S3X00V3系列交换机策略路由配置案例
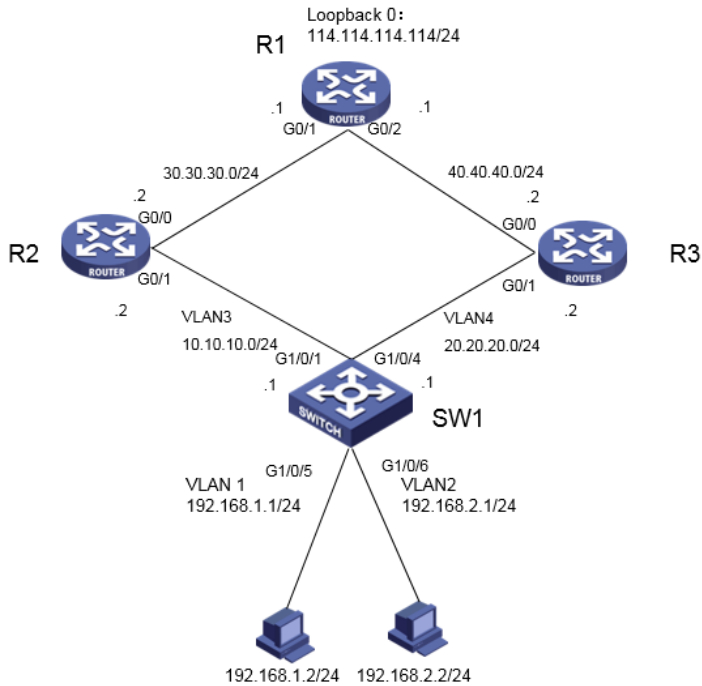
策略路由　肖梦茹　2019-09-21 发表

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S3100V3-28TP-SI、S3100V3-28TP-EI、S3100V3-20TP-PWR-SI、S3100V3-28TP-PWR-EI等S3100V3系列的交换机。

1.2配置需求及实现的效果

交换机SW1上配置一条静态路由，使终端访问114.114.114.114的时候通过R2，其中192.168.2.0这个网段，访问114.114.114.114 的时候匹配策略路由从R3去访问。

2 组网图

配置步骤

3 配置步骤

一. 交换机和路由器上ip地址基本配置

#在SW1上进图系统视图

<H3C>system-view

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

#创建vlan 1-4

[H3C]vlan 1 to 4

#配置vlan 1-vlan 4虚接口IP地址

[H3C]interface Vlan-interface 1

[H3C-Vlan-interface1] ip address 192.168.1.1 255.255.255.0

[H3C-Vlan-interface1]quit

[H3C]interface Vlan-interface 2

[H3C-Vlan-interface2] ip address 192.168.2.1 255.255.255.0

[H3C-Vlan-interface2]quit

[H3C]interface Vlan-interface 3

[H3C-Vlan-interface3] ip address 10.10.10.1 255.255.255.0

[H3C-Vlan-interface3]quit

[H3C]interface Vlan-interface 4

[H3C-Vlan-interface4] ip address 20.20.20.1 255.255.255.0

[H3C-Vlan-interface4]quit

#将端口分别划分到所属vlan，端口1属于vlan 3，端口4属于vlan 4，端口5属于默人vlan 1，端口6属于vlan 2。

[H3C]interface GigabitEthernet 1/0/1

[H3C-GigabitEthernet1/0/1] port access vlan 3

[H3C-GigabitEthernet1/0/1]quit

[H3C]interface GigabitEthernet 1/0/4

[H3C-GigabitEthernet1/0/4] port access vlan 4
[H3C-GigabitEthernet1/0/4]quit
[H3C]interface GigabitEthernet 1/0/6
[H3C-GigabitEthernet1/0/6] port access vlan 2
[H3C-GigabitEthernet1/0/6]quit
#配置到114.114.114.0网段的静态路由
[H3C] ip route-static 114.114.114.0 24 10.10.10.2
[H3C]save force

#在R1上进图系统视图
<H3C>system-view
System View: return to User View with Ctrl+Z.
#创建环回接口LoopBack 0用来模拟主机，地址是114.114.114.114/24
[H3C]interface LoopBack 0
[H3C-LoopBack0]ip address 114.114.114.114 255.255.255.0
[H3C-LoopBack0]quit
#为路由器1口和2口分别配置IP地址。
[H3C]int GigabitEthernet 0/1
[H3C-GigabitEthernet0/1] ip address 30.30.30.1 255.255.255.0
[H3C]int GigabitEthernet 0/2
[H3C-GigabitEthernet0/2] ip address 40.40.40.1 255.255.255.0
[H3C-GigabitEthernet0/2]quit
#配置到192.168.1.0网段的静态路由
[H3C]ip route-static 192.168.1.0 24 30.30.30.2
#配置到114.114.114.0网段的静态路由
[H3C]ip route-static 192.168.2.0 24 40.40.40.2
#开启设备的ICMP目的不可达报文的发送功能
[H3C]ip unreachables enable
#开启ICMP超时报文发送功能
[H3C]ip ttl-expires enable
[H3C]save force

#在R2上进图系统视图
<H3C>system-view
System View: return to User View with Ctrl+Z.
#为路由器1口和2口分别配置IP地址。
[H3C]int GigabitEthernet 0/0
[H3C-GigabitEthernet0/0] ip address 30.30.30.2 255.255.255.0
[H3C]int GigabitEthernet 0/1
[H3C-GigabitEthernet0/1] ip address 10.10.10.2 255.255.255.0
#配置到114.114.114.0网段的静态路由
[H3C] ip route-static 114.114.114.0 24 30.30.30.1
#配置到192.168.1.0网段的静态路由
[H3C] ip route-static 192.168.1.0 24 10.10.10.1
#配置到114.114.114.0网段的静态路由
[H3C] ip route-static 192.168.2.0 24 10.10.10.1
#开启设备的ICMP目的不可达报文的发送功能
[H3C]ip unreachables enable
#开启ICMP超时报文发送功能
[H3C]ip ttl-expires enable
[H3C]save force

#在R3上进图系统视图
<H3C>system-view
System View: return to User View with Ctrl+Z.
#为路由器1口和2口分别配置IP地址。
[H3C]int GigabitEthernet 0/0
[H3C-GigabitEthernet0/0] ip address 40.40.40.2 255.255.255.0
[H3C]int GigabitEthernet 0/1
[H3C-GigabitEthernet0/1] ip address 20.20.20.2 255.255.255.0
#配置到114.114.114.0网段的静态路由
[H3C] ip route-static 114.114.114.0 24 40.40.40.1
#配置到192.168.1.0网段的静态路由
[H3C] ip route-static 192.168.1.0 24 10.10.10.2

#配置到114.114.114.0网段的静态路由
[H3C] ip route-static 192.168.2.0 24 10.10.10.
#开启设备的ICMP目的不可达报文的发送功能
[H3C]ip unreachables enable
#开启ICMP超时报文发送功能
[H3C]ip ttl-expires enable
[H3C]save force

二．交换机策略路由配置
<H3C>system-view
System View: return to User View with Ctrl+Z.
#定义访问控制列表3000，用来匹配内网源地址为192.168.2.0/24网段的数据流
[H3C]acl advanced 3000
[H3C-acl-ipv4-adv-3000]rule permit ip source 192.168.2.0 0.0.0.255
[H3C-acl-ipv4-adv-3000]quit
定义访问控制列表3001，用来匹配内网192.168.2.0/24网段去访问内网192.168.1.0/24网段的数据流
。
[H3C]acl advanced 3001
[H3C-acl-adv-3001]rule permit ip source 192.168.2.0 0.0.0.255 destination 192.168.1.0 0.0.0.255
[H3C-acl-adv-3001]quit
创建策略路由，名称为aaa，节点为10，匹配acl 3001的数据流，不设置apply动作（如果不设置动作
，则匹配到的数据转发时根据路由表来进行转，且不再匹配下一节点，配置这个节点的作用是实现内
网不同网段之间互访的流量不匹配策略路由，达到可以互访的目的。备注：默认情况下，网关在路由
器上的不同网段是可以互相访问的）。
[H3C]policy-based-route aaa permit node 10
[H3C-pbr-aaa-10]if-match acl 3001
[H3C-pbr-aaa-10]quit
#创建策略路由aaa的节点20，匹配acl 3000的数据流，设置apply动作，指定数据的下一跳为20.20.20.
2。
[H3C]policy-based-route aaa node 20
[H3C-pbr-aaa-20]if-match acl 3000
[H3C-pbr-aaa-20]apply next-hop 20.20.20.2
[H3C-pbr-aaa-20]quit
#在内网VLAN虚接口（网关）上应用策略路由
[H3C]interface vlan 2
[H3C-Vlan-interface2]ip policy-based-route aaa
[H3C-Vlan-interface2]quit
[H3C]save force

4 验证配置
交换机上没有配置策略路由的时候，在两台终端上tracert路径的结果如下：

192.168.1.2：


```
[H3C]tracert 114.114.114.114
traceroute to 114.114.114.114 (114.114.114.114), 30 hops at most, 40 bytes each packet, pr
ess CTRL_C to break
 1  192.168.1.1 (192.168.1.1)  7.000 ms  2.000 ms  1.000 ms
 2  10.10.10.2 (10.10.10.2)  3.000 ms  4.000 ms  4.000 ms
 3  30.30.30.1 (30.30.30.1)  6.000 ms  7.000 ms  5.000 ms
```

192.168.2.2：


```
[H3C]tracert 114.114.114.114
traceroute to 114.114.114.114 (114.114.114.114), 30 hops at most, 40 bytes each packet, pr
ess CTRL_C to break
 1  192.168.2.1 (192.168.2.1)  1.000 ms  1.000 ms  1.000 ms
 2  10.10.10.2 (10.10.10.2)  1.000 ms  1.000 ms  2.000 ms
 3  30.30.30.1 (30.30.30.1)  2.000 ms  1.000 ms  2.000 ms
```

配置了策略路由以后
192.168.1.2：


```
[H3C]tracert 114.114.114.114
traceroute to 114.114.114.114 (114.114.114.114), 30 hops at most, 40 bytes each packet, pr
ess CTRL_C to break
 1  192.168.1.1 (192.168.1.1)  7.000 ms  2.000 ms  1.000 ms
 2  10.10.10.2 (10.10.10.2)  3.000 ms  4.000 ms  4.000 ms
 3  30.30.30.1 (30.30.30.1)  6.000 ms  7.000 ms  5.000 ms
```

192.168.2.2：


```
[H3C]tracert 114.114.114.114
traceroute to 114.114.114.114 (114.114.114.114), 30 hops at most, 40 bytes each packet, pr
ess CTRL_C to break
 1  192.168.2.1 (192.168.2.1)  2.000 ms  2.000 ms  2.000 ms
 2  20.20.20.2 (20.20.20.2)  4.000 ms  4.000 ms  8.000 ms
 3  40.40.40.1 (40.40.40.1)  11.000 ms  4.000 ms  5.000 ms
```