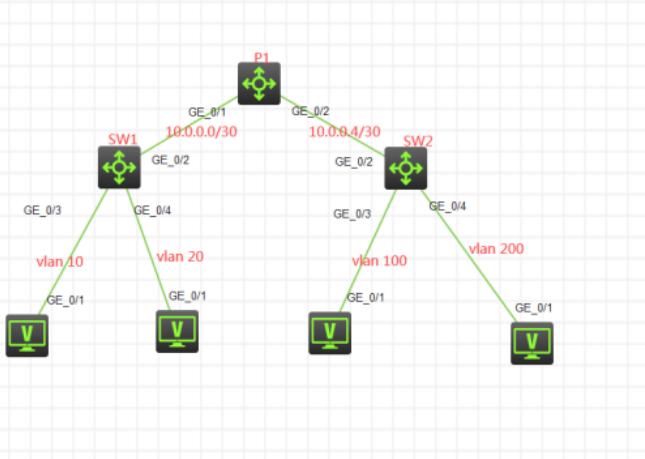


S5820 MPLS VPN IBGP典型组网配置案例

BGP MPLS L3VPN OSPF H3C模拟器 韦家宁 2020-04-05 发表

组网及说明



组网说明：

本案例采用H3C HCL模拟器的S5820交换机来模拟 MPLS VPN IBGP 典型组网配置。为了实现业务的相互隔离，需要将不同的VLAN绑定到不同的VPN实例中进行业务的互通，因此在本案例引入多实例V PN，将相关的业务进行捆绑。其中SW1、SW2属于AS100，均为PE，P1为公网的P设备，要求SW1与SW2跨越P1最终建立IBGP邻居关系，宣告业务网段，使得相同VPN实例的业务能互通，不同VPN实例的业务不能互通，为了实现SW1与SW2能跨越P1建立IBGP邻居关系，因此SW1、SW2、P1之间需要运行OSPF路由协议。

VPN实例规划如下：

VPN实例名称	RD值	RT值	业务类型	备注
vpn-rt	100:1	100:1	实时业务	
vpn-nrt	200:1	200:1	非实时业务	

IP地址规划如下：

设备名称	接口/VLAN	IP地址	子网掩码位数	所属VPN实例	备注
SW1	Gi 1/0/2	10.0.0.1	30	-	
	VLAN 10	192.168.10.1	24	vpn-rt	
	VLAN 20	192.168.20.1	24	vpn-nrt	
	Loopback 0	1.1.1.1	32	vpn-rt	Router-id
SW2	Gi 1/0/2	10.0.0.5	30	-	
	VLAN 100	172.16.10.1	24	vpn-rt	
	VLAN 200	172.16.20.1	24	vpn-nrt	
	Loopback 0	3.3.3.3	32		Router-id
P1	Gi 1/0/1	10.0.0.2	30		
	Gi 1/0/2	10.0.0.6	30		
	Loopback 0	2.2.2.2	30		Router-id

配置步骤

SW1:

```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname SW1
[SW1]int loopback 0
[SW1-LoopBack0]ip address 1.1.1.1 32
[SW1-LoopBack0]quit
#创建VPN实例，指定RD值、RT值
[SW1]ip vpn-instance vpn-rt
[SW1-vpn-instance-vpn-rt]route-distinguisher 100:1
[SW1-vpn-instance-vpn-rt]vpn-target 100:1
[SW1-vpn-instance-vpn-rt]quit
[SW1]ip vpn-instance vpn-nrt
[SW1-vpn-instance-vpn-nrt]route-distinguisher 200:1
[SW1-vpn-instance-vpn-nrt]vpn-target 200:1
[SW1-vpn-instance-vpn-nrt]quit
[SW1]mpls lsr-id 1.1.1.1
```

```
[SW1]mpls ldp
[SW1-ldp]quit
[SW1]vlan 10
[SW1-vlan10]quit
[SW1]vlan 20
[SW1-vlan20]quit
[SW1]int vlan 10
[SW1-Vlan-interface10]ip binding vpn-instance vpn-rt //将VLAN绑定到VPN实例
Some configurations on the interface are removed.
[SW1-Vlan-interface10]ip address 192.168.10.1 24
[SW1-Vlan-interface10]quit
[SW1]int vlan 20
[SW1-Vlan-interface20]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
[SW1-Vlan-interface20]ip address 192.168.20.1 24
[SW1-Vlan-interface20]quit
[SW1]int gi 1/0/3
[SW1-GigabitEthernet1/0/3]port link-mode bridge
[SW1-GigabitEthernet1/0/3]port link-type access
[SW1-GigabitEthernet1/0/3]port access vlan 10
[SW1-GigabitEthernet1/0/3]quit
[SW1]int gi 1/0/4
[SW1-GigabitEthernet1/0/4]port link-mode bridge
[SW1-GigabitEthernet1/0/4]port link-type access
[SW1-GigabitEthernet1/0/4]port access vlan 20
[SW1-GigabitEthernet1/0/4]quit
[SW1]int gi 1/0/2
[SW1-GigabitEthernet1/0/2]port link-mode route
[SW1-GigabitEthernet1/0/2]des <connect to P1>
[SW1-GigabitEthernet1/0/2]ip address 10.0.0.1 30
[SW1-GigabitEthernet1/0/2]mpls enable
[SW1-GigabitEthernet1/0/2]mpls ldp enable
[SW1-GigabitEthernet1/0/2]quit
[SW1]ospf 1 router-id 1.1.1.1
[SW1-ospf-1]area 0.0.0
[SW1-ospf-1-area-0.0.0.0]network 10.0.0.1 0.0.0.0
[SW1-ospf-1-area-0.0.0.0]network 1.1.1.1 0.0.0.0
[SW1-ospf-1-area-0.0.0.0]quit
[SW1-ospf-1]quit
[SW1]bgp 100
[SW1-bgp-default]router-id 1.1.1.1
[SW1-bgp-default]peer 3.3.3.3 as-number 100
[SW1-bgp-default]address-family ipv4 unicast //创建IPV4地址族
[SW1-bgp-default-ipv4]peer 3.3.3.3 enable
[SW1-bgp-default-ipv4]import-route direct
[SW1-bgp-default-ipv4]quit
[SW1-bgp-default]address-family vpnv4 //创建VPNV4地址族
[SW1-bgp-default-vpnv4]peer 3.3.3.3 enable
[SW1-bgp-default-vpnv4]quit
[SW1-bgp-default]ip vpn-instance vpn-rt
[SW1-bgp-default-vpn-rt]address-family ipv4 unicast
[SW1-bgp-default-ipv4-vpn-rt]network 192.168.10.0 255.255.255.0
[SW1-bgp-default-ipv4-vpn-rt]quit
[SW1-bgp-default-vpn-rt]quit
[SW1-bgp-default]ip vpn-instance vpn-nrt
[SW1-bgp-default-vpn-nrt]address-family ipv4 unicast
[SW1-bgp-default-ipv4-vpn-nrt]network 192.168.20.0 255.255.255.0
[SW1-bgp-default-ipv4-vpn-nrt]quit
[SW1-bgp-default-vpn-nrt]quit
[SW1-bgp-default]quit
```

SW2:

<H3C>sys

System View: return to User View with Ctrl+Z.

```
[H3C]sysname SW2
[SW2]int loopback 0
[SW2-LoopBack0]ip address 3.3.3.3 32
[SW2-LoopBack0]quit
[SW2]ip vpn-instance vpn-rt
[SW2-vpn-instance-vpn-rt]route-distinguisher 100:1
[SW2-vpn-instance-vpn-rt]vpn-target 100:1
[SW2-vpn-instance-vpn-rt]quit
[SW2]ip vpn-instance vpn-nrt
[SW2-vpn-instance-vpn-nrt]route-distinguisher 200:1
[SW2-vpn-instance-vpn-nrt]vpn-target 200:1
[SW2-vpn-instance-vpn-nrt]quit
[SW2]router id 3.3.3.3
[SW2]mpls lsr-id 3.3.3.3
[SW2]mpls ldp
[SW2-ldp]quit
[SW2]vlan 100
[SW2-vlan100]quit
[SW2]vlan 200
[SW2-vlan200]quit
[SW2]int vlan 100
[SW2-Vlan-interface100]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[SW2-Vlan-interface100]ip address 172.16.10.1 24
[SW2-Vlan-interface100]quit
[SW2]int vlan 200
[SW2-Vlan-interface200]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
[SW2-Vlan-interface200]ip address 172.16.20.1 24
[SW2-Vlan-interface200]quit
[SW2]int gi 1/0/3
[SW2-GigabitEthernet1/0/3]port link-mode bridge
[SW2-GigabitEthernet1/0/3]port link-type access
[SW2-GigabitEthernet1/0/3]port access vlan 100
[SW2-GigabitEthernet1/0/3]quit
[SW2]int gi 1/0/4
[SW2-GigabitEthernet1/0/4]port link-mode bridge
[SW2-GigabitEthernet1/0/4]port link-type access
[SW2-GigabitEthernet1/0/4]port access vlan 200
[SW2-GigabitEthernet1/0/4]quit
[SW2]int gi 1/0/2
[SW2-GigabitEthernet1/0/2]port link-mode route
[SW2-GigabitEthernet1/0/2]des <connect to P1>
[SW2-GigabitEthernet1/0/2]ip address 10.0.0.5 30
[SW2-GigabitEthernet1/0/2]mpls enable
[SW2-GigabitEthernet1/0/2]mpls ldp enable
[SW2-GigabitEthernet1/0/2]quit
[SW2]ospf 1 router-id 3.3.3.3
[SW2-ospf-1]area 0.0.0.0
[SW2-ospf-1-area-0.0.0.0]network 10.0.0.5 0.0.0.0
[SW2-ospf-1-area-0.0.0.0]network 3.3.3.3 0.0.0.0
[SW2-ospf-1-area-0.0.0.0]quit
[SW2-ospf-1]quit
[SW2]bgp 100
[SW2-bgp-default]router-id 3.3.3.3
[SW2-bgp-default]peer 1.1.1.1 as-number 100
[SW2-bgp-default]address-family ipv4 unicast
[SW2-bgp-default-ipv4]peer 1.1.1.1 enable
[SW2-bgp-default-ipv4]import-route direct
[SW2-bgp-default-ipv4]quit
[SW2-bgp-default]address-family vpnv4
[SW2-bgp-default-vpnv4]peer 1.1.1.1 enable
[SW2-bgp-default-vpnv4]quit
[SW2-bgp-default]ip vpn-instance vpn-rt
```

```
[SW2-bgp-default-vpn-rt]address-family ipv4 unicast
[SW2-bgp-default-ipv4-vpn-rt]network 172.16.10.0 255.255.255.0
[SW2-bgp-default-ipv4-vpn-rt]quit
[SW2-bgp-default-vpn-rt]quit
[SW2-bgp-default]ip vpn-instance vpn-nrt
[SW2-bgp-default-vpn-nrt]address-family ipv4 unicast
[SW2-bgp-default-ipv4-vpn-nrt]network 172.16.20.0 255.255.255.0
[SW2-bgp-default-ipv4-vpn-nrt]quit
[SW2-bgp-default-vpn-nrt]quit
[SW2-bgp-default]quit
[SW2]
```

P1:

```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname P1
[P1]int loopback 0
[P1-LoopBack0]ip address 2.2.2.2 32
[P1-LoopBack0]quit
[P1]router id 2.2.2.2
[P1]mpls lsr-id 2.2.2.2
[P1]mpls ldp
[P1-ldp]quit
[P1]int gi 1/0/1
[P1-GigabitEthernet1/0/1]port link-mode route
[P1-GigabitEthernet1/0/1]des <connect to SW1>
[P1-GigabitEthernet1/0/1]ip address 10.0.0.2 30
[P1-GigabitEthernet1/0/1]mpls enable
[P1-GigabitEthernet1/0/1]mpls ldp enable
[P1-GigabitEthernet1/0/1]quit
[P1]int gi 1/0/2
[P1-GigabitEthernet1/0/2]port link-mode route
[P1-GigabitEthernet1/0/2]des <connect to SW2>
[P1-GigabitEthernet1/0/2]ip address 10.0.0.6 30
[P1-GigabitEthernet1/0/2]mpls enable
[P1-GigabitEthernet1/0/2]mpls ldp enable
[P1-GigabitEthernet1/0/2]quit
[P1]ospf 1 router-id 2.2.2.2
[P1-ospf-1]area 0.0.0.0
[P1-ospf-1-area-0.0.0.0]network 2.2.2.2 0.0.0.0
[P1-ospf-1-area-0.0.0.0]network 10.0.0.2 0.0.0.0
[P1-ospf-1-area-0.0.0.0]network 10.0.0.6 0.0.0.0
[P1-ospf-1-area-0.0.0.0]quit
[P1-ospf-1]quit
```

PC都填写IP地址：

配置PC_3

接口	状态	IPv4地址	IPv6地址
G0/0/1	UP	192.168.10.2/24	

刷新

接口管理
 禁用 启用

IPv4配置：

DHCP
 静态

IPv4地址：
掩码地址：
IPv4网关：

启用

配置PC_4

接口	状态	IPv4地址	IPv6地址
G0/0/1	UP	192.168.20.2/24	

刷新

接口管理
 禁用 启用

IPv4配置：

DHCP
 静态

IPv4地址：
掩码地址：
IPv4网关：

启用

配置PC_5

接口	状态	IPv4地址	IPv6地址
G0/0/1	UP	172.16.10.2/24	

刷新

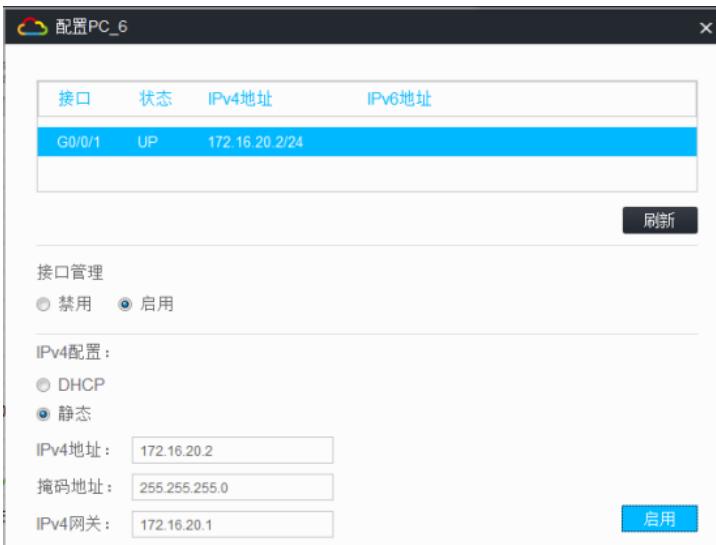
接口管理
 禁用 启用

IPv4配置：

DHCP
 静态

IPv4地址：
掩码地址：
IPv4网关：

启用



相同VPN实例的业务可以互通，不同VPN实例的业务不可以互通：

```

h3c_wsec51
SS820V2-54QS-GE_1 SS820V2-54QS-GE_2 PC_3 PC_4 PC_5 PC_6
<H3C>
<H3C>ping 172.16.10.2
Ping 172.16.10.2 (172.16.10.2): 56 data bytes, press CTRL_C to break
56 bytes from 172.16.10.2: icmp_seq=0 ttl=253 time=3.000 ms
56 bytes from 172.16.10.2: icmp_seq=1 ttl=253 time=2.000 ms
56 bytes from 172.16.10.2: icmp_seq=2 ttl=253 time=3.000 ms
56 bytes from 172.16.10.2: icmp_seq=3 ttl=253 time=4.000 ms
56 bytes from 172.16.10.2: icmp_seq=4 ttl=253 time=3.000 ms
--- Ping statistics for 172.16.10.2 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 2.000/3.000/4.000/0.632 ms
<H3C>%Apr 5 18:09:10:021 2020 H3C PING/6/PING_STATISTICS: Ping statistics for 172.16.10.2
p min/avg/max/std-dev = 2.000/3.000/4.000/0.632 ms.

<H3C>ping 172.16.20.2
Ping 172.16.20.2 (172.16.20.2): 56 data bytes, press CTRL_C to break
Request time out

--- Ping statistics for 172.16.20.2 ---
5 packet(s) transmitted, 0 packet(s) received, 100.0% packet loss

```

```

h3c_wsec51
SS820V2-54QS-GZ_1 SS820V2-54QS-GE_2 PC_3 PC_4 PC_5 PC_6

<H3C>ping 172.16.20.2
Ping 172.16.20.2 (172.16.20.2): 56 data bytes, press CTRL_C to break
56 bytes from 172.16.20.2: icmp_seq=0 ttl=255 time=0.000 ms
56 bytes from 172.16.20.2: icmp_seq=1 ttl=255 time=0.000 ms
56 bytes from 172.16.20.2: icmp_seq=2 ttl=255 time=0.000 ms
56 bytes from 172.16.20.2: icmp_seq=3 ttl=255 time=0.000 ms
56 bytes from 172.16.20.2: icmp_seq=4 ttl=255 time=0.000 ms
--- Ping statistics for 172.16.20.2 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 0.000/0.000/0.000/0.000 ms
<H3C>%Apr 5 18:09:54:441 2020 H3C PING/6/PING_STATISTICS: Ping statistics for 172.16.20.2
: 5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss, round-trip min/avg/max/
std-dev = 0.000/0.000/0.000 ms.

<H3C>ping 172.16.10.2
Ping 172.16.10.2 (172.16.10.2): 56 data bytes, press CTRL_C to break
Request time out

--- Ping statistics for 172.16.10.2 ---

```

```

<H3C>ping 192.168.10.2
Ping 192.168.10.2 (192.168.10.2): 56 data bytes, press CTRL_C to break
56 bytes from 192.168.10.2: icmp_seq=0 ttl=253 time=4.000 ms
56 bytes from 192.168.10.2: icmp_seq=1 ttl=253 time=3.000 ms
56 bytes from 192.168.10.2: icmp_seq=2 ttl=253 time=2.000 ms
56 bytes from 192.168.10.2: icmp_seq=3 ttl=253 time=1.000 ms
56 bytes from 192.168.10.2: icmp_seq=4 ttl=253 time=2.000 ms

--- Ping statistics for 192.168.10.2 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 1.000/2.400/4.000/1.020 ms
<H3C>*Apr 5 18:10:32:935 2020 H3C PING/6/PING_STATISTICS: Ping statistics for 192.168.10.2: 5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss, round-trip min/avg/max/std-dev = 1.000/2.400/4.000/1.020 ms.

<H3C>ping 192.168.20.2
Ping 192.168.20.2 (192.168.20.2): 56 data bytes, press CTRL_C to break
Request time out

```

```

<H3C>ping 192.168.20.2
Ping 192.168.20.2 (192.168.20.2): 56 data bytes, press CTRL_C to break
56 bytes from 192.168.20.2: icmp_seq=0 ttl=253 time=3.000 ms
56 bytes from 192.168.20.2: icmp_seq=1 ttl=253 time=2.000 ms
56 bytes from 192.168.20.2: icmp_seq=2 ttl=253 time=2.000 ms
56 bytes from 192.168.20.2: icmp_seq=3 ttl=253 time=2.000 ms
56 bytes from 192.168.20.2: icmp_seq=4 ttl=253 time=2.000 ms

--- Ping statistics for 192.168.20.2 ---
5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss
round-trip min/avg/max/std-dev = 2.000/2.200/3.000/0.400 ms
<H3C>*Apr 5 18:14:14:157 2020 H3C PING/6/PING_STATISTICS: Ping statistics for 192.168.20.2: 5 packet(s) transmitted, 5 packet(s) received, 0.0% packet loss, round-trip min/avg/max/std-dev = 2.000/2.200/3.000/0.400 ms.

<H3C>ping 192.168.10.2
Ping 192.168.10.2 (192.168.10.2): 56 data bytes, press CTRL_C to break
Request time out

```

查看SW1的OSPF邻居状态：

```

<SW1>dis ospf peer
OSPF Process 1 with Router ID 1.1.1.1
      Neighbor Brief Information

      Area: 0.0.0.0
      Router ID      Address      Pri Dead-Time  State      Interface
      2.2.2.2        10.0.0.2      1    32          Full/DR    GE1/0/2

```

查看P1的OSPF邻居状态：

```

<P1>dis ospf peer
OSPF Process 1 with Router ID 2.2.2.2
      Neighbor Brief Information

      Area: 0.0.0.0
      Router ID      Address      Pri Dead-Time  State      Interface
      1.1.1.1        10.0.0.1      1    39          Full/BDR   GE1/0/1
      3.3.3.3        10.0.0.5      1    30          Full/DR    GE1/0/2

```

查看SW2的OSPF邻居状态：

```

<SW2>dis ospf peer
OSPF Process 1 with Router ID 3.3.3.3
      Neighbor Brief Information

      Area: 0.0.0.0
      Router ID      Address      Pri Dead-Time  State      Interface
      2.2.2.2        10.0.0.6      1    37          Full/BDR   GE1/0/2

```

查看SW1的LDP邻居状态：

```

<SW1>dis mpls ldp peer
Total number of peers: 1
Peer LDP ID           State       Role     GR     MDS KA Sent/Rcvd
2.2.2.2:0             Operational Passive Off   Off   15/15

```

查看P1的LDP邻居状态：

```
<PI>dis mpls ldp peer
Total number of peers: 2
Peer LDP ID           State      Role     GR   MD5 KA Sent/Rcvd
1.1.1.1:0             Operational Active  Off  Off  17/17
3.3.3.3:0             Operational Passive Off  Off  17/16
<PI>
```

查看SW2的LDP邻居状态:

```
<SW2>dis mpls ldp peer
Total number of peers: 1
Peer LDP ID           State      Role     GR   MD5 KA Sent/Rcvd
2.2.2.2:0             Operational Active  Off  Off  15/16
<SW2>
```

查看SW1的BGP邻居状态:

```
<SW1>dis bgp peer ipv4
BGP local router ID: 1.1.1.1
Local AS number: 100
Total number of peers: 1          Peers in established state: 1

* - Dynamically created peer
Peer          AS MsgRcvd MsgSent OutQ PrefRcv Up/Down State
3.3.3.3       100    12     12    0      2 00:04:26 Established

<SW1>dis bgp peer vpngv4
BGP local router ID: 1.1.1.1
Local AS number: 100
Total number of peers: 1          Peers in established state: 1

* - Dynamically created peer
Peer          AS MsgRcvd MsgSent OutQ PrefRcv Up/Down State
3.3.3.3       100    12     12    0      2 00:04:30 Established
<SW1>
```

查看SW2的BGP邻居状态:

```
<SW2>dis bgp peer ipv4
BGP local router ID: 3.3.3.3
Local AS number: 100
Total number of peers: 1          Peers in established state: 1

* - Dynamically created peer
Peer          AS MsgRcvd MsgSent OutQ PrefRcv Up/Down State
1.1.1.1       100    13     13    0      2 00:04:20 Established

<SW2>dis bgp peer vpngv4
BGP local router ID: 3.3.3.3
Local AS number: 100
Total number of peers: 1          Peers in established state: 1

* - Dynamically created peer
Peer          AS MsgRcvd MsgSent OutQ PrefRcv Up/Down State
1.1.1.1       100    13     13    0      2 00:04:24 Established
<SW2>
```

查看SW1 VPN路由表:

```
<SW1>dis ip routing-table vpn-instance vpn-rt
Destinations : 13      Routes : 13

Destination/Mask Proto Pre Cost      NextHop      Interface
0.0.0.0/32        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
172.16.10.0/24    BGP    255 0       3.3.3.3      GE1/0/2
192.168.10.0/24   Direct 0 0        192.168.10.1  Vlan10
192.168.10.0/32   Direct 0 0        192.168.10.1  Vlan10
192.168.10.1/32   Direct 0 0        127.0.0.1    InLoop0
192.168.10.255/32 Direct 0 0        192.168.10.1  Vlan10
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
<SW1>
```

```
<SW1>dis ip routing-table vpn-instance vpn-nrt
Destinations : 13      Routes : 13

Destination/Mask Proto Pre Cost     NextHop      Interface
0.0.0.0/32    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
172.16.20.0/24 BGP   255 0        3.3.3.3     GE1/0/2
192.168.20.0/24 Direct 0   0          192.168.20.1 Vlan20
192.168.20.0/32 Direct 0   0          192.168.20.1 Vlan20
192.168.20.1/32 Direct 0   0          127.0.0.1    InLoop0
192.168.20.255/32 Direct 0   0          192.168.20.1 Vlan20
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
<SW1>
```

查看SW2 VPN路由表：

```
<SW2>dis ip routing-table vpn-instance vpn-rt
Destinations : 13      Routes : 13

Destination/Mask Proto Pre Cost     NextHop      Interface
0.0.0.0/32    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
172.16.10.0/24 Direct 0   0          172.16.10.1  Vlan100
172.16.10.0/32 Direct 0   0          172.16.10.1  Vlan100
172.16.10.1/32 Direct 0   0          127.0.0.1    InLoop0
172.16.10.255/32 Direct 0   0          172.16.10.1  Vlan100
192.168.10.0/24 BGP   255 0        1.1.1.1     GE1/0/2
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
<SW2>
```

```
<SW2>dis ip routing-table vpn-instance vpn-nrt
Destinations : 13      Routes : 13

Destination/Mask Proto Pre Cost     NextHop      Interface
0.0.0.0/32    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
172.16.20.0/24 Direct 0   0          172.16.20.1  Vlan200
172.16.20.0/32 Direct 0   0          172.16.20.1  Vlan200
172.16.20.1/32 Direct 0   0          127.0.0.1    InLoop0
172.16.20.255/32 Direct 0   0          172.16.20.1  Vlan200
192.168.20.0/24 BGP   255 0        1.1.1.1     GE1/0/2
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
<SW2>
```

至此，S5820 MPLS VPN IBGP典型组网配置案例已完成！

配置关键点