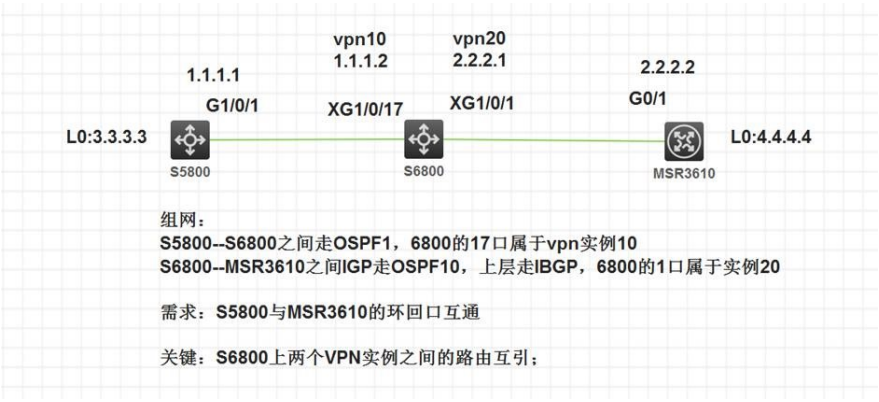
vpn-instance实例路由互引

VPDN 周凯 2020-11-03 发表

组网及说明



1

问题描述

见图

过程分析

关键点在于S6800上两个VPN实例之间如何相互引入，有两种方法：

（1）在S6800连接MSR3610上创建vlan虚接口或者子接口绑定到VPN10，在BGP vpn视图中与对端建立邻居；

（2）本地VPN实例之间进行路由复制；复制到自己VPN路由表中，再在BGP中network，使对端BGP能学到。

注意：一边全局一边vpn实例无法只能单边互引，无法将全局路由复制到VPN实例中

解决方法

S5800配置：

```
#
interface GigabitEthernet1/0/1
port link-mode bridge
#
interface Vlan-interface1
ip address 1.1.1.1 255.255.255.0
#
ospf 1
area 0.0.0.0
network 1.1.1.1 0.0.0.0
network 3.3.3.3 0.0.0.0
```

S6800配置：

```
#
ip vpn-instance 10
route-distinguisher 1:1
#
address-family ipv4
  route-replicate from vpn-instance 20 protocol direct advertise
  route-replicate from vpn-instance 20 protocol ospf 10 advertise
  route-replicate from vpn-instance 20 protocol bgp 100
#
ip vpn-instance 20
route-distinguisher 2:2
#
address-family ipv4
  route-replicate from vpn-instance 10 protocol ospf 1 advertise
#
ospf 1 vpn-instance 10
```

```
default-route-advertise always
area 0.0.0.0
 network 1.1.1.2 0.0.0.0
 network 4.4.4.4 0.0.0.0
 network 10.10.10.1 0.0.0.0
#
ospf 10 vpn-instance 20
area 0.0.0.0
 network 2.2.2.1 0.0.0.0
#
interface Vlan-interface1
ip binding vpn-instance 10
ip address 1.1.1.2 255.255.255.0
#
interface Vlan-interface2
ip binding vpn-instance 20
ip address 2.2.2.1 255.255.255.0
#
interface Ten-GigabitEthernet1/0/17
port link-mode bridge
mirroring-group 1 mirroring-port both
#
interface Ten-GigabitEthernet1/0/48
port link-mode bridge
port access vlan 10
port-isolate enable group 1
mirroring-group 1 monitor-port
#
bgp 100
#
ip vpn-instance 20
 peer 2.2.2.2 as-number 100
 #
 address-family ipv4 unicast
  network 3.3.3.3 255.255.255.255
  peer 2.2.2.2 enable
#
```

MSR3610配置：

```
#
ospf 10
area 0.0.0.0
 network 2.2.2.2 0.0.0.0
 network 4.4.4.4 0.0.0.0
#
interface LoopBack0
ip address 4.4.4.4 255.255.255.255
#
interface GigabitEthernet0/1
port link-mode route
ip address 2.2.2.2 255.255.255.0
#
```

S5800路由表：

```
<H3C>dis ip routing-table
Routing Tables: Public
         Destinations : 7        Routes : 7

Destination/Mask    Proto   Pre  Cost      NextHop         Interface

0.0.0.0/0           O_ASE   150  1         1.1.1.2         Vlan1
1.1.1.0/24          Direct  0    0         1.1.1.1         Vlan1
1.1.1.1/32          Direct  0    0         127.0.0.1       InLoop0
3.3.3.3/32          Direct  0    0         127.0.0.1       InLoop0
10.10.10.0/24       OSPF    10   2         1.1.1.2         Vlan1
127.0.0.0/8         Direct  0    0         127.0.0.1       InLoop0
127.0.0.1/32        Direct  0    0         127.0.0.1       InLoop0
```

缺省路由指向6800，到实例10中查表

S6800路由表：

```
[H3C]dis ip routing-table vpn-instance 10

Destinations : 22       Routes : 22

Destination/Mask    Proto   Pre Cost        NextHop         Interface
0.0.0.0/32          Direct  0   0           127.0.0.1       InLoop0
1.1.1.0/24          Direct  0   0           1.1.1.2         Vlan1
1.1.1.0/32          Direct  0   0           1.1.1.2         Vlan1
1.1.1.2/32          Direct  0   0           127.0.0.1       InLoop0
1.1.1.255/32        Direct  0   0           1.1.1.2         Vlan1
2.2.2.0/24          Direct  0   0           2.2.2.1         Vlan2
2.2.2.0/32          Direct  0   0           2.2.2.1         Vlan2
2.2.2.1/32          Direct  0   0           127.0.0.1       InLoop0
2.2.2.255/32        Direct  0   0           2.2.2.1         Vlan2
3.3.3.3/32          O_INTRA 10  1           1.1.1.1         Vlan1
4.4.4.4/32          O_INTRA 10  1           2.2.2.2         Vlan2
10.10.10.0/24       Direct  0   0           10.10.10.1      Vlan10
10.10.10.0/32       Direct  0   0           10.10.10.1      Vlan10
10.10.10.1/32       Direct  0   0           127.0.0.1       InLoop0
10.10.10.255/32     Direct  0   0           10.10.10.1      Vlan10
127.0.0.0/8         Direct  0   0           127.0.0.1       InLoop0
127.0.0.0/32        Direct  0   0           127.0.0.1       InLoop0
127.0.0.1/32        Direct  0   0           127.0.0.1       InLoop0
127.255.255.255/32  Direct  0   0           127.0.0.1       InLoop0
224.0.0.0/4         Direct  0   0           0.0.0.0         NULL0
224.0.0.0/24        Direct  0   0           0.0.0.0         NULL0
255.255.255.255/32  Direct  0   0           127.0.0.1       InLoop0
[H3C]
```

```
[H3C]dis ip routing-table vpn-instance 10

Destinations : 22       Routes : 22

Destination/Mask    Proto   Pre Cost        NextHop         Interface
0.0.0.0/32          Direct  0   0           127.0.0.1       InLoop0
1.1.1.0/24          Direct  0   0           1.1.1.2         Vlan1
1.1.1.0/32          Direct  0   0           1.1.1.2         Vlan1
1.1.1.2/32          Direct  0   0           127.0.0.1       InLoop0
1.1.1.255/32        Direct  0   0           1.1.1.2         Vlan1
2.2.2.0/24          Direct  0   0           2.2.2.1         Vlan2
2.2.2.0/32          Direct  0   0           2.2.2.1         Vlan2
2.2.2.1/32          Direct  0   0           127.0.0.1       InLoop0
2.2.2.255/32        Direct  0   0           2.2.2.1         Vlan2
3.3.3.3/32          O_INTRA 10  1           1.1.1.1         Vlan1
4.4.4.4/32          O_INTRA 10  1           2.2.2.2         Vlan2
10.10.10.0/24       Direct  0   0           10.10.10.1      Vlan10
10.10.10.0/32       Direct  0   0           10.10.10.1      Vlan10
10.10.10.1/32       Direct  0   0           127.0.0.1       InLoop0
10.10.10.255/32     Direct  0   0           10.10.10.1      Vlan10
127.0.0.0/8         Direct  0   0           127.0.0.1       InLoop0
127.0.0.0/32        Direct  0   0           127.0.0.1       InLoop0
127.0.0.1/32        Direct  0   0           127.0.0.1       InLoop0
127.255.255.255/32  Direct  0   0           127.0.0.1       InLoop0
224.0.0.0/4         Direct  0   0           0.0.0.0         NULL0
224.0.0.0/24        Direct  0   0           0.0.0.0         NULL0
255.255.255.255/32  Direct  0   0           127.0.0.1       InLoop0
[H3C]
```

MSR3610路由表：

```
[RT]dis ip routing-table

Destinations : 14       Routes : 14

Destination/Mask    Proto   Pre Cost        NextHop         Interface
0.0.0.0/32          Direct  0   0           127.0.0.1       InLoop0
2.2.2.0/24          Direct  0   0           2.2.2.2         GE0/1
2.2.2.0/32          Direct  0   0           2.2.2.2         GE0/1
2.2.2.2/32          Direct  0   0           127.0.0.1       InLoop0
2.2.2.255/32        Direct  0   0           2.2.2.2         GE0/1
3.3.3.3/32          BGP     255 2           2.2.2.1         GE0/1
4.4.4.4/32          Direct  0   0           127.0.0.1       InLoop0
127.0.0.0/8         Direct  0   0           127.0.0.1       InLoop0
127.0.0.0/32        Direct  0   0           127.0.0.1       InLoop0
127.0.0.1/32        Direct  0   0           127.0.0.1       InLoop0
127.255.255.255/32  Direct  0   0           127.0.0.1       InLoop0
224.0.0.0/4         Direct  0   0           0.0.0.0         NULL0
224.0.0.0/24        Direct  0   0           0.0.0.0         NULL0
255.255.255.255/32  Direct  0   0           127.0.0.1       InLoop0
```

测试结果，MSR3610学的到S5800的环回口路由，且可达；

```
[RT]ping 3.3.3.3
Ping 3.3.3.3 (3.3.3.3): 56 data bytes, press CTRL+C to break
56 bytes from 3.3.3.3: icmp_seq=0 ttl=254 time=1.101 ms
56 bytes from 3.3.3.3: icmp_seq=1 ttl=254 time=4.185 ms
56 bytes from 3.3.3.3: icmp_seq=2 ttl=254 time=1.004 ms
56 bytes from 3.3.3.3: icmp_seq=3 ttl=254 time=1.007 ms
56 bytes from 3.3.3.3: icmp_seq=4 ttl=254 time=0.962 ms

--- Ping statistics for 3.3.3.3 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 0.962/1.652/4.185/1.267 ms
[RT]%Jan 11 10:30:31:967 2016 RT PING/6/PING_STATISTICS: Ping statistics for 3.3
.3.3: 5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss, round-tri
p min/avg/max/std-dev = 0.962/1.652/4.185/1.267 ms.
```