

1. Examen des routes statiques. 1
2. Résumé des routes statiques (routeur R3). 1
3. Configuration d'un réseau d'extrémité (routeur R1). 1

## 1. Examen des routes statiques.

entrée du MDP et sh run pour le R1

```
password:
R1>en
Password:
R1#sh run
Building configuration...

Current configuration : 931 bytes
!
version 12.3
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R1
!
```

sh IP route R1

```
R1#
R1#
R1#sh ip route
Codes: C - connected, S - static, I - IGRP, 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

      172.16.0.0/24 is subnetted, 3 subnets
S       172.16.1.0 [1/0] via 172.16.2.2
C       172.16.2.0 is directly connected, Serial0/0/0
C       172.16.3.0 is directly connected, FastEthernet0/0
S      192.168.1.0/24 [1/0] via 172.16.2.2
S      192.168.2.0/24 [1/0] via 172.16.2.2

R1#
```

entrée du MDP la commande sh run pour le R2

```
R2
Physical  Config  CLI  Attributes

Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0,
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1,

User Access Verification

Password:

R2>en
Password:
R2#sh run
Building configuration...

Current configuration : 945 bytes
!
version 12.3
```

sh route R2

```
R2
mac-address 0007.eca7.1511
ip address 172.16.1.1 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
mac-address 0001.42dd.a220
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
ip address 172.16.2.2 255.255.255.0
!
interface Serial0/0/1
ip address 192.168.1.2 255.255.255.0
clock rate 64000
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 172.16.3.0 255.255.255.0 Serial0/0/0
ip route 192.168.2.0 255.255.255.0 Serial0/0/1
```

## sh ip route R2

```
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#sh ip route
Codes: C - connected, S - static, I - IGRP, 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

      172.16.0.0/24 is subnetted, 3 subnets
C       172.16.1.0 is directly connected, FastEthernet0/0
C       172.16.2.0 is directly connected, Serial0/0/0
S       172.16.3.0 is directly connected, Serial0/0/0
C     192.168.1.0/24 is directly connected, Serial0/0/1
S     192.168.2.0/24 is directly connected, Serial0/0/1

R2#
```

## Entrée MDP R3

```
R3
Physical  Config  CLI  Attributes

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1,
is down

User Access Verification

Password:

R3>en
Password:
R3#sh route
^
% Invalid input detected at '^' marker.

R3#sh run
Building configuration...

Current configuration : 972 bytes
!
version 12.3
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R3
!
!
```

sh run

```
R3
Physical Config CLI Attributes
ip address 192.168.2.1 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
mac-address 0006.2a91.d285
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
no ip address
clock rate 2000000
!
interface Serial0/0/1
ip address 192.168.1.1 255.255.255.0
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 172.16.3.0 255.255.255.0 192.168.1.2
ip route 172.16.2.0 255.255.255.0 192.168.1.2
ip route 172.16.1.0 255.255.255.0 192.168.1.2
```

sh ip route

```
R3
R3#
R3#
R3#
R3#
R3#
R3#
R3#sh ip route
Codes: C - connected, S - static, I - IGRP, 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

172.16.0.0/24 is subnetted, 3 subnets
S       172.16.1.0 [1/0] via 192.168.1.2
S       172.16.2.0 [1/0] via 192.168.1.2
S       172.16.3.0 [1/0] via 192.168.1.2
C       192.168.1.0/24 is directly connected, Serial0/0/1
C       192.168.2.0/24 is directly connected, FastEthernet0/0
R3#
```

## Ping de PC2 et PC3 depuis PC1 (succès)

```
PC1
C:\>ping 172.16.1.0

Pinging 172.16.1.0 with 32 bytes of data:

Reply from 172.16.2.2: bytes=32 time=13ms TTL=254
Reply from 172.16.2.2: bytes=32 time=1ms TTL=254
Reply from 172.16.2.2: bytes=32 time=9ms TTL=254
Reply from 172.16.2.2: bytes=32 time=9ms TTL=254

Ping statistics for 172.16.1.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 13ms, Average = 8ms

C:\>ping 192.168.2.0

Pinging 192.168.2.0 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=14ms TTL=253
Reply from 192.168.1.1: bytes=32 time=11ms TTL=253
Reply from 192.168.1.1: bytes=32 time=2ms TTL=253
Reply from 192.168.1.1: bytes=32 time=12ms TTL=253

Ping statistics for 192.168.2.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 14ms, Average = 9ms
```

## Ping de PC1 et PC3 depuis PC2 (succès)

```
PC2
C:\>ping 172.16.3.0

Pinging 172.16.3.0 with 32 bytes of data:

Reply from 172.16.2.1: bytes=32 time=1ms TTL=254
Reply from 172.16.2.1: bytes=32 time=9ms TTL=254
Reply from 172.16.2.1: bytes=32 time=1ms TTL=254
Reply from 172.16.2.1: bytes=32 time=8ms TTL=254

Ping statistics for 172.16.3.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 9ms, Average = 4ms

C:\>ping 192.168.2.0

Pinging 192.168.2.0 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=10ms TTL=254
Reply from 192.168.1.1: bytes=32 time=9ms TTL=254
Reply from 192.168.1.1: bytes=32 time=1ms TTL=254
Reply from 192.168.1.1: bytes=32 time=10ms TTL=254

Ping statistics for 192.168.2.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 10ms, Average = 7ms
```

## Ping de PC1 et PC2 depuis PC3 (succès)

```
PC3
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.16.1.0

Pinging 172.16.1.0 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=5ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=9ms TTL=254

Ping statistics for 172.16.1.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 9ms, Average = 4ms

C:\>ping 172.16.3.0

Pinging 172.16.3.0 with 32 bytes of data:

Reply from 172.16.2.1: bytes=32 time=12ms TTL=253
Reply from 172.16.2.1: bytes=32 time=14ms TTL=253
Reply from 172.16.2.1: bytes=32 time=15ms TTL=253
Reply from 172.16.2.1: bytes=32 time=15ms TTL=253

Ping statistics for 172.16.3.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 15ms, Average = 14ms
```

## 2. Résumé des routes statiques (routeur R3).

Suppression des ip statique et ajout de l'IP :  
172.16.0.0 255.255.252.0 192.168.1.2 sur R3 et copy run start

```
R3
Physical Config CLI Attributes
R3(config)#ip route 172.16.0.0 255.255.252.0 192.168.1.2
R3(config)#^Z
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R3#show ip route
Codes: C - connected, S - static, I - IGRP, 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

      172.16.0.0/22 is subnetted, 1 subnets
        S      172.16.0.0 [1/0] via 192.168.1.2
        C      192.168.1.0/24 is directly connected, Serial0/0/1
        C      192.168.2.0/24 is directly connected, FastEthernet0/0

R3#sh run
```

## sh run sur R3

```
R3
Physical Config CLI Attributes
!
interface FastEthernet0/0
 mac-address 0003.e472.7a36
 ip address 192.168.2.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 mac-address 0006.2a91.d285
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 no ip address
 clock rate 2000000
!
interface Serial0/0/1
 ip address 192.168.1.1 255.255.255.0
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip route 172.16.0.0 255.255.252.0 192.168.1.2
!
```

Ping des IP de PC1 et PC2 depuis PC3 avec la nouvelles IP (succès)

```
PC3
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 172.16.3.0

Pinging 172.16.3.0 with 32 bytes of data:

Reply from 172.16.2.1: bytes=32 time=18ms TTL=253
Reply from 172.16.2.1: bytes=32 time=13ms TTL=253
Reply from 172.16.2.1: bytes=32 time=2ms TTL=253
Reply from 172.16.2.1: bytes=32 time=12ms TTL=253

Ping statistics for 172.16.3.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 18ms, Average = 11ms

C:\>ping 172.16.1.0

Pinging 172.16.1.0 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=12ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=10ms TTL=254
Reply from 192.168.1.2: bytes=32 time=10ms TTL=254

Ping statistics for 172.16.1.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 12ms, Average = 8ms
```

### 3. Configuration d'un réseau d'extrémité (routeur R1).

Entrer du MPD et suppressions des toutes les IP's Statique pour les remplacer par la nouvelle IP par défaut : 0.0.0.0 0.0.0.0 172.16.2.2 sur R1

```
R1

User Access Verification

Password:
Password:

R1>en
Password:
R1#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#no ip route 172.16.1.0 255.255.255.0 172.16.2.2
R1(config)#no ip route 192.168.1.0 255.255.255.0 172.16.2.2
R1(config)#no ip route 192.168.2.0 255.255.255.0 172.16.2.2
R1(config)#ip route 0.0.0.0 0.0.0.0 172.16.2.2
^
% Invalid input detected at '^' marker.

R1(config)#ip route 0.0.0.0 0.0.0.0 172.16.2.2
R1(config)#
```

quitte le mode config, copy run start et sh ip route

```
R1
Physical Config CLI Attributes

R1(config)#ip route 0.0.0.0 0.0.0.0 172.16.2.2
R1(config)#^Z
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R1#sh ip route
Codes: C - connected, S - static, I - IGRP, 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 172.16.2.2 to network 0.0.0.0

     172.16.0.0/24 is subnetted, 2 subnets
C       172.16.2.0 is directly connected, Serial10/0/0
C       172.16.3.0 is directly connected, FastEthernet0/0
S*    0.0.0.0/0 [1/0] via 172.16.2.2
```

## sh run sur R1

```
R1
Physical Config CLI Attributes
!
!
interface FastEthernet0/0
 ip address 172.16.3.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 ip address 172.16.2.1 255.255.255.0
 clock rate 64000
!
interface Serial0/0/1
 no ip address
 clock rate 2000000
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip route 0.0.0.0 0.0.0.0 172.16.2.2
```

## Ping de PC2 et PC3 depuis PC1 avec la nouvelle IP (succès)

```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
C:\>ping 192.168.2.0
Pinging 192.168.2.0 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=15ms TTL=253
Reply from 192.168.1.1: bytes=32 time=11ms TTL=253
Reply from 192.168.1.1: bytes=32 time=10ms TTL=253
Reply from 192.168.1.1: bytes=32 time=12ms TTL=253
Ping statistics for 192.168.2.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 15ms, Average = 12ms
C:\>ping 172.16.1.0
Pinging 172.16.1.0 with 32 bytes of data:
Reply from 172.16.2.2: bytes=32 time=12ms TTL=254
Reply from 172.16.2.2: bytes=32 time=9ms TTL=254
Reply from 172.16.2.2: bytes=32 time=8ms TTL=254
Reply from 172.16.2.2: bytes=32 time=10ms TTL=254
Ping statistics for 172.16.1.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 12ms, Average = 9ms
```