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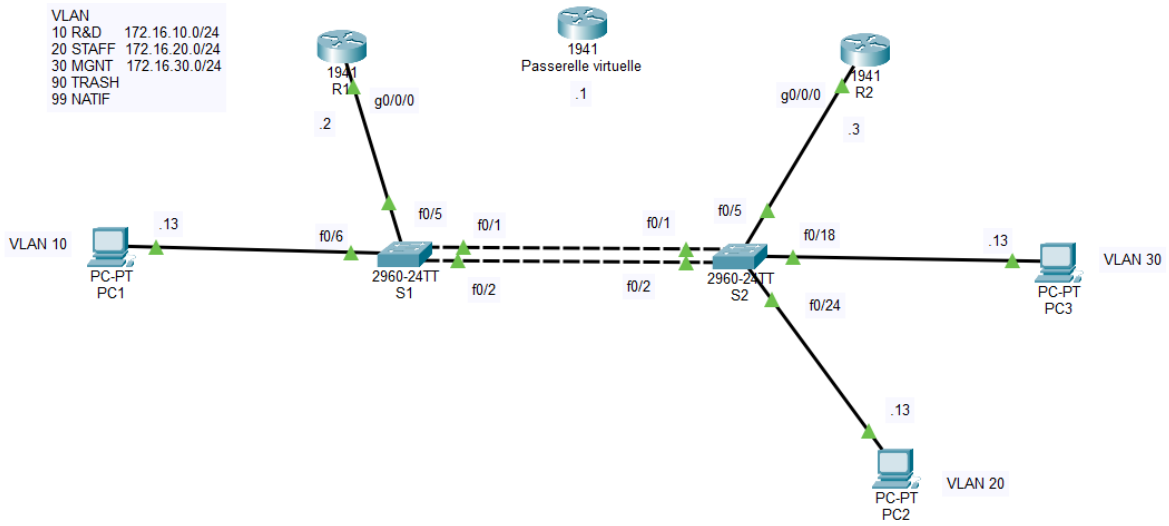
Labo DHCP - HSRP



ping depuis PC1 vers PC2

```
root@PC1-A:~# ping 172.16.20.12
PING 172.16.20.12 (172.16.20.12) 56(84) bytes of data.
64 bytes from 172.16.20.12: icmp_seq=1 ttl=63 time=2.84 ms
64 bytes from 172.16.20.12: icmp_seq=2 ttl=63 time=1.11 ms
64 bytes from 172.16.20.12: icmp_seq=3 ttl=63 time=1.31 ms
64 bytes from 172.16.20.12: icmp_seq=4 ttl=63 time=1.31 ms
64 bytes from 172.16.20.12: icmp_seq=5 ttl=63 time=1.36 ms
64 bytes from 172.16.20.12: icmp_seq=6 ttl=63 time=1.40 ms
64 bytes from 172.16.20.12: icmp_seq=7 ttl=63 time=1.38 ms
^C
--- 172.16.20.12 ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 6007ms
rtt min/avg/max/mdev = 1.115/1.536/2.845/0.542 ms
root@PC1-A:~#
```

ping depuis PC1 vers PC3

```
root@PC1-A:~# ping 172.16.30.13
PING 172.16.30.13 (172.16.30.13) 56(84) bytes of data.
64 bytes from 172.16.30.13: icmp_seq=1 ttl=63 time=2.76 ms
64 bytes from 172.16.30.13: icmp_seq=2 ttl=63 time=1.70 ms
64 bytes from 172.16.30.13: icmp_seq=4 ttl=63 time=1.53 ms
64 bytes from 172.16.30.13: icmp_seq=5 ttl=63 time=1.46 ms
^C
--- 172.16.30.13 ping statistics ---
5 packets transmitted, 4 received, 20% packet loss, time 4016ms
rtt min/avg/max/mdev = 1.465/1.867/2.761/0.523 ms
root@PC1-A:~#
```

ping depuis PC1 vers s1

```
root@PC1-A:~# ping 172.16.30.11
PING 172.16.30.11 (172.16.30.11) 56(84) bytes of data.
64 bytes from 172.16.30.11: icmp_seq=1 ttl=254 time=1.16 ms
64 bytes from 172.16.30.11: icmp_seq=2 ttl=254 time=1.52 ms
64 bytes from 172.16.30.11: icmp_seq=3 ttl=254 time=1.46 ms
64 bytes from 172.16.30.11: icmp_seq=4 ttl=254 time=1.41 ms
64 bytes from 172.16.30.11: icmp_seq=5 ttl=254 time=1.46 ms
^C
--- 172.16.30.11 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 1.169/1.408/1.523/0.124 ms
root@PC1-A:~#
```

ping depuis PC1 vers s2

```
root@PC1-A:~# ping 172.16.30.12
PING 172.16.30.12 (172.16.30.12) 56(84) bytes of data.
64 bytes from 172.16.30.12: icmp_seq=1 ttl=254 time=1.29 ms
64 bytes from 172.16.30.12: icmp_seq=2 ttl=254 time=1.21 ms
64 bytes from 172.16.30.12: icmp_seq=3 ttl=254 time=1.07 ms
64 bytes from 172.16.30.12: icmp_seq=4 ttl=254 time=1.08 ms
64 bytes from 172.16.30.12: icmp_seq=5 ttl=254 time=1.32 ms
^C
--- 172.16.30.12 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4004ms
rtt min/avg/max/mdev = 1.076/1.200/1.328/0.105 ms
root@PC1-A:~#
```

ping depuis PC1 vers R1

```
root@PC1-A:~# ping 172.16.10.2
PING 172.16.10.2 (172.16.10.2) 56(84) bytes of data.
64 bytes from 172.16.10.2: icmp_seq=1 ttl=255 time=1.75 ms
64 bytes from 172.16.10.2: icmp_seq=2 ttl=255 time=1.02 ms
64 bytes from 172.16.10.2: icmp_seq=3 ttl=255 time=0.974 ms
64 bytes from 172.16.10.2: icmp_seq=4 ttl=255 time=0.863 ms
64 bytes from 172.16.10.2: icmp_seq=5 ttl=255 time=0.913 ms
64 bytes from 172.16.10.2: icmp_seq=6 ttl=255 time=0.812 ms
64 bytes from 172.16.10.2: icmp_seq=7 ttl=255 time=0.883 ms
^C
--- 172.16.10.2 ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 6077ms
rtt min/avg/max/mdev = 0.812/1.031/1.752/0.301 ms
root@PC1-A:~#
```

ping depuis PC1 vers R2

```
root@PC1-A:~# ping 172.16.10.3
PING 172.16.10.3 (172.16.10.3) 56(84) bytes of data.
64 bytes from 172.16.10.3: icmp_seq=1 ttl=255 time=2.10 ms
64 bytes from 172.16.10.3: icmp_seq=2 ttl=255 time=1.25 ms
64 bytes from 172.16.10.3: icmp_seq=3 ttl=255 time=1.06 ms
64 bytes from 172.16.10.3: icmp_seq=4 ttl=255 time=1.39 ms
64 bytes from 172.16.10.3: icmp_seq=5 ttl=255 time=1.17 ms
^C
--- 172.16.10.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 1.061/1.396/2.105/0.372 ms
root@PC1-A:~#
```

ping depuis PC1 vers la passerelle virtuelle (HSRP)

```
root@PC1-A:~# ping 172.16.10.1
PING 172.16.10.1 (172.16.10.1) 56(84) bytes of data.
64 bytes from 172.16.10.1: icmp_seq=1 ttl=255 time=0.792 ms
64 bytes from 172.16.10.1: icmp_seq=2 ttl=255 time=1.19 ms
64 bytes from 172.16.10.1: icmp_seq=3 ttl=255 time=1.01 ms
64 bytes from 172.16.10.1: icmp_seq=4 ttl=255 time=1.01 ms
64 bytes from 172.16.10.1: icmp_seq=5 ttl=255 time=1.80 ms
64 bytes from 172.16.10.1: icmp_seq=6 ttl=255 time=1.23 ms
^C
--- 172.16.10.1 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5034ms
rtt min/avg/max/mdev = 0.792/1.175/1.808/0.318 ms
root@PC1-A:~#
```

ping depuis PC2 vers S1

```
root@PC-2-A:~# ping 172.16.30.11
PING 172.16.30.11 (172.16.30.11) 56(84) bytes of data.
64 bytes from 172.16.30.11: icmp_seq=1 ttl=254 time=1.11 ms
64 bytes from 172.16.30.11: icmp_seq=2 ttl=254 time=1.26 ms
64 bytes from 172.16.30.11: icmp_seq=3 ttl=254 time=1.55 ms
64 bytes from 172.16.30.11: icmp_seq=4 ttl=254 time=1.07 ms
64 bytes from 172.16.30.11: icmp_seq=5 ttl=254 time=1.23 ms
^C
--- 172.16.30.11 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 1.074/1.247/1.552/0.168 ms
root@PC-2-A:~#
```

ping depuis PC2 vers S2

```
root@PC-2-A:~# ping 172.16.30.12
PING 172.16.30.12 (172.16.30.12) 56(84) bytes of data.
64 bytes from 172.16.30.12: icmp_seq=1 ttl=254 time=1.20 ms
64 bytes from 172.16.30.12: icmp_seq=2 ttl=254 time=1.38 ms
64 bytes from 172.16.30.12: icmp_seq=3 ttl=254 time=1.53 ms
64 bytes from 172.16.30.12: icmp_seq=4 ttl=254 time=1.50 ms
64 bytes from 172.16.30.12: icmp_seq=5 ttl=254 time=1.32 ms
64 bytes from 172.16.30.12: icmp_seq=6 ttl=254 time=1.91 ms
^C
--- 172.16.30.12 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5007ms
rtt min/avg/max/mdev = 1.201/1.480/1.919/0.225 ms
root@PC-2-A:~#
```

ping depuis PC2 vers PC1

```
root@PC-2-A:~# ping 172.16.10.13
PING 172.16.10.13 (172.16.10.13) 56(84) bytes of data.
64 bytes from 172.16.10.13: icmp_seq=1 ttl=63 time=1.05 ms
64 bytes from 172.16.10.13: icmp_seq=2 ttl=63 time=1.36 ms
64 bytes from 172.16.10.13: icmp_seq=3 ttl=63 time=1.50 ms
64 bytes from 172.16.10.13: icmp_seq=4 ttl=63 time=1.29 ms
64 bytes from 172.16.10.13: icmp_seq=5 ttl=63 time=1.27 ms
^C
--- 172.16.10.13 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4004ms
rtt min/avg/max/mdev = 1.054/1.299/1.504/0.151 ms
root@PC-2-A:~#
```

ping depuis PC2 vers PC3

```
root@PC-2-A:~# ping 172.16.30.13
PING 172.16.30.13 (172.16.30.13) 56(84) bytes of data.
64 bytes from 172.16.30.13: icmp_seq=1 ttl=63 time=1.61 ms
64 bytes from 172.16.30.13: icmp_seq=2 ttl=63 time=1.11 ms
64 bytes from 172.16.30.13: icmp_seq=3 ttl=63 time=1.43 ms
64 bytes from 172.16.30.13: icmp_seq=4 ttl=63 time=1.42 ms
64 bytes from 172.16.30.13: icmp_seq=5 ttl=63 time=1.17 ms
^C
--- 172.16.30.13 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 1.116/1.352/1.616/0.184 ms
root@PC-2-A:~#
```

ping depuis PC2 vers la passerelle virtuelle (HSRP)

```
root@PC-2-A:~# ping 172.16.20.1
PING 172.16.20.1 (172.16.20.1) 56(84) bytes of data.
64 bytes from 172.16.20.1: icmp_seq=1 ttl=255 time=1.06 ms
64 bytes from 172.16.20.1: icmp_seq=2 ttl=255 time=0.648 ms
64 bytes from 172.16.20.1: icmp_seq=3 ttl=255 time=1.23 ms
64 bytes from 172.16.20.1: icmp_seq=4 ttl=255 time=0.706 ms
64 bytes from 172.16.20.1: icmp_seq=5 ttl=255 time=0.725 ms
^C
--- 172.16.20.1 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4021ms
rtt min/avg/max/mdev = 0.648/0.875/1.232/0.230 ms
root@PC-2-A:~#
```

ping depuis PC2 vers R1

```
root@PC-2-A:~# ping 172.16.20.2
PING 172.16.20.2 (172.16.20.2) 56(84) bytes of data.
64 bytes from 172.16.20.2: icmp_seq=1 ttl=255 time=1.19 ms
64 bytes from 172.16.20.2: icmp_seq=2 ttl=255 time=0.882 ms
64 bytes from 172.16.20.2: icmp_seq=3 ttl=255 time=0.934 ms
64 bytes from 172.16.20.2: icmp_seq=4 ttl=255 time=0.756 ms
^C
--- 172.16.20.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3032ms
rtt min/avg/max/mdev = 0.756/0.941/1.194/0.162 ms
root@PC-2-A:~#
```

ping depuis PC2 vers R2

```
root@PC-2-A:~# ping 172.16.20.3
PING 172.16.20.3 (172.16.20.3) 56(84) bytes of data.
64 bytes from 172.16.20.3: icmp_seq=1 ttl=255 time=1.56 ms
64 bytes from 172.16.20.3: icmp_seq=2 ttl=255 time=1.07 ms
64 bytes from 172.16.20.3: icmp_seq=3 ttl=255 time=1.20 ms
64 bytes from 172.16.20.3: icmp_seq=4 ttl=255 time=1.07 ms
64 bytes from 172.16.20.3: icmp_seq=5 ttl=255 time=1.15 ms
64 bytes from 172.16.20.3: icmp_seq=6 ttl=255 time=1.53 ms
^C
--- 172.16.20.3 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5005ms
rtt min/avg/max/mdev = 1.076/1.269/1.568/0.206 ms
root@PC-2-A:~#
```

ping depuis PC3 vers PC1

```
root@PC-3-A:~# ping 172.16.10.13
PING 172.16.10.13 (172.16.10.13) 56(84) bytes of data.
64 bytes from 172.16.10.13: icmp_seq=1 ttl=63 time=1.58 ms
64 bytes from 172.16.10.13: icmp_seq=2 ttl=63 time=1.36 ms
64 bytes from 172.16.10.13: icmp_seq=3 ttl=63 time=1.15 ms
64 bytes from 172.16.10.13: icmp_seq=4 ttl=63 time=1.19 ms
64 bytes from 172.16.10.13: icmp_seq=5 ttl=63 time=1.26 ms
^C
--- 172.16.10.13 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 1.150/1.311/1.584/0.161 ms
root@PC-3-A:~#
```

ping depuis PC3 vers PC2

```
root@PC-3-A:~# ping 172.16.20.12
PING 172.16.20.12 (172.16.20.12) 56(84) bytes of data.
64 bytes from 172.16.20.12: icmp_seq=1 ttl=63 time=1.14 ms
64 bytes from 172.16.20.12: icmp_seq=2 ttl=63 time=1.29 ms
64 bytes from 172.16.20.12: icmp_seq=3 ttl=63 time=1.15 ms
64 bytes from 172.16.20.12: icmp_seq=4 ttl=63 time=1.27 ms
64 bytes from 172.16.20.12: icmp_seq=5 ttl=63 time=1.41 ms
^C
--- 172.16.20.12 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 1.144/1.257/1.410/0.103 ms
root@PC-3-A:~#
```

ping depuis PC3 vers s1

```
root@PC-3-A:~# ping 172.16.30.11
PING 172.16.30.11 (172.16.30.11) 56(84) bytes of data.
64 bytes from 172.16.30.11: icmp_seq=2 ttl=255 time=0.890 ms
64 bytes from 172.16.30.11: icmp_seq=3 ttl=255 time=0.995 ms
64 bytes from 172.16.30.11: icmp_seq=4 ttl=255 time=1.12 ms
64 bytes from 172.16.30.11: icmp_seq=5 ttl=255 time=1.00 ms
64 bytes from 172.16.30.11: icmp_seq=6 ttl=255 time=1.06 ms
^C
--- 172.16.30.11 ping statistics ---
6 packets transmitted, 5 received, 16% packet loss, time 5031ms
rtt min/avg/max/mdev = 0.890/1.014/1.120/0.083 ms
root@PC-3-A:~#
```

ping depuis PC3 vers s2

```
root@PC-3-A:~# ping 172.16.30.12
PING 172.16.30.12 (172.16.30.12) 56(84) bytes of data.
64 bytes from 172.16.30.12: icmp_seq=2 ttl=255 time=1.19 ms
64 bytes from 172.16.30.12: icmp_seq=3 ttl=255 time=0.922 ms
64 bytes from 172.16.30.12: icmp_seq=4 ttl=255 time=1.12 ms
64 bytes from 172.16.30.12: icmp_seq=5 ttl=255 time=0.909 ms
64 bytes from 172.16.30.12: icmp_seq=6 ttl=255 time=1.04 ms
64 bytes from 172.16.30.12: icmp_seq=7 ttl=255 time=0.974 ms
^C
--- 172.16.30.12 ping statistics ---
7 packets transmitted, 6 received, 14% packet loss, time 6052ms
rtt min/avg/max/mdev = 0.909/1.027/1.195/0.111 ms
root@PC-3-A:~#
```

ping depuis PC3 vers R1

```
root@PC-3-A:~# ping 172.16.30.2
PING 172.16.30.2 (172.16.30.2) 56(84) bytes of data.
64 bytes from 172.16.30.2: icmp_seq=1 ttl=255 time=0.726 ms
64 bytes from 172.16.30.2: icmp_seq=2 ttl=255 time=0.924 ms
64 bytes from 172.16.30.2: icmp_seq=3 ttl=255 time=0.747 ms
64 bytes from 172.16.30.2: icmp_seq=4 ttl=255 time=0.945 ms
^C
--- 172.16.30.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3059ms
rtt min/avg/max/mdev = 0.726/0.835/0.945/0.103 ms
root@PC-3-A:~#
```

ping depuis PC3 vers R2

```
root@PC-3-A:~# ping 172.16.30.3
PING 172.16.30.3 (172.16.30.3) 56(84) bytes of data.
64 bytes from 172.16.30.3: icmp_seq=1 ttl=255 time=2.16 ms
64 bytes from 172.16.30.3: icmp_seq=2 ttl=255 time=0.936 ms
64 bytes from 172.16.30.3: icmp_seq=3 ttl=255 time=1.16 ms
64 bytes from 172.16.30.3: icmp_seq=4 ttl=255 time=1.42 ms
64 bytes from 172.16.30.3: icmp_seq=5 ttl=255 time=1.07 ms
^C
--- 172.16.30.3 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4011ms
rtt min/avg/max/mdev = 0.936/1.351/2.166/0.439 ms
root@PC-3-A:~#
```

ping depuis PC3 vers la passerelle virtuelle (HSRP)

```
root@PC-3-A:~# ping 172.16.30.1
PING 172.16.30.1 (172.16.30.1) 56(84) bytes of data.
64 bytes from 172.16.30.1: icmp_seq=1 ttl=255 time=1.19 ms
64 bytes from 172.16.30.1: icmp_seq=2 ttl=255 time=1.02 ms
64 bytes from 172.16.30.1: icmp_seq=3 ttl=255 time=1.42 ms
64 bytes from 172.16.30.1: icmp_seq=4 ttl=255 time=1.02 ms
64 bytes from 172.16.30.1: icmp_seq=5 ttl=255 time=1.25 ms
^C
--- 172.16.30.1 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4004ms
rtt min/avg/max/mdev = 1.027/1.187/1.427/0.156 ms
root@PC-3-A:~#
```

show etherchannel summary sur S1 :

```
S1>sh eth sum
Flags:  D - down        P - bundled in port-channel
        I - stand-alone s - suspended
        H - Hot-standby (LACP only)
        R - Layer3      S - Layer2
        U - in use      f - failed to allocate aggregator

        M - not in use, minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port


Number of channel-groups in use: 1
Number of aggregators:           1

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------------------------------
1      Po1(SU)         PAgP      Fa0/1(P)    Fa0/2(D)

S1>
```

show etherchannel summary sur S2 :

```
S2>sh eth sum
Flags:  D - down        P - bundled in port-channel
        I - stand-alone s - suspended
        H - Hot-standby (LACP only)
        R - Layer3      S - Layer2
        U - in use      f - failed to allocate aggregator

        M - not in use, minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port


Number of channel-groups in use: 1
Number of aggregators:           1

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------------------------------
1      Po1(SU)         PAgP      Fa0/1(P)    Fa0/2(D)

S2>
```

show interfaces trunk sur S1 :

```
S1>show interfaces trunk

Port        Mode             Encapsulation  Status        Native vlan
Fa0/5       on               802.1q         trunking      99
Po1         on               802.1q         trunking      99

Port        Vlans allowed on trunk
Fa0/5       1-4094
Po1         1-4094

Port        Vlans allowed and active in management domain
Fa0/5       1,10,20,30,90,99
Po1         1,10,20,30,90,99

Port        Vlans in spanning tree forwarding state and not pruned
Fa0/5       1,10,20,30,90,99
Po1         1,10,20,30,90,99
S1>
```

show interfaces trunk sur S2 :

```
S2>show interfaces trunk

Port        Mode             Encapsulation  Status        Native vlan
Fa0/5       on               802.1q         trunking      99
Po1         on               802.1q         trunking      99

Port        Vlans allowed on trunk
Fa0/5       1-4094
Po1         1-4094

Port        Vlans allowed and active in management domain
Fa0/5       1,10,20,30,90,99
Po1         1,10,20,30,90,99

Port        Vlans in spanning tree forwarding state and not pruned
Fa0/5       1,10,20,30,90,99
Po1         1,10,20,30,90,99
S2>
```

show vlan brief sur S1 :

```
S1>show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gi0/1, Gi0/2
10   R&D                              active    Fa0/6
20   STAFF                            active
30   MGNT                             active
90   TRASH                            active    Fa0/2, Fa0/3, Fa0/4, Fa0/7
                                                Fa0/8, Fa0/9, Fa0/10, Fa0/11
                                                Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                Fa0/24
99   NATIF                            active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup
S1>
```

show vlan brief sur S2 :

```
S2>sh vlan brief

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Gi0/1, Gi0/2
10   R&D                               active
20   STAFF                             active    Fa0/24
30   MGNT                              active    Fa0/18
90   TRASH                             active    Fa0/2, Fa0/3, Fa0/4, Fa0/6
                                                 Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                 Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                 Fa0/15, Fa0/16, Fa0/17, Fa0/19
                                                 Fa0/20, Fa0/21, Fa0/22, Fa0/23
99   NATIF                             active
1002 fddi-default                      act/unsup
1003 token-ring-default                act/unsup
1004 fddinet-default                   act/unsup
1005 trnet-default                     act/unsup
S2>
```

sh ip int br sur S1 :

```
S1>sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
Vlan1                  unassigned      YES NVRAM  up                    up
Vlan30                 172.16.30.11    YES manual up                    up
FastEthernet0/1        unassigned      YES unset  up                    up
FastEthernet0/2        unassigned      YES unset  administratively down down
FastEthernet0/3        unassigned      YES unset  administratively down down
FastEthernet0/4        unassigned      YES unset  administratively down down
FastEthernet0/5        unassigned      YES unset  up                    up
FastEthernet0/6        unassigned      YES unset  up                    up
FastEthernet0/7        unassigned      YES unset  administratively down down
FastEthernet0/8        unassigned      YES unset  administratively down down
FastEthernet0/9        unassigned      YES unset  administratively down down
FastEthernet0/10       unassigned      YES unset  administratively down down
FastEthernet0/11       unassigned      YES unset  administratively down down
FastEthernet0/12       unassigned      YES unset  administratively down down
FastEthernet0/13       unassigned      YES unset  administratively down down
FastEthernet0/14       unassigned      YES unset  administratively down down
FastEthernet0/15       unassigned      YES unset  administratively down down
FastEthernet0/16       unassigned      YES unset  administratively down down
FastEthernet0/17       unassigned      YES unset  administratively down down
FastEthernet0/18       unassigned      YES unset  administratively down down
FastEthernet0/19       unassigned      YES unset  administratively down down
FastEthernet0/20       unassigned      YES unset  administratively down down

S1>
```

sh ip int br sur S2:

```
S2>sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
Vlan1                  unassigned      YES NVRAM  up                    up
Vlan30                 172.16.30.12    YES manual up                    up
FastEthernet0/1        unassigned      YES unset  up                    up
FastEthernet0/2        unassigned      YES unset  administratively down down
FastEthernet0/3        unassigned      YES unset  administratively down down
FastEthernet0/4        unassigned      YES unset  administratively down down
FastEthernet0/5        unassigned      YES unset  up                    up
FastEthernet0/6        unassigned      YES unset  administratively down down
FastEthernet0/7        unassigned      YES unset  administratively down down
FastEthernet0/8        unassigned      YES unset  administratively down down
FastEthernet0/9        unassigned      YES unset  administratively down down
FastEthernet0/10       unassigned      YES unset  administratively down down
FastEthernet0/11       unassigned      YES unset  administratively down down
FastEthernet0/12       unassigned      YES unset  administratively down down
FastEthernet0/13       unassigned      YES unset  administratively down down
FastEthernet0/14       unassigned      YES unset  administratively down down
FastEthernet0/15       unassigned      YES unset  administratively down down
FastEthernet0/16       unassigned      YES unset  administratively down down
FastEthernet0/17       unassigned      YES unset  administratively down down
FastEthernet0/18       unassigned      YES unset  up                    up
FastEthernet0/19       unassigned      YES unset  administratively down down
FastEthernet0/20       unassigned      YES unset  administratively down down

S2>
```

ifconfig sur pc1 :

```
root@PC1-A:~# ifconfig
eth0      Link encap:Ethernet  HWaddr 7e:36:5f:9a:f5:34
          inet addr:172.16.10.13  Bcast:0.0.0.0  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:2604 errors:0 dropped:0 overruns:0 frame:0
          TX packets:59 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:166484 (166.4 KB)  TX bytes:6350 (6.3 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

root@PC1-A:~#
```

ifconfig sur pc2 :

```
root@PC-2-A:~# ifconfig
eth0      Link encap:Ethernet  HWaddr 62:81:c7:40:24:c9
          inet addr:172.16.20.12  Bcast:0.0.0.0  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:26231 errors:0 dropped:1 overruns:0 frame:0
          TX packets:144 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1604472 (1.6 MB)  TX bytes:12140 (12.1 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:40 errors:0 dropped:0 overruns:0 frame:0
          TX packets:40 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:4480 (4.4 KB)  TX bytes:4480 (4.4 KB)

root@PC-2-A:~#
```

ifconfig sur pc3 :

```
root@PC-3-A:~# ifconfig
eth0      Link encap:Ethernet  HWaddr aa:9f:f8:f4:1b:d6
          inet addr:172.16.30.13  Bcast:0.0.0.0  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:8586 errors:0 dropped:4 overruns:0 frame:0
          TX packets:59 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:528138 (528.1 KB)  TX bytes:6106 (6.1 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

root@PC-3-A:~#
```

sh ip inter br sur R1

```
R1>sh ip inter br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0/0   unassigned      YES NVRAM  up                    up
Gi0/0/0.10             172.16.10.2     YES manual up                    up
Gi0/0/0.20             172.16.20.2     YES manual up                    up
Gi0/0/0.30             172.16.30.2     YES manual up                    up
GigabitEthernet0/0/1   unassigned      YES NVRAM  down                  down
Gi0/0/1.10             unassigned      YES manual deleted               down
Gi0/0/1.20             unassigned      YES manual deleted               down
Gi0/0/1.30             unassigned      YES manual deleted               down
Gi0/0/1.99             172.16.99.254   YES NVRAM  down                  down
GigabitEthernet0/0/2   unassigned      YES NVRAM  administratively down down
GigabitEthernet0       unassigned      YES NVRAM  administratively down down
Vlan1                  unassigned      YES NVRAM  administratively down down
R1>
```

sh ip route sur R1

```
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
       i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      172.16.0.0/16 is variably subnetted, 6 subnets, 2 masks
C        172.16.10.0/24 is directly connected, GigabitEthernet0/0/0.10
L        172.16.10.2/32 is directly connected, GigabitEthernet0/0/0.10
C        172.16.20.0/24 is directly connected, GigabitEthernet0/0/0.20
L        172.16.20.2/32 is directly connected, GigabitEthernet0/0/0.20
C        172.16.30.0/24 is directly connected, GigabitEthernet0/0/0.30
L        172.16.30.2/32 is directly connected, GigabitEthernet0/0/0.30
R1>
```

sh ip dhcp binding sur R1

```
R1#sh ip dhcp binding
Bindings from all pools not associated with VRF:
IP address      Client-ID/              Lease expiration        Type       State      Interface
                Hardware address/
                User name
172.16.10.11    0122.667b.1780.9e       Jan 07 2026 07:39 PM    Automatic  Active     GigabitEthernet0/0/0.10
172.16.10.13    017e.365f.9af5.34       Jan 07 2026 09:01 PM    Automatic  Active     GigabitEthernet0/0/0.10
172.16.20.11    01e2.f1ca.85cd.84       Jan 07 2026 07:39 PM    Automatic  Active     GigabitEthernet0/0/0.20
172.16.20.12    0162.81c7.4024.c9       Jan 07 2026 08:15 PM    Automatic  Active     GigabitEthernet0/0/0.20
172.16.30.11    015a.3035.9ae2.66       Jan 07 2026 07:39 PM    Automatic  Active     GigabitEthernet0/0/0.30
172.16.30.13    01aa.9ff8.f41b.d6       Jan 07 2026 09:01 PM    Automatic  Active     GigabitEthernet0/0/0.30
R1#
```

sh standby brief sur R1

```
R1#show standby brief
                     P indicates configured to preempt.
                     |
Interface   Grp  Pri P State   Active          Standby         Virtual IP
Gi0/0/0.10  10   110 P Active  local           172.16.10.3     172.16.10.1
Gi0/0/0.20  20   100   Standby 172.16.20.3     local           172.16.20.1
Gi0/0/0.30  30   110 P Active  local           172.16.30.3     172.16.30.1
R1#
```

sh ip inter br sur R2

```
R2>sh ip inter br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0/0   unassigned      YES NVRAM  up                    up
Gi0/0/0.10             172.16.10.3     YES manual up                    up
Gi0/0/0.20             172.16.20.3     YES manual up                    up
Gi0/0/0.30             172.16.30.3     YES manual up                    up
GigabitEthernet0/0/1   unassigned      YES NVRAM  administratively down down
GigabitEthernet0/0/2   unassigned      YES NVRAM  administratively down down
GigabitEthernet0       unassigned      YES NVRAM  administratively down down
R2>
```

sh ip route sur R2

```
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
       i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      172.16.0.0/16 is variably subnetted, 6 subnets, 2 masks
C        172.16.10.0/24 is directly connected, GigabitEthernet0/0/0.10
L        172.16.10.3/32 is directly connected, GigabitEthernet0/0/0.10
C        172.16.20.0/24 is directly connected, GigabitEthernet0/0/0.20
L        172.16.20.3/32 is directly connected, GigabitEthernet0/0/0.20
C        172.16.30.0/24 is directly connected, GigabitEthernet0/0/0.30
L        172.16.30.3/32 is directly connected, GigabitEthernet0/0/0.30
R2>
```

sh ip dhcp binding sur R2

```
R2>sh ip dhcp binding
Bindings from all pools not associated with VRF:
IP address      Client-ID/              Lease expiration        Type       State      Interface
                Hardware address/
                User name
172.16.10.129   01d2.6634.d3bb.88       Jan 07 2026 07:14 PM    Automatic  Active     GigabitEthernet0/0/0.10
R2>
```

sh standby brief sur R2

```
R2>sh standby brief
                     P indicates configured to preempt.
                     |
Interface   Grp  Pri P State   Active          Standby         Virtual IP
Gi0/0/0.10  10   100   Standby 172.16.10.2     local           172.16.10.1
Gi0/0/0.20  20   110 P Active  local           172.16.20.2     172.16.20.1
Gi0/0/0.30  30   100   Standby 172.16.30.2     local           172.16.30.1
R2>
```

traceroute 172.16.10.1 sur pc1 qui passe par R1

```
root@PC1-A:~# traceroute 172.16.10.1
traceroute to 172.16.10.1 (172.16.10.1), 30 hops max, 60 byte packets
 1  172.16.10.2 (172.16.10.2)  1.065 ms * *
root@PC1-A:~#
```

ping depuis PC1 vers la passerelle virtuelle avant enlever le câble

```
root@PC1-A:~# ping 172.16.10.1
PING 172.16.10.1 (172.16.10.1) 56(84) bytes of data.
64 bytes from 172.16.10.1: icmp_seq=1 ttl=255 time=0.970 ms
64 bytes from 172.16.10.1: icmp_seq=2 ttl=255 time=1.29 ms
64 bytes from 172.16.10.1: icmp_seq=3 ttl=255 time=1.17 ms
64 bytes from 172.16.10.1: icmp_seq=4 ttl=255 time=1.15 ms
64 bytes from 172.16.10.1: icmp_seq=5 ttl=255 time=1.12 ms
64 bytes from 172.16.10.1: icmp_seq=15 ttl=255 time=1.37 ms
```

ping depuis PC1 vers la passerelle virtuelle avant et après enlever le câble

```
root@PC1-A:~# ping 172.16.10.1
PING 172.16.10.1 (172.16.10.1) 56(84) bytes of data.
64 bytes from 172.16.10.1: icmp_seq=1 ttl=255 time=0.970 ms
64 bytes from 172.16.10.1: icmp_seq=2 ttl=255 time=1.29 ms
64 bytes from 172.16.10.1: icmp_seq=3 ttl=255 time=1.17 ms
64 bytes from 172.16.10.1: icmp_seq=4 ttl=255 time=1.15 ms
64 bytes from 172.16.10.1: icmp_seq=5 ttl=255 time=1.12 ms
64 bytes from 172.16.10.1: icmp_seq=15 ttl=255 time=1.37 ms
64 bytes from 172.16.10.1: icmp_seq=16 ttl=255 time=1.28 ms
64 bytes from 172.16.10.1: icmp_seq=17 ttl=255 time=1.29 ms
64 bytes from 172.16.10.1: icmp_seq=18 ttl=255 time=1.42 ms
64 bytes from 172.16.10.1: icmp_seq=19 ttl=255 time=1.16 ms
64 bytes from 172.16.10.1: icmp_seq=20 ttl=255 time=1.51 ms
64 bytes from 172.16.10.1: icmp_seq=21 ttl=255 time=1.59 ms
64 bytes from 172.16.10.1: icmp_seq=22 ttl=255 time=1.49 ms
64 bytes from 172.16.10.1: icmp_seq=23 ttl=255 time=1.23 ms
64 bytes from 172.16.10.1: icmp_seq=24 ttl=255 time=1.45 ms
64 bytes from 172.16.10.1: icmp_seq=25 ttl=255 time=1.44 ms
64 bytes from 172.16.10.1: icmp_seq=26 ttl=255 time=1.54 ms
64 bytes from 172.16.10.1: icmp_seq=27 ttl=255 time=1.56 ms
64 bytes from 172.16.10.1: icmp_seq=28 ttl=255 time=1.81 ms
64 bytes from 172.16.10.1: icmp_seq=29 ttl=255 time=1.37 ms
64 bytes from 172.16.10.1: icmp_seq=30 ttl=255 time=1.67 ms
64 bytes from 172.16.10.1: icmp_seq=31 ttl=255 time=1.47 ms
64 bytes from 172.16.10.1: icmp_seq=32 ttl=255 time=1.56 ms
64 bytes from 172.16.10.1: icmp_seq=33 ttl=255 time=1.40 ms
64 bytes from 172.16.10.1: icmp_seq=34 ttl=255 time=1.28 ms
^C
```

traceroute 172.16.10.1 sur pc1 qui passe par R2 après reconnecter le câble

```
root@PC1-A:~# traceroute 172.16.10.1
traceroute to 172.16.10.1 (172.16.10.1), 30 hops max, 60 byte packets
 1  172.16.10.3 (172.16.10.3)  1.728 ms

 * *
root@PC1-A:~#
```