

FSOS
GMRP Configuration

Contents

1. GMRP Configuration.....	1
1.1 Brief Introduction to GMRP.....	1
1.2 GMRP Configuration.....	1
1.2.1 Enabling GMRP.....	1
1.2.2 Add Requisite Static Route Forwarded by GMRP.....	1
1.2.3 Displaying and Maintain GMRP.....	2
1.2.4 GMRP Configuring Examples.....	2

1. GMRP Configuration

1.1 Brief Introduction to GMRP

GMRP (GARP Multicast Registration Protocol) is a kind of application of GARP (Generic Attribute Registration Protocol), which is based on GARP working mechanism to maintain the dynamic multicast register information in switch. All switches supported GMRP can receive multicast register information from other switches and upgrade local multicast register information dynamically and transfer it to other switches to make the consistency of multicast information of devices supported GMRP in the same switching network. Multicast register information transferred by GMRP includes local manual configuration of static multicast register information and the dynamic multicast register information of other switch.

1.2 GMRP Configuration

1.2.1 Enabling GMRP

Enable GMRP needs in both globally and port configuration. By default, GMRP disable in both globally and port configuration.

Table 1-1 Enable GMRP

Operation	Command	Remark
Enter globally configuration mode	configure terminal	-
Enable GMRP in global configuration mode	gmrp	required
Enter port configuration	interface ethernet device/slot/port	-
Enable GMRP in port configuration mode	gmrp	required

1.2.2 Add Requisite Static Route Forwarded by GMRP

It forwards dynamically broadcast learning from GMRP when startup GMRP, but it is necessary for administrator to configure manually when GMRP forwards local static broadcast.

Table 1-2 Add requisite static route forwarded by GMRP

Operation	Command	Remark
Enter globally configuration mode	configure terminal	-

Add requisite static route forwarded by GMRP	garp permit multicast mac-address mac vlan <i>vid</i>	required
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1.2.3 Displaying and Maintain GMRP

After finishing above configuration, you can use below commands to show GMRP client configuration.

Table 1-3 Display and maintain GMRP

Operation	Command	Remark
display GMRP in globally configuration mode	show gmrp	Perform either of the commands
Display GMRP in port configuration mode	show gmrp interface [ethernet interface-n um]	
Display GMRP permit multicast	show garp permit multicast	
Display local broadcast (including static and learning broadcast by GMRP)	show multicast	

1.2.4 GMRP Configuring Examples

As shown below, S1 and S3 by GMRP protocol packets to its own static multicast information circular to S2, S2 by GMRP packets will be learned by GMRP multicast information circular to go out in the end, making S1, S2, S3 the multicast information to be synchronized.



MAC 01:00:5e:01:01:01 VLAN 111

MAC 01:00:5e:03:03:03 VLAN 333

Figure 1-1 network

Configuration steps:

!Configuration on S1

!Before configuration

Switch(config)#vlan 111,333

Switch(config-if-vlan)#switchport ethernet 0/0/1 to ethernet 0/0/10

Add VLAN port successfully.

Switch(config)#multicast mac-address 01:00:5e:01:01:01 vlan 111

```
adding multicast group successfully !
Switch(config)#multicast mac-address 01:00:5e:01:01:01 vlan 111 interface
ethernet 0/0/1 to ethernet 0/0/10
adding multicast group port successfully !
Switch(config-if-vlan)#interface e 0/0/1
Switch(config-if-ethernet-0/0/1)#switchport mode trunk
Switch(config-if-ethernet-0/0/1)#exit
!Configure GMRP
Switch(config)#gvrp
Turn on GVRP successfully.
Switch(config)#gmrp
Turn on GMRP successfully.
Switch(config)#garp permit vlan 111,333
Switch(config)#garp permit multicast mac-address 01:00:5e:01:01:01 vlan
111
Switch(config)#interface e 0/0/1
Switch(config-if-ethernet-0/0/1)#gvrp
Switch(config-if-ethernet-0/0/1)#gmrp
Switch(config-if-ethernet-0/0/1)#exit
!GVRP configuration verification
Switch(config)#show gmrp
GMRP status : enable
Switch(config)#show gmrp interface ethernet 0/0/1
port      GMRP status
e0/0/1   enable
Total entries: 1.
Switch(config)#show garp permit multicast
GARP permit multicast:
  vlan  111, mac 01:00:5e:01:01:01
*****
```

!Configuration on S2

!Before configuration

```
Switch(config)#interface range ethernet 0/0/2 to ethernet 0/0/3
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#exit
!Configure GMRP
Switch(config)#gvrp
Turn on GVRP successfully
Switch(config)#gmrp
Turn on GMRP successfully.
Switch(config)#interface range ethernet 0/0/2 to ethernet 0/0/3
Switch(config-if-range)#gvrp
Switch(config-if-range)#gmrp
Switch(config-if-range)#exit
```

!GVRP configuration verification

```
Switch(config)#show gmrp
GMRP state : enable
Switch(config)#show gmrp interface ethernet 0/0/2 ethernet 0/0/3
port      GMRP status
e0/0/2   enable
e0/0/3   enable
Total entries: 2.
*****
```

!Configuration on S3

```
*****
```

!Before configuration

```
Switch(config)#vlan 111,333
Switch(config-if-vlan)#switchport ethernet 0/0/1 to ethernet 0/0/10
Add VLAN port successfully.
Switch(config)#multicast mac-address 01:00:5e:03:03:03 vlan 333
adding multicast group successfully !
Switch(config)#multicast mac-address 01:00:5e:03:03:03 vlan 333 interface
ethernet 0/0/1 to ethernet 0/0/10
adding multicast group port successfully !
Switch(config-if-vlan)#interface e 0/0/4
Switch(config-if-ethernet-0/0/4)#switchport mode trunk
Switch(config-if-ethernet-0/0/4)#exit
```

!Configure GMRP

```
Switch(config)#gvrp
Turn on GVRP successfully.
Switch(config)#gmrp
Turn on GMRP successfully.
Switch(config)#garp permit vlan 111,333
Switch(config)#garp permit multicast mac-address 01:00:5e:03:03:03 vlan
333
Switch(config)#interface e 0/0/4
Switch(config-if-ethernet-0/0/4)#gvrp
Switch(config-if-ethernet-0/0/4)#gmrp
Switch(config-if-ethernet-0/0/4)#exit
```

!GVRP configuration verification

```
Switch(config)#show gmrp
GMRP status : enable
Switch(config)#show gmrp interface ethernet 0/0/4
port      GMRP status
e0/0/4   enable
Total entries: 1.
Switch(config)#show garp permit multicast
GARP permit multicast:
  vlan 333, mac 01:00:5e:03:03:03
```

After configuration is complete, you can show multicast command to view the function of learning to GMRP multicast registration information.

!View the multicast information in S1 can be found, 01:00:5 e: 03:03:03 is learned by GMRP multicast.

```
Switch(config)#show multicast
show multicast table information
MAC Address      : 01:00:5e:01:01:01
VLAN ID         : 111
Static port list : e0/0/1-e0/0/10.
IGMP port list  :
Dynamic port list :
```

```
MAC Address      : 01:00:5e:03:03:03
VLAN ID         : 333
Static port list :
IGMP port list  :
Dynamic port list : e0/0/1.
```

Total entries: 2 .

! To view the multicast information on S3 can be found, 01:00:5 e: 01:01:01 and 01:00:5 e: 03:03:03 through learning to GMRP multicast.

```
Switch(config)#show multicast
show multicast table information
MAC Address      : 01:00:5e:01:01:01
VLAN ID         : 111
Static port list :
IGMP port list  :
Dynamic port list : e0/0/2.
```

```
MAC Address      : 01:00:5e:03:03:03
VLAN ID         : 333
Static port list :
IGMP port list  :
Dynamic port list : e0/0/3.
```

Total entries: 2 .

!View multicast information on S3 can be found, 01:00:5 e: 01:01:01 by GMRP multicast learn.

```
Switch(config)#show multicast
show multicast table information
MAC Address      : 01:00:5e:01:01:01
VLAN ID         : 111
```

Static port list :
IGMP port list :
Dynamic port list : e0/0/4.

MAC Address : 01:00:5e:03:03:03
VLAN ID : 333
Static port list : e0/0/1-e0/0/10.
IGMP port list :
Dynamic port list :

Total entries: 2 .