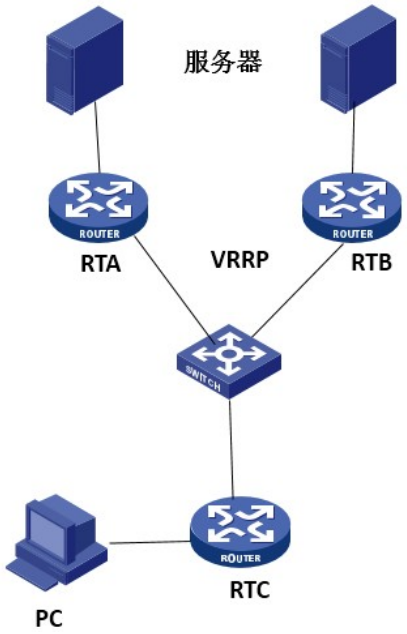
MSR使用VRRP虚地址建立GRE隧道配置

VRRP ipoe 朱玉广 2015-11-05 发表

1. RTA和RTB采用VRRP做备份；
2. RTA、RTB使用VRRP虚地址与RTC起GRE Tunnel。
3. 当RTA链路出现问题时，切换到备用RTB上，保持GRE VPN不断，PC可以快速访问到备用服务器；



RTA的配置

```
#配置接口地址，并起VRRP
interface GigabitEthernet0/0
 port link-mode route
 ip address 1.1.1.2 255.255.255.0
 vrrp vrid 1 virtual-ip 1.1.1.4
 vrrp vrid 1 priority 110
 vrrp vrid 1 preempt-mode timer delay 5
#配置连接内网服务器接口地址
interface GigabitEthernet0/1
 port link-mode route
 ip address 192.168.1.1 255.255.255.0
#配置GRE，此处注意，RTA和RTB上的配置参数需要一致，source地址需要配置为VRRP的虚地址。
interface Tunnel0
 ip address 10.1.1.1 255.255.255.0
 source 1.1.1.4
 destination 1.1.1.10
 keepalive 10 3
#配置完，切记要添加一条静态路由，指向tunnel口。
 ip route-static 192.168.2.0 255.255.255.0 Tunnel0
```

RTB的配置

```
#配置接口地址，并起VRRP
interface GigabitEthernet0/0
 port link-mode route
 ip address 1.1.1.3 255.255.255.0
 vrrp vrid 1 virtual-ip 1.1.1.4
 vrrp vrid 1 preempt-mode timer delay 5
#配置连接内网服务器接口地址
interface GigabitEthernet0/1
 port link-mode route
 ip address 192.168.1.1 255.255.255.0
```

#配置GRE，此处注意，RTA和RTB上的配置参数需要一致，source地址需要配置为VRRP的虚地址。
interface Tunnel0
 ip address 10.1.1.1 255.255.255.0
 source 1.1.1.4
 destination 1.1.1.10
 keepalive 10 3
#
 ip route-static 192.168.2.0 255.255.255.0 Tunnel0
#
RTC的配置
#配置出口地址
interface GigabitEthernet0/0
 port link-mode route
 ip address 1.1.1.10 255.255.255.0
#配置内网地址，这里使用一个loopback地址进行模拟
interface LoopBack5
 ip address 192.168.2.2 255.255.255.255
#配置GRE tunnel
interface Tunnel0
 ip address 10.1.1.2 255.255.255.0
 source 1.1.1.10
 destination 1.1.1.4
 keepalive 10 3
#添加一条静态路由，指向tunnel口
 ip route-static 192.168.1.0 255.255.255.0 Tunnel0
配置完成之后，在RTA上观察VRRP
[RTA]dis vrrp ver
 IPv4 Standby Information:
     Run Mode   : Standard
     Run Method   : Virtual MAC
 Total number of virtual routers : 1
   Interface GigabitEthernet0/0
     VRID   : 1   Adver Timer : 1
     Admin Status   : Up   State   : Master
     Config Pri   : 110   Running Pri : 110
     Preempt Mode   : Yes   Delay Time : 5
     Auth Type   : None
     Virtual IP   : 1.1.1.4
     Virtual MAC   : 0000-5e00-0101
     Master IP   : 1.1.1.2

在RTB上观察VRRP
[RTB]dis vrrp ver
 IPv4 Standby Information:
     Run Mode   : Standard
     Run Method   : Virtual MAC
 Total number of virtual routers : 1
   Interface GigabitEthernet0/0
     VRID   : 1   Adver Timer : 1
     Admin Status   : Up   State   : Backup
     Config Pri   : 100   Running Pri : 100
     Preempt Mode   : Yes   Delay Time : 5
     Become Master : 3100ms left
     Auth Type   : None
     Virtual IP   : 1.1.1.4
     Master IP   : 1.1.1.2
可以看到，RTA为mater设备。

在RTA的观察tunnel0
[RTA]dis interface Tunnel 0
Tunnel0 current state: UP
Line protocol current state: UP
Description: Tunnel0 Interface

The Maximum Transmit Unit is 1476
Internet Address is 20.1.1.1/24 Primary
Encapsulation is TUNNEL, service-loopback-group ID not set.
Tunnel source 1.1.1.4, destination 1.1.1.10
Tunnel bandwidth 64 (kbps)
Tunnel keepalive enabled, Period(10 s), Retries(3)
Tunnel protocol/transport GRE/IP
  GRE key disabled
  Checksumming of GRE packets disabled
Output queue : (Urgent queuing : Size/Length/Discards) 0/100/0
Output queue : (Protocol queuing : Size/Length/Discards) 0/500/0
Output queue : (FIFO queuing : Size/Length/Discards) 0/75/0
 Last clearing of counters: Never
  Last 300 seconds input: 2 bytes/sec, 0 packets/sec
  Last 300 seconds output: 2 bytes/sec, 0 packets/sec
  404 packets input, 4956 bytes
  0 input error
  233 packets output, 5700 bytes
0 output error

在RTB上观察tunnel0
[RTB]dis interface Tunnel 0
Tunnel0 current state: DOWN
Line protocol current state: DOWN
Description: Tunnel0 Interface
The Maximum Transmit Unit is 64000
Internet Address is 10.1.1.1/24 Primary
Encapsulation is TUNNEL, service-loopback-group ID not set.
Tunnel source 1.1.1.4, destination 1.1.1.10
Tunnel bandwidth 64 (kbps)
Tunnel keepalive enabled, Period(10 s), Retries(3)
Tunnel protocol/transport GRE/IP
  GRE key disabled
  Checksumming of GRE packets disabled
Output queue : (Urgent queuing : Size/Length/Discards) 0/100/0
Output queue : (Protocol queuing : Size/Length/Discards) 0/500/0
Output queue : (FIFO queuing : Size/Length/Discards) 0/75/0
 Last clearing of counters: Never
  Last 300 seconds input: 0 bytes/sec, 0 packets/sec
  Last 300 seconds output: 0 bytes/sec, 0 packets/sec
  0 packets input, 0 bytes
  0 input error
  0 packets output, 0 bytes
  0 output error
在RTC上观察tunnel0
[RTC]dis int Tunnel 0
Tunnel0 current state: UP
Line protocol current state: UP
Description: Tunnel0 Interface
The Maximum Transmit Unit is 1476
Internet Address is 10.1.1.2/24 Primary
Encapsulation is TUNNEL, service-loopback-group ID not set.
Tunnel source 1.1.1.10, destination 1.1.1.4
Tunnel bandwidth 64 (kbps)
Tunnel keepalive enabled, Period(10 s), Retries(3)
Tunnel protocol/transport GRE/IP
  GRE key disabled
  Checksumming of GRE packets disabled
Output queue : (Urgent queuing : Size/Length/Discards) 0/100/0
Output queue : (Protocol queuing : Size/Length/Discards) 0/500/0
Output queue : (FIFO queuing : Size/Length/Discards) 0/75/0
 Last clearing of counters: Never
  Last 300 seconds input: 0 bytes/sec, 0 packets/sec
  Last 300 seconds output: 2 bytes/sec, 0 packets/sec

221 packets input, 324 bytes
0 input error
239 packets output, 5844 bytes
0 output error

断开RTA的连线之后，可以看到VRRP已经切换到了RTB设备上。

```
[RTB]dis vrrp ver
 IPv4 Standby Information:
     Run Mode       : Standard
     Run Method     : Virtual MAC
  Total number of virtual routers : 1
    Interface GigabitEthernet0/0
     VRID           : 1               Adver Timer : 1
     Admin Status   : Up              State       : Master
     Config Pri     : 100             Running Pri : 100
     Preempt Mode   : Yes             Delay Time  : 5
     Auth Type      : None
     Virtual IP     : 1.1.1.4
     Virtual MAC    : 0000-5e00-0101
     Master IP      : 1.1.1.3
```

在长ping的时候，我们可以看到，当RTA的出口链路端口之后，会很快的切换到RTB设备上。

1、 RTA与RTB配置的GRE参数需要保持一致。
2、 配置完之后，记得添加一个路由，指向tunnel口。