Routage Dynamique OSPF et protocole HSRP

SAINT-ELOC

Partie 1 - Routage OSPF

Partie A - Verification

Verification Passerelles :

Ici commence par lister la connectivité des points vers leurs passerelles :

```
Pc0>ping 192.168.0.254

Pinging 192.168.0.254 with 32 bytes of data:

Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.0.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
Pc1>ping 192.168.0.254

Pinging 192.168.0.254 with 32 bytes of data:

Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.0.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Verification connectivité routeur :

Ici cette connectivité se concentre sur routeur sans leurs voisins :

routeur 1 :

```
router ospf 1
network 192.168.0.0 0.0.0.255 area 0
network 10.0.0.0 0.255.255.255 area 0
network 172.16.0.0 0.0.255.255 area 0
```

```
Router#show ip ospf neighbor

Router#show ip route
Gateway of last resort is not set

C    192.168.0.0/24 is directly connected, FastEthernet0/0.1
C    10.0.0.0/8 is directly connected, Serial0/0/0
O    172.16.0.0/16 [110/2] via 10.0.0.1, 00:01:13, Serial0/0/0
C    172.16.0.0/16 is directly connected, FastEthernet0/0.2
```

routeur 2 :

```
router ospf 1
network 10.0.0.0 0.255.255.255 area 0
network 172.16.0.0 0.0.255.255 area 0
network 192.168.0.0 0.0.0.255 area 0
```

```
Router#show ip ospf neighbor

Router#show ip route
Gateway of last resort is not set

O    192.168.0.0/24 [110/2] via 10.0.0.2, 00:01:13, Serial0/0/0
C    10.0.0.0/8 is directly connected, Serial0/0/0
O    172.16.0.0/16 [110/2] via 10.0.0.1, 00:01:13, Serial0/0/0
C    172.16.0.0/16 is directly connected, FastEthernet0/0.2
```

routeur 3 :

```
router ospf 1
network 10.0.0.0 0.255.255.255 area 0
network 192.168.0.0 0.0.0.255 area 0
network 172.16.0.0 0.0.255.255 area 0
```

```
Router#show ip ospf neighbor

Router#show ip route
Gateway of last resort is not set

O    192.168.0.0/24 [110/2] via 10.0.0.2, 00:01:13, Serial0/0/0
C    10.0.0.0/8 is directly connected, Serial0/0/0
O    172.16.0.0/16 [110/2] via 10.0.0.1, 00:01:13, Serial0/0/0
C    172.16.0.0/16 is directly connected, FastEthernet0/0.2
```

Ici commence par lister le processus ospf et quelque uns paramas d'ospf :

Ici cette ping la fonctionnalité de ces paramètres d'ospf :

```
Router#show ip ospf
Routing process "ospf 1" with ID 10.0.0.1
Supports only single TOS(TOS0) routes
Supports opaque LSA
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs
Number of external LSA 0. Checksum Sum 0x000000
Number of opaque AS LSA 0. Checksum Sum 0x000000
Number of DCbitless external and opaque AS LSA 0
Number of DC bitless internal LSA 3
External flood list length 0
    Area BACKBONE(0)
        Number of interfaces in this area is 2
        Area has no authentication
        SPF algorithm executed 4 times
        Area ranges are
        Number of LSA 4. Checksum Sum 0x0227A0
        Number of DCbitless LSA 3
        Number of indication LSA 0
        Number of DoNotAge LSA 0
        Flood list length 0
```

```
Router#show ip ospf interface
FastEthernet0/0.1 is up, line protocol is up
  Internet Address 192.168.0.254/24, Area 0
  Process ID 1, Router ID 10.0.0.1, Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 10.0.0.1, Interface address 192.168.0.254
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:05
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
Serial0/0/0 is up, line protocol is up
  Internet Address 10.0.0.1/8, Area 0
  Process ID 1, Router ID 10.0.0.1, Network Type POINT_TO_POINT, Cost: 64
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:05
  Index 1/2, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 10.0.0.2
  Suppress hello for 0 neighbor(s)
```

Verification serveur SAN :

Ici comme HTP permet à plusieurs appareil de partager son adresse IP ouvert :

Ici cette ping la fonctionnalité de ces paramètres d'ospf :

```
Server0>ping 192.168.0.254

Pinging 192.168.0.254 with 32 bytes of data:

Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.0.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Partie B - Routage dynamique

Mise en place OSPF :

Ici commence par lister les passerelles :

Ici cette ping la fonctionnalité de ces paramètres d'ospf :

```
Server0>ping 192.168.0.254

Pinging 192.168.0.254 with 32 bytes of data:

Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255
Reply from 192.168.0.254: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.0.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Mise en place OSPF :

Ici commence par lister les routeurs :

```
router ospf 1
network 192.168.0.0 0.0.0.255 area 0
network 10.0.0.0 0.255.255.255 area 0
network 172.16.0.0 0.0.255.255 area 0
```

```
router ospf 1
network 10.0.0.0 0.255.255.255 area 0
network 172.16.0.0 0.0.255.255 area 0
network 192.168.0.0 0.0.0.255 area 0
```

```
router ospf 1
network 10.0.0.0 0.255.255.255 area 0
network 172.16.0.0 0.0.255.255 area 0
network 192.168.0.0 0.0.0.255 area 0
```

```
router ospf 1
network 192.168.0.0 0.0.0.255 area 0
network 10.0.0.0 0.255.255.255 area 0
network 172.16.0.0 0.0.255.255 area 0
```

Passerelle OSPF :

Ici cette ping la fonctionnalité de ces paramètres d'ospf :

Ici cette ping la fonctionnalité de ces paramètres d'ospf :

```
Router#show ip ospf
Routing process "ospf 1" with ID 10.0.0.1
Supports only single TOS(TOS0) routes
Supports opaque LSA
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs
Number of external LSA 0. Checksum Sum 0x000000
Number of opaque AS LSA 0. Checksum Sum 0x000000
Number of DCbitless external and opaque AS LSA 0
Number of DC bitless internal LSA 3
External flood list length 0
    Area BACKBONE(0)
        Number of interfaces in this area is 2
        Area has no authentication
        SPF algorithm executed 4 times
        Area ranges are
        Number of LSA 4. Checksum Sum 0x0227A0
        Number of DCbitless LSA 3
        Number of indication LSA 0
        Number of DoNotAge LSA 0
        Flood list length 0
```

```
Router#show ip ospf interface
FastEthernet0/0.1 is up, line protocol is up
  Internet Address 192.168.0.254/24, Area 0
  Process ID 1, Router ID 10.0.0.1, Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 10.0.0.1, Interface address 192.168.0.254
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:05
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
Serial0/0/0 is up, line protocol is up
  Internet Address 10.0.0.1/8, Area 0
  Process ID 1, Router ID 10.0.0.1, Network Type POINT_TO_POINT, Cost: 64
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:05
  Index 1/2, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 10.0.0.2
  Suppress hello for 0 neighbor(s)
```

```
Welcome to Microsoft Windows [Version 10.0.19045.5854]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>ping -t -l 65500 -n 10 -w 1000 -4 -f -i 255 -v 192.168.1.1

Pinging 192.168.1.1 with 65500 bytes of data:
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0
Reply from 192.168.1.1: bytes=65500 TTL=64 TOS=0

Ping statistics for 192.168.1.1:
    Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
Approximate round trip times in milliseconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Admin>
```