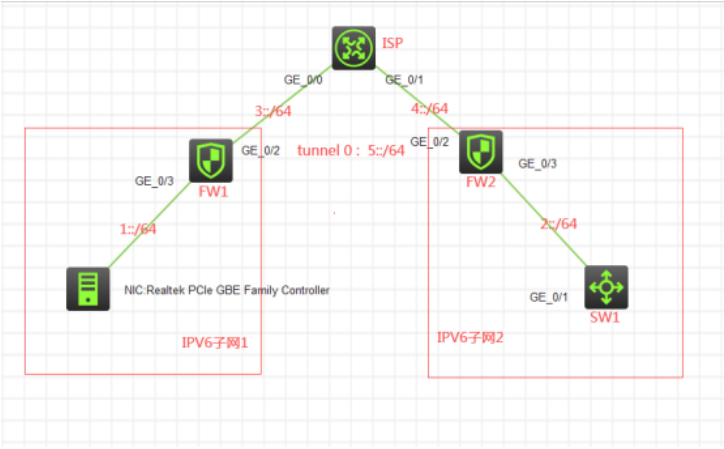
F1060 gre ipv6隧道典型组网配置案例

GRE VPN　设备部署方式　H3C模拟器　**韦家宁**　2020-03-07 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gre ipv6隧道的典型组网配置。IPV6子网在网络拓扑图已经有了明确的标识。为了避免IPV6子网1和IPV6子网2在整个IPV6子网中泄露并实现通信，因此在FW1与FW2之间建立gre ipv6的隧道。

配置步骤

1、按照网络拓扑图正确配置IP地址
2、FW1与FW2建立gre ipv6隧道

配置关键点

ISP：
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname ISP
[ISP]int gi 0/0
[ISP-GigabitEthernet0/0]des <connect to FW1>
[ISP-GigabitEthernet0/0]ipv6 address 3::2 64
[ISP-GigabitEthernet0/0]quit
[ISP]int gi 0/1
[ISP-GigabitEthernet0/1]des <connect to FW2>
[ISP-GigabitEthernet0/1]ipv6 address 4::2 64
[ISP-GigabitEthernet0/1]quit

SW1：
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname SW1
[SW1]int gi 1/0/1
[SW1-GigabitEthernet1/0/1]port link-mode route
[SW1-GigabitEthernet1/0/1]des <connect to FW2>
[SW1-GigabitEthernet1/0/1]ipv6 address 2::2 64
[SW1-GigabitEthernet1/0/1]quit
[SW1]ipv6 route-static :: 0 2::1

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]
[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 1/0/3
[FW1-GigabitEthernet1/0/3]ipv6 address 1::1 64
[FW1-GigabitEthernet1/0/3]quit
[FW1]int gi 1/0/2
[FW1-GigabitEthernet1/0/2]des <connect to ISP>
[FW1-GigabitEthernet1/0/2]ipv6 address 3::1 64
[FW1-GigabitEthernet1/0/2]quit
[FW1]ipv6 route-static :: 0 3::2
[FW1]security-zone name Trust
[FW1-security-zone-Trust]import interface GigabitEthernet 1/0/3
[FW1-security-zone-Trust]quit
[FW1]security-zone name Untrust
[FW1-security-zone-Untrust]import interface GigabitEthernet 1/0/2
[FW1-security-zone-Untrust]quit
```

FW1 ipv6 over ipv6隧道配置关键点：

```
[FW1]int Tunnel 0 mode gre ipv6
[FW1-Tunnel0]ipv6 address 5::1 64
[FW1-Tunnel0]source 3::1
[FW1-Tunnel0]destination 4::1
[FW1-Tunnel0]quit
[FW1]ipv6 route 2:: 64 Tunnel 0
[FW1]security-zone name Untrust
[FW1-security-zone-Untrust]import interface Tunnel 0
[FW1-security-zone-Untrust]quit
```

FW2：

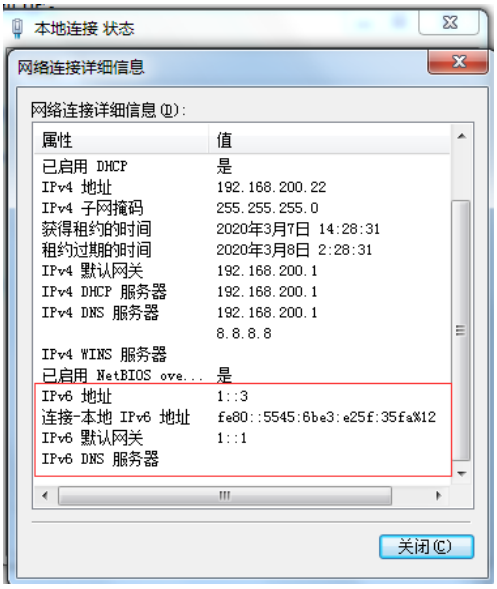
```
<H3C>sys
System View: return to User View with Ctrl+Z.
[H3C]sysname FW2
```

```
[FW2]acl ipv6 basic 2001
[FW2-acl-ipv6-basic-2001]rule 0 permit source any
[FW2-acl-ipv6-basic-2001]quit
[FW2]
[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]ipv6 address 2::1 64
[FW2-GigabitEthernet1/0/3]quit
[FW2]int gi 1/0/2
[FW2-GigabitEthernet1/0/2]des <connect to ISP>
[FW2-GigabitEthernet1/0/2]ipv6 address 4::1 64
[FW2-GigabitEthernet1/0/2]quit
[FW2]ipv6 route-static :: 0 4::2
[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 1/0/2
[FW2-security-zone-Untrust]quit
```

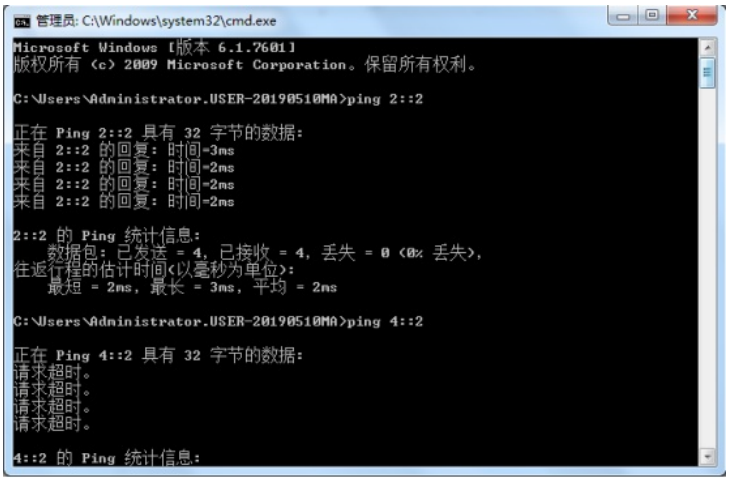
FW2 ipv6 over ipv6隧道配置关键点：

```
[FW2]int Tunnel 0 mode gre ipv6
[FW2-Tunnel0]ipv6 address 5::2 64
[FW2-Tunnel0]source 4::1
[FW2-Tunnel0]destination 3::1
[FW2-Tunnel0]quit
[FW2]ipv6 route 1:: 64 Tunnel 0
[FW2]security-zone name Untrust
[FW2-security-zone-Untrust]import interface Tunnel 0
[FW2-security-zone-Untrust]quit
```

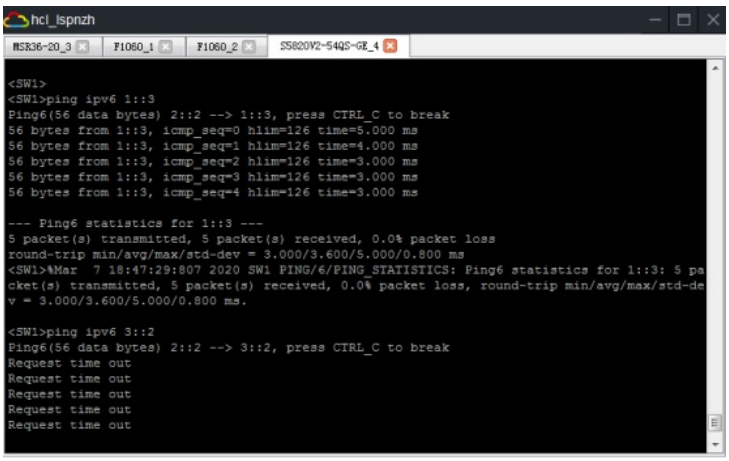
IPV6子网1的PC填写IPV6地址：



IPV6子网1的PC可以PING通IPV6子网2的SW1，PING不通ISP的IPV6地址：

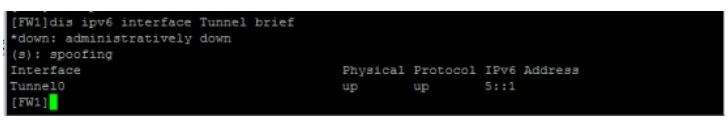


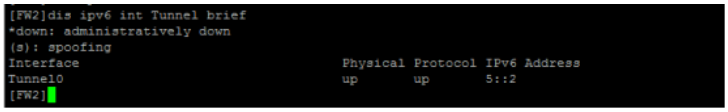
IPV6子网2的SW1可以PING通IPV6子网1的PC，PING不通ISP的IPV6地址：



根据测试结果得知，IPV6子网1和IPV6子网2已经在ISP中成功隐藏，并实现互通。

分别查看FW1和FW2的隧道状态：





分别查看FW1和FW2的IPV6路由表，均可看到隧道的路由：
[FW1]dis ipv6 routing-table

Destinations : 11 Routes : 11

Destination: ::/0 Protocol : Static
NextHop : 3::2 Preference: 60
Interface : GE1/0/2 Cost : 0

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

Destination: 1::/64 Protocol : Direct
NextHop : :: Preference: 0
Interface : GE1/0/3 Cost : 0

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

Destination: 2::/64 Protocol : Static
NextHop : :: Preference: 60
Interface : Tun0 Cost : 0

Destination: 3::/64 Protocol : Direct
NextHop : :: Preference: 0
Interface : GE1/0/2 Cost : 0

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

Destination: 5::/64 Protocol : Direct
NextHop : :: Preference: 0
Interface : Tun0 Cost : 0

Destination: 5::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
[FW1]

[FW2]dis ipv6 routing-table

Destinations : 11 Routes : 11

Destination: ::/0 Protocol : Static
NextHop : 4::2 Preference: 60
Interface : GE1/0/2 Cost : 0

Destination: ::1/128 Protocol : Direct

```
NextHop    : ::1                        Preference: 0
Interface  : InLoop0                    Cost      : 0

Destination: 1::/64                     Protocol  : Static
NextHop    : ::                         Preference: 60
Interface  : Tun0                       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: 4::/64                     Protocol  : Direct
NextHop    : ::                         Preference: 0
Interface  : GE1/0/2                    Cost      : 0

Destination: 4::1/128                   Protocol  : Direct
NextHop    : ::1                        Preference: 0
Interface  : InLoop0                    Cost      : 0

Destination: 5::/64                     Protocol  : Direct
NextHop    : ::                         Preference: 0
Interface  : Tun0                       Cost      : 0

Destination: 5::2/128                   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
[FW2]
```

至此，F1060 GRE IPV6典型组网配置案例已完成！