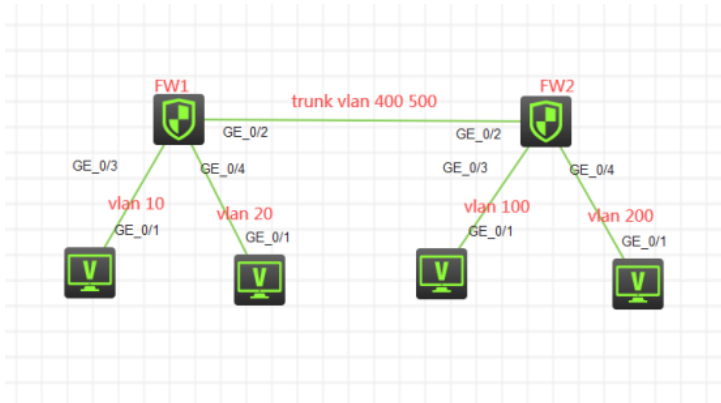


知 F1060防火墙多VPN实例OSPF典型组网配置案例

设备部署方式 韦家宁 2020-04-04 发表

组网及说明



组网说明:

本案例采用H3C HCL模拟器的F1060防火墙来模拟多VPN实例OSPF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VPN,将相关的业务进行捆绑。FW1与FW2采用路由模式,FW1与FW2的互联使用trunk,允许VLAN 400 VLAN 500通过,最终建立多VPN实例OSPF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。

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
FW1	VLAN 400	10.0.0.1	30	vpn-rt	互联
	VLAN 500	10.0.0.1	30	vpn-nrt	互联
	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	
	Loopback 1	2.2.2.2	32	vpn-nrt	
FW2	VLAN 400	10.0.0.2	30	vpn-rt	互联
	VLAN 500	10.0.0.2	30	vpn-nrt	互联
	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	vpn-rt	
	Loopback 1	4.4.4.4	32	vpn-nrt	

配置步骤

FW1:

```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname FW1
#创建VPN实例,配置RT值、RD值
[FW1]ip vpn-instance vpn-rt
[FW1-vpn-instance-vpn-rt]route-distinguisher 100:1
[FW1-vpn-instance-vpn-rt]vpn-target 100:1
[FW1-vpn-instance-vpn-rt]quit
[FW1]ip vpn-instance vpn-nrt
[FW1-vpn-instance-vpn-nrt]route-distinguisher 200:1
[FW1-vpn-instance-vpn-nrt]vpn-target 200:1
[FW1-vpn-instance-vpn-nrt]quit
[FW1]acl basic 2000
[FW1-acl-ipv4-basic-2000]rule 0 permit source any
[FW1-acl-ipv4-basic-2000]rule 1 permit source any vpn-instance vpn-rt
[FW1-acl-ipv4-basic-2000]rule 2 permit source any vpn-instance vpn-nrt
```

```

[FW1-acl-ipv4-basic-2000]quit
[FW1]zone-pair security source trust destination untrust
[FW1-zone-pair-security-Trust-Untrust]packet-filter 2000
[FW1-zone-pair-security-Trust-Untrust]quit
[FW1]
[FW1]zone-pair security source untrust destination trust
[FW1-zone-pair-security-Untrust-Trust]packet-filter 2000
[FW1-zone-pair-security-Untrust-Trust]quit
[FW1]
[FW1]zone-pair security source trust destination local
[FW1-zone-pair-security-Trust-Local]packet-filter 2000
[FW1-zone-pair-security-Trust-Local]quit
[FW1]
[FW1]zone-pair security source local destination trust
[FW1-zone-pair-security-Local-Trust]packet-filter 2000
[FW1-zone-pair-security-Local-Trust]quit
[FW1]
[FW1]zone-pair security source untrust destination local
[FW1-zone-pair-security-Untrust-Local]packet-filter 2000
[FW1-zone-pair-security-Untrust-Local]quit
[FW1]
[FW1]zone-pair security source local destination untrust
[FW1-zone-pair-security-Local-Untrust]packet-filter 2000
[FW1-zone-pair-security-Local-Untrust]quit
[FW1]
[FW1]zone-pair security source trust destination trust
[FW1-zone-pair-security-Trust-Trust]packet-filter 2000
[FW1-zone-pair-security-Trust-Trust]quit
[FW1]
[FW1]zone-pair security source untrust destination untrust
[FW1-zone-pair-security-Untrust-Untrust]packet-filter 2000
[FW1-zone-pair-security-Untrust-Untrust]quit
#创建互联VLAN、业务VLAN
[FW1]vlan 10
[FW1-vlan10]quit
[FW1]vlan 20
[FW1-vlan20]quit
[FW1]vlan 400
[FW1-vlan400]quit
[FW1]vlan 500
[FW1-vlan500]quit
[FW1]int vlan 10
[FW1-Vlan-interface10]ip binding vpn-instance vpn-rt //绑定VPN实例
Some configurations on the interface are removed.
[FW1-Vlan-interface10]ip address 192.168.10.1 24
[FW1-Vlan-interface10]quit
[FW1]int vlan 20
[FW1-Vlan-interface20]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
[FW1-Vlan-interface20]ip address 192.168.20.1 24
[FW1-Vlan-interface20]quit
[FW1]int vlan 400
[FW1-Vlan-interface400]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[FW1-Vlan-interface400]des <connect to FW2_vpn-rt>
[FW1-Vlan-interface400]ip address 10.0.0.1 30
[FW1-Vlan-interface400]quit
[FW1]int vlan 500
[FW1-Vlan-interface500]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
[FW1-Vlan-interface500]des <connect to FW2_vpn-nrt>
[FW1-Vlan-interface500]ip address 10.0.0.1 30
[FW1-Vlan-interface500]quit
[FW1]int gi 1/0/3

```

```

[FW1-GigabitEthernet1/0/3]port link-mode bridge
[FW1-GigabitEthernet1/0/3]port link-type access
[FW1-GigabitEthernet1/0/3]port access vlan 10
[FW1-GigabitEthernet1/0/3]quit
[FW1]int gi 1/0/4
[FW1-GigabitEthernet1/0/4]port link-mode bridge
[FW1-GigabitEthernet1/0/4]port link-type access
[FW1-GigabitEthernet1/0/4]port access vlan 20
[FW1-GigabitEthernet1/0/4]quit
[FW1]int gi 1/0/2
[FW1-GigabitEthernet1/0/2]port link-mode bridge
[FW1-GigabitEthernet1/0/2]port link-type trunk
[FW1-GigabitEthernet1/0/2]undo port trunk permit vlan 1
[FW1-GigabitEthernet1/0/2]port trunk permit vlan 400 500
[FW1-GigabitEthernet1/0/2]quit
[FW1]security-zone name Trust
[FW1-security-zone-Trust]import interface vlan 10
[FW1-security-zone-Trust]import interface vlan 20
[FW1-security-zone-Trust]import interface GigabitEthernet 1/0/3 vlan 10
[FW1-security-zone-Trust]import interface GigabitEthernet 1/0/4 vlan 20
[FW1-security-zone-Trust]quit
[FW1]int loopback 0
[FW1-LoopBack0]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[FW1-LoopBack0]ip address 1.1.1.1 32
[FW1-LoopBack0]quit
[FW1]int loopback 1
[FW1-LoopBack1]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
[FW1-LoopBack1]ip address 2.2.2.2 32
[FW1-LoopBack1]quit
[FW1]security-zone name Untrust
[FW1-security-zone-Untrust]import interface LoopBack 0
[FW1-security-zone-Untrust]import interface LoopBack 1
[FW1-security-zone-Untrust]import interface vlan 400
[FW1-security-zone-Untrust]import interface vlan 500
[FW1-security-zone-Untrust]import interface GigabitEthernet 1/0/2 vlan 400 500
[FW1-security-zone-Untrust]quit
[FW1]ospf 10 vpn-instance vpn-rt router-id 1.1.1.1 //创建OSPF进程，并绑定VPN实例
[FW1-ospf-10]area 0.0.0.0
[FW1-ospf-10-area-0.0.0.0]network 10.0.0.1 0.0.0.0
[FW1-ospf-10-area-0.0.0.0]network 1.1.1.1 0.0.0.0
[FW1-ospf-10-area-0.0.0.0]network 192.168.10.0 0.0.0.255
[FW1-ospf-10-area-0.0.0.0]quit
[FW1-ospf-10]quit
[FW1]ospf 20 vpn-instance vpn-nrt router-id 2.2.2.2
[FW1-ospf-20]area 0.0.0.0
[FW1-ospf-20-area-0.0.0.0]network 10.0.0.1 0.0.0.0
[FW1-ospf-20-area-0.0.0.0]network 2.2.2.2 0.0.0.0
[FW1-ospf-20-area-0.0.0.0]network 192.168.20.0 0.0.0.255
[FW1-ospf-20-area-0.0.0.0]quit
[FW1-ospf-20]quit

```

FW2:

```

<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname FW2
[FW2]ip vpn-instance vpn-rt
[FW2-vpn-instance-vpn-rt]route-distinguisher 100:1
[FW2-vpn-instance-vpn-rt]vpn-target 100:1
[FW2-vpn-instance-vpn-rt]quit
[FW2]ip vpn-instance vpn-nrt
[FW2-vpn-instance-vpn-nrt]route-distinguisher 200:1
[FW2-vpn-instance-vpn-nrt]vpn-target 200:1

```

```
[FW2-vpn-instance-vpn-nrt]quit
[FW2]acl basic 2000
[FW2-acl-ipv4-basic-2000]rule 0 permit source any
[FW2-acl-ipv4-basic-2000]rule 1 permit source any vpn-instance vpn-rt
[FW2-acl-ipv4-basic-2000]rule 2 permit source any vpn-instance vpn-nrt
[FW2-acl-ipv4-basic-2000]quit
[FW2]zone-pair security source trust destination untrust
[FW2-zone-pair-security-Trust-Untrust]packet-filter 2000
[FW2-zone-pair-security-Trust-Untrust]quit
[FW2]
[FW2]zone-pair security source untrust destination trust
[FW2-zone-pair-security-Untrust-Trust]packet-filter 2000
[FW2-zone-pair-security-Untrust-Trust]quit
[FW2]
[FW2]zone-pair security source trust destination local
[FW2-zone-pair-security-Trust-Local]packet-filter 2000
[FW2-zone-pair-security-Trust-Local]quit
[FW2]
[FW2]zone-pair security source local destination trust
[FW2-zone-pair-security-Local-Trust]packet-filter 2000
[FW2-zone-pair-security-Local-Trust]quit
[FW2]
[FW2]zone-pair security source untrust destination local
[FW2-zone-pair-security-Untrust-Local]packet-filter 2000
[FW2-zone-pair-security-Untrust-Local]quit
[FW2]
[FW2]zone-pair security source local destination untrust
[FW2-zone-pair-security-Local-Untrust]packet-filter 2000
[FW2-zone-pair-security-Local-Untrust]quit
[FW2]
[FW2]zone-pair security source trust destination trust
[FW2-zone-pair-security-Trust-Trust]packet-filter 2000
[FW2-zone-pair-security-Trust-Trust]quit
[FW2]
[FW2]zone-pair security source untrust destination untrust
[FW2-zone-pair-security-Untrust-Untrust]packet-filter 2000
[FW2-zone-pair-security-Untrust-Untrust]quit
[FW2]vlan 100
[FW2-vlan100]quit
[FW2]vlan 200
[FW2-vlan200]quit
[FW2]vlan 400
[FW2-vlan400]quit
[FW2]vlan 500
[FW2-vlan500]quit
[FW2]int vlan 100
[FW2-Vlan-interface100]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[FW2-Vlan-interface100]ip address 172.16.10.1 24
[FW2-Vlan-interface100]quit
[FW2]int vlan 200
[FW2-Vlan-interface200]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
[FW2-Vlan-interface200]ip address 172.16.20.1 24
[FW2-Vlan-interface200]quit
[FW2]int vlan 400
[FW2-Vlan-interface400]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[FW2-Vlan-interface400]ip address 10.0.0.2 30
[FW2-Vlan-interface400]des <connect to FW1_vpn-rt>
[FW2-Vlan-interface400]quit
[FW2]int vlan 500
[FW2-Vlan-interface500]ip binding vpn-instance vpn-nrt
Some configurations on the interface are removed.
```

```
[FW2-Vlan-interface500]ip address 10.0.0.2 30
[FW2-Vlan-interface500]des <connect to FW1_vpn-nrt>
[FW2-Vlan-interface500]quit
[FW2]int loopback 0
[FW2-LoopBack0]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[FW2-LoopBack0]ip address 3.3.3.3 32
[FW2-LoopBack0]quit
[FW2]int loopback 1
[FW2-LoopBack1]ip binding vpn-instance vpn-rt
Some configurations on the interface are removed.
[FW2-LoopBack1]ip address 4.4.4.4 32
[FW2-LoopBack1]quit
[FW2]int gi 1/0/3
[FW2-GigabitEthernet1/0/3]port link-mode bridge
[FW2-GigabitEthernet1/0/3]port link-type access
[FW2-GigabitEthernet1/0/3]port access vlan 100
[FW2-GigabitEthernet1/0/3]quit
[FW2]int gi 1/0/4
[FW2-GigabitEthernet1/0/4]port link-mode bridge
[FW2-GigabitEthernet1/0/4]port link-type access
[FW2-GigabitEthernet1/0/4]port access vlan 200
[FW2-GigabitEthernet1/0/4]quit
[FW2]int gi 1/0/2
[FW2-GigabitEthernet1/0/2]port link-mode bridge
[FW2-GigabitEthernet1/0/2]des <connect to FW1>
[FW2-GigabitEthernet1/0/2]port link-type trunk
[FW2-GigabitEthernet1/0/2]undo port trunk permit vlan 1
[FW2-GigabitEthernet1/0/2]port trunk permit vlan 400 500
[FW2-GigabitEthernet1/0/2]quit
[FW2]security-zone name Trust
[FW2-security-zone-Trust]import interface vlan 100
[FW2-security-zone-Trust]import interface vlan 200
[FW2-security-zone-Trust]import interface GigabitEthernet 1/0/3 vlan 100
[FW2-security-zone-Trust]import interface GigabitEthernet 1/0/4 vlan 200
[FW2-security-zone-Trust]quit
[FW2]security-zone name Untrust
[FW2-security-zone-Untrust]import interface LoopBack 0
[FW2-security-zone-Untrust]import interface LoopBack 1
[FW2-security-zone-Untrust]import interface GigabitEthernet 1/0/2 vlan 400 500
[FW2-security-zone-Untrust]import interface vlan 400
[FW2-security-zone-Untrust]import interface vlan 500
[FW2-security-zone-Untrust]quit
[FW2]ospf 10 vpn-instance vpn-rt router-id 3.3.3.3
[FW2-ospf-10]area 0.0.0.0
[FW2-ospf-10-area-0.0.0.0]network 10.0.0.2 0.0.0.0
[FW2-ospf-10-area-0.0.0.0]network 3.3.3.3 0.0.0.0
[FW2-ospf-10-area-0.0.0.0]network 172.16.10.0 0.0.0.255
[FW2-ospf-10-area-0.0.0.0]quit
[FW2-ospf-10]quit
[FW2]ospf 20 vpn-instance vpn-nrt router-id 4.4.4.4
[FW2-ospf-20]area 0.0.0.0
[FW2-ospf-20-area-0.0.0.0]network 10.0.0.2 0.0.0.0
[FW2-ospf-20-area-0.0.0.0]network 4.4.4.4 0.0.0.0
[FW2-ospf-20-area-0.0.0.0]network 172.16.20.0 0.0.0.255
[FW2-ospf-20-area-0.0.0.0]quit
[FW2-ospf-20]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

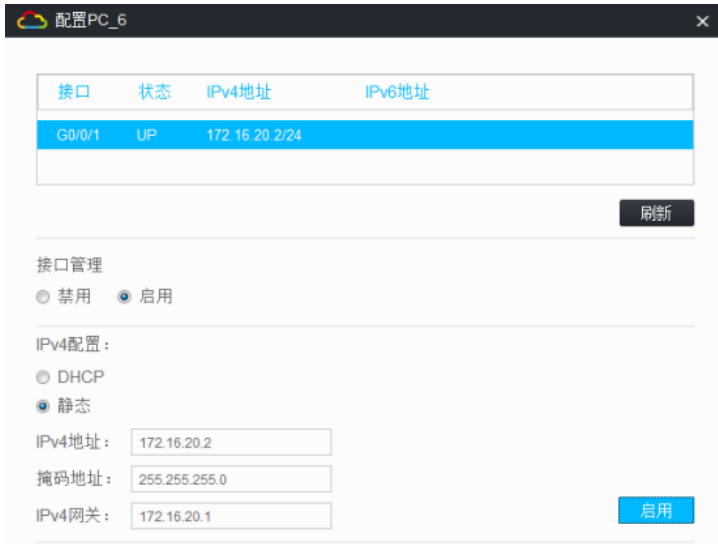
静态

IPv4地址:

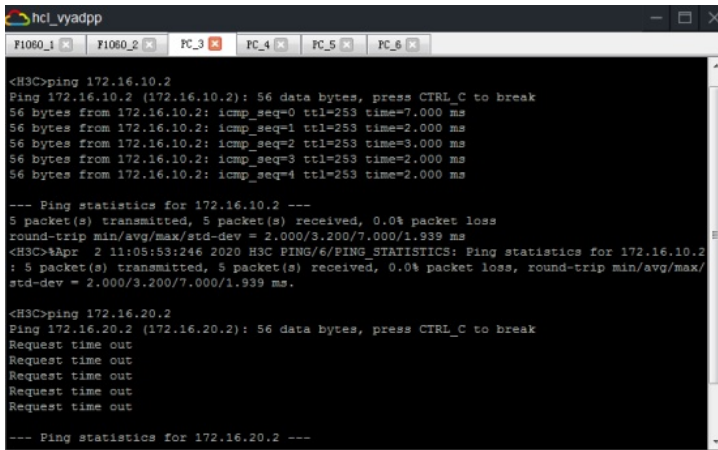
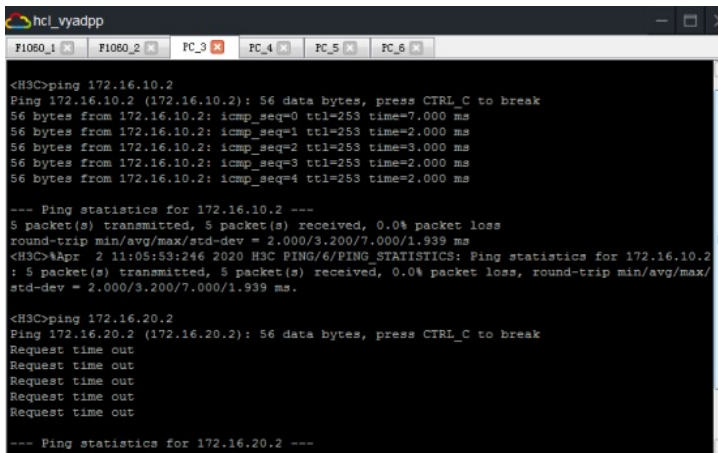
掩码地址:

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：



```

hcl_vyadpp
FI060_1 FI060_2 PC_3 PC_4 PC_5 PC_6
<H3C>%Apr 2 11:02:57:406 2020 H3C SHELL/5/SHELL_LOGIN: Console logged in from con0.
<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=2.000 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=3.000 ms
56 bytes from 192.168.10.2: icmp_seq=4 ttl=253 time=1.000 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 2 11:04:56:638 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.
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
Request time out
Request time out
Request time out

--- Ping statistics for 192.168.20.2 ---

```

```

hcl_vyadpp
FI060_1 FI060_2 PC_3 PC_4 PC_5 PC_6
<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=5.000 ms
56 bytes from 192.168.20.2: icmp_seq=1 ttl=253 time=3.000 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=4.000 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 = 2.000/3.200/5.000/1.166 ms
<H3C>%Apr 2 11:09:42:110 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 = 2.000/3.200/5.000/1.166 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
Request time out
Request time out
Request time out

--- Ping statistics for 192.168.10.2 ---

```

查看FW1的OSPF邻居信息:

```

[FW1]dis ospf peer

      OSPF Process 10 with Router ID 1.1.1.1
        Neighbor Brief Information

Area: 0.0.0.0
Router ID   Address      Pri Dead-Time  State      Interface
3.3.3.3     10.0.0.2     1  40          Full/DR    Vlan400

      OSPF Process 20 with Router ID 2.2.2.2
        Neighbor Brief Information

Area: 0.0.0.0
Router ID   Address      Pri Dead-Time  State      Interface
4.4.4.4     10.0.0.2     1  40          Full/DR    Vlan500
[FW1]

```

查看FW2的OSPF邻居信息:

```

[FW2]dis ospf peer

      OSPF Process 10 with Router ID 3.3.3.3
        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  37          Full/BDR   Vlan400

      OSPF Process 20 with Router ID 4.4.4.4
        Neighbor Brief Information

Area: 0.0.0.0
Router ID   Address      Pri Dead-Time  State      Interface
2.2.2.2     10.0.0.1     1  37          Full/BDR   Vlan500
[FW2]

```

查看FW1的VPN实例路由表:


```
[FW1]dis ip routing-table vpn-instance vpn-rt
Destinations : 19          Routes : 19

Destination/Mask  Proto  Pre Cost      NextHop      Interface
0.0.0.0/32        Direct  0  0           127.0.0.1    InLoop0
1.1.1.1/32        Direct  0  0           127.0.0.1    InLoop0
3.3.3.3/32        O_INTRA 10 1           10.0.0.2     Vlan400
10.0.0.0/30       Direct  0  0           10.0.0.1     Vlan400
10.0.0.0/32       Direct  0  0           10.0.0.1     Vlan400
10.0.0.1/32       Direct  0  0           127.0.0.1    InLoop0
10.0.0.3/32       Direct  0  0           10.0.0.1     Vlan400
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    O_INTRA 10 2           10.0.0.2     Vlan400
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
[FW1]
```

```
[FW1]dis ip routing-table vpn-instance vpn-nrt
Destinations : 19          Routes : 19

Destination/Mask  Proto  Pre Cost      NextHop      Interface
0.0.0.0/32        Direct  0  0           127.0.0.1    InLoop0
2.2.2.2/32        Direct  0  0           127.0.0.1    InLoop0
4.4.4.4/32        O_INTRA 10 1           10.0.0.2     Vlan500
10.0.0.0/30       Direct  0  0           10.0.0.1     Vlan500
10.0.0.0/32       Direct  0  0           10.0.0.1     Vlan500
10.0.0.1/32       Direct  0  0           127.0.0.1    InLoop0
10.0.0.3/32       Direct  0  0           10.0.0.1     Vlan500
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    O_INTRA 10 2           10.0.0.2     Vlan500
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
[FW1]
```

查看FW2的VPN实例路由表:

```
[FW2]dis ip routing-table vpn-instance vpn-rt
Destinations : 19          Routes : 19

Destination/Mask  Proto  Pre Cost      NextHop      Interface
0.0.0.0/32        Direct  0  0           127.0.0.1    InLoop0
1.1.1.1/32        O_INTRA 10 1           10.0.0.1     Vlan400
3.3.3.3/32        Direct  0  0           127.0.0.1    InLoop0
10.0.0.0/30       Direct  0  0           10.0.0.2     Vlan400
10.0.0.0/32       Direct  0  0           10.0.0.2     Vlan400
10.0.0.2/32       Direct  0  0           127.0.0.1    InLoop0
10.0.0.3/32       Direct  0  0           10.0.0.2     Vlan400
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   O_INTRA 10 2           10.0.0.1     Vlan400
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
[FW2]
```

```
[FW2]dis ip routing-table vpn-instance vpn-nrt
Destinations : 19          Routes : 19

Destination/Mask  Proto  Pre Cost      NextHop      Interface
0.0.0.0/32        Direct  0  0           127.0.0.1    InLoop0
2.2.2.2/32        O_INTRA 10  1           10.0.0.1     Vlan500
4.4.4.4/32        Direct  0  0           127.0.0.1    InLoop0
10.0.0.0/30       Direct  0  0           10.0.0.2     Vlan500
10.0.0.0/32       Direct  0  0           10.0.0.2     Vlan500
10.0.0.2/32       Direct  0  0           127.0.0.1    InLoop0
10.0.0.3/32       Direct  0  0           10.0.0.2     Vlan500
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   O_INTRA 10  2           10.0.0.1     Vlan500
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
[FW2]
```

至此，F1060多VPN实例OSPF典型组网配置案例已完成！

配置关键点