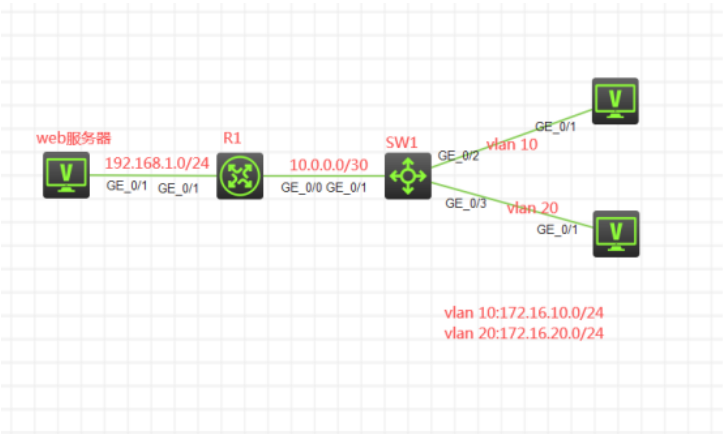
基本ACL典型组网配置案例

ACL VLAN OSPF H3C模拟器 **韦家宁** 2020-02-21 发表

组网及说明



组网说明:

本案例采用H3C HCL模拟器来模拟基本ACL的典型组网配置。在网络拓扑图中已经有了客户机和服务器的标识。R1与SW1运行OSPF路由协议。要求VLAN 20无法访问WEB服务器。

配置步骤

1、按照网络拓扑图正确配置IP地址

2、R1与SW1运行OSPF路由协议

3、SW1配置基本ACL，VLAN 20无法访问WEB服务器

配置关键点

第一阶段调试（基础网络配置）：

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
[SW1]router id 1.1.1.1
[SW1]vlan 10
[SW1-vlan10]quit
[SW1]vlan 20
[SW1-vlan20]quit
[SW1]int vlan 10
[SW1-Vlan-interface10]ip address 172.16.10.1 24
[SW1-Vlan-interface10]quit
[SW1]int vlan 20
[SW1-Vlan-interface20]ip address 172.16.20.1 24
[SW1-Vlan-interface20]quit
[SW1]int gi 1/0/2
[SW1-GigabitEthernet1/0/2]port link-type access
[SW1-GigabitEthernet1/0/2]port access vlan 10
[SW1-GigabitEthernet1/0/2]quit
[SW1]int gi 1/0/3
[SW1-GigabitEthernet1/0/3]port link-type access
[SW1-GigabitEthernet1/0/3]port access vlan 20
[SW1-GigabitEthernet1/0/3]quit
[SW1]int gi 1/0/1
[SW1-GigabitEthernet1/0/1]port link-mode route
[SW1-GigabitEthernet1/0/1]des <connect to R1>
[SW1-GigabitEthernet1/0/1]ip address 10.0.0.1 30
[SW1-GigabitEthernet1/0/1]quit
```

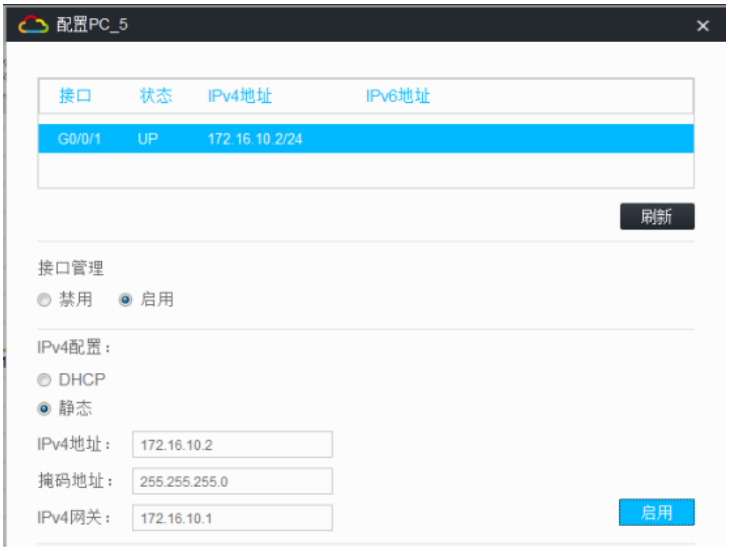
```
[SW1]ospf 1 router-id 1.1.1.1
[SW1-ospf-1]area 0.0.0.0
[SW1-ospf-1-area-0.0.0.0]network 10.0.0.1 0.0.0.0
[SW1-ospf-1-area-0.0.0.0]network 1.1.1.1 0.0.0.0
[SW1-ospf-1-area-0.0.0.0]network 172.16.10.0 0.0.0.255
[SW1-ospf-1-area-0.0.0.0]network 172.16.20.0 0.0.0.255
[SW1-ospf-1-area-0.0.0.0]quit
[SW1-ospf-1]quit
[SW1]
```

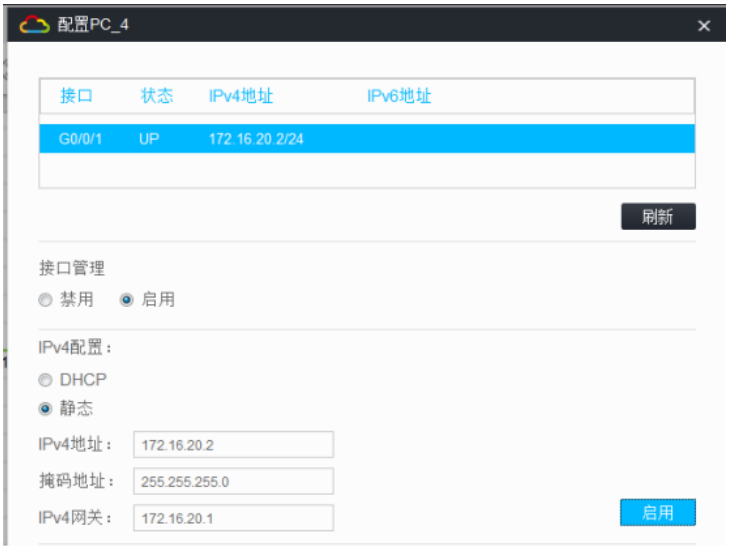
R1：

```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname R1
[R1]int gi 0/0
[R1-GigabitEthernet0/0]des <connect to SW1>
[R1-GigabitEthernet0/0]ip address 10.0.0.2 30
[R1-GigabitEthernet0/0]quit
[R1]int gi 0/1
[R1-GigabitEthernet0/1]ip address 192.168.1.1 24
[R1-GigabitEthernet0/1]quit
[R1]int loopback 0
[R1-LoopBack0]ip address 2.2.2.2 32
[R1-LoopBack0]quit
[R1]router id 2.2.2.2
[R1]ospf 1 router-id 2.2.2.2
[R1-ospf-1]area 0.0.0.0
[R1-ospf-1-area-0.0.0.0]network 10.0.0.2 0.0.0.0
[R1-ospf-1-area-0.0.0.0]network 2.2.2.2 0.0.0.0
[R1-ospf-1-area-0.0.0.0]network 192.168.1.0 0.0.0.255
[R1-ospf-1-area-0.0.0.0]quit
[R1-ospf-1]quit
```

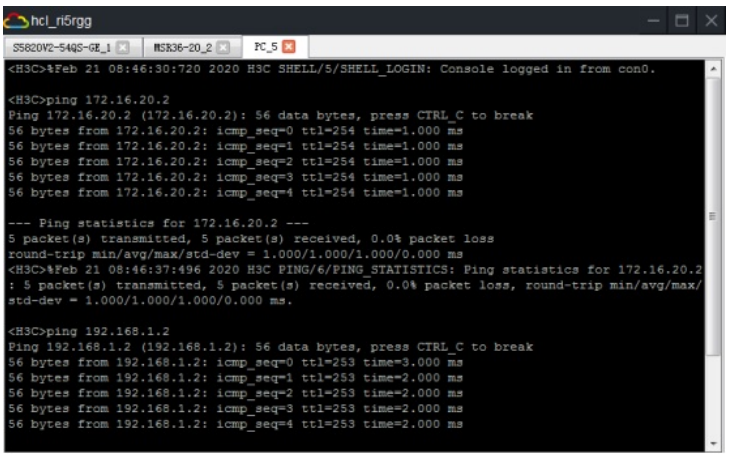
第一阶段测试：

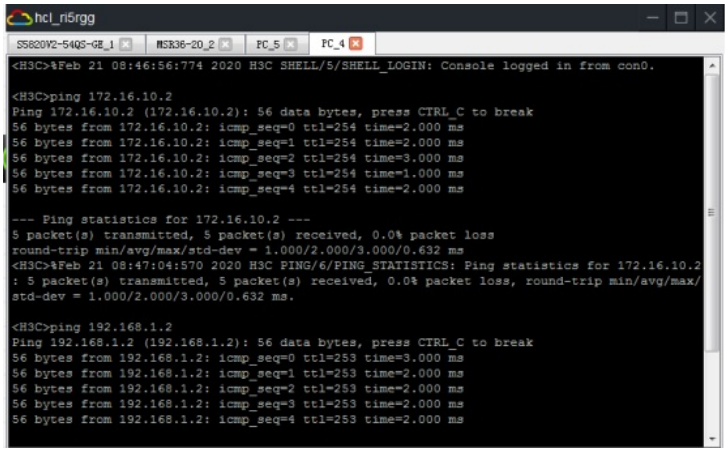
所有PC都填写IP地址，且都能互通：

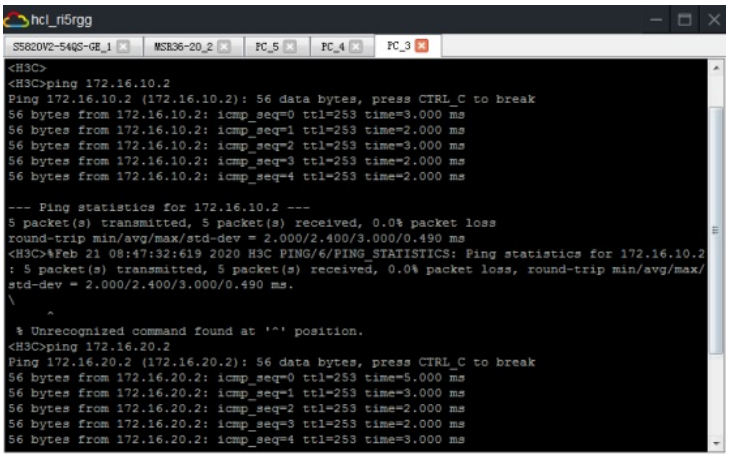



配置PC_4
接口 状态 IPv4地址 IPv6地址
G0/0/1 UP 172.16.20.2/24
刷新
接口管理
禁用 启用
IPv4配置：
DHCP
静态
IPv4地址： 172.16.20.2
掩码地址： 255.255.255.0
IPv4网关： 172.16.20.1
启用


配置PC_3
接口 状态 IPv4地址 IPv6地址
G0/0/1 UP 192.168.1.2/24
刷新
接口管理
禁用 启用
IPv4配置：
DHCP
静态
IPv4地址： 192.168.1.2
掩码地址： 255.255.255.0
IPv4网关： 192.168.1.1
启用


hcl_ri5rgg
S5820V2-54QS-GE_1
MSR36-20_2
PC_5
<H3C>%Feb 21 08:46:30:720 2020 H3C SHELL/5/SHELL_LOGIN: Console logged in from con0.
<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=254 time=1.000 ms
56 bytes from 172.16.20.2: icmp_seq=1 ttl=254 time=1.000 ms
56 bytes from 172.16.20.2: icmp_seq=2 ttl=254 time=1.000 ms
56 bytes from 172.16.20.2: icmp_seq=3 ttl=254 time=1.000 ms
56 bytes from 172.16.20.2: icmp_seq=4 ttl=254 time=1.000 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 = 1.000/1.000/1.000/0.000 ms
<H3C>%Feb 21 08:46:37:496 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 = 1.000/1.000/1.000/0.000 ms.
<H3C>ping 192.168.1.2
Ping 192.168.1.2 (192.168.1.2): 56 data bytes, press CTRL_C to break
56 bytes from 192.168.1.2: icmp_seq=0 ttl=253 time=3.000 ms
56 bytes from 192.168.1.2: icmp_seq=1 ttl=253 time=2.000 ms
56 bytes from 192.168.1.2: icmp_seq=2 ttl=253 time=2.000 ms
56 bytes from 192.168.1.2: icmp_seq=3 ttl=253 time=2.000 ms
56 bytes from 192.168.1.2: icmp_seq=4 ttl=253 time=2.000 ms





第二阶段调试（基本ACL关键配置点）：

[SW1]acl basic 2000

[SW1-acl-ipv4-basic-2000]rule 0 permit source 172.16.10.0 0.0.0.255

[SW1-acl-ipv4-basic-2000]rule 1 deny source 172.16.20.0 0.0.0.255

[SW1-acl-ipv4-basic-2000]quit

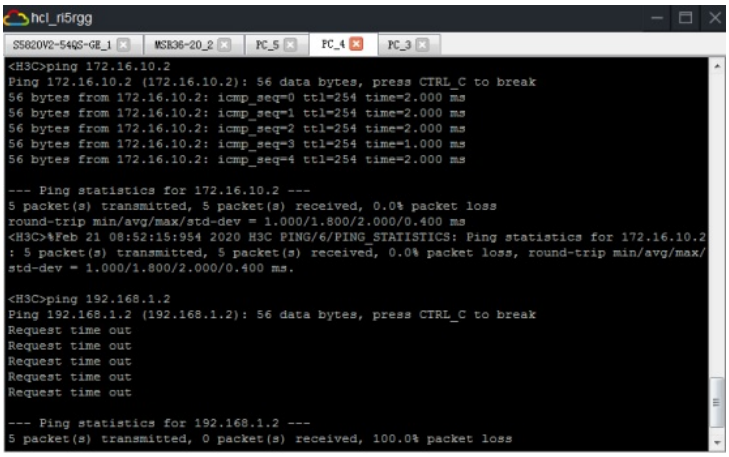
[SW1]int gi 1/0/1

[SW1-GigabitEthernet1/0/1]packet-filter 2000 inbound

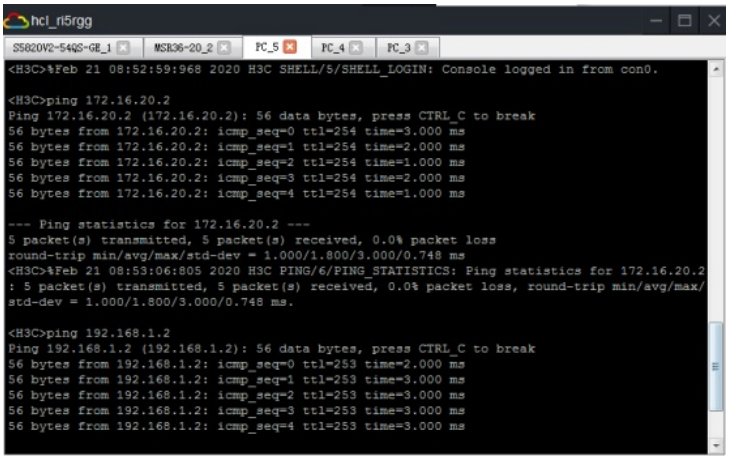
[SW1-GigabitEthernet1/0/1]quit

第二阶段测试：

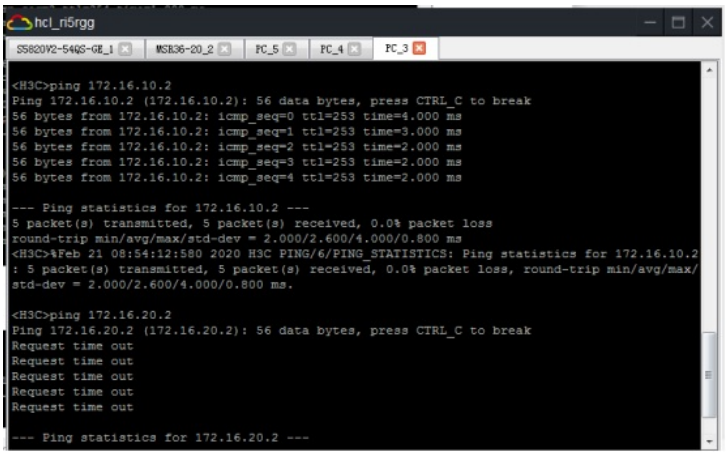
VLAN 20的PC无法PING通服务器



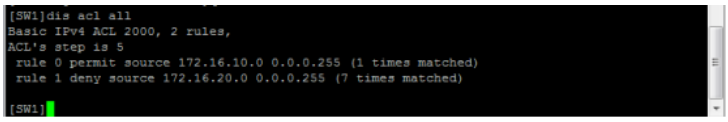
VLAN 10依然可以PING通服务器：



服务器可以PING通VLAN 10的终端，无法PING通VLAN 20的终端：



查看ACL的匹配情况：



至此，基本ACL典型组网配置案例已完成！