SR66-F系列路由器VE-L3VPN接口超规格时临时规避典型配置案例

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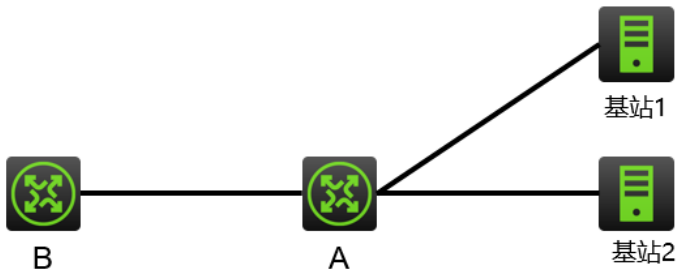
VE-L3VPN接口在IPRAN组网中至关重要，他作为L2VPN接入L3VPN的中转站起到了承上启下的作用；同时VE-L3VPN接口也作为下联基站的网关，业务下发后检测L2VPN连通性测试以及与基站互通的情况，B设备VE-L3VPN接口可以作为一个很好的节点；但是VE-L3VPN接口规格限制为255个，所以最多在B设备上配置255个网关，在部分局点实施过程中，因为各种原因可能需要临时新增业务，可以通过本案例的临时规避办法新增业务，但是在运维及规范上不符合要求，需要尽快将新业务迁移到扩容B设备；



如上图所示，我们通过该简化拓扑介绍一下配置关键点；

前面我们已经了解，目前VE-L2VPN/VE-L3VPN已经满规格，新增的基站2无法新建网关，所以规避方式是在B设备上共用已有的VSI/VE-L2VPN/VE-L3VPN接口，配置示例如下：

基础配置省略：

B设备配置：

```
pw-class 121
control-word enable
pw-type ethernet
vccv cc control-word
vccv bfd
#//
vsi 1 hub-spoke
pwsignaling ldp
  peer 2.2.2.2 pw-id 11 pw-class 1
  peer 2.2.2.2 pw-id 22 pw-class 1

interface VE-L2VPN1
xconnect vsi 1 hub

interface VE-L3VPN1
ip binding vpn-instance 2
ip address 100.1.1.1 255.255.255.252
ip address 100.1.2.1 255.255.255.252 sub
```

A配置：

```
pw-class 1
control-word enable
pw-type ethernet
vccv cc control-word

xconnect-group 1
connection 1
  ac interface GigabitEthernet1/0/14 service-instance 1 access-mode ethernet
  arp suppression enable
  peer 1.1.1.1 pw-id 11 pw-class 1
#
```

```
xconnect-group 2
connection 1
 ac interface GigabitEthernet1/0/15 service-instance 1 access-mode ethernet
 arp suppression enable
 peer 1.1.1.1 pw-id 22 pw-class 1

interface GigabitEthernet1/0/14
port link-mode bridge
service-instance 1
 encapsulation default
#
interface GigabitEthernet1/0/15
port link-mode bridge
service-instance 1
 encapsulation default
```

模拟基站配置：

```
interface GigabitEthernet1/0/0
port link-mode route
ip address 100.1.1.2 255.255.255.252

interface GigabitEthernet1/0/0
port link-mode route
ip address 100.1.2.2 255.255.255.252
```

查看PW状态信息：

```
[B2]dis l2v pw
Flags: M - main, B - backup, H - hub link, S - spoke link, N - no split horizon
Total number of PWs: 3
2 up, 0 blocked, 1 down, 0 defect, 0 idle, 0 duplicate

VSI Name: 1
Peer          PW ID/Rmt Site    In/Out Label    Proto   Flag  Link ID  State
2.2.2.2       11                133758/65663    LDP     MS    8        Up
2.2.2.2       22                133757/65662    LDP     MS    9        Up

[H3C]dis l2v pw
Flags: M - main, B - backup, H - hub link, S - spoke link, N - no split horizon
Total number of PWs: 2
2 up, 0 blocked, 0 down, 0 defect, 0 idle, 0 duplicate

Xconnect-group Name: 1
Peer          PW ID/Rmt Site    In/Out Label    Proto   Flag  Link ID  State
1.1.1.1       11                65663/133758    LDP     M     0        Up

Xconnect-group Name: 2
Peer          PW ID/Rmt Site    In/Out Label    Proto   Flag  Link ID  State
1.1.1.1       22                65662/133757    LDP     M     1        Up
```

ARP：

```
[B2]dis arp interface VE-L3VPN 1
  Type: S-Static   D-Dynamic   O-Openflow   R-Rule   M-Multiport  I-Invalid
IP address      MAC address    VLAN     Interface              Aging Type
100.1.1.2       487a-dafe-79ed N/A      L3VE1                  10    D
100.1.2.2       487a-dafe-7cbd N/A      L3VE1                  11    D

[H3C]dis arp suppression xconnect-group
IP address      MAC address    Xconnect-group      Connection          Aging
100.1.1.1       3c8c-405e-cfd1 1                   1                   14
100.1.2.1       3c8c-405e-cfd1 1                   1                   15
100.1.2.2       487a-dafe-7cbd 1                   1                   16
100.1.1.1       3c8c-405e-cfd1 2                   1                   14
```

100.1.2.1	3c8c-405e-cfd1 2	1	15
100.1.1.2	487a-dafe-79ed 2	1	15

互通测试：

```
[B2]ping -vpn-instance 2 100.1.1.2
Ping 100.1.1.2 (100.1.1.2): 56 data bytes, press CTRL_C to break
56 bytes from 100.1.1.2: icmp_seq=0 ttl=255 time=1.035 ms
56 bytes from 100.1.1.2: icmp_seq=1 ttl=255 time=0.823 ms
56 bytes from 100.1.1.2: icmp_seq=2 ttl=255 time=0.797 ms
56 bytes from 100.1.1.2: icmp_seq=3 ttl=255 time=0.961 ms
56 bytes from 100.1.1.2: icmp_seq=4 ttl=255 time=0.785 ms

--- Ping statistics for 100.1.1.2 in VPN instance 2 ---
5 packets transmitted, 5 packets received, 0.0% packet loss
round-trip min/avg/max/std-dev = 0.785/0.880/1.035/0.100 ms
[B2]
[B2]ping -vpn-instance 2 100.1.2.2
Ping 100.1.2.2 (100.1.2.2): 56 data bytes, press CTRL_C to break
56 bytes from 100.1.2.2: icmp_seq=0 ttl=255 time=0.977 ms
56 bytes from 100.1.2.2: icmp_seq=1 ttl=255 time=0.826 ms
56 bytes from 100.1.2.2: icmp_seq=2 ttl=255 time=0.847 ms
56 bytes from 100.1.2.2: icmp_seq=3 ttl=255 time=0.839 ms
56 bytes from 100.1.2.2: icmp_seq=4 ttl=255 time=0.803 ms

--- Ping statistics for 100.1.2.2 in VPN instance 2 ---
5 packets transmitted, 5 packets received, 0.0% packet loss
round-trip min/avg/max/std-dev = 0.803/0.858/0.977/0.061 ms
```

1. 新增基站共用已有基站VSI/VE-L2VPN/VE-L3VPN接口；
2. 新增网关配置为VE-L3VPN SUB地址；
3. 该方案为临时规避方案，不建议长期使用，需尽快切换；