

知 SR66/SR66X系列路由器NQA监测静态路由下一跳不可达时发送Trap消息的典型配置

张玺 2013-07-31 发表

SR66/SR66X系列路由器NQA监测静态路由下一跳不可达时 发送Trap消息的典型配置

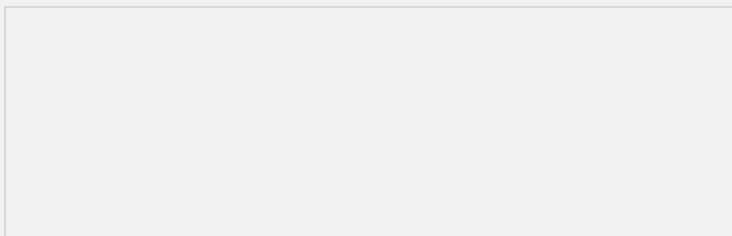
一、组网需求：

客户网络中有两台SR6602路由器对接，中间经过二层设备（使用普通二层SW模拟）。SR6602-1上配置静态路由使得其可以访问地址100.0.0.1/32，SR6602-2上配置静态路由使得其可以访问地址200.0.0.1/32。

目前客户欲实现以下功能：在两台SR6602上配置静态路由与NQA联动，使得SW与SR6602-2之间的链路断开时，SR6602-1因为无法监测到10.0.0.2可达而使去往地址100.0.0.1/32的静态路由失效，并向网管服务器发送相关Trap消息。同样，SW与SR6602-1之间的链路断开时，SR6602-2因为无法监测到10.0.0.1可达而使去往地址200.0.0.1/32的静态路由失效，并向网管服务器发送相关Trap消息。

设备及版本：SR6602路由器2台（版本为R2604P10）、普通二层SW 1台。

二、组网图：



三、配置步骤：

SR6602-1 配置

```
#
sysname SR6602-1
#
interface LoopBack0
ip address 200.0.0.1 255.255.255.255
#
interface GigabitEthernet0/0
ip address 10.0.0.1 255.255.255.0
#
nqa entry h3c 1 //创建NQA测试组，管理员名为h3c，测试操作标签为1
type icmp-echo
destination ip 10.0.0.2
frequency 1000 //测试组连续两次测试开始时间的时间间隔为1000毫秒
probe count 5 //一次NQA测试中进行探测的次数为5
reaction 1 checked-element probe-fail threshold-type consecutive 2 action-type trigger-only //阈值探测次数为2次，达到阈值后触发联动模块
reaction trap test-failure 2 //本次测试中探测失败次数达到2次，则在本次测试完成后发送Trap消息
source ip 10.0.0.1
#
ip route-static 100.0.0.1 255.255.255.255 10.0.0.2 track 1
#
snmp-agent
snmp-agent local-engineid 800063A20300E0FC3A0000
snmp-agent community read public
snmp-agent community write private
snmp-agent sys-info version all
snmp-agent target-host trap address udp-domain 192.168.1.2 params securityname h3c
#
track 1 nqa entry h3c 1 reaction 1
#
nqa schedule h3c 1 start-time now lifetime forever
#
```

SR6602-2 配置

```
#
```

```

sysname SR6602-2
#
interface LoopBack0
ip address 100.0.0.1 255.255.255.255
#
interface GigabitEthernet0/0
ip address 10.0.0.2 255.255.255.0
#
nqa entry h3c 1 //创建NQA测试组，管理员名为h3c，测试操作标签为1
type icmp-echo
destination ip 10.0.0.1
frequency 1000 //测试组连续两次测试开始时间的间隔为1000毫秒
probe count 5 //一次NQA测试中进行探测的次数为5
reaction 1 checked-element probe-fail threshold-type consecutive 2 action-type trigger-only //阈值探测次数为2次，达到阈值后触发联动模块
reaction trap test-failure 2 //本次测试中探测失败次数达到2次，则在本次测试完成后发送Trap消息
source ip 10.0.0.2
#
ip route-static 200.0.0.1 255.255.255.255 10.0.0.1 track 1
#
snmp-agent
snmp-agent local-engineid 800063A203000FE2000002
snmp-agent community read public
snmp-agent community write private
snmp-agent sys-info version all
snmp-agent target-host trap address udp-domain 192.168.1.2 params securityname h3c
#
track 1 nqa entry h3c 1 reaction 1
#
nqa schedule h3c 1 start-time now lifetime forever
#

```

四、功能测试：

1、配置完成后，查看SR6602-1上的NQA统计：

```
[SR6602-1]dis nqa statistics
```

NQA entry (admin h3c, tag 1) test statistics:

NO. : 1

Destination IP address: 10.0.0.2

Start time: 2013-07-21 17:14:40.6

Life time: 3 seconds

Send operation times: 20 Receive response times: 20

Min/Max/Average round trip time: 1/1/1

Square-Sum of round trip time: 60

Extended results:

Packet loss in test: 0%

Failures due to timeout: 0

Failures due to disconnect: 0

Failures due to no connection: 0

Failures due to sequence error: 0

Failures due to internal error: 0

Failures due to other errors: 0

Packet(s) arrived late: 0

Reaction statistics:

Index	Checked Element	Threshold Type	Checked Num	Over-threshold Num
1	probe-fail	consecutive	19	0

2、此时查看SR6602-1的路由表，可以看到去往100.0.0.1/32网段的静态路由：

```
[SR66-1]dis ip routing-table
```

Routing Tables: Public

Destinations : 6 Routes : 6

Destination/Mask	Proto	Pre	Cost	NextHop	Interface
100.0.0.1/32	Static	60	0	10.0.0.2	GE0/0

3、拔掉SR6602-2和SW的相连的网线后，再次查看去往100.0.0.1/32网段的静态路由，可见静态路由消失了。

4、在SR6602-2和SW未恢复连通的情况下，每隔一段时间可以看到如下Trap信息：

```
#Jul 21 17:19:20:464 2013 SR66-1 NQA/4/NQA Trap:
```

```
1.3.6.1.2.1.80.0.2<pingTestFailed> NQA entry h3c 1 test fail trap information: pingCtl
```

```
OwnerIndex: h3c, pingCtlTestName: 1, pingCtlTargetAddressType: 1,
```

```
pingCtlTargetAddress: 10.0.0.2, pingResultsOperStatus: 1,
```

pingResultsIpTargetAddressType: 0, pingResultsIpTargetAddress: ,
pingResultsMinRtt: 0, pingResultsMaxRtt: 0, pingResultsAverageRtt: 0,
pingResultsProbeResponses: 0, pingResultsSentProbes: 5, pingResultsRttSumOfSquares: 0, pingResultsLastGoodProbe: 0.0.0.0.0.0.0.0.0.0.

5、SR6602-2和SW恢复连通后，去往100.0.0.1/32网段的静态路由又出现了，且以上Trap信息也无法看到了。

五、配置关键点：
无