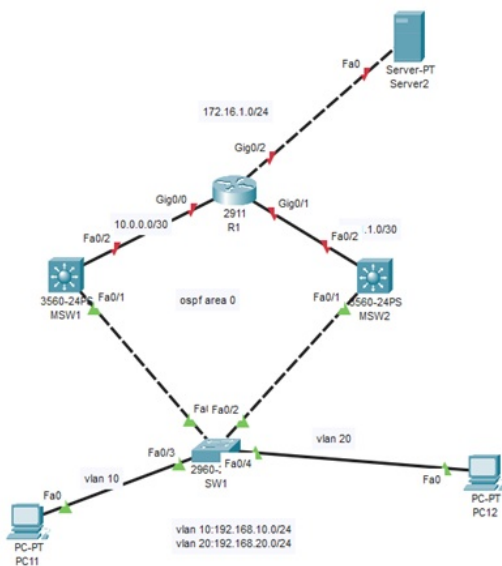


## 组网及说明



本案例采用思科模拟器的交换机来部署HSRP技术，在该网络拓扑图中，MSW1为主设备、MSW2为备用设备，在网络正常时流量主走MSW1，当MSW1故障时，流量切换到MSW2进行转发。

## 配置步骤

- 1、按照网络拓扑图配置VLAN和IP地址。
- 2、MSW1为STP主根、MSW2为备用根桥。
- 3、配置OSPF
- 4、配置MSW1为HSRP主设备、MSW2为HSRP备设备。

## 配置关键点

配置过程：

(1) SW1:

```
Switch>ena
```

```
Switch#conf t
```

Enter configuration commands, one per line. End with CNTL/Z.

```
Switch(config)#hos SW1
```

```
SW1(config)#vlan 10
```

```
SW1(config-vlan)#exit
```

```
SW1(config)#vlan 20
```

```
SW1(config-vlan)#exit
```

```
SW1(config)#int f 0/3
```

```
SW1(config-if)#sw mo acc
```

```
SW1(config-if)#sw acc vlan 10
```

```
SW1(config-if)#exit
```

```
SW1(config)#int f 0/4
```

```
SW1(config-if)#sw mo acc
```

```
SW1(config-if)#sw acc vlan 20
```

```
SW1(config-if)#exit
```

```
SW1(config)#int range f 0/1-2
```

```
SW1(config-if-range)#sw mo tr
```

```
SW1(config-if-range)#sw tr all vlan 10,20
```

```
SW1(config-if-range)#exit
```

```
SW1(config)#do wr
```

```
Building configuration...
```

[OK]

SW1(config)#

(2) MSW1:

Switch>ena

Switch#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hos MSW1

MSW1(config)#vlan 10

MSW1(config-vlan)#exit

MSW1(config)#vlan 20

MSW1(config-vlan)#exit

MSW1(config)#spanning-tree vlan 10 priority 0 //设置STP的优先级

MSW1(config)#spanning-tree vlan 20 priority 0

MSW1(config)#

MSW1(config)#int vlan 10

MSW1(config-if)#ip address 192.168.10.253 255.255.255.0

MSW1(config-if)#standby 1 ip 192.168.10.1 //设置HSRP组1的VIP

MSW1(config-if)#standby 1 priority 120 //设置HSRP的优先级

MSW1(config-if)#standby 1 preempt //指定为抢占模式

MSW1(config-if)#standby 1 track fastEthernet 0/2 //指定探测的端口

MSW1(config-if)#no shutdown

MSW1(config-if)#exit

MSW1(config)#int vlan 20

MSW1(config-if)#ip address 192.168.20.253 255.255.255.0

MSW1(config-if)#standby 2 ip 192.168.20.1

MSW1(config-if)#standby 2 priority 120

MSW1(config-if)#standby 2 preempt

MSW1(config-if)#standby 1 track fastEthernet 0/2

MSW1(config-if)#no shutdown

MSW1(config-if)#exit

MSW1(config)#int f 0/1

MSW1(config-if)#sw tr enc do

MSW1(config-if)#sw mo tr

MSW1(config-if)#sw tr all vlan 10,20

MSW1(config-if)#exit

MSW1(config)#int f 0/2

MSW1(config-if)#no switchport

MSW1(config-if)#ip address 10.0.0.1 255.255.255.252

MSW1(config-if)#no shutdown

MSW1(config-if)#exit

MSW1(config)#ip routing

MSW1(config)#router ospf 1

MSW1(config-router)#passive-interface vlan 10

MSW1(config-router)#passive-interface vlan 20

MSW1(config-router)#network 10.0.0.0 0.0.0.3 area 0

MSW1(config-router)#network 192.168.10.0 0.0.0.255 area 0

MSW1(config-router)#network 192.168.20.0 0.0.0.255 area 0

MSW1(config-router)#exit

MSW1(config)#do wr

Building configuration...

[OK]

MSW1(config)#

(3) MSW2

Switch>ena

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hos MSW2
MSW2(config)#vlan 10
MSW2(config-vlan)#exit
MSW2(config)#vlan 20
MSW2(config-vlan)#exit
MSW2(config)#spanning-tree vlan 10 priority 8192
MSW2(config)#spanning-tree vlan 20 priority 8192
MSW2(config)#int vlan 10
MSW2(config-if)#ip address 192.168.10.254 255.255.255.0
MSW2(config-if)#standby 1 ip 192.168.10.1
MSW2(config-if)#standby 1 priority 100
MSW2(config-if)#standby 1 preempt
MSW2(config-if)#standby 1 track fastEthernet 0/2
MSW2(config-if)#no shutdown
MSW2(config-if)#exit

MSW2(config)#int vlan 20
MSW2(config-if)#ip address 192.168.20.254 255.255.255.0
MSW2(config-if)#standby 2 ip 192.168.20.1
MSW2(config-if)#standby 2 priority 100
MSW2(config-if)#standby 2 preempt
MSW2(config-if)#standby 2 track fastEthernet 0/2
MSW2(config-if)#no shutdown
MSW2(config-if)#exit

MSW2(config)#int f 0/1
MSW2(config-if)#sw tr enc do
MSW2(config-if)#sw mo tr
MSW2(config-if)#sw tr all vlan 10,20
MSW2(config-if)#exit
MSW2(config)#int f 0/2
MSW2(config-if)#no switchport
MSW2(config-if)#ip address 10.1.1.1 255.255.255.252
MSW2(config-if)#no shutdown
MSW2(config-if)#exit
MSW2(config)#ip routing
MSW2(config)#router ospf 1
MSW2(config-router)#passive-interface vlan 10
MSW2(config-router)#passive-interface vlan 20
MSW2(config-router)#network 10.1.1.0 0.0.0.255 area 0
MSW2(config-router)#network 192.168.10.0 0.0.0.255 area 0
MSW2(config-router)#network 192.168.20.0 0.0.0.255 area 0
MSW2(config-router)#exi
MSW2(config)#do wr
Building configuration...
[OK]
MSW2(config)#
```

(4) R1:

```
Router>ena
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hos R1
R1(config)#int gi 0/2
R1(config-if)#ip address 172.16.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#exit
```

```

R1(config)#int gi 0/0
R1(config-if)#ip address 10.0.0.2 255.255.255.252
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#int gi 0/1
R1(config-if)#ip address 10.1.1.2 255.255.255.252
R1(config-if)#ip ospf cost 100
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#router ospf 1
R1(config-router)#network 10.0.0.0 0.0.0.3 area 0
R1(config-router)#network 10.1.1.0 0.0.0.3 area 0
R1(config-router)#network 172.16.1.0 0.0.0.255 ar
R1(config-router)#network 172.16.1.0 0.0.0.255 area 0
R1(config-router)#exit
R1(config)#do wr
Building configuration...
[OK]
R1(config)#

```

(5) 分别查看MSW1、MSW2、R1的OSPF邻居状态，均已建立完成。

```

MSW1(config)#do sh ip ospf nei
Neighbor ID      Pri  State           Dead Time   Address      Interface
172.16.1.1       1    FULL/BDR        00:00:38   10.0.0.2    FastEthernet0/2
MSW1(config)#

MSW2(config)#do sh ip ospf nei
Neighbor ID      Pri  State           Dead Time   Address      Interface
172.16.1.1       1    FULL/BDR        00:00:38   10.1.1.2    FastEthernet0/2
MSW2(config)#

R1(config)#do sh ip ospf nei
Neighbor ID      Pri  State           Dead Time   Address      Interface
192.168.20.254   1    FULL/DR         00:00:40   10.1.1.1    GigabitEthernet0/1
192.168.20.253   1    FULL/DR         00:00:39   10.0.0.1    GigabitEthernet0/0
R1(config)#

```

(6) 分别查看MSW1、MSW2、R1的路由表，均已学习到对端传递过来的路由。

```

MSW1(config)#do sh ip ro
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

 10.0.0.0/30 is subnetted, 2 subnets
C    10.0.0.0 is directly connected, FastEthernet0/2
O    10.1.1.0 [110/2] via 10.0.0.2, 00:01:53, FastEthernet0/2
 172.16.0.0/24 is subnetted, 1 subnets
O    172.16.1.0 [110/2] via 10.0.0.2, 00:01:53, FastEthernet0/2
C    192.168.10.0/24 is directly connected, Vlan10
C    192.168.20.0/24 is directly connected, Vlan20

MSW2(config)#do sh ip ro
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter a
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

 10.0.0.0/30 is subnetted, 2 subnets
O    10.0.0.0 [110/2] via 10.1.1.2, 00:02:14, FastEthernet0/2
C    10.1.1.0 is directly connected, FastEthernet0/2
 172.16.0.0/24 is subnetted, 1 subnets
O    172.16.1.0 [110/2] via 10.1.1.2, 00:02:14, FastEthernet0/2
C    192.168.10.0/24 is directly connected, Vlan10
C    192.168.20.0/24 is directly connected, Vlan20

MSW2(config)#

```

```

R1(config)#do sh ip ro
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

 10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C   10.0.0.0/30 is directly connected, GigabitEthernet0/0
L   10.0.0.2/32 is directly connected, GigabitEthernet0/0
C   10.1.1.0/30 is directly connected, GigabitEthernet0/1
L   10.1.1.2/32 is directly connected, GigabitEthernet0/1
L   172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C   172.16.1.0/24 is directly connected, GigabitEthernet0/2
L   172.16.1.1/32 is directly connected, GigabitEthernet0/2
O   192.168.10.0/24 [110/2] via 10.0.0.1, 00:02:26, GigabitEthernet0/0
    [110/2] via 10.1.1.1, 00:02:26, GigabitEthernet0/1
O   192.168.20.0/24 [110/2] via 10.0.0.1, 00:02:26, GigabitEthernet0/0
    [110/2] via 10.1.1.1, 00:02:26, GigabitEthernet0/1

R1(config)#

```

(8) 分别查看MSW1、MSW2的生成树的状态，目前根桥在MSW1

```

MSW1#sh spanning-tree active
VLAN0001
Spanning tree enabled protocol ieee
Root ID    Priority    32769
           Address    0001.640E.B6C7
           This bridge is the root
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID   Priority    32769 (priority 32769 sys-id-ext 1)
           Address    0001.640E.B6C7
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
           Aging Time 20

Interface   Role Sts Cost      Prio.Nbr Type
-----
Fa0/1       Desg FWD 19        128.1   P2p

VLAN0010
Spanning tree enabled protocol ieee
Root ID    Priority    10
           Address    0001.640E.B6C7
           This bridge is the root
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID   Priority    10 (priority 0 sys-id-ext 10)
           Address    0001.640E.B6C7
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
           Aging Time 20

Interface   Role Sts Cost      Prio.Nbr Type
-----
Fa0/1       Desg FWD 19        128.1   P2p

VLAN0020
Spanning tree enabled protocol ieee
Root ID    Priority    20
           Address    0001.640E.B6C7
           This bridge is the root
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID   Priority    20 (priority 0 sys-id-ext 20)
           Address    0001.640E.B6C7
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
           Aging Time 20

Interface   Role Sts Cost      Prio.Nbr Type
-----
Fa0/1       Desg FWD 19        128.1   P2p

MSW1#

```

```

MSW2#sh spanning-tree active
VLAN0001
Spanning tree enabled protocol ieee
Root ID    Priority    32769
           Address    0001.640E.B6C7
           Cost      38
           Port      1(FastEthernet0/1)
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID   Priority    32769 (priority 32768 sys-id-ext 1)
           Address    0001.C75A.80D8
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
           Aging Time 20

Interface   Role Sts Cost      Prio.Nbr Type
-----
Fa0/1       Root FWD 19        128.1   P2p

VLAN0010
Spanning tree enabled protocol ieee
Root ID    Priority    10
           Address    0001.640E.B6C7
           Cost      38
           Port      1(FastEthernet0/1)
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID   Priority    8202 (priority 8192 sys-id-ext 10)
           Address    0001.C75A.80D8
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
           Aging Time 20

Interface   Role Sts Cost      Prio.Nbr Type
-----
Fa0/1       Root FWD 19        128.1   P2p

VLAN0020
Spanning tree enabled protocol ieee
Root ID    Priority    20
           Address    0001.640E.B6C7
           Cost      38
           Port      1(FastEthernet0/1)
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID   Priority    8212 (priority 8192 sys-id-ext 20)
           Address    0001.C75A.80D8
           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
           Aging Time 20

Interface   Role Sts Cost      Prio.Nbr Type
-----
Fa0/1       Root FWD 19        128.1   P2p

MSW2#

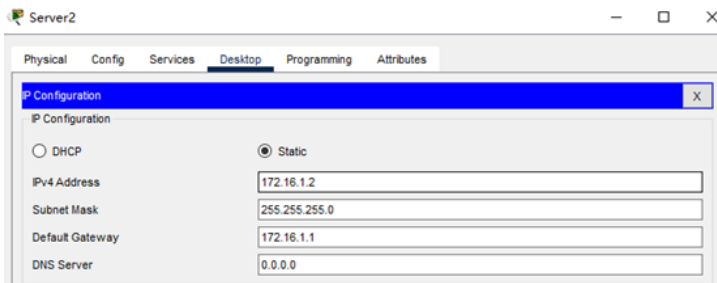
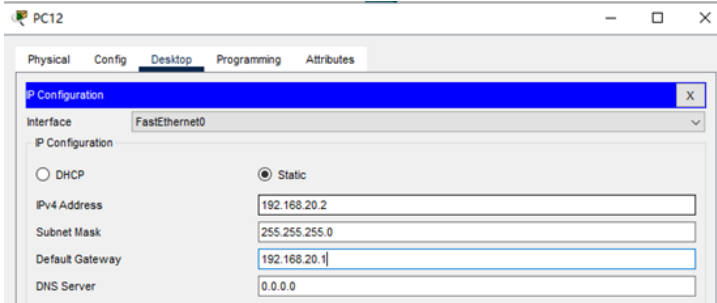
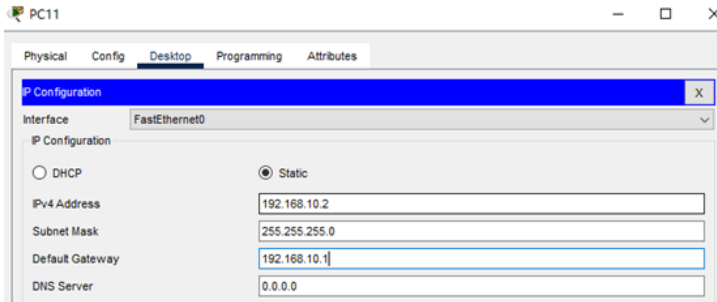
```

(8) 分别查看MSW1和MSW2的HSRP状态，目前HSRP的主设备是在MSW。

```
MSW1#show standby brief
P indicates configured to preempt.
|
Interface Grp Pri P State Active Standby Virtual IP
Vl10 1 120 P Active local 192.168.10.254 192.168.10.1
Vl20 2 120 P Active local 192.168.20.254 192.168.20.1
MSW1#
```

```
MSW2# show standby brief
P indicates configured to preempt.
|
Interface Grp Pri P State Active Standby Virtual IP
Vl10 1 100 P Standby 192.168.10.253 local 192.168.10.1
Vl20 2 100 P Standby 192.168.20.253 local 192.168.20.1
MSW2#
```

(9) PC和服务器均填写IP地址。



(10) VLAN 10的PC追踪路由到服务器，发现目前主走是MSW1

```
C:\>ping 172.16.1.2

Pinging 172.16.1.2 with 32 bytes of data:

Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>tracert -d 172.16.1.2
Invalid Command.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.10.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>
```

(11) VLAN 20的PC追踪路由到服务器，发现目前主走是MSW1

```

Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.16.1.2

Pinging 172.16.1.2 with 32 bytes of data:

Reply from 172.16.1.2: bytes=32 time=4ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 1ms

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.20.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>|

```

(13) 关闭MSW1上行到R1的F0/2端口和F0/1端口，模拟设备断电。

```

MSW1(config)#show ip interface brief
MSW1(config)#int f 0/2
MSW1(config-if)#shu
MSW1(config-if)#shutdown

MSW1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to administratively down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down
00:29:34: %OSPF-5-ADJCHG: Process 1, Nbr 172.16.1.1 on FastEthernet0/2 from FULL to DOWN, Neighbor Down: Interface down or detached
MSW1(config-if)#

MSW1(config)#int f 0/1
MSW1(config-if)#shu
MSW1(config-if)#shutdown

MSW1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administratively down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan20, changed state to down

```

(14) 查看MSW2的HSRP状态，发现MSW2已经切换为主设备。

```

MSW2# show standby brief
          P indicates configured to preempt.
          |
Interface  Grp  Pri  P State   Active        Standby        Virtual IP
Vl10      1    100 P Active  local         unknown       192.168.10.1
Vl20      2    100 P Active  local         unknown       192.168.20.1
MSW2#|

```

(15) 这时候，属于VLAN10的PC追踪到服务器时，走的是MSW2

```

Physical  Config  Desktop  Programming  Attributes
Command Prompt

C:\>ping 172.16.1.2

Pinging 172.16.1.2 with 32 bytes of data:

Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>tracert -d 172.16.1.2
Invalid Command.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.10.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  1  0 ms    0 ms    0 ms    192.168.10.254
  2  0 ms    0 ms    0 ms    10.1.1.2
  3  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>

```

(16) 这时候，属于VLAN20的PC追踪到服务器时，走的是MSW2

```

PC12
Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.16.1.2

Pinging 172.16.1.2 with 32 bytes of data:

Reply from 172.16.1.2: bytes=32 time=4ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  1  0 ms    0 ms    0 ms    192.168.20.253
  2  0 ms    0 ms    0 ms    10.0.0.2
  3  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  1  *          0 ms    0 ms    192.168.20.254
  2  0 ms    0 ms    0 ms    10.1.1.2
  3  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>

```

(17) 重新开启MSW1的F0/1端口和F0/2端口，模拟设备恢复正常。

```

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan20, changed state to down
MSW1(config-if)#
MSW1(config-if)#
MSW1(config-if)#no shu
MSW1(config-if)#no shutdown

MSW1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan20, changed state to up
exit
MSW1(config-if)#exit
MSW1(config)#int f 0/2
MSW1(config-if)#no shu
MSW1(config-if)#no shutdown

MSW1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
MSW1(config-if)#

```



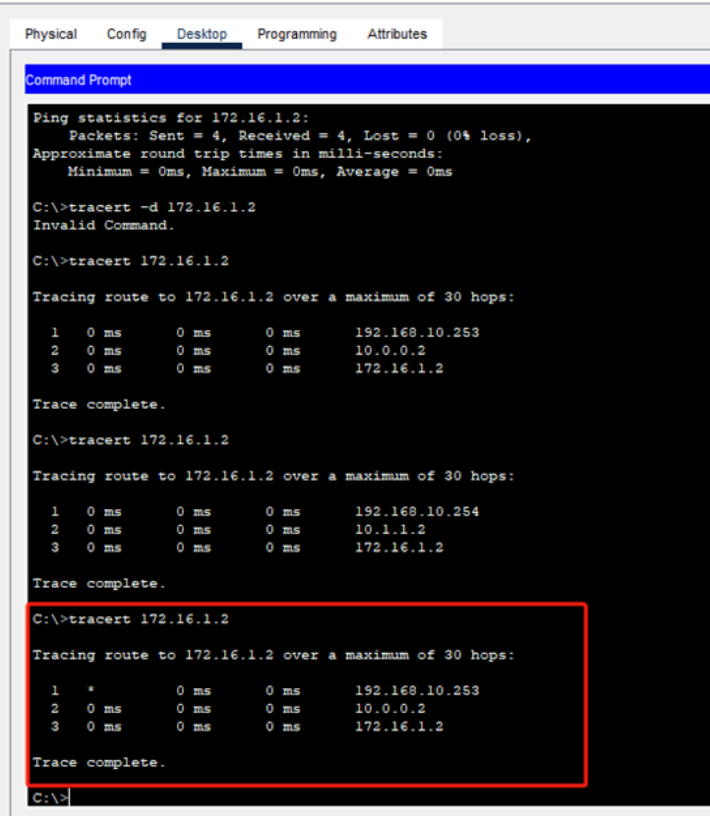
(18) 这时候HSRP主切换回MSW1，MSW2切换为备。

```
MSW1#show standby brief
                P indicates configured to preempt.
                |
Interface   Grp  Pri P State   Active        Standby        Virtual IP
Vl10       1    120 P Active   local         192.168.10.254 192.168.10.1
Vl20       2    120 P Active   local         192.168.20.254 192.168.20.1
MSW1#
```

```
MSW2# show standby brief
                P indicates configured to preempt.
                |
Interface   Grp  Pri P State   Active        Standby        Virtual IP
Vl10       1    100 P Standby 192.168.10.253 local         192.168.10.1
Vl20       2    100 P Standby 192.168.20.253 local         192.168.20.1
MSW2#
```

(19) 此时，属于VLAN10的PC追踪到服务器的路径，主走MSW1。

PC11



The screenshot shows a Windows command prompt window titled 'Command Prompt' with tabs for Physical, Config, Desktop, Programming, and Attributes. The user has executed several commands to test connectivity to 172.16.1.2:

```
C:\>ping 172.16.1.2
Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>tracert -d 172.16.1.2
Invalid Command.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.10.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.10.254
  1  0 ms    0 ms    0 ms    10.1.1.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  *        0 ms    0 ms    192.168.10.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>
```

The final traceroute result is highlighted with a red box, showing the path from the PC to the server via 10.0.0.2 and 172.16.1.2.

(20) 此时，属于VLAN10的PC追踪到服务器的路径，主走MSW1。

Physical Config Desktop Programming Attributes

```
Command Prompt
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126
Reply from 172.16.1.2: bytes=32 time<1ms TTL=126

Ping statistics for 172.16.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 1ms

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.20.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.20.254
  1  0 ms    0 ms    0 ms    10.1.1.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>tracert 172.16.1.2

Tracing route to 172.16.1.2 over a maximum of 30 hops:

  0  *        0 ms    0 ms    192.168.20.253
  1  0 ms    0 ms    0 ms    10.0.0.2
  2  0 ms    0 ms    0 ms    172.16.1.2

Trace complete.

C:\>
```

Top

至此，思科交换机HSRP典型组网配置案例已完成！