

组网及说明

1 配置需求或说明

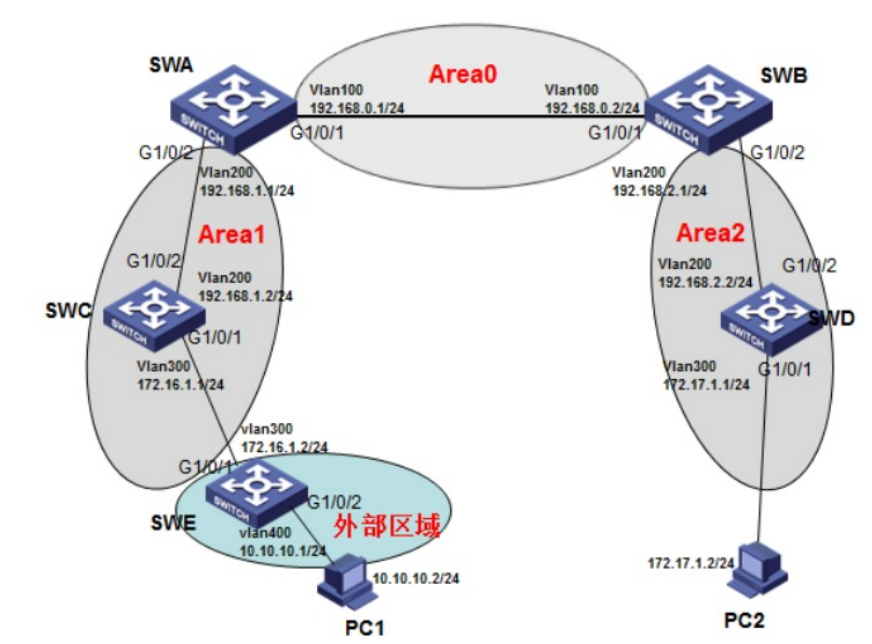
1.1 适用产品系列

本案例适用于如S3600V2-28TP-EI、S3600V2-28TP-SI等S3600V2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，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



配置步骤

3 配置步骤

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),

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