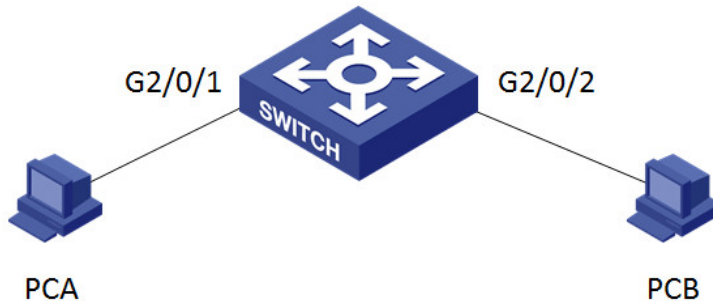


流量统计就是通过与类关联，对符合匹配规则的流进行统计，统计报文数或字节数。是排查丢包和不通类问题的手段。例如，可以统计从某个源IP地址发送的报文，然后管理员对统计信息进行分析，根据分析情况采取相应的措施。

如图所示组网，PCA访问PCB web业务无法访问成功，怀疑网络中存在丢包，使用流量统计，确认丢包位置。在大型网络中通过流量统计也可以缩小故障范围。PCA的IP为1.1.1.1，PCB的IP为2.2.2.2。



定义acl，匹配PCA访问PCB的流量计，在做流量统计时应尽量保证匹配的情况精确，避免抓取到其他业务流量，使流量统计不准确。

```
[H3C]acl number 3333
[H3C-acl-adv-3333]description traffic accounting for host A to host B
[H3C-acl-adv-3333]rule 10 permit tcp source 1.1.1.1 0.0.0.0 destination 2.2.2.2 0.0.0.0 destination-port eq 80
```

定义流分类，匹配acl定义的PCA访问PCB的web流量。

```
[H3C]traffic classifier traffic_accounting_from_A_to_B
[H3C-classifier-traffic_accounting_from_A_to_B]if-match acl 3333
```

定义流行为，统计报文个数

```
[H3C]traffic behavior traffic_accounting_from_A_to_B
[H3C-behavior-traffic_accounting_from_A_to_B]accounting packet
```

定义qos策略，关联流分类和流行为

```
[H3C]qos policy traffic_accounting_from_A_to_B
[H3C-qospolicy-traffic_accounting_from_A_to_B]classifier traffic_accounting_from_A_to_B behavior traffic_accounting_from_A_to_B
```

在2/0/1的入方向和2/0/2的出访问下发qos策略，来统计报文是否到达设备和是否被设备转发给PCB。

```
[H3C]interface GigabitEthernet2/0/1
[H3C-GigabitEthernet2/0/1]qos apply policy traffic_accounting_from_A_to_B inbound
[H3C]interface GigabitEthernet2/0/2
[H3C-GigabitEthernet2/0/2]qos apply policy traffic_accounting_from_A_to_B outbound
```

使PCA访问PCB，查看接口GigabitEthernet2/0/1流量统计结果

```
[H3C]display qos policy interface GigabitEthernet 2/0/1
Interface: GigabitEthernet2/0/1
Direction: Inbound
Policy: traffic_accounting_from_A_to_B
Classifier: traffic_accounting_from_A_to_B
Operator: AND
Rule(s) : If-match acl 3333
Behavior: traffic_accounting_from_A_to_B
Accounting Enable:
5 (Packets)
```

根据结果看出有5个报文进行交换机。查看接口GigabitEthernet2/0/2流量统计结果

```
[H3C]display qos policy interface GigabitEthernet 2/0/2
Interface: GigabitEthernet2/0/2
Direction: Outbound
Policy: traffic_accounting_from_A_to_B
Classifier: traffic_accounting_from_A_to_B
Operator: AND
Rule(s) : If-match acl 3333
Behavior: traffic_accounting_from_A_to_B
Accounting Enable:
```

5 (Packets)

有5个报文从交换机发出，说明从A到B转发正常。

使用相同方式对反方向做流量统计，同时查看结果。

```
[H3C]acl number 3334
```

```
[H3C-acl-adv-3334]description traffic accounting for host B to host A
```

```
[H3C-acl-adv-3334]rule 10 permit tcp source 2.2.2.2 0.0.0.0 source-port eq 80 destination 1.1.1.1 0.0.
```

```
0.0
```

定义流分类，匹配acl定义的PCA访问PCB的web流量。

```
[H3C]traffic classifier traffic_accounting_from_B_to_A
```

```
[H3C-classifier-traffic_accounting_from_B_to_A]if-match acl 3334
```

定义流行为，统计报文个数

```
[H3C]traffic behavior traffic_accounting_from_B_to_A
```

```
[H3C-behavior-traffic_accounting_from_B_to_A]accounting packet
```

定义qos策略，关联流分类和流行为

```
[H3C]qos policy traffic_accounting_from_B_to_A
```

```
[H3C-qospolicy-traffic_accounting_from_B_to_A]classifier traffic_accounting_from_B_to_A behavior t
```

```
raffic_accounting_from_B_to_A
```

在2/0/2的入方向和2/0/1的出访问下发qos策略，来统计报文是否到达设备和是否被设备转发给PCB。

```
[H3C]interface GigabitEthernet2/0/1
```

```
[H3C-GigabitEthernet2/0/1]qos apply policy traffic_accounting_from_B_to_A outbound
```

```
[H3C]interface GigabitEthernet2/0/2
```

```
[H3C-GigabitEthernet2/0/2]qos apply policy traffic_accounting_from_B_to_A inbound
```

使用display qos policy interface查看流量统计结果

```
[H3C]display qos policy interface GigabitEthernet 2/0/1
```

```
Interface: GigabitEthernet2/0/1
```

```
Direction: Outbound
```

```
Policy: traffic_accounting_from_B_to_A
```

```
Classifier: traffic_accounting_from_B_to_A
```

```
Operator: AND
```

```
Rule(s) : If-match acl 3334
```

```
Behavior: traffic_accounting_from_B_to_A
```

```
Accounting Enable:
```

```
5 (Packets)
```

```
[H3C]display qos policy interface GigabitEthernet 2/0/2
```

```
Interface: GigabitEthernet2/0/2
```

```
Direction: Inbound
```

```
Policy: traffic_accounting_from_B_to_A
```

```
Classifier: traffic_accounting_from_B_to_A
```

```
Operator: AND
```

```
Rule(s) : If-match acl 3334
```

```
Behavior: traffic_accounting_from_B_to_A
```

```
Accounting Enable:
```

```
5 (Packets)
```

通过以上结果可以看出交换机反向转发正常，在交换机上没有丢包。

关键配置如下

```
acl number 3333
```

```
description traffic accounting for host A to host B
```

```
rule 10 permit tcp source 1.1.1.1 0 destination 2.2.2.2 0 destination-port eq www
```

```
acl number 3334
```

```
description traffic accounting for host B to host A
```

```
rule 10 permit tcp source 2.2.2.2 0 source-port eq www destination 1.1.1.1 0
```

```
#
```

```
traffic classifier traffic_accounting_from_A_to_B operator and
```

```
if-match acl 3333
```

```
traffic classifier traffic_accounting_from_B_to_A operator and
```

```
if-match acl 3334
```

```
#
```

```
traffic behavior traffic_accounting_from_A_to_B
```

```
accounting packet
```

```
traffic behavior traffic_accounting_from_B_to_A
```

```
accounting packet
```

```
#
```

```
qos policy traffic_accounting_from_A_to_B
```

```
classifier traffic_accounting_from_A_to_B behavior traffic_accounting_from_A_to_B
```

```
qos policy traffic_accounting_from_B_to_A
classifier traffic_accounting_from_B_to_A behavior traffic_accounting_from_B_to_A
#
interface GigabitEthernet2/0/1
qos apply policy traffic_accounting_from_A_to_B inbound
qos apply policy traffic_accounting_from_B_to_A outbound
#
interface GigabitEthernet2/0/2
qos apply policy traffic_accounting_from_B_to_A inbound
qos apply policy traffic_accounting_from_A_to_B outbound
```

注意事项

- 1、对匹配的流量计一定要尽量精确，避免其他流量影响统计结果。
- 2、注意流量双向性和qos策略下发的方向要正确下发。