PRAKTIKUM
DESAIN DAN MANAJEMEN JARINGAN KOMPUTER

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NPM	2206024682	Tipe	Tugas Tambahan

1. Topologi jaringan.
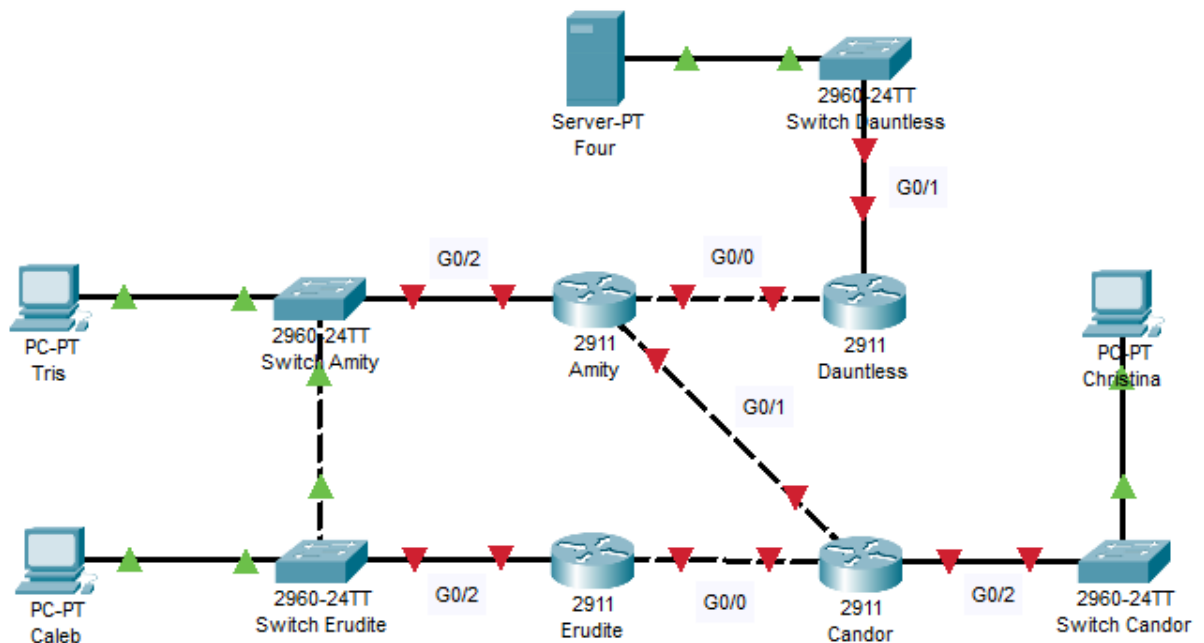
2. Addressing table.

NPM: 2206024682.

X = 46 = **2E**;   Y = 68 = **44**;   Z = 82 = **52**;

Device	Interface	IP Address	Subnet	Default Gateway
Dauntless	G0/0	2024:DB8:52:2E::1	/64	
	G0/1	2024:DB8:44:52::1	/64	
Amity	G0/0	2024:DB8:52:2E::2	/64	
	G0/1	2024:DB8:2E:44::1	/64	
	G0/2	2024:DB8:44:2E::2	/64	
Candor	G0/0	2024:DB8:2E:2E::1	/64	

	G0/1	2024:DB8:2E:44::2	/64	
	G0/2	2024:DB8:2E:52::1	/64	
Erudite	G0/0	2024:DB8:2E:2E::2	/64	
	G0/2	2024:DB8:52:44::1	/64	
Four	NIC	Auto Config		
Tris				
Caleb				
Christina				

Pengalamatan:

- Dauntless.

```
Dauntless(config)#int g0/0
Dauntless(config-if)#ipv6 add 2024:db8:52:2e::1/64
Dauntless(config-if)#no sh
Dauntless(config-if)#int g0/1
Dauntless(config-if)#ipv6 add 2024:db8:44:52::1/64
Dauntless(config-if)#no sh
```

- Amity.

```
Amity(config)#int g0/0
Amity(config-if)#ipv6 add 2024:db8:52:2e::2/64
Amity(config-if)#no sh
Amity(config-if)#int g0/1
Amity(config-if)#ipv6 add 2024:db8:2e:44::1/64
Amity(config-if)#no sh
Amity(config-if)#int g0/2
Amity(config-if)#ipv6 add 2024:db8:44:2e::2/64
Amity(config-if)#no sh
```

- Candor.

```
Candor(config)#int g0/0
Candor(config-if)#ipv6 add 2024:db8:2e:2e::1/64
Candor(config-if)#no sh
Candor(config-if)#int g0/1
Candor(config-if)#ipv6 add 2024:db8:2e:44::2/64
Candor(config-if)#no sh
Candor(config-if)#int g0/2
Candor(config-if)#ipv6 add 2024:db8:2e:52::1/64
Candor(config-if)#no sh
```

- Erudite.

```
Erudite(config)#int g0/0
Erudite(config-if)#ipv6 add 2024:db8:2e:2e::2/64
Erudite(config-if)#no sh
Erudite(config-if)#int g0/2
Erudite(config-if)#ipv6 add 2024:db8:52:44::1/64
Erudite(config-if)#no sh
```

- Four.

IPv6 Configuration

◉ Automatic	○ Static	Ipv6 request successful.
IPv6 Address	2024:DB8:44:52:201:96FF:FE42:9590 / 64
Link Local Address	FE80::201:96FF:FE42:9590
Default Gateway	FE80::260:5CFF:FEE9:2202

- Tris.

IPv6 Configuration

◉ Automatic	○ Static	Ipv6 request successful.
IPv6 Address	2024:DB8:44:2E:2D0:58FF:FE8A:3611 / 64
Link Local Address	FE80::2D0:58FF:FE8A:3611
Default Gateway	FE80::260:70FF:FE1A:AD03

- Caleb.

IPv6 Configuration

◉ Automatic	○ Static	Ipv6 request successful.
IPv6 Address	2024:DB8:52:44:2E0:B0FF:FE5D:A80E / 64
Link Local Address	FE80::2E0:B0FF:FE5D:A80E
Default Gateway	FE80::260:2FFF:FE1D:B403

- Christina.

IPv6 Configuration

◉ Automatic	○ Static	Ipv6 request successful.
IPv6 Address	2024:DB8:2E:52:2D0:BAFF:FE1B:CB22 / 64
Link Local Address	FE80::2D0:BAFF:FE1B:CB22
Default Gateway	FE80::2D0:BAFF:FE65:1603

3. Konfigurasi EIGRP IPv6.

- Dauntless:

```
Dauntless(config)#ipv6 unicast-routing
Dauntless(config)#ipv6 router eigrp 5
Dauntless(config-rtr)#no sh
Dauntless(config-rtr)#eigrp router-id 1.1.1.1
Dauntless(config-rtr)#passive-interface g0/1
Dauntless(config)#int g0/0
Dauntless(config-if)#ipv6 eigrp 5
Dauntless(config-if)#int g0/1
Dauntless(config-if)#ipv6 eigrp 5
```

- Amity:

```
Amity(config)#ipv6 unicast-routing
Amity(config)#ipv6 router eigrp 5
Amity(config-rtr)#no sh
Amity(config-rtr)#eigrp router-id 2.2.2.2
Amity(config)#int g0/0
Amity(config-if)#ipv6 eigrp 5
Amity(config-if)#int g0/1
Amity(config-if)#ipv6 eigrp 5
Amity(config-if)#int g0/2
Amity(config-if)#ipv6 eigrp 5
```

- Candor:

```
Candor(config)#ipv6 unicast-routing
Candor(config)#ipv6 router eigrp 5
Candor(config-rtr)#no sh
Candor(config-rtr)#eigrp router-id 3.3.3.3
Candor(config-rtr)#passive-interface g0/2
Candor(config)#int g0/0
Candor(config-if)#ipv6 eigrp 5
Candor(config-if)#int g0/1
Candor(config-if)#ipv6 eigrp 5
Candor(config-if)#int g0/2
Candor(config-if)#ipv6 eigrp 5
```

- Erudite:

```
Erudite(config)#ipv6 unicast-routing
Erudite(config)#ipv6 router eigrp 5
Erudite(config-rtr)#no sh
Erudite(config-rtr)#eigrp router-id 4.4.4.4
Erudite(config)#int g0/0
Erudite(config-if)#ipv6 eigrp 5
Erudite(config-if)#int g0/2
Erudite(config-if)#ipv6 eigrp 5
```

Referensi:

- "EIGRP For IPv6 Configuration On Cisco IOS," ipcisco.com. [Online]. Available: https://ipcisco.com/lesson/eigrp-for-ipv6-configuration-on-cisco-ios-ccnp/. [Accessed Mar. 01, 2024].

4. Tes konektivitas:

a. Four ke Tris.

Last Status	Source	Destination	Type
Successful	Four	2024:DB8:52:44:2D0:58FF:FE8A:3611	ICMPv6

b. Four ke Christina.

Last Status	Source	Destination	Type
Successful	Four	2024:DB8:2E:52:2D0:BAFF:FE1B:CB22	ICMPv6

c. Tris ke Caleb.

Last Status	Source	Destination	Type
Successful	Tris	2024:DB8:44:2E:2E0:B0FF:FE5D:A80E	ICMPv6

d. Christina ke Tris.

Last Status	Source	Destination	Type
Successful	Christina	2024:DB8:52:44:2D0:58FF:FE8A:3611	ICMPv6

5. Menampilkan hasil:

a. Rute IPv6.

- Dauntless.

```
Dauntless#sh ipv6 route
IPv6 Routing Table - 10 entries

D    2024:DB8:2E:2E::/64 [90/3328]
       via FE80::260:70FF:FE1A:AD01, GigabitEthernet0/0
D    2024:DB8:2E:44::/64 [90/3072]
       via FE80::260:70FF:FE1A:AD01, GigabitEthernet0/0
D    2024:DB8:2E:52::/64 [90/3328]
       via FE80::260:70FF:FE1A:AD01, GigabitEthernet0/0
D    2024:DB8:44:2E::/64 [90/3072]
       via FE80::260:70FF:FE1A:AD01, GigabitEthernet0/0
C    2024:DB8:44:52::/64 [0/0]
       via GigabitEthernet0/1, directly connected
L    2024:DB8:44:52::1/128 [0/0]
       via GigabitEthernet0/1, receive
C    2024:DB8:52:2E::/64 [0/0]
       via GigabitEthernet0/0, directly connected
L    2024:DB8:52:2E::1/128 [0/0]
       via GigabitEthernet0/0, receive
D    2024:DB8:52:44::/64 [90/3328]
       via FE80::260:70FF:FE1A:AD01, GigabitEthernet0/0
L    FF00::/8 [0/0]
       via Null0, receive
```

- Amity.

```
Amity#sh ipv6 route
IPv6 Routing Table - 11 entries

D    2024:DB8:2E:2E::/64 [90/3072]
       via FE80::2D0:BAFF:FE65:1602, GigabitEthernet0/1
       via FE80::260:2FFF:FE1D:B403, GigabitEthernet0/2
C    2024:DB8:2E:44::/64 [0/0]
       via GigabitEthernet0/1, directly connected
L    2024:DB8:2E:44::1/128 [0/0]
       via GigabitEthernet0/1, receive
D    2024:DB8:2E:52::/64 [90/3072]
       via FE80::2D0:BAFF:FE65:1602, GigabitEthernet0/1
C    2024:DB8:44:2E::/64 [0/0]
       via GigabitEthernet0/2, directly connected
L    2024:DB8:44:2E::2/128 [0/0]
       via GigabitEthernet0/2, receive
D    2024:DB8:44:52::/64 [90/3072]
       via FE80::260:5CFF:FEE9:2201, GigabitEthernet0/0
C    2024:DB8:52:2E::/64 [0/0]
       via GigabitEthernet0/0, directly connected
L    2024:DB8:52:2E::2/128 [0/0]
       via GigabitEthernet0/0, receive
D    2024:DB8:52:44::/64 [90/3072]
       via FE80::260:2FFF:FE1D:B403, GigabitEthernet0/2
L    FF00::/8 [0/0]
       via Null0, receive
```

- Candor.

```
Candor#sh ipv6 route
IPv6 Routing Table - 11 entries

C   2024:DB8:2E:2E::/64 [0/0]
      via GigabitEthernet0/0, directly connected
L   2024:DB8:2E:2E::1/128 [0/0]
      via GigabitEthernet0/0, receive
C   2024:DB8:2E:44::/64 [0/0]
      via GigabitEthernet0/1, directly connected
L   2024:DB8:2E:44::2/128 [0/0]
      via GigabitEthernet0/1, receive
C   2024:DB8:2E:52::/64 [0/0]
      via GigabitEthernet0/2, directly connected
L   2024:DB8:2E:52::1/128 [0/0]
      via GigabitEthernet0/2, receive
D   2024:DB8:44:2E::/64 [90/3072]
      via FE80::260:70FF:FE1A:AD02, GigabitEthernet0/1
D   2024:DB8:44:52::/64 [90/3328]
      via FE80::260:70FF:FE1A:AD02, GigabitEthernet0/1
D   2024:DB8:52:2E::/64 [90/3072]
      via FE80::260:70FF:FE1A:AD02, GigabitEthernet0/1
D   2024:DB8:52:44::/64 [90/3072]
      via FE80::260:2FFF:FE1D:B401, GigabitEthernet0/0
L   FF00::/8 [0/0]
      via Null0, receive
```

- Erudite.

```
Erudite#sh ipv6 route
IPv6 Routing Table - 10 entries

C   2024:DB8:2E:2E::/64 [0/0]
      via GigabitEthernet0/0, directly connected
L   2024:DB8:2E:2E::2/128 [0/0]
      via GigabitEthernet0/0, receive
D   2024:DB8:2E:44::/64 [90/3072]
      via FE80::2D0:BAFF:FE65:1601, GigabitEthernet0/0
      via FE80::260:70FF:FE1A:AD03, GigabitEthernet0/2
D   2024:DB8:2E:52::/64 [90/3072]
      via FE80::2D0:BAFF:FE65:1601, GigabitEthernet0/0
D   2024:DB8:44:2E::/64 [90/3072]
      via FE80::260:70FF:FE1A:AD03, GigabitEthernet0/2
D   2024:DB8:44:52::/64 [90/3328]
      via FE80::260:70FF:FE1A:AD03, GigabitEthernet0/2
D   2024:DB8:52:2E::/64 [90/3072]
      via FE80::260:70FF:FE1A:AD03, GigabitEthernet0/2
C   2024:DB8:52:44::/64 [0/0]
      via GigabitEthernet0/2, directly connected
L   2024:DB8:52:44::1/128 [0/0]
      via GigabitEthernet0/2, receive
L   FF00::/8 [0/0]
      via Null0, receive
```

b. Protokol IPv6.

- Dauntless.

```
Dauntless#sh ipv6 protocols
IPv6 Routing Protocol is "connected"
IPv6 Routing Protocol is "ND"
IPv6 Routing Protocol is "eigrp 5"
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Interfaces:
    GigabitEthernet0/0
    GigabitEthernet0/1 (passive)
Redistributing: eigrp 5
  Maximum path: 16
  Distance: internal 90 external 170
```

- Amity.

```
Amity#sh ipv6 pro
IPv6 Routing Protocol is "connected"
IPv6 Routing Protocol is "ND"
IPv6 Routing Protocol is "eigrp 5"
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Interfaces:
    GigabitEthernet0/0
    GigabitEthernet0/1
    GigabitEthernet0/2
Redistributing: eigrp 5
  Maximum path: 16
  Distance: internal 90 external 170
```

- Candor.

```
Candor#sh ipv6 pro
IPv6 Routing Protocol is "connected"
IPv6 Routing Protocol is "ND"
IPv6 Routing Protocol is "eigrp 5"
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Interfaces:
    GigabitEthernet0/0
    GigabitEthernet0/1
    GigabitEthernet0/2 (passive)
Redistributing: eigrp 5
  Maximum path: 16
  Distance: internal 90 external 170
```

- Erudite.

```
Erudite#sh ipv6 pro
IPv6 Routing Protocol is "connected"
IPv6 Routing Protocol is "ND"
IPv6 Routing Protocol is "eigrp 5"
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Interfaces:
    GigabitEthernet0/0
    GigabitEthernet0/2
Redistributing: eigrp 5
  Maximum path: 16
  Distance: internal 90 external 170
```

c. IPv6 EIGRP neighbors.

- Dauntless.

```
Dauntless#sh ipv6 eigrp neighbor
IPv6-EIGRP neighbors for process 5
H   Address                 Interface    Hold   Uptime    SRTT   RTO   Q   Seq
                                         (sec)            (ms)        Cnt Num
0   Link-local address:     Gig0/0        12    00:11:13  40    1000   0   54
    FE80::260:70FF:FE1A:AD01
```

- Amity.

```
Amity#sh ipv6 eigrp neigh
IPv6-EIGRP neighbors for process 5
H   Address                 Interface    Hold   Uptime    SRTT   RTO   Q   Seq
                                         (sec)            (ms)        Cnt Num
0   Link-local address:     Gig0/1        15    00:11:13  40    1000   0   42
    FE80::2D0:BAFF:FE65:1602
1   Link-local address:     Gig0/0        13    00:11:13  40    1000   0   43
    FE80::260:5CFF:FEE9:2201
2   Link-local address:     Gig0/2        10    00:11:13  40    1000   0   56
    FE80::260:2FFF:FE1D:B403
```

- Candor.

```
Candor#sh ipv6 eigrp neig
IPv6-EIGRP neighbors for process 5
H   Address                 Interface    Hold   Uptime    SRTT   RTO   Q   Seq
                                         (sec)            (ms)        Cnt Num
0   Link-local address:     Gig0/0        11    00:11:13  40    1000   0   55
    FE80::260:2FFF:FE1D:B401
1   Link-local address:     Gig0/1        14    00:11:13  40    1000   0   54
    FE80::260:70FF:FE1A:AD02
```

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- Erudite.

```
Erudite#sh ipv6 eigrp neig
IPv6-EIGRP neighbors for process 5
H   Address                 Interface     Hold   Uptime    SRTT   RTO  Q  Seq
                                          (sec)            (ms)       Cnt Num
0   Link-local address:     Gig0/0        13     00:11:13  40     1000 0   41
    FE80::2D0:BAFF:FE65:1601
1   Link-local address:     Gig0/2        13     00:11:13  40     1000 0   55
    FE80::260:70FF:FE1A:AD03
```

d. IPv6 EIGRP topology.

- Dauntless.

```
Dauntless#sh ipv6 eigrp topology
IPv6-EIGRP Topology Table for AS 5/ID(1.1.1.1)

P 2024:DB8:2E:2E::/64, 1 successors, FD is 3328
        via FE80::260:70FF:FE1A:AD01 (3328/3072), GigabitEthernet0/0
P 2024:DB8:2E:44::/64, 1 successors, FD is 3072
        via FE80::260:70FF:FE1A:AD01 (3072/2816), GigabitEthernet0/0
P 2024:DB8:2E:52::/64, 1 successors, FD is 3328
        via FE80::260:70FF:FE1A:AD01 (3328/3072), GigabitEthernet0/0
P 2024:DB8:44:2E::/64, 1 successors, FD is 3072
        via FE80::260:70FF:FE1A:AD01 (3072/2816), GigabitEthernet0/0
P 2024:DB8:44:52::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/1
P 2024:DB8:52:2E::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/0
P 2024:DB8:52:44::/64, 1 successors, FD is 3328
        via FE80::260:70FF:FE1A:AD01 (3328/3072), GigabitEthernet0/0
```

- Amity.

```
Amity#sh ipv6 eigrp top
IPv6-EIGRP Topology Table for AS 5/ID(2.2.2.2)

P 2024:DB8:2E:2E::/64, 2 successors, FD is 3072
        via FE80::2D0:BAFF:FE65:1602 (3072/2816), GigabitEthernet0/1
        via FE80::260:2FFF:FE1D:B403 (3072/2816), GigabitEthernet0/2
P 2024:DB8:2E:44::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/1
P 2024:DB8:2E:52::/64, 1 successors, FD is 3072
        via FE80::2D0:BAFF:FE65:1602 (3072/2816), GigabitEthernet0/1
P 2024:DB8:44:2E::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/2
P 2024:DB8:44:52::/64, 1 successors, FD is 3072
        via FE80::260:5CFF:FEE9:2201 (3072/2816), GigabitEthernet0/0
P 2024:DB8:52:2E::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/0
P 2024:DB8:52:44::/64, 1 successors, FD is 3072
        via FE80::260:2FFF:FE1D:B403 (3072/2816), GigabitEthernet0/2
```

- Candor.

```
Candor#sh ipv6 eigrp top
IPv6-EIGRP Topology Table for AS 5/ID(3.3.3.3)

P 2024:DB8:2E:2E::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/0
P 2024:DB8:2E:44::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/1
P 2024:DB8:2E:52::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/2
P 2024:DB8:44:2E::/64, 1 successors, FD is 3072
        via FE80::260:70FF:FE1A:AD02 (3072/2816), GigabitEthernet0/1
P 2024:DB8:44:52::/64, 1 successors, FD is 3328
        via FE80::260:70FF:FE1A:AD02 (3328/3072), GigabitEthernet0/1
P 2024:DB8:52:2E::/64, 1 successors, FD is 3072
        via FE80::260:70FF:FE1A:AD02 (3072/2816), GigabitEthernet0/1
P 2024:DB8:52:44::/64, 1 successors, FD is 3072
        via FE80::260:2FFF:FE1D:B401 (3072/2816), GigabitEthernet0/0
```

- Erudite.

```
Erudite#sh ipv6 eigrp top
IPv6-EIGRP Topology Table for AS 5/ID(4.4.4.4)

P 2024:DB8:2E:2E::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/0
P 2024:DB8:2E:44::/64, 2 successors, FD is 3072
        via FE80::2D0:BAFF:FE65:1601 (3072/2816), GigabitEthernet0/0
        via FE80::260:70FF:FE1A:AD03 (3072/2816), GigabitEthernet0/2
P 2024:DB8:2E:52::/64, 1 successors, FD is 3072
        via FE80::2D0:BAFF:FE65:1601 (3072/2816), GigabitEthernet0/0
P 2024:DB8:44:2E::/64, 1 successors, FD is 3072
        via FE80::260:70FF:FE1A:AD03 (3072/2816), GigabitEthernet0/2
P 2024:DB8:44:52::/64, 1 successors, FD is 3328
        via FE80::260:70FF:FE1A:AD03 (3328/3072), GigabitEthernet0/2
P 2024:DB8:52:2E::/64, 1 successors, FD is 3072
        via FE80::260:70FF:FE1A:AD03 (3072/2816), GigabitEthernet0/2
P 2024:DB8:52:44::/64, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/2
```

e. IPv6 EIGRP interface.

- Dauntless.

```
Dauntless#sh ipv6 eigrp interface
IPv6-EIGRP interfaces for process 5

                     Xmit Queue   Mean   Pacing Time   Multicast    Pending
Interface     Peers  Un/Reliable  SRTT   Un/Reliable   Flow Timer   Routes
Gig0/1          0        0/0      1236       0/10           0          0
Gig0/0          1        0/0      1236       0/10           0          0
```

- Amity.

```
Amity#sh ipv6 eigrp int
IPv6-EIGRP interfaces for process 5

                     Xmit Queue   Mean   Pacing Time   Multicast    Pending
Interface     Peers  Un/Reliable  SRTT   Un/Reliable   Flow Timer   Routes
Gig0/0          1        0/0      1236       0/10           0          0
Gig0/2          1        0/0      1236       0/10           0          0
Gig0/1          1        0/0      1236       0/10           0          0
```

- Candor.

```
Candor#sh ipv6 eigrp int
IPv6-EIGRP interfaces for process 5

                     Xmit Queue   Mean   Pacing Time   Multicast    Pending
Interface     Peers  Un/Reliable  SRTT   Un/Reliable   Flow Timer   Routes
Gig0/1          1        0/0      1236       0/10           0          0
Gig0/2          0        0/0      1236       0/10           0          0
Gig0/0          1        0/0      1236       0/10           0          0
```

- Erudite.

```
Erudite#sh ipv6 eigrp int
IPv6-EIGRP interfaces for process 5

                     Xmit Queue   Mean   Pacing Time   Multicast    Pending
Interface     Peers  Un/Reliable  SRTT   Un/Reliable   Flow Timer   Routes
Gig0/0          1        0/0      1236       0/10           0          0
Gig0/2          1        0/0      1236       0/10           0          0
```

Referensi:

- "Cisco IOS IPv6 Command Reference," cisco.com, Dec. 2019. [Online]. Available: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6/command/ipv6-cr-book/ipv6-s5.html. [Accessed Mar. 01, 2024].

6. Konfigurasi HSRP:

- Amity.

```
Amity(config-if)#int g0/2
Amity(config-if)#ipv6 enable
Amity(config-if)#standby version 2
Amity(config-if)#standby 1 ipv6 autoconfig
Amity(config-if)#standby 1 priority 150
Amity(config-if)#standby 1 preempt
```

- Erudite.

```
Erudite(config)#int g0/2
Erudite(config-if)#standby version 2
Erudite(config-if)#ipv6 enab
Erudite(config-if)#standby 1 ipv6 auto
Erudite(config-if)#standby 1 ipv6 autoconfig
Erudite(config-if)#standby 1 priority 100
Erudite(config-if)#standby 1 preempt
```

Referensi:

- "IPv6 HSRP Configuration Example," cisco.com, Oct. 2011. [Online]. Available: https://www.cisco.com/c/en/us/support/docs/ip/hot-standby-router-protocol-hsrp/113216-ipv6-hsrp-00.html. [Accessed Mar. 01, 2024].

7. Memutus kabel dan melakukan ping dari Caleb ke Christina:

```
C:\>ping 2024:db8:2e:52:2d0:baff:felb:cb22

Pinging 2024:db8:2e:52:2d0:baff:felb:cb22 with 32 bytes of data:

Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time<1ms TTL=126
Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time=10ms TTL=126
Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time=11ms TTL=126
Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time=2ms TTL=126

Ping statistics for 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 5ms
```

Ping yang dilakukan berhasil. Sebelumnya telah diterapkan HSRP pada *router* Amity dan Erudite dengan Amity sebagai *active router* (prioritas lebih besar). Dengan hal ini, sudah seharusnya Amity akan meneruskan semua paket yang ingin dikirimkan oleh PC Tris dan Caleb ke luar. Namun karena G0/2 pada *router* Amity diputuskan, maka peran *active router* akan berpindah ke Erudite. `%HSRP-6-STATECHANGE: GigabitEthernet0/2 Grp 1 state Standby -> Active`. Sehingga paket yang dikirimkan dari Caleb ke Christina akan melewati Erudite. Untuk membuktikannya, dapat dilakukan *tracer route*:

```
C:\>tracert 2024:db8:2e:52:2d0:baff:fe1b:cb22

Tracing route to 2024:db8:2e:52:2d0:baff:fe1b:cb22 over a maximum of 30 hops:

  1    0 ms     0 ms     0 ms     2024:DB8:52:44::1
  2   10 ms     0 ms     0 ms     2024:DB8:2E:2E::1
  3   14 ms    11 ms     1 ms     2024:DB8:2E:52:2D0:BAFF:FE1B:CB22

Trace complete.
```

Dari informasi diatas, dapat dilihat bahwa paket melewati *interface* G0/2 milik Erudite dan lanjut ke G0/0 milik Candor, hingga sampai ke Christina.

Referensi:

- "Cisco Hot Stanby Router Protocol (HSRP) Explained," study-ccna.com. [Online]. Available: https://study-ccna.com/cisco-hsrp-explained/. [Accessed Mar. 02, 2024].

8. Menyambungkan kembali kabel dan melakukan ping.

```
C:\>ping 2024:db8:2e:52:2d0:baff:fe1b:cb22

Pinging 2024:db8:2e:52:2d0:baff:fe1b:cb22 with 32 bytes of data:

Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time<1ms TTL=126
Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time=10ms TTL=126
Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time<1ms TTL=126
Reply from 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22: bytes=32 time=10ms TTL=126

Ping statistics for 2024:DB8:2E:52:2D0:BAFF:FE1B:CB22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 5ms
```

Ping yang dilakukan, setelah kabel dihubungkan kembali, berhasil. Perubahan yang terjadi adalah pada rute yang dipilih untuk mengirimkan paket dari Caleb ke Christina. Sebelumnya, paket akan melewati Erudite, namun setelah koneksi ke Amity kembali pulih, paket akan memilih untuk melwati Amity. Buktinya adalah dari *tracer route* dibawah ini.

```
C:\>tracert 2024:db8:2e:52:2d0:baff:fe1b:cb22

Tracing route to 2024:db8:2e:52:2d0:baff:fe1b:cb22 over a maximum of 30 hops:

  1    0 ms     0 ms     0 ms     2024:DB8:44:2E::2
  2   10 ms    11 ms    11 ms     2024:DB8:2E:44::2
  3   13 ms    11 ms     0 ms     2024:DB8:2E:52:2D0:BAFF:FE1B:CB22

Trace complete.
```

Sebelumnya, saat kabel dengan Amity diputuskan, Erudite menjadi *active router*. Setelah kabel dihubungkan kembali, peran tersebut akan kembali ke Amity. Hal ini terjadi karena saat melakukan konfigurasi HSRP, *preempt* disertakan, sehingga Amity dapat kembali menjadi *active router*.

Referensi:

- "Hot Standby Router Protocol (HSRP)" geeksforgeeks.org, Oct. 2021. [Online]. Available: https://www.geeksforgeeks.org/hot-standby-router-protocol-hsrp/. [Accessed Mar. 02, 2024].

9. HSRP (*Hot Standby Router Protocol*) memiliki tujuan utama untuk menyediakan solusi *failover* yang efisien diatara *router-router* yang menerapkan HSRP, sehingga saat suatu *router* mengalami kegagalan, *router* lain yang telah terkonfigurasi dapat langsung mengambil peran dari *router* tersebut. Setiap *router* dalam HSRP *group* memiliki alamat IP virtual yang akan digunakan sebagai *default gateway* oleh perangkat/*end devices* dalam jaringan. *Active router* akan bertanggung jawab untuk meneruskan semua paket serta memberikan informasi mengenai keadaan jaringan ke *standby router*. Saat *active router* mengalami kegagalan, maka *standby router* dengan prioritas tertinggi dapat segera menjadi *active router.*

   Keuntungan dari diterapkannya HSRP dalam jaringan adalah seluruh *data traffic* dapat diarahkan melalui jalur yang pasti (dapat diandalkan), dapat menerapkan redundansi dalam jaringan, mengurangi risiko *downtime*, dan dapat memastikan bahwa layanan tetap tersedia bagi *host*/pengguna.

   Referensi:

- "Hot Standby Router Protocol (HSRP)" geeksforgeeks.org, Oct. 2021. [Online]. Available: https://www.geeksforgeeks.org/hot-standby-router-protocol-hsrp/. [Accessed Mar. 02, 2024].