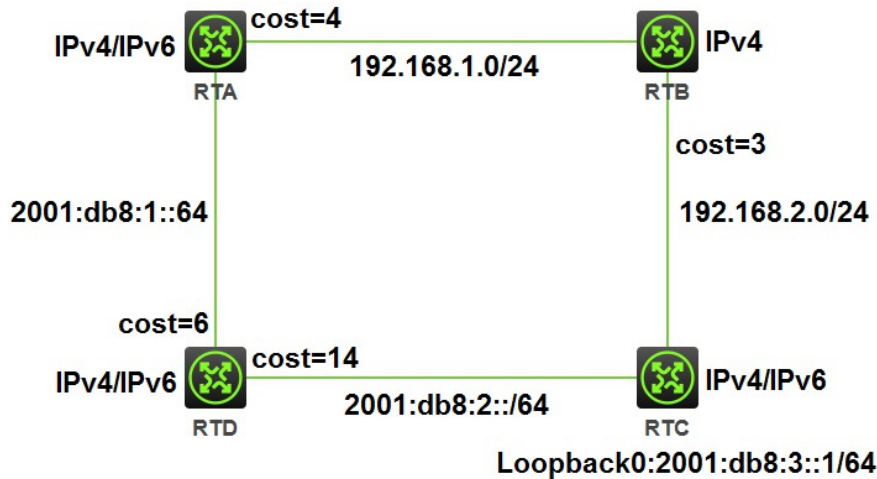


配置IS-IS MTR多拓扑特性

IS-IS MTR 刘嘉福 2020-06-08 发表

组网及说明

IPv6 IS-IS和IPv4 IS-IS使用同样的最短路径进行路由计算，IPv4和IPv6的混合拓扑被看成是一个集成的拓扑，这就要求所有IPv4和IPv6的拓扑信息必须一致。但是IPv4和IPv6协议在网络中的部署可能不一致，IPv4和IPv6的拓扑信息可能不同。当一些路由器和链路不支持IPv6协议时，支持双协议栈的路由器因为无法感知到这些路由器和链路不支持IPv6，仍然会把IPv6报文转发给它们，这就导致IPv6报文由于无法转发而被丢弃。



图中RTA、RTC和RTD支持IPv4和IPv6双协议栈；RTB只支持IPv4协议，不能转发IPv6报文。在RTA、RTC、RTD上配置IS-IS支持IPv6单播拓扑，对于IPv4、IPv6都分为两个拓扑进行计算，到RTC的Loopback0的IPv6地址不会转发给Router B而造成报文丢弃。

配置步骤

(1)进入系统视图。

```
system-view
```

(2)进入IS-IS视图。

```
isis [ process-id ] [ vpn-instance vpn-instance-name ]
```

(3)配置IS-IS开销值的类型。

```
cost-style { compatible | wide | wide-compatible } 缺省情况下，IS-IS只收发采用narrow方式的报文。
```

(4)进入IPv6地址族视图。

```
address-family ipv6 [ unicast ]
```

(5)配置IS-IS支持IPv6单播拓扑。multi-topology [compatible] 缺省情况下，IS-IS不支持IPv6单播拓扑。

配置示例如下：

RTA:

```
#
sysname RTA
#
global-address-family ipv4 unicast
#
topology 1
#
isis 1 cost-style wide network-entity 86.0000.0000.0001.00
#
address-family ipv4 unicast
#
topology 1 tid 6
#
address-family ipv6 unicast multi-topology
#
interface GigabitEthernet0/0
ip address 192.168.1.1 255.255.255.0
isis enable 1
isis cost 4
#
```

```
topology ipv4 unicast 1 isis topology enable
#
interface GigabitEthernet0/1
isis ipv6 enable 1
ipv6 address 2001:DB8:1::1/64
#
RTB:
#
sysname RTB
#
isis 1 cost-style wide network-entity 86.0000.0000.0002.00
#
interface GigabitEthernet0/0
ip address 192.168.1.2 255.255.255.0
isis enable 1
#
interface GigabitEthernet0/1
ip address 192.168.2.1 255.255.255.0
isis enable 1
isis cost 3
#
RTC:
#
sysname RTC
#
global-address-family ipv4 unicast
#
topology 1
#
isis 1 cost-style wide network-entity 86.0000.0000.0003.00
#
address-family ipv4 unicast
#
topology 1 tid 6
#
address-family ipv6 unicast multi-topology
#
interface LoopBack0
isis ipv6 enable 1
ipv6 address 2001:DB8:3::1/64
#
interface GigabitEthernet0/0
ip address 192.168.2.2 255.255.255.0
isis enable 1
#
topology ipv4 unicast 1
isis topology enable
#
interface GigabitEthernet0/1
isis ipv6 enable 1
ipv6 address 2001:DB8:2::2/64
#
RTD:
#
sysname RTD
#
global-address-family ipv4 unicast
#
isis 1 cost-style wide network-entity 86.0000.0000.0004.00
#
address-family ipv4 unicast
#
address-family ipv6 unicast multi-topology
#
```

```
interface GigabitEthernet0/0
isis ipv6 enable 1
isis cost 6
isis ipv6 cost 6
ipv6 address 2001:DB8:1::2/64
#
interface GigabitEthernet0/1
isis ipv6 enable 1
isis cost 14
isis ipv6 cost 14
ipv6 address 2001:DB8:2::1/64
#
```

注：这里的IPv4地址族不是必须配置，IPv4划分多拓扑可以配置此部分内容；对于Pv6与IPv4分拓扑计算，配置IPv6地址族即可。

配置关键点

- 1、当IS-IS网络中同时存在IPv4和IPv6拓扑时，建议配置此功能，否则可能导致路由计算错误；
- 2、配置ISIS MTR，必须将cost-style配置为 wide, compatible or wide-compatible
Cost style must be wide, compatible or wide-compatible when multiple topology exists.