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Labo 16.3.1
PT Dépannage

Packet Tracer – Troubleshoot Static and Default Routes

Problème 1 sur R1 :

• **Mauvaise passerelle par défaut** : La route pointait vers `172.31.1.195` (adresse de broadcast) au lieu de `172.31.1.193` (R2).

```
R1>show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 172.31.1.195 to network 0.0.0.0

     172.31.0.0/16 is variably subnetted, 4 subnets, 3 masks
C       172.31.1.0/25 is directly connected, GigabitEthernet0/0
L       172.31.1.1/32 is directly connected, GigabitEthernet0/0
C       172.31.1.192/30 is directly connected, Serial0/0/0
L       172.31.1.194/32 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 172.31.1.195

R1>
```

Solution :

no ip route 0.0.0.0 0.0.0.0 172.31.1.195

ip route 0.0.0.0 0.0.0.0 172.31.1.193

```
R1>sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 172.31.1.193 to network 0.0.0.0

     172.31.0.0/16 is variably subnetted, 4 subnets, 3 masks
C       172.31.1.0/25 is directly connected, GigabitEthernet0/0
L       172.31.1.1/32 is directly connected, GigabitEthernet0/0
C       172.31.1.192/30 is directly connected, Serial0/0/0
L       172.31.1.194/32 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 172.31.1.193

R1>
```

Problème 2 sur R1 :

- La table de routage IPv6 sur **R1** est **parfaite**. Elle ne contient aucune erreur.

```
R1>sh ipv6 route
IPv6 Routing Table - 8 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
C   2001:DB8:1::/64 [0/0]
     via GigabitEthernet0/0, directly connected
L   2001:DB8:1::1/128 [0/0]
     via GigabitEthernet0/0, receive
C   2001:DB8:2::/64 [0/0]
     via Serial0/0/0, directly connected
L   2001:DB8:2::194/128 [0/0]
     via Serial0/0/0, receive
S   2001:DB8:3::/64 [1/0]
     via Serial0/0/0, directly connected
S   2001:DB8:4::/64 [1/0]
     via Serial0/0/0, directly connected
S   2001:DB8:5::/64 [1/0]
     via Serial0/0/0, directly connected
L   FF00::/8 [0/0]
     via Null0, receive
R1>
```

Problème 1 sur R2 :

- Inversion des adresses de prochain saut pour les réseaux distants

```
R2>sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.31.0.0/16 is variably subnetted, 8 subnets, 5 masks
C       172.31.0.0/24 is directly connected, GigabitEthernet0/0
L       172.31.0.1/32 is directly connected, GigabitEthernet0/0
S       172.31.1.0/25 [1/0] via 172.31.1.198
S       172.31.1.128/26 [1/0] via 172.31.1.194
C       172.31.1.192/30 is directly connected, Serial0/0/0
L       172.31.1.193/32 is directly connected, Serial0/0/0
C       172.31.1.196/30 is directly connected, Serial0/0/1
L       172.31.1.197/32 is directly connected, Serial0/0/1

R2>
```

Solution :

no ip route 172.31.1.0 255.255.255.128 172.31.1.198

no ip route 172.31.1.128 255.255.255.192 172.31.1.194

ip route 172.31.1.0 255.255.255.128 172.31.1.194

ip route 172.31.1.128 255.255.255.192 172.31.1.198

```
R2>sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.31.0.0/16 is variably subnetted, 8 subnets, 5 masks
C       172.31.0.0/24 is directly connected, GigabitEthernet0/0
L       172.31.0.1/32 is directly connected, GigabitEthernet0/0
S       172.31.1.0/25 [1/0] via 172.31.1.194
S       172.31.1.128/26 [1/0] via 172.31.1.198
C       172.31.1.192/30 is directly connected, Serial0/0/0
L       172.31.1.193/32 is directly connected, Serial0/0/0
C       172.31.1.196/30 is directly connected, Serial0/0/1
L       172.31.1.197/32 is directly connected, Serial0/0/1

R2>
```

Problème 2 sur R2 :

- Erreur de saisie dans le préfixe IPv6 de la route statique vers le LAN 1.

Le réseau a été enregistré en tant que `2001:DB6:1::/64` au lieu de `2001:DB8:1::/64`.

```
R2>sh ipv6 route
IPv6 Routing Table - 9 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
S   2001:DB6:1::/64 [1/0]
     via 2001:DB8:2::194
C   2001:DB8:2::/64 [0/0]
     via Serial0/0/0, directly connected
L   2001:DB8:2::193/128 [0/0]
     via Serial0/0/0, receive
C   2001:DB8:3::/64 [0/0]
     via GigabitEthernet0/0, directly connected
L   2001:DB8:3::1/128 [0/0]
     via GigabitEthernet0/0, receive
C   2001:DB8:4::/64 [0/0]
     via Serial0/0/1, directly connected
L   2001:DB8:4::197/128 [0/0]
     via Serial0/0/1, receive
S   2001:DB8:5::/64 [1/0]
     via 2001:DB8:4::198
L   FF00::/8 [0/0]
     via Null0, receive
R2>
```

Solution :

no ipv6 route 2001:DB6:1::/64 2001:DB8:2::194

ipv6 route 2001:DB8:1::/64 2001:DB8:2::194

```
R2>sh ipv6 route
IPv6 Routing Table - 9 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
S   2001:DB8:1::/64 [1/0]
     via 2001:DB8:2::194
C   2001:DB8:2::/64 [0/0]
     via Serial0/0/0, directly connected
L   2001:DB8:2::193/128 [0/0]
     via Serial0/0/0, receive
C   2001:DB8:3::/64 [0/0]
     via GigabitEthernet0/0, directly connected
L   2001:DB8:3::1/128 [0/0]
     via GigabitEthernet0/0, receive
C   2001:DB8:4::/64 [0/0]
     via Serial0/0/1, directly connected
L   2001:DB8:4::197/128 [0/0]
     via Serial0/0/1, receive
S   2001:DB8:5::/64 [1/0]
     via 2001:DB8:4::198
L   FF00::/8 [0/0]
     via Null0, receive
R2>
```

Problème 1 sur R3 :

- Masque de sous-réseau incorrect (trop restrictif) sur la route statique vers le LAN 1.

La route vers `172.31.1.0` utilise un masque `/28` au lieu de `/25`. Cela empêche la communication avec les hôtes dont l'IP dépasse `.14` (comme PC1 qui est en `.126`).

```
R3>sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.31.0.0/16 is variably subnetted, 7 subnets, 5 masks
S       172.31.0.0/24 is directly connected, Serial0/0/1
S       172.31.1.0/28 is directly connected, Serial0/0/1
C       172.31.1.128/26 is directly connected, GigabitEthernet0/0
L       172.31.1.129/32 is directly connected, GigabitEthernet0/0
S       172.31.1.192/30 is directly connected, Serial0/0/1
C       172.31.1.196/30 is directly connected, Serial0/0/1
L       172.31.1.198/32 is directly connected, Serial0/0/1

R3>
```

Solution :

no ip route 172.31.1.0 255.255.255.240 Serial0/0/1

ip route 172.31.1.0 255.255.255.128 Serial0/0/1

```
R3>sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.31.0.0/16 is variably subnetted, 7 subnets, 5 masks
S       172.31.0.0/24 is directly connected, Serial0/0/1
S       172.31.1.0/25 is directly connected, Serial0/0/1
C       172.31.1.128/26 is directly connected, GigabitEthernet0/0
L       172.31.1.129/32 is directly connected, GigabitEthernet0/0
S       172.31.1.192/30 is directly connected, Serial0/0/1
C       172.31.1.196/30 is directly connected, Serial0/0/1
L       172.31.1.198/32 is directly connected, Serial0/0/1

R3>
```

Problème 2 sur R3 :

- Absence de route statique vers le réseau LAN 1 (`2001:DB8:1::/64`).

La table de routage IPv6 ne contient aucune entrée pour le réseau distant où se trouve PC1. Le routeur R3 est donc incapable de router les paquets vers cette destination.

```
R3>sh ipv6 route
IPv6 Routing Table - 7 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
S   2001:DB8:2::/64 [1/0]
     via Serial0/0/1, directly connected
S   2001:DB8:3::/64 [1/0]
     via Serial0/0/1, directly connected
C   2001:DB8:4::/64 [0/0]
     via Serial0/0/1, directly connected
L   2001:DB8:4::198/128 [0/0]
     via Serial0/0/1, receive
C   2001:DB8:5::/64 [0/0]
     via GigabitEthernet0/0, directly connected
L   2001:DB8:5::1/128 [0/0]
     via GigabitEthernet0/0, receive
L   FF00::/8 [0/0]
     via Null0, receive
R3>
```

Solution :

ipv6 route 2001:DB8:1::/64 Serial0/0/1

```
R3>sh ipv6 route
IPv6 Routing Table - 8 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
S   2001:DB8:1::/64 [1/0]
     via Serial0/0/1, directly connected
S   2001:DB8:2::/64 [1/0]
     via Serial0/0/1, directly connected
S   2001:DB8:3::/64 [1/0]
     via Serial0/0/1, directly connected
C   2001:DB8:4::/64 [0/0]
     via Serial0/0/1, directly connected
L   2001:DB8:4::198/128 [0/0]
     via Serial0/0/1, receive
C   2001:DB8:5::/64 [0/0]
     via GigabitEthernet0/0, directly connected
L   2001:DB8:5::1/128 [0/0]
     via GigabitEthernet0/0, receive
L   FF00::/8 [0/0]
     via Null0, receive
R3>
```