Multicast Commands

1. IPv4 Multicast Routing Commands

1. IGMP Snooping Commands

1 IPv4 Multicast Routing Commands

1.1 msf ipmc-overflow override

Use this command to enable the overflow overriding mechanism. Use the **no** or **default** form of this command to disable the overflow overriding mechanism.

msf ipmc-overflow override

no msf ipmc-overflow override

default msf ipmc-overflow override

Parameter Description

Parameter	Description
-	-

Default Disabled.

Command Mode Global configuration mode.

Usage Guide N/A

Examples The following example enables the overflow overriding mechanism.

```
Orion Alpha A28X (config)# msf ipmc-overflow override
Orion Alpha A28X (config)#
```

1.2 msf nsf

Use this command to configure the parameter for the continuous multicast forwarding. Use the **no** or **default** form of this command to restore the default setting.

msf nsf {{**convergence-time** *time*} | {**leak** *interval*} }

no msf nsf {**convergence-time** | **leak**}

default msf nsf { **convergence-time** | **leak** }

Parameter Description

Parameter	Description
convergence-time *ttl-value*	Maximum time for the multicast protocol convergence, in the valid range of the 0-3600s.
leak *interval*	Packet multicast leak time, in the valid range of 0-3600s

Default

convergence-time *time* :140s;

leak interval: 150s

Command Mode Global configuration mode.

Usage Guide N/A

Examples

The following example sets the maximum time for the protocol convergence.

```
Orion Alpha A28X (config)# msf nsf convergence-time 300
Orion Alpha A28X (config)#
```

The following example sets the packets leak time:

```
Orion Alpha A28X(config)# msf nsf leak 200
Orion Alpha A28X(config)#
```

1.3 show msf msc

Use this command to show IPv4 multi-layer multicast forwarding table.

show msf msc [*soure-address*] [*group-address*] [*vlan-id*]

Parameter Description

Parameter	Description
source-address	Specified source IP address of the multi-layer multicast forwarding table.
group-address	Specified group address of the multi-layer multicast forwarding table.
vlan-id	The Vlan id where the incoming interface of the multi-layer multicast forwarding table is. 4096 indicates a routed port.

Default

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

Usage Guide

The three parameters in this command are optional.

If no source address and group address are specified, all mfc entries are displayed.

- If only the source address is specified as s1, all msc entries with source address 1 are displayed.
- If the source address is specified as s1 and the group address as g1, all corresponding msc entries are displayed.
- If the source address is specified as s1, the group address as g1 and the vlan id as v1, all corresponding msc entries are displayed.
- Each parameter shall be input in order. Only when the parameter in front has been configured, the following one could be set.

Examples The following example shows the IPv4 layer-3 multicast forwarding entries with source IP address 192.168.195.25:

```
Orion Alpha A28X# show msf msc 192.168.195.25
Multicast Switching Cache Table
```

```
(192.168.195.23, 233.3.3.3, 1), SYNC, MTU:0, 1 OIFs
VLAN 1(0): 1 OPORTs, REQ: DONE
OPORT 6, IGMP-SNP, REQ: DONE
```

The fields in the execution of the **show mrf mfc** command are described in the following table.

Field	Description
192.168.195.23	Source address of the entry.
233.3.3.3	Group address of the entry.
1	Vlan id where the incoming interface of the entry is.
SYNC	The entry has been synchronized to the hardware.
MTU	MTU value
OIFs	Layer-3 outgoing interface number.
VLAN1(0)	The vlan where the layer-3 outgoing interface oif is.
1 OPORTs	The number of layer-2 port in the layer-3 outgoing oif.
REQ: DONE	This oif configuration on the hardware has done.
OPORT 6	The layer-2 port in the oif with index 6.
IGMP-SNP	This port is created by the IGMP SNOOPING protocol. This value can also be the PIM-SNP, which means this port is created by the PIM SNOOPING protocol. And the ROUTER means this port is created by the layer-3 protocol.
REQ: DONE	The port configuration on the hardware has done.

1.4 show msf nsf

Use this command to show the configuration of continuous multicast forwarding.

show msf nsf

Parameter Description

Parameter	Description
-	-

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

Examples

The following example shows the configuration of continuous multicast forwarding.

```
Orion Alpha A28X# show msf nsf
Multicast HA Parameters
-----------------------------------------------------+------+
protocol convergence timeout 120 secs
flow leak interval 20 secs
Orion Alpha A28X#
```

Related Commands

Command	Description
msf nsf	Configure the multicast NSF parameter.

2 IGMP Snooping Commands

2.1 clear ip igmp snooping gda-table

Use this command to clear the Group Destination Address (GDA) table.

clear ip igmp snooping gda-table

Parameter Description

Parameter	Description
N/A	N/A

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide The IGMP Snooping GDA table contains VLAN IDs (VIDs), group addresses, routing interface (static or dynamic) ID, and member interface ID. Among them, the VID and group address identify a forwarding entry; the static routing interfaces will not age and cannot be deleted by using the **clear ip igmp snooping gda-table** command.

Configuration Examples The following example clears the Group Destination Address (GDA) table.

```
Orion Alpha A28X# clear ip igmp snooping gda-table
```

Platform Description N/A

2.2 clear ip igmp snooping statistics

Use this command to clear IGMP Snooping statistics.

clear ip igmp snooping statistics

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 IGMP Snooping statistics, which can be displayed by using the **show ip igmp snooping statistics** command.

Configuratio The following example clears the IGMP Snooping statistics.

n Examples

```
Orion Alpha A28X# clear ip igmp snooping statistics
```

Platform Description N/A

2.3 deny

Use this command to deny the forwarding of the multicast streams in the range specified by the profile.

deny

Parameter Description

Parameter	Description
N/A	N/A

Defaults The forwarding of the multicast streams in the range specified by the profile is denied.

Command Mode Profile configuration mode

Usage Guide First, configure the multicast range using the range command in the profile configuration mode. In addition, the profile must be applied to the interface in order to make the profile configuration take effect.

Configuration Examples The following is an example of deny the forwarding of the multicast stream 224.2.2.2 to 224.2.2.244.

```
Orion Alpha A28X(config)# ip igmp profile 1
Orion Alpha A28X(config-profile)# range 224.2.2.2 224.2.2.244
Orion Alpha A28X(config-profile)# deny
```

Platform Description N/A

2.4 ip igmp profile

Use this command to create a profile and enter the IGMP profile configuration mode.

Use the **no** or **default** form of this command to restore the default setting.

ip igmp profile *profile-number*

no ip igmp profile *profile-number*

default ip igmp profile *profile-number*

Parameter Description

Parameter	Description
profile-number	Profile number, in the range from 1 to 1024

Defaults No profile is created by default.

Command Global configuration mode

Mode

Usage Guide The profile is a filter to permit/deny specified groups in the following steps:

- Use the **ip igmp profile** command to create a profile and enter profile configuration mode.
- Use the **range** command to define a profile range.
- Use the **permit** command to permit this profile in the filtering, or use the **deny** command to deny this profile in the filtering.
- If the **deny** command is used without any profile specified, all profiles in the profile are permitted.
- If the **permit** command is used without any profile specified, all profiles in the profile are denied.

Configuration Examples The following example creates and permits profile 1 with addresses from 224.2.2.2 to 224.2.2.244.

```
Orion Alpha A28X(config)# ip igmp profile 1
Orion Alpha A28X(config-profile)# range 224.2.2.2 224.2.2.244
Orion Alpha A28X(config-profile)# permit
```

Platform Description N/A

2.5 ip igmp snooping

Use this command to enable IGMP snooping and enter the IVGL mode.

ip igmp snooping ivgl

Use this command to enable IGMP snooping and enter the SVGL mode.

ip igmp snooping svgl

Use this command to enable IGMP snooping and enter the IVGL-SVGL mode.

ip igmp snooping ivgl-svgl

Use the **no** or **default** command to restore the default setting.

no ip igmp snooping

default ip igmp snooping

Parameter Description

Parameter	Description
N/A	N/A

Defaults IGMP Snooping is disabled by default.

Command Mode Global configuration mode

Usage Guide

- **IVGL (Independent VLAN Group Learning):** In this mode, the multicast flows in different VLANs are independent. A host can only request multicast flows to the router interface in the same VLAN. Upon receiving the multicast flow in any VLAN, the switch forwards the flow to the member port in the same VLAN.
- **SVGL (Shared VLAN Group Learning):** In this mode, the hosts in different VLANs share the same multicast flow. A host can request multicast flows across VLANs. By designating a

Shared VLAN, you can only forward the multicast flows received in this Shared VLAN to other member ports in different VLANs. In the SVGL mode, IGMP Profile must be used to divide the multicast address range, within which the multicast flow can be forwarded across VLANs. By default, all group range is not within the SVGL range and all multicast flows are dropped. As shown in Figure-3:

- **IVGL-SVGL mode:** also known as promiscuous mode. In this mode, the IVGL mode and the SVGL mode can co-exist. Use IGMP Profile to divide a set of multicast address range to the SVGL, within which the member port of the multicast forwarding entry can be forwarded across VLANs and without which the member ports are forwarded in the same VLAN.

  - SVGL mode and IVGL-SVGL mode conflict with the IP multicast function.
  - PIM Snooping must depend on either IVGL or IVGL-SVGL mode of IGMP Snooping. Use **no ip igmp snooping** command to disable IGMP Snooping after PIM Snooping is disabled.

Configuration Examples

The following example enables IGMP Snooping and enters the IVGL mode.

```
Orion Alpha A28X(config)# ip igmp snooping ivgl
```

The following example enables IGMP Snooping and enters the SVGL mode.

```
Orion Alpha A28X(config)# ip igmp snooping svgl
Orion Alpha A28X(config)# ip igmp snooping svgl profile 1
```

The following example enables IGMP Snooping and enters the IVGL-SVGL mode.

```
Orion Alpha A28X(config)# ip igmp snooping ivgl-svgl
Orion Alpha A28X(config)# ip igmp snooping svgl profile 1
```

Platform Description N/A

2.6 ip igmp snooping dyn-mr-aging-time

Use this command to set the aging time of a dynamic routing interface.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping dyn-mr-aging-time *seconds*
no ip igmp snooping dyn-mr-aging-time
default ip igmp snooping dyn-mr-aging-time

Parameter Description

Parameter	Description
seconds	Aging time from 1 to 3,600 in the unit of seconds

Defaults The default is 300 seconds.

Command Mode Global configuration mode

Usage Guide If a dynamic routing interface does not receive IGMP query packets or PIM hello packets before aged, this interface will be deleted.
When the dynamic routing interface learning function is enabled, this command sets the aging time of the routing interface. If the aging time is set too short, the routes may be added and deleted frequently.

Configuration Examples The following example sets the aging time of the routing interface that the switch learns dynamically to 100 seconds.

```
Orion Alpha A28X(config)# ip igmp snooping dyn-mr-aging-time 100
```

Platform Description N/A

2.7 ip igmp snooping fast-leave enable

Use this command to enable the fast leave function.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping fast-leave enable
no ip igmp snooping fast-leave enable
default ip igmp snooping fast-leave enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide After you execute this command to enable the fast-leave function, the system will remove the corresponding multicast group on the corresponding interface upon the receipt of the IGMP leave message.
Subsequently, when the system receives a specific group query packet, the system does not forward it to the corresponding interface. Leave packets include IGMPv2 leave packets and IGMPv3 report packets of the include type without source addresses. The fast leave function applies to scenarios in which one interface is connected to only one host. This function saves bandwidth and resources.

Configuration Examples The following example enables the fast leave function.

```
Orion Alpha A28X(config)# ip igmp snooping fast-leave
```

Platform Description N/A

2.8 ip igmp snooping port-fast-leave enable

Use this command to enable port-fast-leave.
Use the **no** or **default** form of this command to restore default settings.
ip igmp snooping port-fast-leave enable
no ip igmp snooping port-fast-leave enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, this function is disabled.

Command Mode Global configuration mode

Usage Guide With this command configured, the system will delete the multicast groups on related interfaces as it receives IGMP leave packet. Then, as it receives query packets from a specific multicast group, it can not forward this packet to the related interface. The IGMPv2 leave packet without source addresses and the IGMPv3 report message with types included are not included in the leave packet. This fast leave function applies to scenarios in which one interface is connected to only one host. This function saves bandwidth and resources.

Configuration Examples The following example enables the fast leave function.

```
Orion Alpha A28X(config)#interface gigabitEthernet 0/1
Orion Alpha A28X(config-if-GigabitEthernet 0/1)#ip igmp snooping port-fast-leave enable
```

Platform Description N/A

2.9 ip igmp snooping filter

Use this command to specify the profile for ports.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping filter *profile-number*
no ip igmp snooping filter *profile-number*
default ip igmp snooping filter

Use this command to specify the profile for VLANs.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping vlan *vlan-id* **filter** *profile-number*
no ip igmp snooping vlan *vlan-id* **filter**
default ip igmp snooping vlan *vlan-id* **filter**

Parameter

Parameter	Description

Description		
	profile-number	Profile number from 1 to 1024

Defaults This function is disabled by default.

Command Mode Global configuration mode/Interface configuration mode

Usage Guide A specific profile must be created before association.

Configuration Examples The following example specifies profile 1 for interface fastEthernet 0/1.

```
Orion Alpha A28X(config)# interface fastEthernet 0/1
Orion Alpha A28X(config-if)# ip igmp snooping filter 1
```

Platform Description N/A

2.10 ip igmp snooping host-aging-time

Use this command to configure the aging time of IGMP dynamic ports.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping host-aging-time *seconds*
no ip igmp snooping host-aging-time
default ip igmp snooping host-aging-time

Parameter Description	Parameter	Description
	seconds	Aging time. The unit is second. The value ranges from 1 to 65,535.

Defaults The default is 260 seconds.

Command Mode Global configuration mode

Usage Guide The aging time of a dynamic port is set by the system when the port receives an IGMP packet from the host for joining a certain IP multicast group.
When such an IGMP packet is received, the system resets the aging timer for the port. The duration of this timer is determined by **host-aging-time**. If the timer expires, the system determines that there is no host in this port for receiving multicast packets. The multicast device removes the port from the IGMP Snooping group. After the **ip igmp snooping host-aging-time** command is executed, the aging time will be determined by **host-aging-time**. This command takes effect only after the system receives the next IGMP packet. This command does not change the current aging time.

Configuration Examples The following example sets the aging time to 30 seconds.

```
Orion Alpha A28X(config)# ip igmp snooping host-aging-time 30
```

Related Commands	Command	Description
	N/A	N/A

Platform Description	N/A

2.11 ip igmp snooping l2-entry-limit

Use this command to set the maximum number of multicast groups.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping l2-entry-limit *number*
no ip igmp snooping l2-entry-limit
default ip igmp snooping l2-entry-limit

Parameter Description

Parameter	Description
number	Number of multicast groups. The value ranges from 0 to 65,536.

Defaults The default is 65,536.

Command Mode Global configuration mode

Usage Guide The maximum number of multicast groups includes the multicast groups in all ports of all VLANs (including dynamic and static multicast groups). When the number of multicast groups reaches the limit, learning new group records and configuring new static multicast group ports are not allowed.

Configuration Examples The following example sets the maximum number of multicast groups to 2000.

```
Orion Alpha A28X(config)# ip igmp snooping l2-entry-limit 2000
```

Related Commands

Command	Description
show ip igmp snooping	Displays the maximum number of multicast groups.

Platform Description N/A

2.12 ip igmp snooping max-groups

Use this command to configure the maximum number of groups that can be added dynamically to this interface.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping max-groups *number*
no ip igmp snooping max-groups
default ip igmp snooping max-groups

Parameter Description

Parameter	Description
number	The maximum group number from 0 to 1,024

Defaults No maximum group number is configured by default.

Command Mode	Interface configuration mode
Usage Guide	If a maximum number of multicast groups are configured, the device will no longer receive and process IGMP Report messages when the number of multicast groups on this interface is beyond the range.

Configuration Examples	The following example configures the maximum number of multicast groups to 100 on the megabit interface 0/1:
	`Orion Alpha A28X(config)# interface Ethernet 0/1`
	`Orion Alpha A28X(config-if)# ip igmp snooping max-group 100`

Platform Description	N/A

2.13 ip igmp snooping mrouter learn pim-dvmrp

Use this command to configure a device to listen to the IGMP Query/Dvmrp or PIM Help packets dynamically in order to automatically identify a routing interface
Use the **no** form of this command to disable the dynamic learning.
Use the **default** form of this command to restore the default setting.
ip igmp snooping mrouter learn pim-dvmrp
no ip igmp snooping mrouter learn pim-dvmrp
default ip igmp snooping [**vlan** *vid*] **mrouter learn pim-dvmrp**

Parameter Description

Parameter	Description
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Defaults	This function is enabled by default.
Command Mode	Global configuration mode
Usage Guide	Routing interface is a port through which a multicast device (with IGMP Snooping enabled) is directly connected to a multicast neighbouring device (with multicast routing protocols enabled). By default, the dynamic routing interface learning function is enabled. You can use the no form of this command to disable this function and clear all routing interfaces learnt dynamically. With dynamic routing interface learning function disabled globally, the function of all vlans will be disabled. Beside, with this function enabled globally, if the function of specified vlan is disabled, the dynamic routing interface learning function of the corresponding vlan is disabled. When the source port check function is enabled, only the multicast flow enters from the routing interface is legal and it is forwarded to the registered interface by the multicast equipment, the multicast flow from the non routing interface is considered to be the illegal and is discarded. With the source port check function enabled, the dynamic routing interface learning function will improve the application flexibility of IGMP snooping.

Configuration Examples The following example enables the dynamic routing interface learning function on VLAN 1.

```
Orion Alpha A28X(config)# no ip igmp snooping mrouter learn pim-dvmrp
Orion Alpha A28X(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

Platform Description N/A

2.14 ip igmp snooping preview

Use this command to allow the user to preview the specific multicast streams when the user doesn't have access to such multicast streams.
Use **no** or **default** form of this command to disable multicast preview.
ip igmp snooping preview *profile-number*
no ip igmp snooping preview
default ip igmp snooping preview

Parameter Description

Parameter	Description
profile-number	Profile number (1-1024)

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide Apply the IGMP Profile to a multicast preview function. When the user doesn't have access to the multicast streams (namely the user might be filtered by IGMP Snooping filter), it can allow the user to preview partial contents. This function shall be used in conjunction with IGMP Snooping filter or multicast control in order to realize effective multicast preview.

Configuration Examples The following example associates the profile 2 to the Ethernet 0/1 and associates multicast preview with profile 1.

```
Orion Alpha A28X(config)# ip igmp snooping preview 1
Orion Alpha A28X(config-if)# int Ethernet 0/1
Orion Alpha A28X(config-if)# ip igmp snooping filter 2
```

Platform Description N/A

2.15 ip igmp snooping preview interval

Use this command to configure the interval that allows the user to preview the specific multicast streams when the user doesn't have access to such multicast streams.
Use **no** or **default** form of this command to restore the default setting.
ip igmp snooping preview interval *seconds*

no ip igmp snooping preview interval
defaut ip igmp snooping preview interval

Parameter Description	Parameter	Description
	seconds	Preview interval from 1 to 300 in the unit of seconds

Defaults The default is 60 seconds.

Command Mode Global configuration mode

Usage Guide N/A

Configuration Examples The following example sets the multicast preview interval as 100 seconds on the 100M port of 0/1:

```
Orion Alpha A28X(config)# ip igmp snooping preview 1
Orion Alpha A28X(config)# ip igmp snooping preview interval 100
```

Platform Description N/A

2.16 ip igmp snooping querier

Use this command to enable the IGMP querier.
Use **no** or **default** form of this command to restore the default setting.
ip igmp snooping querier
no ip igmp snooping querier
default ip igmp snooping [**vlan** *vid*] **querier**

Parameter Description	Parameter	Description
	vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide After globally enabling the IGMP querier, you must enable the IGMP querier function in VLAN to activate this function.
If the IGMP querier function is disabled globally, the IGMP querier will be disabled in all VLANs.

Configuration Examples The following example enables the IGMP querier function in VLAN 2.

```
Orion Alpha A28X(config)# ip igmp snooping querier
Orion Alpha A28X(config)# ip igmp snooping vlan 2 querier
```

Platform Description N/A

2.17 ip igmp snooping querier address

Use this command to specify a source IP address for IGMP querier.

Use **no** or **default** form of this command to remove the source IP address configured.

ip igmp snooping [**vlan** *vid*] **querier address** *a.b.c.d*

no ip igmp snooping [**vlan** *vid*] **querier address**

default ip igmp snooping [**vlan** *vid*] **querier address**

Parameter Description

Parameter	Description
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.
a.b.c.d	Source IP address of the IGMP querier

Defaults N/A

Command Mode Global configuration mode

Usage Guide After enabling IGMP querier, you msut configure a source IP address for the IGMP querier to activate this function..

If the IGMP querier source IP has been specified in VLAN, the source IP configured in the relevant VLAN will be used first.

Configuration Examples The following example specifies the source IP of the IGMP querier as 1.1.1.1 on the device.

```
Orion Alpha A28X(config)# ip igmp snooping querier address 1.1.1.1
```

The following example specifies the source IP of the IGMP querier as 1.1.1.1 in VLAN 3.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 3 querier
address 1.1.1.1
```

Platform Description

2.18 ip igmp snooping querier max-response-time

Use this command to configure the maximum response time of the IGMP querier.

Use **no** or **default** form of this command to restore to the default setting.

ip igmp snooping [**vlan** *vid*] **querier max-response-time** *seconds*

no ip igmp snooping [vlan *vid* **] querier max-response-time**

default ip igmp snooping [**vlan** *vid*] **querier max-response-time**

Parameter Description

Parameter	Description
num	Maximum response time from 1 to 25 in the unit of seconds
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Defaults The default is 10 seconds.

Command Mode Global configuration mode

Usage Guide If the maximum response time has been specified in the corresponding VLAN, the value specified in VLAN will be used first.

Configuration Examples The following example specifies the maximum response time of the IGMP querier on the device.

```
Orion Alpha A28X(config)# ip igmp snooping querier max-response-time 15
```

The following example specifies the maximum response time of the IGMP querier in VLAN 3.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 3 querier max-response-time 15
```

Platform Description N/A

2.19 ip igmp snooping querier query-interval

Use this command to specify the interval for IGMP querier to send query packets.
Use **no** or **default** form of this command to restore the default setting.
ip igmp snooping querier query-interval *seconds*
no ip igmp snooping querier query-interval
default ip igmp snooping [**vlan** *vid*] **querier query-interval**

Parameter Description

Parameter	Description
seconds	Query interval from 1 to 18,000 in the unit of seconds
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Defaults The default is 60 seconds.

Command Mode Global configuration mode

Usage Guide If the query interval has been configured in the corresponding VLAN, the value specified in VLAN will be used first.

Configuration Examples The following example configures the query interval on the device.

```
Orion Alpha A28X(config)# ip igmp snooping querier query-interval 100
```

The following example configures the query interval in VLAN 3.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 3 querier query-interval 100
```

Platform Description N/A

2.20 ip igmp snooping querier timer expiry

Use this command to specify the expiration timer for non-querier.
Use **no** form of this command to restore the default setting.
ip igmp snooping [**vlan** *vid*] **querier timer expiry** *seconds*
ip igmp snooping [**vlan** *vid*] **querier timer expiry** *seconds*
default ip igmp snooping [**vlan** *vid*] **querier timer expiry**

Parameter Description

Parameter	Description
seconds	Theexpiration timer from 60 to 300 in the unit of seconds
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Defaults The default is 125 seconds.

Command Mode Global configuration mode

Usage Guide After globally enabling IGMP querier, if the device is elected as a non-querier, execute this command to change the expiration timer for non-querier.
If expiration timer has been configured in the corresponding VLAN, the value specified in VLAN will be used first.

Configuration Examples The following example configures the non-querier expiration timer on the device.

```
Orion Alpha A28X(config)# ip igmp snooping querier timer expiry 60
```

The following example configures the non-querier expiration timer in VLAN 3.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 3 querier timer expiry 60
```

Platform Description N/A

2.21 ip igmp snooping querier version

Use the following commands to specify IGMP Snooping querier version.
ip igmp snooping [**vlan** *vid*] **querier version 1**
ip igmp snooping [**vlan** *vid*] **querier version 2**
Use **no** or **default** form of this command to restore to the default setting.
no ip igmp snooping [**vlan** *vid*] **querier version**
default ip igmp snooping [**vlan** *vid*] **querier version**

Parameter Description

Parameter	Description
vlan *vid*	VLAN ID. By default, the specified version is supported on all VLANs.

Defaults The default version is IGMPv2.

Command Global configuration mode

Mode

Usage Guide If an IGMP querier version has been configured in a VLAN, the version specified in the VLAN will be used first.
IGMPv1 and IGMPv2 are supported.

Configuration Examples The following example configures IGMP querier version on the device.

```
Orion Alpha A28X(config)# ip igmp snooping querier version 1
```

The following example configures IGMP querier version on VLAN3.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 3 querier version 1
```

Platform Description N/A

2.22 ip igmp snooping query-max-response-time

Use this command to specify the time for the switch to wait for the member join message after receiving the **query** message.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping query-max-response-time *seconds*
no ip igmp snooping query-max-resposne-time
default ip igmp snooping query-max-response-time

Parameter Description

Parameter	Description
seconds	The aging time of the routing inerface that the switch learns dynamically, in the range from 1 to 65.535

Defaults The default is 10 seconds.

Command Mode Global configuration mode

Usage Guide You can specify the time for the switch to wait for the member join message after receiving the query message. If the switch does not receive the member join message in the specified time, it considers that the member has left and then deletes the member.
This command lets you adjust the waiting time after receiving the query message. This command takes effect only after the switch receives the next member join message. This command does not change the current wait time.

Configuration Examples The following examples sets the aging time of the routing interface that the switch learns dynamically to 100 seconds.

```
Orion Alpha A28X(config)# ip igmp snooping query-max-response-time 100
```

Platform Description N/A

2.23 ip igmp snooping suppression enable

Use this command to enable IGMP snooping suppression.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping suppression enable
no ip igmp snooping suppression enable
default ip igmp snooping suppression enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled by default.

Command Mode Global configuration mode

Usage Guide When this function is enabled, IGMP Snooping only forwards the first report from a specific VLAN or group, and suppresses the following reports to constrain traffic in the networks.
This function is only supported on IGMPv1 and IGMPv2 reports.

Configuration Examples The following example enables IGMP snooping suppression on the device.

```
Orion Alpha A28X(config)# ip igmp snooping suppression enable
```

Platform Description N/A

2.24 ip igmp snooping svgl profile

Use this command to specify the multicast group address range applied in the SVGL/IVGL-SVGL mode.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping svgl profile *profile-number*
no ip igmp snooping svgl profile
default ip igmp snooping svgl profile

Parameter Description

Parameter	Description
profile-number	Profile number, in the range of 1-1,024

Defaults No profile is associated.

Command Mode Global configuration mode

Usage Guide When the IGMP Snooping works in the SVGL and IVGL-SVGL mode, a profile shall be associated to specify the multicast group address range applied in the SVGL or IVGL-SVGL mode.

Configuration Examples The following example specifies the profile 2 applied in SVGL mode.

```
Orion Alpha A28X(config)# ip igmp snooping svgl profile 2
```

Platform Description N/A

2.25 ip igmp snooping svgl subvlan

Use this command to specify the subvlan of multicast VLAN.
Use the **no** or **default** form of this command to restore the default settings.
ip igmp snooping svgl subvlan [*vid-range*]
no ip igmp snooping svgl subvlan [*vid-range*]
default ip igmp snooping svgl subvlan [*vid-range*]

Parameter Description

Parameter	Description
vid-range	VLAN ID or range of VLAN ID

Defaults By default, all VLANs except shared VLANs serve as its sub VLANs.

Command Mode Global configuration mode

Usage Guide This command only takes effect in SVGL and IVGL-SVGL mode.

Configuration Examples The following example specifies VLAN 3 as the shared VLAN and VLAN 2, VLAN 5 to 7 as the sub VLANs.

```
Orion Alpha A28X(config)# ip igmp snooping svgl vlan 3
Orion Alpha A28X(config)# ip igmp snooping svgl subvlan 2,5-7
```

Platform Description N/A

2.26 ip igmp snooping svgl vlan

Use this command to specify the shared VLAN in SVGL mode.
Use the **no** form of this command to restore the default setting.
ip igmp snooping svgl vlan *vid*
no ip igmp snooping svgl vlan
default ip igmp snooping svgl vlan

Parameter Description

Parameter	Description
vid	VLAN ID

Defaults By default , the shared VLAN is VLAN 1.

Command Mode	Global configuration mode
Usage Guide	This command only works in the SVGL and IVGL-SVGL mode.

Configuration Examples	The following example specifies the vlan2 as the shared vlan
	The following example specifies VLAN 3 as the shared VLAN and VLAN 2, VLAN 5 to 7 as the sub VLANs.
	`Orion Alpha A28X(config)# ip igmp snooping svgl vlan 3`
	`Orion Alpha A28X(config)# ip igmp snooping svgl subvlan 2,5-7`

Platform Description	N/A

2.27 ip igmp snooping suppression svgl vlan enable

Use this command to enable primary VLAN suppression of SVGL of IGMP snooping.
Use the **no** or **default** form of this command to restore default settings.
ip igmp snooping suppression svgl vlan enable
no ip igmp snooping suppression svgl vlan enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults	By default, this function is enabled.
Command Mode	Global configuration mode
Usage Guide	With this function enabled, IGMP snooping will forward the first report from a specific VLAN or group only, suppress follow-up reports and restrict network traffic. This function only applies to IGMPv2 report and IGMPv2 report.
Configuration Examples	The following examples suppresses IGMP snooping SVLG VLAN.以在设备上开启 IGMP snooping the The following example enables SVGL primary VLAN suppression. `Orion Alpha A28X(config)# ip igmp snooping suppression svgl vlan enable`
Platform Description	N/A

2.28 ip igmp snooping suppression enable

Use this command to customize the function of IGMP Snooping suppressing the source IP of packets.
Use the **no** or **default** of this command to restore default settings.

ip igmp snooping suppression vlan vlan-id **sip** address
no ip igmp snooping suppression vlan vlan-id **sip**

Parameter Description

Parameter	Description
N/A	N/A

Defaults By default, the source IP address of IGMP snooping suppression is 0.0.0.0.

Command Mode Global configuration mode

Usage Guide With the IGMP snooping suppression enabled, the device can globally customize the source IP address of the report packet as well as the source address based on VLAN. The suppression can only be applied to an IGMPv1 and IGMPv2 report packet, not an IGMPv3 report packet.

Configuration Examples Customize the source IP address of report packet.

```
Orion Alpha A28X(config)# ip igmp snooping suppression vlan 1 sip 1.1.1.1
```

Platform Description N/A

2.29 ip igmp snooping tunnel

Use this command to enable 802.1Q tunneling (QinQ) support for IGMP Snooping.
Use the **no** or **default** form of this command to restore the default setting.
ip igmp snooping tunnel
no ip igmp snooping tunnel
default ip igmp snooping tunnel

Parameter Description

Parameter	Description
N/A	N/A

Defaults This function is disabled.

Command Mode Global configuration mode

Usage Guide After IGMP Snooping is enabled and dot1q-tunnel port is configured on the device, IGMP packets received from dot1q-tunnel port will be handled in two ways:

- First: QinQ transmits IGMP packets transparently. Create multicast entries in the VLAN to which the IGMP packets belong, and forward IGMP packets in the VLAN.
- For example: It is assumed that IGMP Snooping has been enabled on the device; Port A is a dot1q-tunnel port; the default VLAN of Port A is VLAN 1, and packets from VLAN 1 and VLAN 10 are allowed by Port A. When multicast requests of VLAN 10 are sent to port A, IGMP Snooping will create the multicast entry of VLAN 10 and forward the multicast requests to the

router port of VLAN 10.

- Second: Create multicast entries in the default VLAN to which the dot1q-tunnel ports belong, and forward multicast packets in the default VLAN of dot1q-tunnel port after inserting the VLAN Tag of the default VLAN of dot1q-tunnel port.
- For example: It is assumed that IGMP Snooping has been enabled on the device; Port A is a dot1q-tunnel port; the default VLAN of port A is VLAN 1, and packets from VLAN 1 and VLAN 10 are allowed Port A. When multicast requests of VLAN 10 are sent to Port A, IGMP Snooping will create the multicast entry of VLAN 1 and insert the VLAN Tag of VLAN 1 into multicast requests before forwarding the multicast requests to the router port of VLAN 1.
  By default, the second way is used.

Configuration Examples The following example enables QinQ support for IGMP Snooping.

```
Orion Alpha A28X(config)# ip igmp snooping tunnel
```

Platform Description N/A

2.30 ip igmp snooping vlan

Use this command to enable the IGMP Snooping in the specified VLAN and enter IVGL mode.
Use the **no** form of this command is used to disable the IGMP Snooping.
Use the **default** form of this command to restore the default setting.
ip igmp snooping vlan *vid*
no ip igmp snooping vlan *vid*
default ip igmp snooping vlan *vid*

Parameter Description

Parameter	Description
vid	VLAN ID in the range from 1 to 4,094

Defaults If IGMP Snooping (IVGL mode) is enabled globally, all VLANs are enabled with IGMP Snooping (IVGL mode).
If IGMP Snooping (IVGL mode) is not enabled globally, all VLANs are not enabeld with IGMP Snooping (IVGL mode).

Command Mode Global configuration mode

Usage Guide Use this command to enable or disable the IGMP snooping on the specified vlan.

- The PIM Snooping in the specified VLAN works only when IGMP Snooping is configured. To disable PIM Snooping, you must disable IGMP Snooping in the VLAN first, or disabling will fail and be prompted.

Configuration Examples The following example enters IVGL mode and disables the IGMP Snooping in the VLAN 2.

```
Orion Alpha A28X(config)# ip igmp snooping ivgl
Orion Alpha A28X(config)# no ip igmp snooping vlan 2
```

Platform Description N/A

2.31 ip igmp snooping vlan mrouter interface

Use this command to configure a static routing interface.
Use the **no** form of this command to delete a static routing interface.
Use the **default** form of this command to restore the default setting.
ip igmp snooping vlan *vid* **mrouter interface** *interface-type interface-number*
no ip igmp snooping vlan *vid* **mrouter interface** *interface-type interface-number*
default ip igmp snooping vlan *vid* **mrouter interface** *interface-type interface-number*

Parameter Description

Parameter	Description
vid	VLAN ID in the range from 1 to 4,094
interface-type interface-number	Interface ID

Defaults No static routing interface is configured by default.

Command Mode Global configuration mode

Usage Guide A dynamic routing interface is learned dynamically through IGMP Snooping. A static routing interface is configured by using this command and cannot age.
When an interface is configured as a static routing interface, all multicast streams received on this interface will be forwarded.
When the source port check function is enabled, only the multicast flows from the routing interface are forwarded, and other flows will be discarded.

Configuration Examples The following example configures a static routing interface.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 1 mrout erinterface
fastEthernet 0/1
```

Platform Description N/A

2.32 ip igmp snooping vlan static interface

Use this command to configure a static member interface of a multicast group.
Use the **no** form of this command to delete a static member interface from a multicast group.
Use the **default** form of this command to restore the default setting.
ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*
no ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*
default ip igmp snooping vlan *vid* **static** *group-address* **interface** *interface-type interface-number*

Parameter Description

Parameter	Description
vid	VLAN ID in the range from 1 to 4,094
ip-addr	Multicast IP address
interface-id	Interface ID

Defaults No static member interface of any multicast group is configured by default.

Command Mode Global configuration mode

Usage Guide The IGMP Snooping GDA table contains VLAN IDs (VIDs), group addresses, routing interface (static or dynamic) ID, and member interface ID. Among them, the VID and group address identify a forwarding entry; the static routing interfaces will not age and cannot be deleted by using the **clear ip igmp snooping gda-table** command.

Configuration Examples The following example configures a static member interface for the multicast group 224.1.1.1.

```
Orion Alpha A28X(config)# ip igmp snooping vlan 1 static 224.1.1.1
interface GigabitEthernet 0/1
```

Platform Description N/A

2.33 permit

Use this command to permit the multicast forwarding for specified ranges of a specified profile.
permit

Parameter Description

Parameter	Description
N/A	N/A

Defaults The forwarding of the multicast streams in the range specified by the profile is denied.

Command Mode Profile configuration mode

Usage Guide A profile is used to filter a group of multicast packets, so as to assist other features.
Configuration steps:

1. Use the **ip igmp profile** command to create a profile and enter profile configuration mode.
1. Use the **range** command to define a range for the profile.
2. Use the **permit** command to permit the multicast forwarding for the profile.

Configuration Examples The following example permits the forwarding of the multicast streams from 224.2.2.2 to 224.2.2.244 of profile 1.

```
Orion Alpha A28X(config)# ip igmp profile 1
Orion Alpha A28X(config-profile)# range 224.2.2.2 224.2.2.244
```

```
Orion Alpha A28X(config-profile)# permit
```

Platform Description N/A

2.34 range

Use this command to define a range for a specific profile.

Use the **no** form of the command to remove the range from the profile.

range *low-ip-address* [*high-ip-address*]

no range *low-ip-address* [*high-ip-address*]

Parameter Description

Parameter	Description
low-ip-address	Start address of a range
high-ip-address	End address of a range

Defaults No range is defined for a profile by default.

Command Mode Profile configuration mode

Usage Guide A profile is used to filter a group of multicast packets, so as to assist other features.

Configuration steps:

1. Use the **ip igmp profile** command to create a profile and enter profile configuration mode.
1. Use the **range** command to define a range for the profile.
2. Use the **permit** command to permit the multicast forwarding for the profile.

Configuration Examples The following is an example of allowingpermits the forwarding of the multicast streams from 224.2.2.2 to 224.2.2.244: of profile 1.

```
Orion Alpha A28X(config)# ip igmp profile 1
Orion Alpha A28X(config-profile)# range 224.2.2.2 224.2.2.244224.2.2.2
Orion Alpha A28X(config-profile)# permit
```

Platform Description N/A

2.35 show ip igmp profile

Use this command to display the profile information.

show ip igmp profile

show ip igmp profile *profile-number*

Parameter Description

Parameter	Description
profile-number	Displays configuration information of the designated profile.

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide Use this command to display the profile information.

Configuration Examples The following example displays the profile information.

```
Orion Alpha A28X(config-if)# show ip igmp profile
Profile 1
Permit
range 224.0.1.0, 239.255.255.255
```

2.36 show ip igmp snooping

Use this command to display related information of IGMP Snooping.

show ip igmp snooping [**gda-table** | **interfaces** *interface-type interface-number* | **mrouter**| **statistics** [**vlan** *vlan-id*] | **querier** [**detail | vlan** *vid*] | **user-info**]

Parameter Description

Parameter	Description
vlan *vid*	VLAN ID. By defualt, IGMP Snooping information of all VLANs are displayed.
interface-type interface-number	Interface type and number

Defaults N/A

Command Mode Privileged EXEC mode

Usage Guide N/A

Configuration Examples The following example displays global IGMP Snooping information.

```
Orion Alpha A28X#show ip igmp snooping
IGMP Snooping running mode: IVGL
IGMP Snooping L2-entry-limit: 65536
Source port check: Disable
Source ip check: Disable
IGMP Fast-Leave: Disable
IGMP Report suppress: Disable
IGMP Global Querier: Disable
IGMP Preview: Disable
IGMP Tunnel: Disable
IGMP Snooping version: 2
IGMP Snooping version: 2IGMP Preview group aging time : 60(Seconds)
Dynamic Mroute Aging Time : 300(Seconds)
```

```
Dynamic Host Aging Time : 260(Seconds)
```

The following example displays VLAN1 IGMP Snooping information.

```
Orion Alpha A28X#show ip igmp snooping vlan 1
IGMP Snooping running mode: IVGL
IGMP Snooping L2-entry-limit: 65536
Global IGMPv2 Fast-Leave :Disable
Global multicast router learning mode :Enable
Query Max Response Time: 10 (Seconds)
Dynamic Mroute Aging Time : 300(Seconds)
Dynamic Host Aging Time : 260(Seconds)

vlan 1
-------------
IGMP Snooping state: Enable
Multicast router learning mode: pim-dvmrp
IGMP Fast-Leave: Disable
IGMP VLAN querier: Disable
IGMP VLAN Mode: STATIC
```

Platform Description N/A