

S8500关于实现GVRP技术介绍

一、简单原理介绍

GVRP (GARP VLAN Registration Protocol) 是GARP的一种应用, 它基于GARP的工作机制, 维护交换机中的VLAN动态注册信息, 并传播该信息到其它的交换机中。所有支持GVRP特性的交换机能够接收来自其它交换机的VLAN注册信息, 并动态更新本地的VLAN注册信息, 包括当前的VLAN成员、这些VLAN成员可以通过哪个端口到达等。而且所有支持GVRP特性的交换机能够将本地的VLAN注册信息向其它交换机传播, 以使同一交换网内所有支持GVRP特性的设备的VLAN信息达成一致。GVRP传播的VLAN注册信息既包括本地手工配置的静态注册信息, 也包括来自其它交换机的动态注册信息。

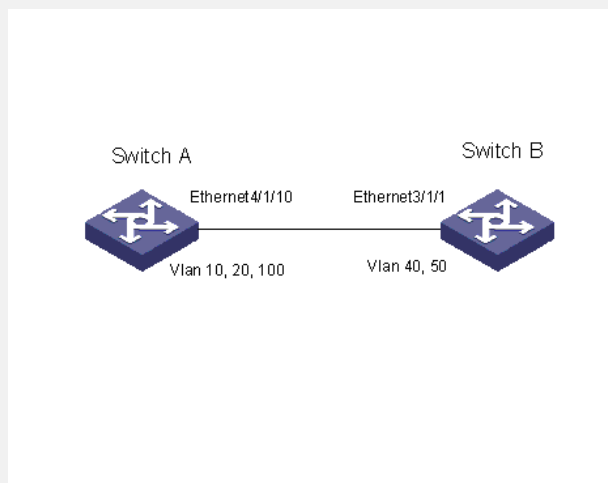
GVRP在IEEE 802.1Q标准文本中有详细的表述。Quidway系列交换机对符合IEEE标准的GVRP提供完备的支持。

二、S8500典型配置实例

2.1 组网需求

为了实现交换机之间VLAN信息的动态注册和更新, 需要在交换机上启动GVRP。

2.2 组网图



2.3 配置命令

开启全局GVRP。

Switch A的基本配置:

```
[Switch A] gvrp
```

```
[Switch A]vlan 10
```

```
[Switch A]vlan 20
```

```
[Switch A]vlan 100
```

将以太网端口eth4/1/10配置为Trunk端口, 并允许所有VLAN通过。

```
[Switch A] interface eth4/1/10
```

```
[Switch A-Ethernet4/1/10] port link-type trunk
```

```
[Switch A-Ethernet4/1/10] port trunk permit vlan all
```

在Trunk端口上开启GVRP。

```
[Switch A-Ethernet4/1/10] gvrp
```

Switch B的基本配置:

开启全局GVRP。

```
[Quidway] gvrp
```

```
[Switch A]vlan 40
```

```
[Switch A]vlan 50
```

将以太网端口Ethernet4/1/1配置为Trunk端口, 并允许所有VLAN通过。

```
[Quidway] interface Ethernet3/1/1
```

```
[Quidway-Ethernet3/1/1] port link-type trunk
```

```
[Quidway-Ethernet3/1/1] port trunk permit vlan all
```

在Trunk端口上开启GVRP。

```
[Quidway-Ethernet3/1/1] gvrp
```

三、正常状态信息查看

只启动一台交换机的GVRP后, 此交换机TRUNK口的情况, 可以看出, vlan passing

```
: 10、20、100。已经将注册的vlan自动的发布到了端口上。
<routerA>dis int eth4/1/10
Ethernet4/1/10 current state : UP
IP Sending Frames' Format is PKTFMT_ETHNT_2, Hardware address is 00e0-fc36-45b1
The Maximum Transmit Unit is 1500
Media type is twisted pair, loopback not set
Port hardware type is 100_BASE_TX
100Mbps-speed mode, full-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
Flow-control is not enabled
The Maximum Frame Length is 1552
Broadcast MAX-ratio: 50%
Allow jumbo frame to pass
PVID: 1
Mdi type: auto
Link-status hold interval:3 Sec
Port link-type: trunk
VLAN passing : 1(default vlan), 10, 20, 100
VLAN permitted: 1(default vlan), 2-4094
Trunk port encapsulation: IEEE 802.1q
GVRP is enabled
Last 300 seconds input: 0 packets/sec 104 bits/sec 0%
Last 300 seconds output: 0 packets/sec 104 bits/sec 0%
Input(total): 2968 packets, 369540 bytes
# 当所有交换机都运行了GVRP后, vlan passing: 10、20、40、50、100。可以看出
gvrp成功的将所有vlan都发布了。
[Quidway]dis int eth3/1/1
Ethernet3/1/1 current state : UP
IP Sending Frames' Format is PKTFMT_ETHNT_2, Hardware address is 00e0-fc00-0001
The Maximum Transmit Unit is 1500
Media type is twisted pair, loopback not set
Port hardware type is 100_BASE_TX
100Mbps-speed mode, full-duplex mode
Link speed type is autonegotiation, link duplex type is autonegotiation
Flow-control is not enabled
The Maximum Frame Length is 1552
Broadcast MAX-ratio: 50%
Allow jumbo frame to pass
PVID: 1
Mdi type: auto
Port link-type: trunk
VLAN passing : 1(default vlan), 10, 20, 40, 50, 100
VLAN permitted: 1(default vlan), 2-4094
Trunk port encapsulation: IEEE 802.1q
GVRP is enabled.
Last 300 seconds input: 0 packets/sec 22 bytes/sec
Last 300 seconds output: 0 packets/sec 13 bytes/sec
Input(total): 1475 packets, 106496 bytes
    330 broadcasts, 1145 multicasts
Input(normal): 1475 packets, 106496 bytes
    - broadcasts, - multicasts
Input: 0 input errors, 0 runts, 0 giants, 0 throttles, 0 CRC
    0 frame, 0 overruns, - aborts, 0 ignored, - parity errors
Output(total): 85 packets, 5440 bytes
    0 broadcasts, 85 multicasts, 0 pauses
Output(normal): 85 packets, 5440 bytes
    - broadcasts, - multicasts, 0 pauses
Output: 0 output errors, - underruns, - buffer failures
    0 aborts, 0 deferred, - collisions, 0 late collisions
    - lost carrier, - no carrier
# 看debuging信息, 也可以清楚的看出状态, 看到vlan10、20、100、40、50都join进来了:
```

*0.9074485 Quidway VLAN/8/debug_case:
Tx GVRP message on port Ethernet3/1/1

*0.9074585 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Leave All, VLAN Id = No Vlan

*0.9074733 Quidway VLAN/8/debug_case:
Rx GVRP message on port Ethernet3/1/1

*0.9074827 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join In, VLAN Id = 1

*0.9074938 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join Empty, VLAN Id = 10

*0.9075050 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join Empty, VLAN Id = 20

*0.9075160 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join Empty, VLAN Id = 100

*0.9075271 Quidway VLAN/8/debug_case:
Tx GVRP message on port Ethernet3/1/1

*0.9075373 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join In, VLAN Id = 1

*0.9075484 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join Empty, VLAN Id = 40

*0.9075595 Quidway VLAN/8/Garp event:
Vlan Attribute, Event = Join Empty, VLAN Id = 50