	Description
	ipv6-address	Sets the IPv6 address for the destination host.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide This command is only used to detect the IPv6 connectivity between the hosts on the management network.

Configuration Examples The following example traces the route to a specified IPv6 host on the management network.

```
Orion_B54Q# traceroute ipv6 oob 2001:1::1
```

Related	Command	Description

Commands	N/A	N/A

Platform Description N/A

14.13 snmp-server host oob

Use this command to specify the MGMT interface to send a trap message to the NMS server.

snmp-server host oob *ip-address*

Parameter Description	Parameter	Description
	ip-address	Sets the IPv4 address for the destination host.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command is used to specify the MGMT interface to send a trap message to the NMS server.

Configuration Examples The following example sets the SNMP server IP address to 1.1.1.1.

```
Orion_B54Q(config)# snmp-server host oob 1.1.1.1
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

14.14 snmp-server host oob ipv6

Use this command to specify the MGMT interface to send a trap message to the NMS server.

snmp-server host oob [**ipv6**] *ipv6-address*

Parameter Description	Parameter	Description
	Ipv6-address	Sets the IPv6 address for the destination host.

Defaults N/A

Command Mode Global configuration mode

Usage Guide This command is used to specify the MGMT interface to send a trap message to the NMS server.

Configuration Examples The following example sets the SNMP server IP address to 1000::1.

```
Orion_B54Q(config)# snmp-server host oob ipv6 1000::1
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.15 show arp oob

Use this command to display the ARP cache table applied on the MGMT interface.

show arp oob [*ip* [*mask*] | **complete** | **incomplete** | *mac-address*]

Parameter Description

Parameter	Description
ip	Displays ARP entries of the specified IP address. If keyword **trusted** is specified, only trusted ARP entries are displayed. Otherwise, untrusted ARP entries are displayed,
mask	Displays ARP entries within the IP subnet. If keyword **trusted** is specified, only trusted ARP entries are displayed. Otherwise, untrusted ARP entries are displayed,
complete	Displays analyzed dynamic ARP entries.
incomplete	Displays unanalyzed dynamic ARP entries.
mac-address	Displays ARP entries of the specified MAC address.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays the outcome of running the **show arp** command.

```
Orion_B54Q# show arp oob
Total Numbers of Arp: 7
Protocol  Address          Age(min)  Hardware
Type   Interface
Internet  192.168.195.68   0         0013.20a5.7a5f  arpa   mgmt 0
Internet  192.168.195.67   0         001a.a0b5.378d  arpa   mgmt 0
Internet  192.168.195.65   0         0018.8b7b.713e  arpa   mgmt 0
Internet  192.168.195.64   0         0018.8b7b.9106  arpa   mgmt 0
Internet  192.168.195.63   0         001a.a0b5.3990  arpa   mgmt 0
Internet  192.168.195.62   0         001a.a0b5.0b25  arpa   mgmt 0
Internet  192.168.195.5    --        00d0.f822.33b1  arpa   mgmt 0
```

Field	Description
Protocol	The network address protocol. The field is “Internet”.
Address	The IP address corresponding to the hardware address.
Age (min)	The time period when ARP cache is preserved, measured in minutes. If this parameter is local or configured statically, it is displayed as “-”.
Hardware	The hardware address corresponding to the IP address.
Type	Both Hardware type and Ethernet address are ARPA.
Interface	The interface associated with the IP address.

The following example displays the outcome of running the **show arp oob** *192.168.195.68*.

```
Orion_B54Q# show arp oob 192.168.195.68
Protocol  Address    Age(min)  Hardware        Type   Interface
Internet  192.168.195.68   1   0013.20a5.7a5f  arpa   Mgmt 0
```

The following example displays the outcome of running the **show arp oob** *001a.a0b5.378d*.

```
Orion_B54Q# show arp 001a.a0b5.378d
Protocol  Address  Age(min)  Hardware  Type   Interface
Internet  192.168.195.67   4   001a.a0b5.378d  arpa   Mgmt 0
```

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.16 show ipv6 neighbors oob

Use this command to display the IPv6 neighbor table applied on the MGMT interface.

show ipv6 neighbors oob [**verbose**] [*ipv6-address*]

Parameter Description

Parameter	Description
verbose	Displays the detailed information about the neighbor.
ipv6-addres	Displays the information about the specified neighbor.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays information about IPv6 neighbors on the MGMT interface.

```
Orion_B54Q# show ipv6 neighbors oob
IPv6 Address Linklayer Addr   Interface
fa::1          00d0.0000.0002   Mgmt 0
fe80::200:ff:fe00:2  00d0.0000.0002  Mgmt 0
```

The following example displays detailed information about IPv6 neighbors.

```
Orion_B54Q# show ipv6 neighbors oob verbose
IPv6 Address  Linklayer Addr Interface
2001::1       00d0.f800.0001 Mgmt 0
        State: Reach/H Age: - asked: 0
fe80::200:ff:fe00:1     00d0.f800.0001 Mgmt 0
        State: Reach/H Age: - asked: 0
```

Field	Description
IPv6 Address	Neighbor IPv6 address,
Linklayer Addr	Link address (MAC address). If the address is not obtained, it is displayed as “incomplete”.
Interface	Neighbor interface.

State	Neighbor state: state/H(R) There are following values: INCMP(Incomplete)—During neighbor address resolution, the neighbor solicitation (NS) packets are sent but the device has not received response packets (neighbor advertisement packets) from the neighbor. REACH(Reachable)—indicates that the neighbor is reachable and the packets can be sent to the neighbor directly. STALE—indicates that the neighbor reachability is due and packets can be sent to the neighbor directly. Neighbor Unreachability Detection (NUD) will start. DELAY—indicates that packets are being sent to the neighbor in STALE state, and the state turns from STALE to DELAY. If the device does not receive NA packets from the neighbor in the period of DELAY_FIRST_PROBE_TIME (five seconds), the state turns from DELAY to PROBE and the device sends NS packets to the neighbor. NUD is ready to start. PROBE—indicates that NUD has been started to detect whether the neighbor is reachable. NS packets are sent to the neighbor every period (RetransTimer milliseconds) until the device receives the response packets or the number of NS packets reaches the MAX UNICAST SOLICIT, that is, 3. ?—indicates unknown status. /R—indicates that the neighbor is a device. /H—indicates that the neighbor is a host.
Age	Indicates the period during which the neighbor is considered reachable. “-” represents constant reachability while the static neighbor entries are an exception. Pay attention to whether they are reachable in reality. “expired” indicates that neighbor reachability is due and NUD will start.
Asked	Indicates the number of NS packets sent to the neighbor before the device resolves the link address of the neighbor.

Related Commands

Command	Description
N/A	N/A

Platform Description N/A

14.17 show mgmt virtual

Use this command to display the virtual MGMT interface information.

show mgmt virtual

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 MGMT interface information in the VSU.

```
Orion_B54Q# show mgmt virtual
MGMT 1/0
Virtual MGMT Member:
    1/M1/MGMT0: Active
    1/M2/MGMT0: Backup
Virtual MGMT Event:
    Last GRTD Fail: N/A
    Last Link Fail: N/A
    Last Board Fail: N/A
    Last IP-Link Fail: N/A

MGMT 2/0
Virtual MGMT Member:
    1/M1/MGMT0: Active
    1/M2/MGMT0: Backup
Virtual MGMT Event:
    Last GRTD Fail: N/A
    Last Link Fail: N/A
    Last Board Fail: N/A
    Last IP-Link Fail: N/A
```

Related Commands	Command	Description
	N/A	N/A

Platform Description N/A

15 HASH Simulator Commands

15.1 show aggregate load-balance to interface aggreateport ap-id ip *

Use this command to display IPv4 aggregate port(AP) load-balanced forwarding port.
show aggregate load-balance to interface aggregateport *ap-id* **ip** [**source** *source-ip*] [**destination** *dest-ip*] [**ip-protocol** *protocol-id*] [**l4-source-port** *src-port*] [**l4-dest-port** *dest-port*]

Parameter Description

Parameter	Description
interface aggregateport *ap-id*	AP ID
source *source-ip*	Source IPv4 address. The default is 0.0.0.0.
destination *dest-ip*]	Destination IPv4 address. The default is 0.0.0.0.
ip-protocol *protocol-id*	IPv4 protocol ID. For example, the protocol ID of UDP and TCP are 17 and 6 respectively. The default is 0.
l4-source-port *src-port*	L4 source port ID. The default is 0.
l4-dest-port *dest-port*	L4 destination port ID. The default is 0.

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Default Level 14

Usage Guide This command is used to display IPv4 AP load-balanced forwarding port. This command does not affect other services, including AP service and packet flow at the forwarding plane.

Configuration Example The following example displays IPv4 AP load-balanced forwarding port.

```
Orion_B54Q# show aggregate load-balance to interface aggregateport 1 ip
source 1.1.1.1
aggregateport load-balance mode :    Source IP
balance to port         :    GigabitEthernet 1/0/1
```

Field Description

Field	Description
aggregateport load-balance mode	Configured load-balancing mode
balance to port	Forwarding port (physical port)

15.2 show aggregate load-balance to interface aggreateport ap-id ipv6 *

Use this command to display IPv6 AP load-balanced forwarding port.

show aggregate load-balance to interface aggregateport *ap-id* **ipv6** [**source** *source-ip*] [**destination** *dest-ip*] [**ip-protocol** *protocol-id*] [**l4-source-port** *src-port*] [**l4-dest-port** *dest-port*]

Parameter Description

Parameter	Description
interface aggregateport *ap-id*	AP ID
source *source-ip*	Source IPv6 address. The default is 0000::0000.
destination *dest-ip*]	Destination IPv6 address. The default is 0000::0000.
ip-protocol *protocol-id*	IPv6 Protocol ID. For example, the protocol ID of UDP and TCP are 17 and 6 respectively. The default is 0.
l4-source-port *src-port*	L4 source port ID. The default is 0.
l4-dest-port *dest-port*	L4 destination port ID. The default is 0.

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Default Level 14

Usage Guide This command is used to display IPv6 AP load-balanced forwarding port. This command does not affect other services, including AP service and packet flow at the forwarding plane.

Configuration Example The following example displays IPv6 AP load-balanced forwarding port.

```
Orion_B54Q# show aggregate load-balance to interface aggregateport 1 ipv6
source 2001::0001
aggregateport load-balance mode :    Source IP
balance to port         :    GigabitEthernet 1/0/1
```

Field Description

15.3 show ip ecmp-nexthop *

Use this command to display IPv4 ECMP load-balanced forwarding port. **show ip ecmp-nexthop address destination** *dest-ip* [**source** *source-ip*] [**protocol** *protocol-id*] [**l4-source-port** *src-port*] [**l4-dest-port** *dst-port*] [**vrf** *vrf-name*]

Parameter Description

Parameter	Description
destination *dest-ip*	Destination IPv4 address
source *source-ip*	Source IPv4 address. The default is 0.0.0.0.

protocol *protocol-id*	IPv4 protocol ID. For example, the protocol ID of UDP and TCP are 17 and 6 respectively. The default is 0.
l4-source-port *src-port*	L4 source port ID. The default is 0.
l4-dest-port *dst-port*	L4 destination port ID. The default is 0.
vrf *vrf-name*	VRF instance

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Default Level 14

Usage Guide This command is used to display IPv4 ECMP load-balanced next hop.

Configuration Example The following example displays IPv4 ECMP load-balanced next hop.

```
Orion_B54Q#show ip ecmp-nexthop address destination 2.3.4.5
balance mode:   Destination IP
route table:    vrf 0
hit ip route, actual nexthop marked by "*":
2.0.0.0/8
  via 1.0.0.10 weight 1 *
  via 1.0.0.11 weight 1
  via 1.0.0.12 weight 1
  via 1.0.0.13 weight 1
```

Field Description

Field	Description
balance mode	Configured load-balancing mode
route table	Hit VRF instance
hit ip route, actual nexthop marked by "*":	Hit IPv4 route. The actual next hop is marked by "*".

15.4 show ipv6 ecmp-nexthop *

Use this command to display IPv6 ECMP load-balanced forwarding port.

show ipv6 ecmp-nexthop address destination *dest-ip* [**source** *source-ip*] [**next-header** *protocol-id*] [**l4-source-port** *src-port*] [**l4-dest-port** *dst-port*] [**vrf** *vrf-name*]

Parameter Description

Parameter	Description
destination *dest-ip*	(Mandatory) Destination IPv6 address
source *source-ip*	Source IPv6 address. The default is 0000::0000.
protocol *protocol-id*	IPv6 Protocol ID. For example, the protocol ID of UDP and TCP are 17 and 6 respectively. The default is 0.

l4-source-port *src-port*	L4 source port ID. The default is 0.
l4-dest-port *dst-port*	L4 destination port ID. The default is 0.
vrf *vrf-name*	VRF instance

Command Mode Privileged EXEC mode/Global configuration mode/Interface configuration mode

Default Level 14

Usage Guide This command is used to display IPv6 ECMP load-balanced next hop.

Configuration Example The following example displays IPv6 ECMP load-balanced next hop.

```
Orion_B54Q#show ipv6 ecmp-nexthop address destination 2::5
balance mode:   Destination IP
route table:    vrf 0
hit ip route, actual nexthop marked by "*":
2::/64
  via 1::10 weight 1
  via 1::11 weight 1 *
  via 1::12 weight 1
  via 1::13 weight 1
```

Field Description

Field	Description
balance mode	Configured load-balancing mode
route table	Hit VRF instance
hit ip route, actual nexthop marked by "*":	Hit IPv6 route. The actual next hop is marked by "*".