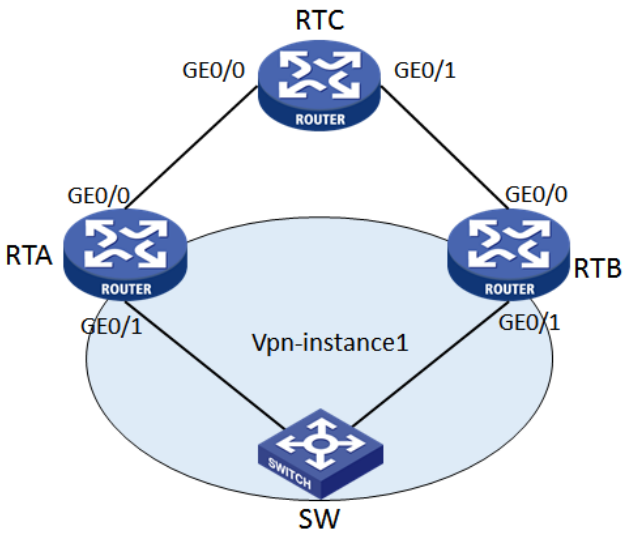
MSR路由器做VRRP跨VPN实例联动Track、NQA典型配置

VPN实例 VRRP 单畅 2019-05-10 发表

组网及说明

RTA的GE0/1和RTB的GE0/1口是内网口，在vpn-instance 1中，做VRRP，RTA为VRRP的主。RTC是公网设备，RTA的GE0/0和RTB的GE0/0是公网口。



配置步骤

RTA配置

```
#
 version 7.1.075, R0615P20
#
 sysname RTA
#
ip vpn-instance 1
#
track 1 nqa entry admin test reaction 1
#
nqa entry admin test
 type icmp-echo
  destination ip 2.1.1.2
  frequency 100
  reaction 1 checked-element probe-fail threshold-type consecutive 5 action-type trigger-only
#
 nqa schedule admin test start-time now lifetime forever
#
interface GigabitEthernet0/0
 port link-mode route
 combo enable copper
 ip address 2.1.1.1 255.255.255.0
#
interface GigabitEthernet0/1
 port link-mode route
 combo enable copper
 ip binding vpn-instance 1
 ip address 1.1.1.1 255.255.255.0
 vrrp vrid 1 virtual-ip 1.1.1.100
vrrp vrid 1 priority 100
 vrrp vrid 1 timer advertise 500
 vrrp vrid 1 authentication-mode simple cipher $c$3$mLWX3F+mQ0ODds4PXs6FSPq2xnfEVXSG
 vrrp vrid 1 preempt-mode delay 5000
 vrrp vrid 1 track 1 priority reduced 30
#
```

RTB配置

```
#
 version 7.1.075, R0615P11
#
 sysname RTB
#
ip vpn-instance 1
#
interface GigabitEthernet0/0
 port link-mode route
 combo enable copper
 ip address 2.1.2.1 255.255.255.0
#
interface GigabitEthernet0/1
 port link-mode route
 combo enable copper
 ip binding vpn-instance 1
 ip address 1.1.1.2 255.255.255.0
 vrrp vrid 1 virtual-ip 1.1.1.100
 vrrp vrid 1 timer advertise 500
 vrrp vrid 1 authentication-mode simple cipher $c$3$NrVJ3aUOvYRZqUOdM1UE/yOzn/Z1rxKs
 vrrp vrid 1 priority 80
 vrrp vrid 1 preempt-mode delay 5000

[RTA]dis vrrp
IPv4 virtual router information:
 Running mode : Standard
 Total number of virtual routers : 1
 Interface          VRID  State       Running Adver    Auth     Virtual
                                  pri     timer(cs) type     IP
 ---------------------------------------------------------------------------
 GE0/1              1     Master      100     500      Simple   1.1.1.100
[RTB]dis vrrp
IPv4 virtual router information:
 Running mode : Standard
 Total number of virtual routers : 1
 Interface          VRID  State       Running Adver    Auth     Virtual
                                  pri     timer(cs) type     IP
 ---------------------------------------------------------------------------
 GE0/1              1     Backup      80      500      Simple   1.1.1.100
```

RTA上连链路断了后，RTA上的日志和debug信息：

```
%May 10 11:04:39:263 2019 1 IFNET/3/PHY_UPDOWN: Physical state on the interface GigabitEther
net0/0 changed to down.
%May 10 11:04:39:263 2019 1 IFNET/5/LINK_UPDOWN: Line protocol state on the interface Gigabit
Ethernet0/0 changed to down.
q%May 10 11:04:39:729 2019 1 NQA/6/NQA_ENTRY_PROBE_RESULT: Reaction entry 1 of NQA e
ntry admin-name admin operation-tag test: probe-fail.//链路断， NQA检测失败

*May 10 11:05:29:039 2019 1 VRRP4/7/Packet:
Sent Advertisement message from GigabitEthernet0/1
VRID: 1  Pri: 70  Adver timer: 500 centisecs//RTA优先级变为70，并向RTB发送优先级为70的vrrp报文

*May 10 11:05:34:039 2019 1 VRRP4/7/Packet:
Sent Advertisement message from GigabitEthernet0/1
VRID: 1  Pri: 70  Adver timer: 500 centisecs

*May 10 11:05:36:326 2019 1 VRRP4/7/Packet: Received Advertisement message from 1.1.1.2 on G
igabitEthernet0/1
VRID: 1  Pri: 80  Adver timer: 500 centisecs//收到RTB发送的优先级为80的vrrp报文

%May 10 11:05:36:326 2019 1 VRRP4/6/VRRP_STATUS_CHANGE:
The status of IPv4 virtual router 1 (configured on GigabitEthernet0/1) changed from Master to Backup
: VRRP packet received.//VRRP主由RTA切换为RTB
```

*May 10 11:05:41:610 2019 1 VRRP4/7/Packet: Received Advertisement message from 1.1.1.2 on GigabitEthernet0/1
VRID: 1 Pri: 80 Adver timer: 500 centisecs

此时看vrrp状态
[RTA]dis vrrp
IPv4 virtual router information:
 Running mode : Standard
 Total number of virtual routers : 1
 Interface VRID State Running Adver Auth Virtual
                  pri timer(cs) type IP

 GE0/1 1 Backup 70 500 Simple 1.1.1.100
[RTB]

链路恢复后，RTA上的日志和debug：
%May 10 11:08:06:453 2019 1 IFNET/3/PHY_UPDOWN: Physical state on the interface GigabitEthernet0/0 changed to up.
%May 10 11:08:06:453 2019 1 IFNET/5/LINK_UPDOWN: Line protocol state on the interface GigabitEthernet0/0 changed to up.
q%May 10 11:08:06:540 2019 1 NQA/6/NQA_ENTRY_PROBE_RESULT: Reaction entry 1 of NQA entry admin-name admin operation-tag test: probe-pass.//链路恢复，NQA检测成功
*May 10 11:08:56:819 2019 1 VRRP4/7/Packet: Received Advertisement message from 1.1.1.2 on GigabitEthernet0/1
VRID: 1 Pri: 80 Adver timer: 500 centisecs//刚开始还是收到RTB发送的优先级为80的vrrp报文

*May 10 11:09:02:136 2019 1 VRRP4/7/Packet: Received Advertisement message from 1.1.1.2 on GigabitEthernet0/1
VRID: 1 Pri: 80 Adver timer: 500 centisecs

%May 10 11:09:02:240 2019 1 VRRP4/6/VRRP_STATUS_CHANGE:
The status of IPv4 virtual router 1 (configured on GigabitEthernet0/1) changed from Backup to Master : Preempt.//RTA由备切换为主

*May 10 11:09:02:240 2019 1 VRRP4/7/Packet:
Sent Advertisement message from GigabitEthernet0/1
VRID: 1 Pri: 100 Adver timer: 500 centisecs//向RTB发送优先级为100的vrrp报文
 [RTA]dis vrrp
IPv4 virtual router information:
 Running mode : Standard
 Total number of virtual routers : 1
 Interface VRID State Running Adver Auth Virtual
                  pri timer(cs) type IP

 GE0/1 1 Master 100 500 Simple 1.1.1.100
[RTB]dis vrrp
IPv4 virtual router information:
 Running mode : Standard
 Total number of virtual routers : 1
 Interface VRID State Running Adver Auth Virtual
                  pri timer(cs) type IP

 GE0/1 1 Backup 80 500 Simple 1.1.1.100

配置关键点

1、接口绑定相同VPN实例，其他配置和普通VRRP一样；
2、配置优先级要保证，NQA检测失败后主设备的优先级比备设备低，从而实现VRRP的切换；
3、这个案例证明，VRRP组网中，接口在不同VPN实例，跨VPN实例进行Track联动NQA检测，是可以生效的。