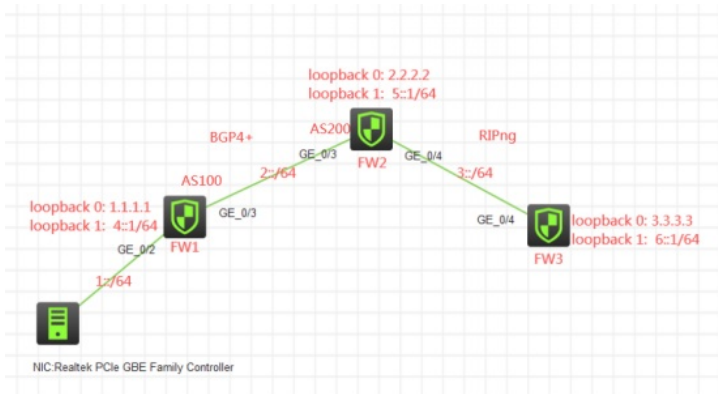


知 F1060 IPV6 BGP4+与RIPng路由重分布典型组网配置案例

设备部署方式 H3C模拟器 韦家宁 2020-03-15 发表

组网及说明



组网说明:

本案例采用H3C HCL模拟器的F1060来模拟IPv6 BGP4+与RIPng路由重分布的典型组网配置。FW1与FW2运行BGP4+路由协议，FW2与FW3运行RIPng路由协议，为了实现物理机能够PING通FW3，因此需要在FW2配置BGP4+与RIPng路由重分布。

配置步骤

- 1、按照网络拓扑图正确配置IP地址
- 2、FW1与FW2运行BGP4+路由协议
- 3、FW2与FW3运行RIPng路由协议
- 4、FW2配置BGP4+与RIPng路由重分布

配置关键点

FW1 :

```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname FW1
[FW1]acl ipv6 basic 2001
[FW1-acl-ipv6-basic-2001]rule 0 permit source any
[FW1-acl-ipv6-basic-2001]quit
[FW1]zone-pair security source trust destination untrust
[FW1-zone-pair-security-Trust-Untrust]packet-filter ipv6 2001
[FW1-zone-pair-security-Trust-Untrust]quit
[FW1]
[FW1]zone-pair security source untrust destination trust
[FW1-zone-pair-security-Untrust-Trust]packet-filter ipv6 2001
[FW1-zone-pair-security-Untrust-Trust]quit
[FW1]
[FW1]zone-pair security source trust destination local
[FW1-zone-pair-security-Trust-Local]packet-filter ipv6 2001
[FW1-zone-pair-security-Trust-Local]quit
[FW1]
[FW1]zone-pair security source local destination trust
[FW1-zone-pair-security-Local-Trust]packet-filter ipv6 2001
[FW1-zone-pair-security-Local-Trust]quit
[FW1]
[FW1]zone-pair security source untrust destination local
[FW1-zone-pair-security-Untrust-Local]packet-filter ipv6 2001
[FW1-zone-pair-security-Untrust-Local]quit
[FW1]
[FW1]zone-pair security source local destination untrust
[FW1-zone-pair-security-Local-Untrust]packet-filter ipv6 2001
[FW1-zone-pair-security-Local-Untrust]quit
[FW1]
[FW1]zone-pair security source trust destination trust
```

```
[FW1-zone-pair-security-Trust-Trust]packet-filter ipv6 2001
[FW1-zone-pair-security-Trust-Trust]quit
[FW1]
[FW1]zone-pair security source untrust destination untrust
[FW1-zone-pair-security-Untrust-Untrust]packet-filter ipv6 2001
[FW1-zone-pair-security-Untrust-Untrust]quit
[FW1]int gi 1/0/2
[FW1-GigabitEthernet1/0/2]ipv6 address 1::1 64
[FW1-GigabitEthernet1/0/2]quit
[FW1]int gi 1/0/3
[FW1-GigabitEthernet1/0/3]des <connect to FW2>
[FW1-GigabitEthernet1/0/3]ipv6 address 2::1 64
[FW1-GigabitEthernet1/0/3]quit
[FW1]int loopback 0
[FW1-LoopBack0]ip address 1.1.1.1 32
[FW1-LoopBack0]quit
[FW1]int loopback 1
[FW1-LoopBack1]ipv6 address 4::1 64
[FW1-LoopBack1]quit
[FW1]security-zone name Trust
[FW1-security-zone-Trust]import interface GigabitEthernet 1/0/2
[FW1-security-zone-Trust]quit
[FW1]security-zone name Untrust
[FW1-security-zone-Untrust]import interface GigabitEthernet 1/0/3
[FW1-security-zone-Untrust]import interface LoopBack 0
[FW1-security-zone-Untrust]import interface LoopBack 1
[FW1-security-zone-Untrust]quit
```

FW1 BGP4+配置关键点:

```
[FW1]bgp 100
[FW1-bgp-default]router-id 1.1.1.1
[FW1-bgp-default]peer 2::2 as-number 200
[FW1-bgp-default]address-family ipv6 unicast
[FW1-bgp-default-ipv6]peer 2::2 enable
[FW1-bgp-default-ipv6]import-route direct
[FW1-bgp-default-ipv6]network 1:: 64
[FW1-bgp-default-ipv6]quit
[FW1-bgp-default]quit
```

FW2:

```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname FW2
[FW2]acl ipv6 basic 2001
[FW2-acl-ipv6-basic-2001]rule 0 permit source any
[FW2-acl-ipv6-basic-2001]quit
[FW2]zone-pair security source trust destination untrust
[FW2-zone-pair-security-Trust-Untrust]packet-filter ipv6 2001
[FW2-zone-pair-security-Trust-Untrust]quit
[FW2]
[FW2]zone-pair security source untrust destination trust
[FW2-zone-pair-security-Untrust-Trust]packet-filter ipv6 2001
[FW2-zone-pair-security-Untrust-Trust]quit
[FW2]
[FW2]zone-pair security source trust destination local
[FW2-zone-pair-security-Trust-Local]packet-filter ipv6 2001
[FW2-zone-pair-security-Trust-Local]quit
[FW2]
[FW2]zone-pair security source local destination trust
[FW2-zone-pair-security-Local-Trust]packet-filter ipv6 2001
[FW2-zone-pair-security-Local-Trust]quit
[FW2]
[FW2]zone-pair security source untrust destination local
[FW2-zone-pair-security-Untrust-Local]packet-filter ipv6 2001
```

```

[FW2-zone-pair-security-Untrust-Local]quit
[FW2]
[FW2]zone-pair security source local destination untrust
[FW2-zone-pair-security-Local-Untrust]packet-filter ipv6 2001
[FW2-zone-pair-security-Local-Untrust]quit
[FW2]
[FW2]zone-pair security source trust destination trust
[FW2-zone-pair-security-Trust-Trust]packet-filter ipv6 2001
[FW2-zone-pair-security-Trust-Trust]quit
[FW2]
[FW2]zone-pair security source untrust destination untrust
[FW2-zone-pair-security-Untrust-Untrust]packet-filter ipv6 2001
[FW2-zone-pair-security-Untrust-Untrust]quit
[FW2]int gi 1/0/3
[FW2-GigabitEthernet1/0/3]des <connect to FW1>
[FW2-GigabitEthernet1/0/3]ipv6 address 2::2 64
[FW2-GigabitEthernet1/0/3]quit
[FW2]int gi 1/0/4
[FW2-GigabitEthernet1/0/4]des <connect to FW3>
[FW2-GigabitEthernet1/0/4]ipv6 address 3::2 64
[FW2-GigabitEthernet1/0/4]quit
[FW2]int loopback 0
[FW2-LoopBack0]ip address 2.2.2.2 32
[FW2-LoopBack0]quit
[FW2]int loopback 1
[FW2-LoopBack1]ipv6 address 5::1 64
[FW2-LoopBack1]quit
[FW2]security-zone name Trust
[FW2-security-zone-Trust]import interface GigabitEthernet 1/0/3
[FW2-security-zone-Trust]quit
[FW2]security-zone name Untrust
[FW2-security-zone-Untrust]import interface GigabitEthernet 1/0/4
[FW2-security-zone-Untrust]import interface LoopBack 0
[FW2-security-zone-Untrust]import interface LoopBack 1
[FW2-security-zone-Untrust]quit

```

FW2 BGP4+与RIPng重分布配置关键点:

```

[FW2]bgp 200
[FW2-bgp-default]router-id 2.2.2.2
[FW2-bgp-default]peer 2::1 as-number 100
[FW2-bgp-default]address-family ipv6 unicast
[FW2-bgp-default-ipv6]import-route direct
[FW2-bgp-default-ipv6]import-route ripng 1
[FW2-bgp-default-ipv6]peer 2::1 enable
[FW2-bgp-default-ipv6]quit
[FW2-bgp-default]quit
[FW2]ripng 1
[FW2-ripng-1]import-route direct
[FW2-ripng-1]import-route bgp4+
[FW2-ripng-1]quit
[FW2]int gi 1/0/4
[FW2-GigabitEthernet1/0/4]ripng 1 enable
[FW2-GigabitEthernet1/0/4]quit

```

FW3:

```

<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname FW3
[FW3]acl ipv6 basic 2001
[FW3-acl-ipv6-basic-2001]rule 0 permit source any
[FW3-acl-ipv6-basic-2001]quit
[FW3]zone-pair security source trust destination untrust
[FW3-zone-pair-security-Trust-Untrust]packet-filter ipv6 2001
[FW3-zone-pair-security-Trust-Untrust]quit

```

```

[FW3]
[FW3]zone-pair security source untrust destination trust
[FW3-zone-pair-security-Untrust-Trust]packet-filter ipv6 2001
[FW3-zone-pair-security-Untrust-Trust]quit
[FW3]
[FW3]zone-pair security source trust destination local
[FW3-zone-pair-security-Trust-Local]packet-filter ipv6 2001
[FW3-zone-pair-security-Trust-Local]quit
[FW3]
[FW3]zone-pair security source local destination trust
[FW3-zone-pair-security-Local-Trust]packet-filter ipv6 2001
[FW3-zone-pair-security-Local-Trust]quit
[FW3]
[FW3]zone-pair security source untrust destination local
[FW3-zone-pair-security-Untrust-Local]packet-filter ipv6 2001
[FW3-zone-pair-security-Untrust-Local]quit
[FW3]
[FW3]zone-pair security source local destination untrust
[FW3-zone-pair-security-Local-Untrust]packet-filter ipv6 2001
[FW3-zone-pair-security-Local-Untrust]quit
[FW3]
[FW3]zone-pair security source trust destination trust
[FW3-zone-pair-security-Trust-Trust]packet-filter ipv6 2001
[FW3-zone-pair-security-Trust-Trust]quit
[FW3]
[FW3]zone-pair security source untrust destination untrust
[FW3-zone-pair-security-Untrust-Untrust]packet-filter ipv6 2001
[FW3-zone-pair-security-Untrust-Untrust]quit
[FW3]int loopback 0
[FW3-LoopBack0]ip address 3.3.3.3 32
[FW3-LoopBack0]quit
[FW3]int loopback 1
[FW3-LoopBack1]ipv6 address 6::1 64
[FW3-LoopBack1]quit
[FW3]int gi 1/0/4
[FW3-GigabitEthernet1/0/4]des <connect to FW2>
[FW3-GigabitEthernet1/0/4]ipv6 address 3::1 64
[FW3-GigabitEthernet1/0/4]quit
[FW3]security-zone name Untrust
[FW3-security-zone-Untrust]import interface GigabitEthernet 1/0/4
[FW3-security-zone-Untrust]import interface LoopBack 0
[FW3-security-zone-Untrust]import interface LoopBack 1
[FW3-security-zone-Untrust]quit

```

FW3 RIPng关键配置点：

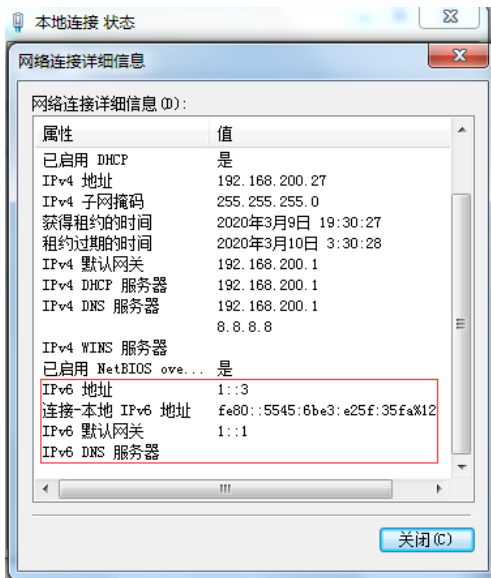
```

[FW3]ripng 1
[FW3-ripng-1]import-route direct
[FW3-ripng-1]quit
[FW3]int loopback 1
[FW3-LoopBack1]ripng 1 enable
[FW3-LoopBack1]quit
[FW3]int gi 1/0/4
[FW3-GigabitEthernet1/0/4]ripng 1 enable
[FW3-GigabitEthernet1/0/4]quit

```

测试：

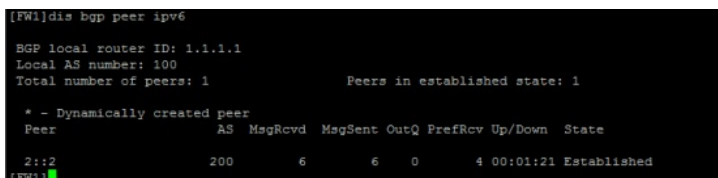
物理机填写IPV6地址：



物理机能PING通FW3的loopback1:



分别查看FW1、FW2的BGP4+邻居信息:



分别查看FW1、FW2、FW3的IPV6路由表:

[FW1]dis ipv6 routing-table

Destinations : 12 Routes : 12

```

Destination: ::1/128          Protocol : Direct
NextHop : ::1                Preference: 0
Interface : InLoop0          Cost : 0

```

```

Destination: 1::/64          Protocol : Direct
NextHop : ::                Preference: 0
Interface : GE1/0/2          Cost : 0

```

Destination: 1::1/128	Protocol : Direct
NextHop : ::1	Preference: 0
Interface : InLoop0	Cost : 0
Destination: 2::/64	Protocol : Direct
NextHop : ::	Preference: 0
Interface : GE1/0/3	Cost : 0
Destination: 2::1/128	Protocol : Direct
NextHop : ::1	Preference: 0
Interface : InLoop0	Cost : 0
Destination: 3::/64	Protocol : BGP4+
NextHop : 2::2	Preference: 255
Interface : GE1/0/3	Cost : 0
Destination: 4::/64	Protocol : Direct
NextHop : ::	Preference: 0
Interface : Loop1	Cost : 0
Destination: 4::1/128	Protocol : Direct
NextHop : ::1	Preference: 0
Interface : InLoop0	Cost : 0
Destination: 5::/64	Protocol : BGP4+
NextHop : 2::2	Preference: 255
Interface : GE1/0/3	Cost : 0
Destination: 6::/64	Protocol : BGP4+
NextHop : 2::2	Preference: 255
Interface : GE1/0/3	Cost : 1
Destination: FE80::/10	Protocol : Direct
NextHop : ::	Preference: 0
Interface : InLoop0	Cost : 0
Destination: FF00::/8	Protocol : Direct
NextHop : ::	Preference: 0
Interface : NULL0	Cost : 0

[FW1]

[FW2]dis ipv6 routing-table

Destinations : 12 Routes : 12

Destination: ::1/128	Protocol : Direct
NextHop : ::1	Preference: 0
Interface : InLoop0	Cost : 0
Destination: 1::/64	Protocol : BGP4+
NextHop : 2::1	Preference: 255
Interface : GE1/0/3	Cost : 0
Destination: 2::/64	Protocol : Direct
NextHop : ::	Preference: 0
Interface : GE1/0/3	Cost : 0
Destination: 2::2/128	Protocol : Direct
NextHop : ::1	Preference: 0
Interface : InLoop0	Cost : 0
Destination: 3::/64	Protocol : Direct
NextHop : ::	Preference: 0

```

Interface : GE1/0/4          Cost : 0

Destination: 3::2/128       Protocol : Direct
NextHop : ::1              Preference: 0
Interface : InLoop0        Cost : 0

Destination: 4::/64         Protocol : BGP4+
NextHop : 2::1             Preference: 255
Interface : GE1/0/3        Cost : 0

Destination: 5::/64         Protocol : Direct
NextHop : ::               Preference: 0
Interface : Loop1          Cost : 0

Destination: 5::1/128       Protocol : Direct
NextHop : ::1             Preference: 0
Interface : InLoop0        Cost : 0

Destination: 6::/64         Protocol : RIPng
NextHop : FE80::547B:C7FF:FE20:309 Preference: 100
Interface : GE1/0/4        Cost : 1

Destination: FE80::/10      Protocol : Direct
NextHop : ::              Preference: 0
Interface : InLoop0        Cost : 0

Destination: FF00::/8       Protocol : Direct
NextHop : ::              Preference: 0
Interface : NULL0          Cost : 0
[FW2]

```

[FW3]dis ipv6 routing-table

Destinations : 11 Routes : 11

```

Destination: ::1/128       Protocol : Direct
NextHop : ::1             Preference: 0
Interface : InLoop0        Cost : 0

Destination: 1::/64        Protocol : RIPng
NextHop : FE80::547B:C2FF:FED7:209 Preference: 100
Interface : GE1/0/4        Cost : 1

Destination: 2::/64        Protocol : RIPng
NextHop : FE80::547B:C2FF:FED7:209 Preference: 100
Interface : GE1/0/4        Cost : 1

Destination: 3::/64        Protocol : Direct
NextHop : ::              Preference: 0
Interface : GE1/0/4        Cost : 0

Destination: 3::1/128      Protocol : Direct
NextHop : ::1             Preference: 0
Interface : InLoop0        Cost : 0

Destination: 4::/64        Protocol : RIPng
NextHop : FE80::547B:C2FF:FED7:209 Preference: 100
Interface : GE1/0/4        Cost : 1

Destination: 5::/64        Protocol : RIPng
NextHop : FE80::547B:C2FF:FED7:209 Preference: 100
Interface : GE1/0/4        Cost : 1

Destination: 6::/64        Protocol : Direct

```

```
NextHop  : ::                Preference: 0
Interface : Loop1            Cost      : 0

Destination: 6::1/128        Protocol : Direct
NextHop   : ::1              Preference: 0
Interface : InLoop0          Cost      : 0

Destination: FE80::/10       Protocol : Direct
NextHop   : ::                Preference: 0
Interface : InLoop0          Cost      : 0

Destination: FF00::/8        Protocol : Direct
NextHop   : ::                Preference: 0
Interface : NULL0            Cost      : 0
[FW3]
```

至此， F1060 IPV6 BGP4+与RIPng路由重分布典型组网配置案例已完成！