H3C万兆核心路由器SR8800 BFD for VRRP(监控Master)典型配置

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H3C万兆核心路由器SR8800 BFD for VRRP
(监控master)配置举例

1　组网需求

l　Master出现故障时，只能依赖于Backup设置的超时时间来判断是否应该抢占，切换时间一般在3秒~4秒之间，无法达到秒级以下的切换速度。

l　VRRP必须依赖一种可靠的链路检测机制来探测Master的当前状态。Backup上的探测协议快速检测Master的运行状态，当Master状态出现故障时，Backup能够立即抢占成为Master，切换时间在100ms以内。

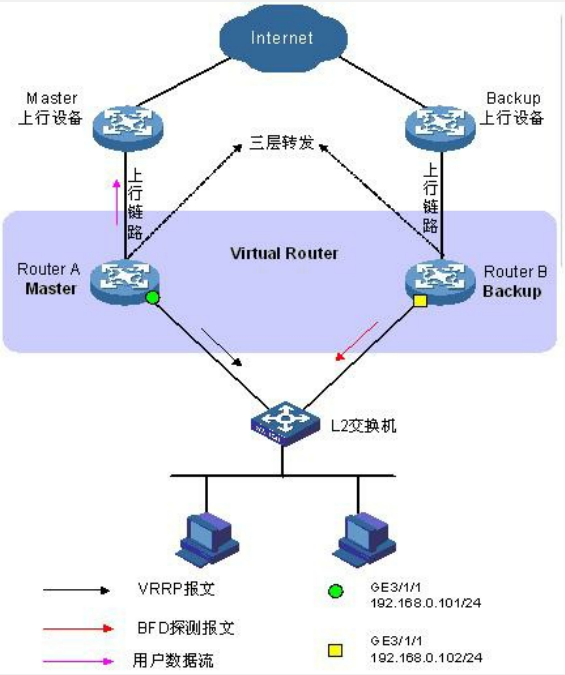

图1 BFD for VRRP配置举例组网图

2 配置思路

l　配置VRRP基本功能

l　配置BFD for VRRP

注意

l　BFD工作于echo方式的时候，其Souce IP可以任意指定。

l　BFD工作于echo方式的时候，可以配置接收周期和检测周期。在echo报文工作方式下，BFD报文的发送者和接收者为同一台设备，因此只需这两台设备就可以决定检测周期。设备默认接收周期为400ms，检测周期为5。

l　BFD会话工作与control报文方式时，参数有发送周期、接收周期，检测周期，用户需要根据实际组网的需要来配置。

3 配置步骤

3.1 路由器A的配置

1. 配置步骤

配置接口IP地址和VRRP基本功能。

<RouterA> system-view

[RouterA] interface gigabitEthernet 3/1/1

[RouterA-GigabitEthernet3/1/1] ip address 192.168.0.101 24

创建备份组，并配置备份组的虚拟IP地址

[RouterA-GigabitEthernet3/1/1] vrrp vrid 1 virtual-ip 192.168.0.10

[RouterA-GigabitEthernet3/1/1] vrrp vrid 1 priority 110

2. 配置文件

[RouterA]dis cur

#

version 5.20, Ess 3121

#

sysname RouterA

#

```
 password-control login-attempt 3 exceed lock-time 120
#
 domain default enable system
#
 ipv6
#
 telnet server enable
#
 xbar load-single
#
vlan 1
#
domain system
 access-limit disable
 state active
 idle-cut disable
 self-service-url disable
#
interface NULL0
#
interface GigabitEthernet3/1/1
 port link-mode route
 ip address 192.168.0.101 255.255.255.0
 vrrp vrid 1 virtual-ip 192.168.0.10
 vrrp vrid 1 priority 110
#
interface GigabitEthernet3/1/5
 port link-mode route
 shutdown
#
interface GigabitEthernet3/1/2
 port link-mode route
 shutdown
#
interface GigabitEthernet3/1/8
 port link-mode route
#
interface GigabitEthernet3/1/9
 port link-mode route
#
interface GigabitEthernet3/1/10
 port link-mode route
 shutdown
#
interface GigabitEthernet3/1/3
 port link-mode bridge
#
interface GigabitEthernet3/1/4
 port link-mode bridge
#
interface GigabitEthernet3/1/6
 port link-mode bridge
#
interface GigabitEthernet3/1/7
 port link-mode bridge
#
interface M-Ethernet4/0/0
 ip address 191.1.1.231 255.255.255.0
#
user-interface con 0
 idle-timeout 0 0
user-interface aux 0
 authentication-mode none
 user privilege level 3
```

```
 idle-timeout 0 0
user-interface vty 0 4
 authentication-mode none
 user privilege level 3
 idle-timeout 0 0
#
return
```

3.2 路由器B的配置

1. 配置步骤

```
# 配置BFD echo报文方式的Souce IP，IP地址可以任意指定，不需要与实际接口地址对应。
<RouterB> system-view
[RouterB] bfd session init-mode active
[RouterB] bfd echo-source-ip 10.10.10.10
[RouterB] interface GigabitEthernet 3/1/1
[RouterB-GigabitEthernet3/1/1] ip address 192.168.0.102 24
# 配置接口接收BFD echo报文的最小时间间隔。
[RouterB-GigabitEthernet3/1/1] bfd min-echo-receive-interval 10
[RouterB-GigabitEthernet3/1/1] bfd detect-multiplier 3
[RouterB-GigabitEthernet3/1/1] quit
# 配置Track对象
[RouterB] track 1 bfd echo interface GigabitEthernet3/1/1 remote ip 192.168.0.101 local ip 192.168.0.102
[RouterB] interface GigabitEthernet 3/1/1
# 创建备份组，并配置备份组的虚拟IP地址
[RouterB-GigabitEthernet3/1/1] vrrp vrid 1 virtual-ip 192.168.0.10
[RouterB-GigabitEthernet3/1/1] vrrp vrid 1 track 1 switchover
```

2. 配置文件

```
[RouterB]dis cur
#
 version 5.20, Ess 3121
#
 sysname RouterB
#
 password-control login-attempt 3 exceed lock-time 120
#
 domain default enable system
#
 ipv6
#
 telnet server enable
#
 xbar load-single
#
 bfd echo-source-ip 10.10.10.10
#
vlan 1
#
domain system
 access-limit disable
 state active
 idle-cut disable
 self-service-url disable
#
interface NULL0
#
interface GigabitEthernet3/1/1
 port link-mode route
 ip address 192.168.0.102 255.255.255.0
 bfd min-echo-receive-interval 10
 bfd detect-multiplier 3
 vrrp vrid 1 virtual-ip 192.168.0.10
 vrrp vrid 1 track 1 switchover
```

```
#
interface GigabitEthernet3/1/3
 port link-mode route
#
interface GigabitEthernet3/1/4
 port link-mode route
#
interface GigabitEthernet3/1/6
 port link-mode route
#
interface GigabitEthernet3/1/7
 port link-mode route
#
interface GigabitEthernet3/1/8
 port link-mode route
#
interface GigabitEthernet3/1/9
 port link-mode route
#
interface GigabitEthernet3/1/10
 port link-mode route
 shutdown
#
interface GigabitEthernet3/1/2
 port link-mode bridge
#
interface GigabitEthernet3/1/5
 port link-mode bridge
#
interface M-Ethernet4/0/0
 ip address 191.1.1.232 255.255.255.0
 ospf trans-delay 23
#
 track 1 bfd echo interface GigabitEthernet3/1/1 remote ip 192.168.0.101 local ip 192.
168.0.102
#
user-interface con 0
 idle-timeout 0 0
user-interface aux 0
 authentication-mode none
 user privilege level 3
 idle-timeout 0 0
user-interface vty 0 4
 authentication-mode none
 user privilege level 3
 idle-timeout 0 0
#
return
```

3.3 验证结果

可通过以下方式验证上述配置：

```
# 显示Router A上备份组1的详细信息
<RouterA> display vrrp verbose
IPv4 Standby Information:
 Run Method      : REAL-MAC
 Virtual IP Ping : Enable
 Interface       : GigabitEthernet3/1/1
 VRID            : 1                 Adver. Timer   : 1
 Admin Status    : UP                State      : Master
 Config Pri      : 110               Run Pri        : 110
 Preempt Mode    : YES                   Delay Time     : 0
 Auth Type       : NONE
Virtual IP     : 192.168.0.10
 Master IP       : 192.168.0.101
```

```
# 显示Router B上备份组1的详细信息
<RouterB> display vrrp verbose
IPv4 Standby Information:
 Run Method      : REAL-MAC
 Virtual IP Ping : Enable
 Interface       : GigabitEthernet3/1/1
 VRID            : 1                 Adver. Timer   : 1
 Admin Status    : UP                State : Backup
 Config Pri      : 100               Run Pri        : 100
 Preempt Mode    : YES               Delay Time     : 0
 Auth Type       : NONE
 Track Object    : 1                 Switchover
 Virtual IP      : 192.168.0.10
 Master IP       : 192.168.0.101
```

以上显示信息表示在备份组1中Router A为Master路由器，Router B为Backup路由器。当Router A出现故障时，通过**display vrrp**命令查看备份组的信息。

```
# 显示Router B上备份组1的详细信息。
<RouterB> display vrrp verbose
IPv4 Standby Information:
 Run Method      : REAL-MAC
 Virtual IP Ping : Enable
 Interface       : GigabitEthernet3/1/1
 VRID            : 1                 Adver. Timer   : 1
 Admin Status    : UP                State      : Master
 Config Pri      : 100               Run Pri        : 100
 Preempt Mode    : YES               Delay Time     : 0
 Auth Type       : NONE
 Track Object    : 1                 Switchover
 Virtual IP      : 192.168.0.10
 Virtual MAC     : 0000-5e00-0101
 Master IP       : 192.168.0.102
# 显示Router B上Track对象的详细信息
<RouterB> display track 1
Track ID: 1
Status: Negative
Reference Object:
BFD Session:
Packet type: Echo
Interface  : GigabitEthernet3/1/1
Remote IP  : 192.168.0.101
Local IP   : 192.168.0.102
```