

组网及说明	
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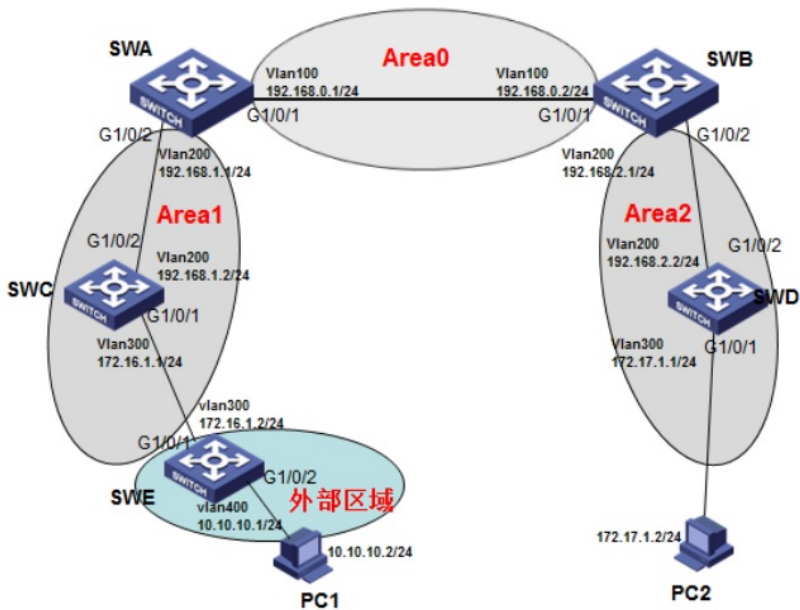
1.1 适用产品系列

本案例适用于如S5500V2-34S-EI、S5500V2-28F-SI、S5530F-EI-D、S5560-54C-EI、S5560X-54C-PWR-EI、S5820V2-52Q、S5820V2-52QF-H3等S5500V2、S55X0、S58X0V2系列的交换机。

1.2 配置需求

SWA、SWB、SWC、SWD运行OSPF。SWC、SWE和SWG运行静态路由，并将整个自治系统划分为3个区域。其中Switch A和Switch B作为ABR来转发区域之间的路由。Switch C上配置为ASBR引入外部路由（静态路由），且路由信息可正确的在AS内传播。

2 组网图



3.1 SWA配置

#创建vlan100和vlan200，并把G1/0/1口加入vlan100、1/0/2口加入vlan200，并且配置vlan100和vlan200的虚接口地址

```
<SWA>system-view
```

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

```
[SWA]vlan 100
```

```
[SWA-vlan100]port GigabitEthernet 1/0/1
```

```
[SWA-vlan100]quit
```

```
[SWA]vlan 200
```

```
[SWA-vlan200]port GigabitEthernet 1/0/2
```

```
[SWA-vlan200]quit
```

```
[SWA]interface vlan 100
```

```
[SWA-Vlan-interface100]ip address 192.168.0.1 255.255.255.0
```

```
[SWA-Vlan-interface100]quit
```

```
[SWA]interface vlan 200
```

```
[SWA-Vlan-interface200]ip address 192.168.1.1 255.255.255.0
```

```
[SWA-Vlan-interface200]quit
```

```
#启动ospf协议，并设置路由器的router id
```

```
[SWA]ospf 1 router-id 192.168.1.1
```

```
#配置区域0并且发布网段
```

```
[SWA-ospf-1]area 0
```

```
[SWA-ospf-1-area-0.0.0.0]network 192.168.0.0 0.0.0.255
```

```
[SWA-ospf-1-area-0.0.0.0]quit
```

```
#配置区域1并且发布网段
```

```
[SWA-ospf-1]area 1
```

```
[SWA-ospf-1-area-0.0.0.1]network 192.168.1.0 0.0.0.255
```

```
[SWA-ospf-1-area-0.0.0.1]quit
```

```
[SWA-ospf-1]quit
```

```
#保存配置
```

```
[SWA]save force
```

3.2 SWB配置

```
#创建vlan100和vlan200，并把G1/0/1口加入vlan100、1/0/2口加入vlan200，并且配置vlan100和vlan200的虚接口地址
```

```
<SWB>system-view
```

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

```
[SWB]vlan 100
```

```
[SWB-vlan100]port GigabitEthernet 1/0/1
```

```
[SWB-vlan100]quit
```

```
[SWB]vlan 200
```

```
[SWB-vlan200]port GigabitEthernet 1/0/2
```

```
[SWB-vlan200]quit
```

```
[SWB]interface vlan 100
```

```
[SWB-Vlan-interface100]ip address 192.168.0.2 255.255.255.0
```

```
[SWB-Vlan-interface100]quit
```

```
[SWB]interface vlan 200
```

```
[SWB-Vlan-interface200]ip address 192.168.2.1 255.255.255.0
```

```
[SWB-Vlan-interface200]quit
```

```
#启动ospf协议，并设置路由器的router id
```

```
[SWB]ospf 1 router-id 192.168.2.1
```

```
#配置区域0并且发布网段
```

```
[SWB-ospf-1]area 0
```

```
[SWB-ospf-1-area-0.0.0.0]network 192.168.0.0 0.0.0.255
```

```
[SWB-ospf-1-area-0.0.0.0]quit
```

```
#配置区域2并且发布网段
```

```
[SWB-ospf-1]area 2
```

```
[SWB-ospf-1-area-0.0.0.2]network 192.168.2.0 0.0.0.255
```

```
[SWB-ospf-1-area-0.0.0.2]quit
```

```
[SWB-ospf-1]quit
```

```
#保存配置
```

```
[SWB]save force
```

3.3 SWC配置

```
#创建vlan200和vlan300，并把G1/0/1口加入vlan300、1/0/2口加入vlan200，并且配置vlan300和vlan200的虚接口地址
```

```
<SWC>system-view
```

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

```
[SWC]vlan 300
```

```
[SWC-vlan300]port GigabitEthernet 1/0/1
```

```
[SWC-vlan300]quit
```

```
[SWC]vlan 200
```

```
[SWC-vlan200]port GigabitEthernet 1/0/2
```

```
[SWC-vlan200]quit
```

```
[SWC]interface vlan 300
```

```
[SWC-Vlan-interface300]ip address 172.16.1.1 255.255.255.0
```

```
[SWC-Vlan-interface300]quit
```

```
[SWC]interface vlan 200
```

```
[SWC-Vlan-interface200]ip address 192.168.1.2 255.255.255.0
```

```
[SWC-Vlan-interface200]quit
```

```
#配置到10.10.10.0网段的静态路由，下一跳指向172.16.1.2
```

```
[SWC]ip route-static 10.10.10.0 24 172.16.1.2
```

```
#启动ospf协议，并设置路由器的router id
```

```
[SWC]ospf 1 router-id 192.168.1.2
```

```
#配置区域1并且发布网段
```

```
[SWC-ospf-1]area 1
```

```
[SWC-ospf-1-area-0.0.0.1]network 192.168.1.0 0.0.0.255
```

```
[SWC-ospf-1-area-0.0.0.1]network 172.16.1.0 0.0.0.255
```

```
[SWC-ospf-1-area-0.0.0.1]quit
```

```
#在ospf中引入静态路由
```

```
[SWC-ospf-1]import-route static
```

```
[SWC-ospf-1]quit
```

```
#保存配置
```

```
[SWC]save force
```

3.4 SWD配置

#创建vlan200和vlan300，并把G1/0/1口加入vlan300、1/0/2口加入vlan200，并且配置vlan300和vlan200的虚接口地址

```
<SWD>system-view
```

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

```
[SWD]vlan 300
```

```
[SWD-vlan300]port GigabitEthernet 1/0/1
```

```
[SWD-vlan300]quit
```

```
[SWD]vlan 200
```

```
[SWD-vlan200]port GigabitEthernet 1/0/2
```

```
[SWD-vlan200]quit
```

```
[SWD]interface vlan 300
```

```
[SWD-Vlan-interface300]ip address 172.17.1.1 255.255.255.0
```

```
[SWD-Vlan-interface300]quit
```

```
[SWD]interface vlan 200
```

```
[SWD-Vlan-interface200]ip address 192.168.2.2 255.255.255.0
```

```
[SWD-Vlan-interface200]quit
```

#启动ospf协议，并设置路由器的router id

```
[SWD]ospf 1 router-id 192.168.2.2
```

#配置区域1并且发布网段

```
[SWD-ospf-1]area 2
```

```
[SWD-ospf-1-area-0.0.0.2]network 192.168.2.0 0.0.0.255
```

```
[SWD-ospf-1-area-0.0.0.2]network 172.17.1.0 0.0.0.255
```

```
[SWD-ospf-1-area-0.0.0.2]quit
```

```
[SWD-ospf-1]quit
```

#保存配置

```
[SWD]save force
```

3.5 SWE配置

#创建vlan300和vlan400，并把G1/0/1口加入vlan300、1/0/2口加入vlan400，并且配置vlan300和vlan400的虚接口地址

```
<SWE>system-view
```

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

```
[SWE]vlan 300
```

```
[SWE-vlan300]port GigabitEthernet 1/0/1
```

```
[SWE-vlan300]quit
```

```
[SWE]vlan 400
```

```
[SWE-vlan400]port GigabitEthernet 1/0/2
```

```
[SWE-vlan400]quit
```

```
[SWE]interface vlan 300
```

```
[SWE-Vlan-interface300]ip address 172.16.1.2 255.255.255.0
```

```
[SWE-Vlan-interface300]quit
```

```
[SWE]interface vlan 400
```

```
[SWE-Vlan-interface400]ip address 10.10.10.1 255.255.255.0
```

```
[SWE-Vlan-interface400]quit
```

#配置默认路由指向172.16.1.1

```
[SWE]ip route-static 0.0.0.0 0 172.16.1.1
```

```
[SWE]save force
```

3.6 验证配置

#查看Switch A的路由表信息，有到172.16.1.0、172.17.1.0、192.168.2.0的路由以及学习到外部引入的静态路由

```
<SWA>display ip routing-table
```

Destinations : 20 Routes : 20

Destination/Mask	Proto	Pre	Cost	NextHop	Interface
0.0.0.0/32	Direct	0	0	127.0.0.1	InLoop0
10.10.10.0/24	O_ASE2	150	1	192.168.1.2	Vlan200
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
172.16.1.0/24	O_INTRA	10	2	192.168.1.2	Vlan200
172.17.1.0/24	O_INTER	10	3	192.168.0.2	Vlan100
192.168.0.0/24	Direct	0	0	192.168.0.1	Vlan100
192.168.0.0/32	Direct	0	0	192.168.0.1	Vlan100

```
192.168.0.1/32   Direct 0 0      127.0.0.1   InLoop0
192.168.0.255/32 Direct 0 0      192.168.0.1   Vlan100
192.168.1.0/24   Direct 0 0      192.168.1.1   Vlan200
192.168.1.0/32   Direct 0 0      192.168.1.1   Vlan200
192.168.1.1/32   Direct 0 0      127.0.0.1   InLoop0
192.168.1.255/32 Direct 0 0      192.168.1.1   Vlan200
192.168.2.0/24   O_INTER 10 2    192.168.0.2   Vlan100
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
# PC1 ping PC2 正常通信
C:\Users\mfw2656>ping 172.17.1.2
Ping 172.17.1.2 (172.17.1.2): 56 data bytes, press CTRL_C to break
56 bytes from 172.17.1.2: icmp_seq=0 ttl=254 time=8.000 ms
56 bytes from 172.17.1.2: icmp_seq=1 ttl=254 time=2.000 ms
56 bytes from 172.17.1.2: icmp_seq=2 ttl=254 time=3.000 ms
56 bytes from 172.17.1.2: icmp_seq=3 ttl=254 time=3.000 ms
172.17.1.2的 Ping 统计信息:
    数据包: 已发送 = 4, 已接收 = 4, 丢失 = 0 (0% 丢失),
    往返行程的估计时间(以毫秒为单位):
        最短 = 2ms, 最长 = 3ms, 平均 = 2ms
```

配置关键点