R2 / TP N°9

Configuration de DHCP

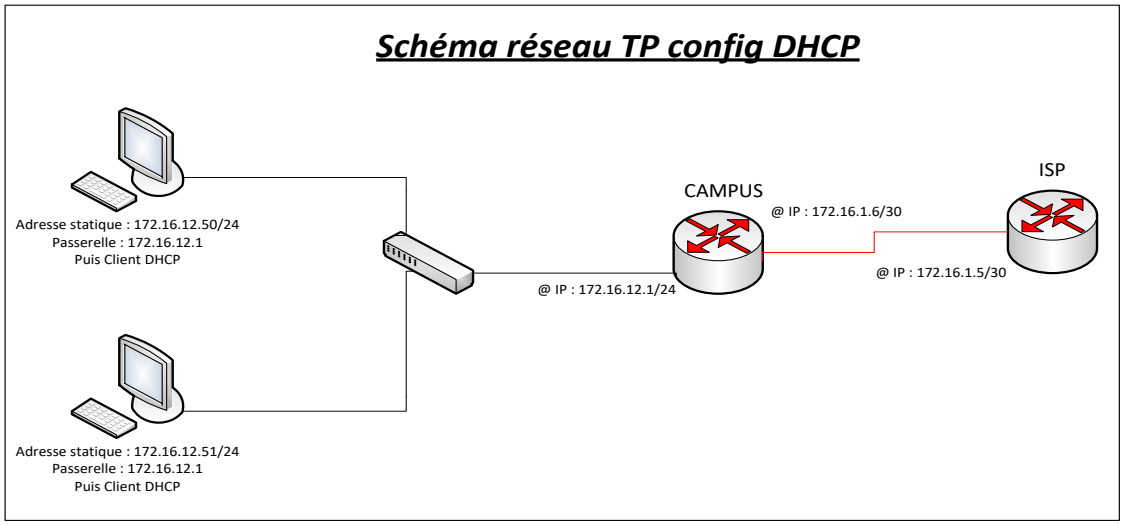

Figure 1 : Schéma du réseau pour le TP

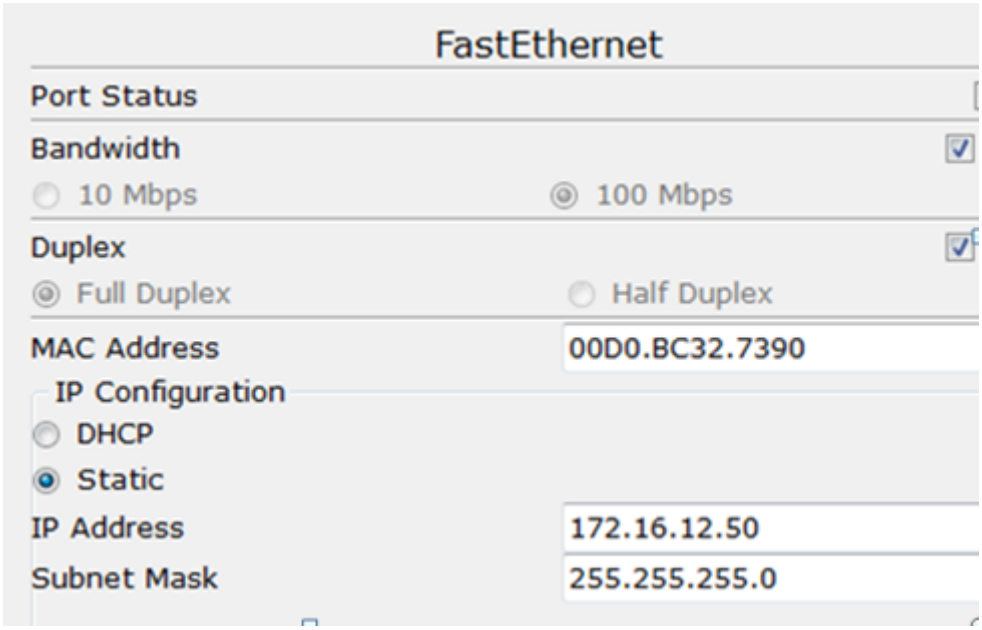

Figure 2 : Configuration statique du PC1

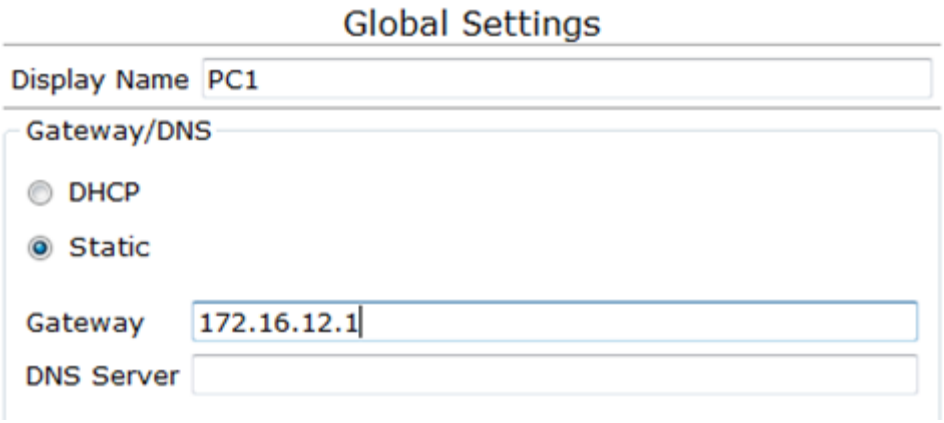

Figure 3 : Configuration statique de la passerelle du PC1

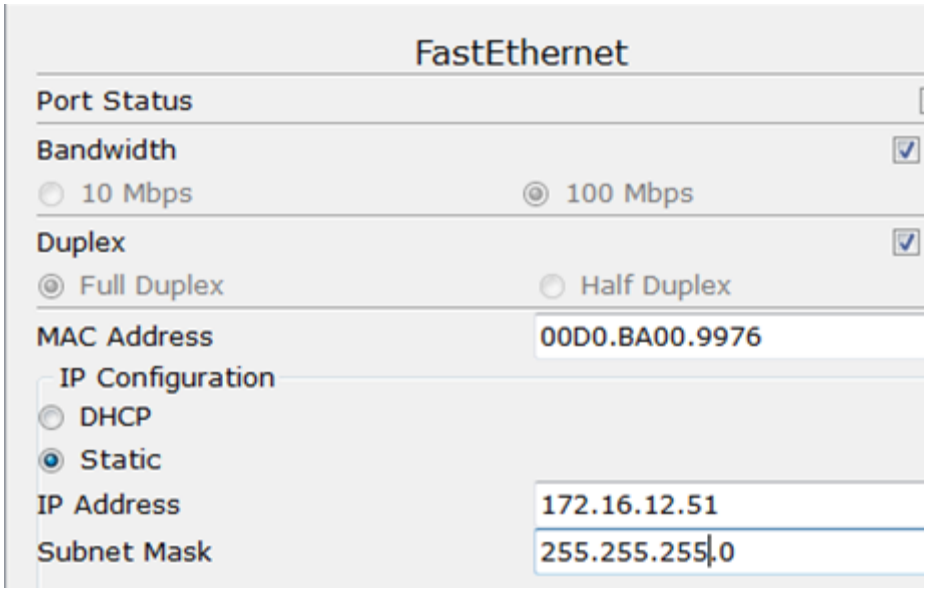

Figure 4 : Configuration statique du PC2

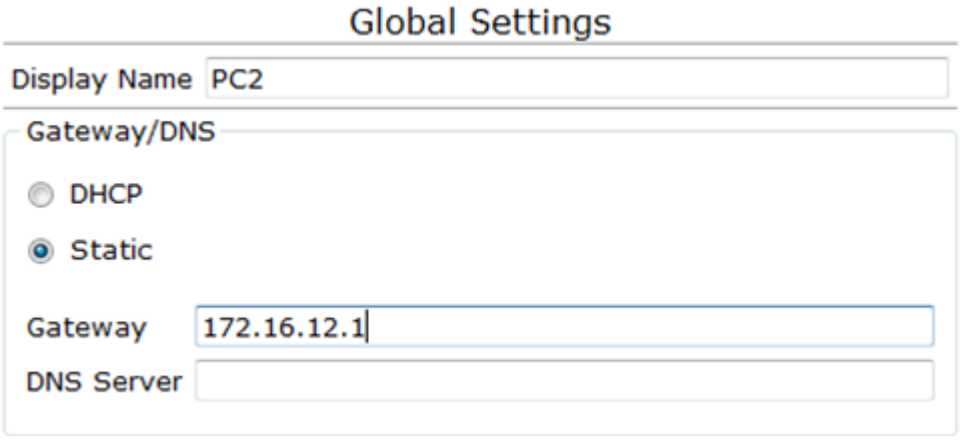

Figure 5 : Configuration de la passerelle statique du PC2

```
Press RETURN to get started!



Router>ena
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname Campus
Campus(config)#enable secret class
Campus(config)#line console 0
Campus(config-line)#password cisco
Campus(config-line)#login
Campus(config-line)#exit
Campus(config)#line vty 0 4
Campus(config-line)#password cisco
Campus(config-line)#login
Campus(config-line)#exit
```

Figure 6 : Configuration du nom d'hôte, des mots de passe de la console, du terminal virtuel et "enable secret" du routeur 1 Campus

```
Campus(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Campus(config-if)#exit
Campus(config)#int fa 0/0
Campus(config-if)#ip address 172.16.12.1 255.255.255.0
% 172.16.12.0 overlaps with Serial2/0
Campus(config-if)#int se2/0
Campus(config-if)#ip address 172.16.1.6 255.255.255.252
Campus(config-if)#nos hut
                   ^
% Invalid input detected at '^' marker.

Campus(config-if)#no shut
Campus(config-if)#exit
Campus(config)#int fa 2/0
%Invalid interface type and number
Campus(config)#int fe 2/0
                   ^
% Invalid input detected at '^' marker.

Campus(config)#int fa0/0
Campus(config-if)#ip address 172.16.12.1 255.255.255.0
Campus(config-if)#no shut
```

Figure 7 : Configuration des interfaces du routeur 1 Campus

```
Router>ena
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname ISP
ISP(config)#enable secret clas
ISP(config)#enable secret class
ISP(config)#line console 0
ISP(config-line)#password cisco
ISP(config-line)#login
ISP(config-line)#exit
ISP(config)#line vty 0 4
ISP(config-line)#password cisco
ISP(config-line)#login
ISP(config-line)#exit
ISP(config)#int se2/0
ISP(config-if)#ip address 172.16.1.5 255.255.255.252
ISP(config-if)#no shut

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

ISP(config-if)#exit
ISP(config)#
```

Figure 8 : Configuration du nom d'hôte, des mots de passe de la console, du terminal virtuel et "enable secret" du routeur 2 ISP

```
Campus(config)#int se2/0
Campus(config-if)#clock rate 64000
Campus(config-if)#no shut
Campus(config-if)#exit
Campus(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
```

Figure 9 : Configuration de la clock rate sur le routeur Campus

Fire	Last Status	Source	Destination	Type	Color	Time (sec)	Periodic	Num	Edit	Delete
	Successful	Router2	Router1	ICMP		0.000	N	0	(edit)	(delete)
	Successful	Router1	Router2	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC1	Router1	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC2	Router1	ICMP		0.000	N	3	(edit)	(delete)

Figure 10 : Tests de ping

```
ISP(config)#int loopback 0

%LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

ISP(config-if)#ip address 172.16.13.1 255.255.255.252
ISP(config-if)#no shut
ISP(config-if)#exit
ISP(config)#
```

Figure 11 : Configuration du loopback 0 sur le routeur ISP

```
ISP#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
ISP#
```

Figure 12 : sauvegarde de la configuration du routeur ISP

```
Campus#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Campus#
```

Figure 13 : sauvegarde de la configuration du routeur Campus

```
ISP#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
ISP(config)#ip route 172.16.12.0 255.255.255.0 172.16.1.6
ISP(config)#
```

Figure 14 : création d'une route statique vers le réseau Campus

```
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

     172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C       172.16.1.4/30 is directly connected, Serial2/0
S       172.16.12.0/24 [1/0] via 172.16.1.6
C       172.16.13.0/30 is directly connected, Loopback0
ISP#
```

Figure 15 : Vérification de la création de la route

```
Campus#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Campus(config)#ip route 0.0.0.0 0.0.0.0 172.16.1.5
Campus(config)#exit
Campus#
%SYS-5-CONFIG_I: Configured from console by console
```

Figure 16 : création d'une route par défaut sur le routeur Campus

```
Campus#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 172.16.1.5 to network 0.0.0.0

     172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.16.1.4/30 is directly connected, Serial2/0
C       172.16.12.0/24 is directly connected, FastEthernet0/0
S*   0.0.0.0/0 [1/0] via 172.16.1.5
Campus#
```

Figure 17 : Vérification de la création de la route par défaut via un "show ip route"

Fire	Last Status	Source	Destination	Type	Color	Time (sec)	Periodic	Num	Edit	Delete
	Successful	Router2	PC1	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC1	Router2	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC2	Router2	ICMP		0.000	N	2	(edit)	(delete)
	Successful	Router2	PC2	ICMP		0.000	N	3	(edit)	(delete)

Figure 18 : tests de ping des PC au routeur ISP et inversement

```
Campus#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Campus(config)#ip dhcp pool campus
Campus(dhcp-config)#network 172.16.12.0 255.255.255.0
Campus(dhcp-config)#default-router 172.16.12.1
Campus(dhcp-config)#dns-server 172.16.1.2
```

Figure 19 : Configuration du dhcp sur le routeur Campus

```
Campus(dhcp-config)#ip dhcp excluded-address 172.16.12.1 172.16.12.11
Campus(config)#
```

Figure 20 : Exclusion de la plage d'adresses 172.16.12.1 à 172.16.12.11

```
PC>ipconfig

IP Address.....................: 172.16.12.12
Subnet Mask....................: 255.255.255.0
Default Gateway................: 172.16.12.1

PC>
```

Figure 21 : Passage en mode client dhcp, une nouvelle adresse IP automatique sur le PC1

```
Packet Tracer PC Command Line 1.0
PC>ipconfig /all

Physical Address.....: 00D0.BA00.9976
IP Address.....: 172.16.12.13
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 172.16.12.1
DNS Servers.....: 172.16.1.2


PC>
```

Figure 22 : Passage en mode client dhcp, une nouvelle adresse IP automatique sur le PC2

```
Campus#
%SYS-5-CONFIG_I: Configured from console by console

Campus#sh ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
172.16.12.12     00D0.BC32.7390           --                     Automatic
172.16.12.13     00D0.BA00.9976           --                     Automatic
Campus#
```

Figure 23 : "show ip dhcp binding" sur le routeur ISP pour consulter les IP attribuées, les adresses MAC correspondantes, la date d'expiration du bail et le type de renouvellement de bail (automatique ou manuel)