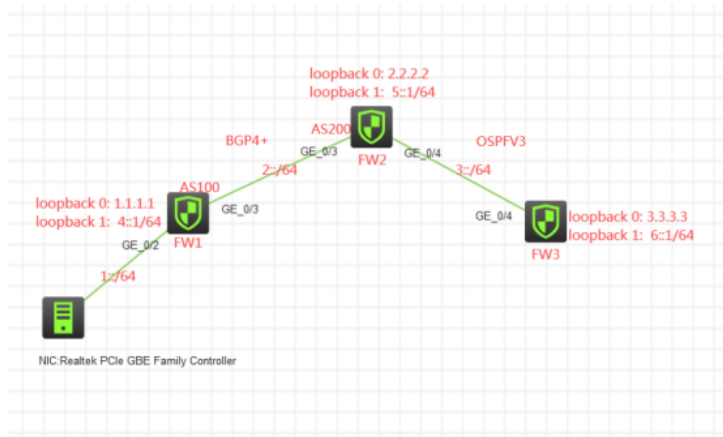


# 知 F1060 IPV6 BGP4+与OSPFV3路由重分布典型组网配置案例

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OSPFV3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OSPFV3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OSPFV3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OSPFV3路由协议
- 4、FW2配置BGP4+与OSPFV3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ISIS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 ospfv3 1
[FW2-bgp-default-ipv6]peer 2::1 enable
[FW2-bgp-default-ipv6]quit
[FW2-bgp-default]quit
[FW2]ospfv3 1
[FW2-ospfv3-1]router-id 2.2.2.2
[FW2-ospfv3-1]import-route direct
[FW2-ospfv3-1]import-route bgp4+
[FW2-ospfv3-1]quit
[FW2]int gi 1/0/4
[FW2-GigabitEthernet1/0/4]ospfv3 1 area 0
[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 OSPFV3关键配置点:

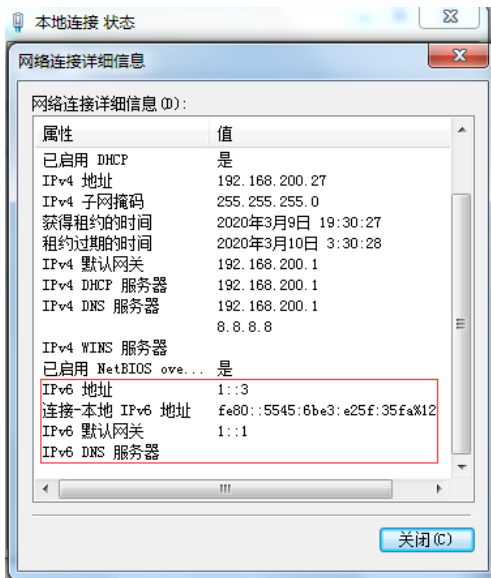
```

[FW3]ospfv3 1
[FW3-ospfv3-1]router-id 3.3.3.3
[FW3-ospfv3-1]import-route direct
[FW3-ospfv3-1]quit
[FW3]int loopback 1
[FW3-LoopBack1]ospfv3 1 area 0
[FW3-LoopBack1]quit
[FW3]int gi 1/0/4
[FW3-GigabitEthernet1/0/4]ospfv3 1 area 0
[FW3-GigabitEthernet1/0/4]quit

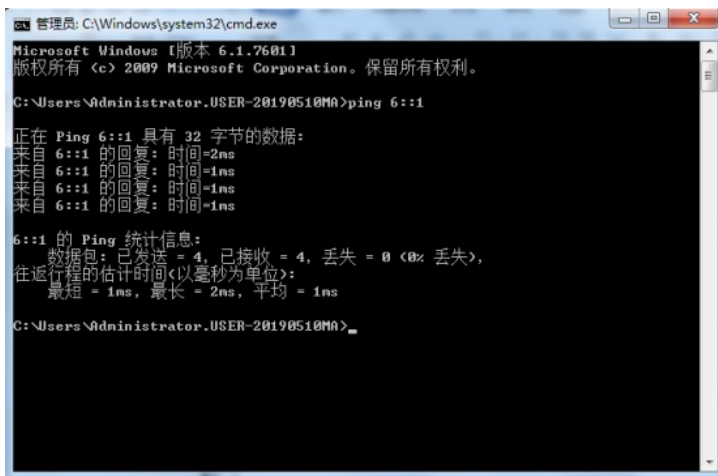
```

测试:

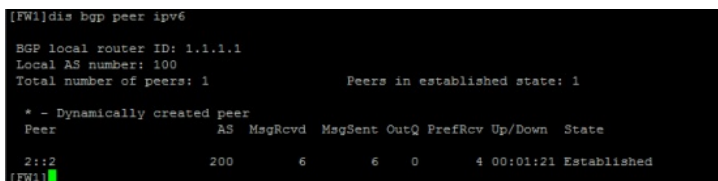
物理机填写IPV6地址:



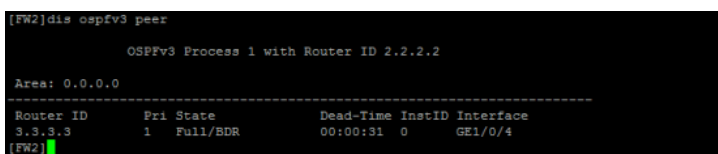
物理机能PING通FW3的loopback1:



分别查看FW1、FW2的BGP4+邻居信息:



分别查看FW2、FW3的OSPFV3邻居信息:



```
[FW3]dis ospfv3 peer
OSPFv3 Process 1 with Router ID 3.3.3.3
Area: 0.0.0.0
-----
Router ID      Pri State      Dead-Time InstID Interface
2.2.2.2       1 Full/DR      00:00:40  0    GE1/0/4
[FW3]
```

分别查看FW1、FW2、FW3的IPV6路由表:

[FW1]dis ipv6 routing-table

Destinations : 13 Routes : 13

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: 6::1/128	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 : 13    Routes : 13

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 : O_ASE2
NextHop : FE80::547B:C7FF:FE20:309	Preference: 150
Interface : GE1/0/4	Cost : 1
Destination: 6::1/128	Protocol : O_INTRA
NextHop : FE80::547B:C7FF:FE20:309	Preference: 10
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 : O_ASE2
NextHop   : FE80::547B:C2FF:FED7:209    Preference: 150
Interface : GE1/0/4           Cost    : 1

Destination: 2::/64           Protocol : O_ASE2
NextHop   : FE80::547B:C2FF:FED7:209    Preference: 150
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 : O_ASE2
NextHop   : FE80::547B:C2FF:FED7:209    Preference: 150
Interface : GE1/0/4           Cost    : 1

Destination: 5::/64           Protocol : O_ASE2
NextHop   : FE80::547B:C2FF:FED7:209    Preference: 150
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OSPFV3路由重分布典型组网配置案例已完成！