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**Année :**

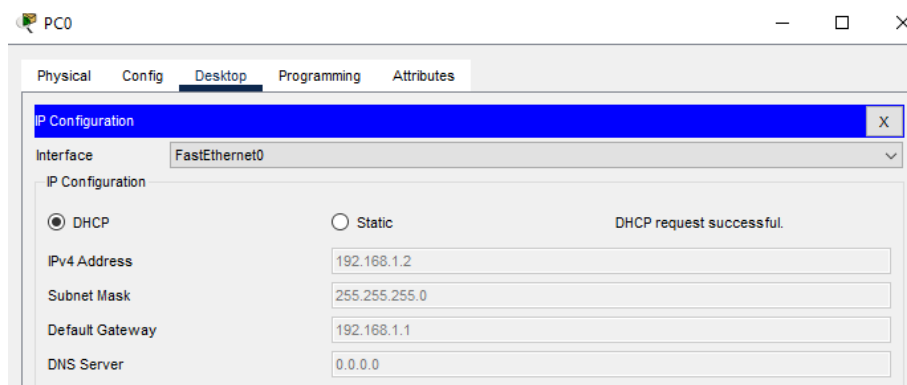
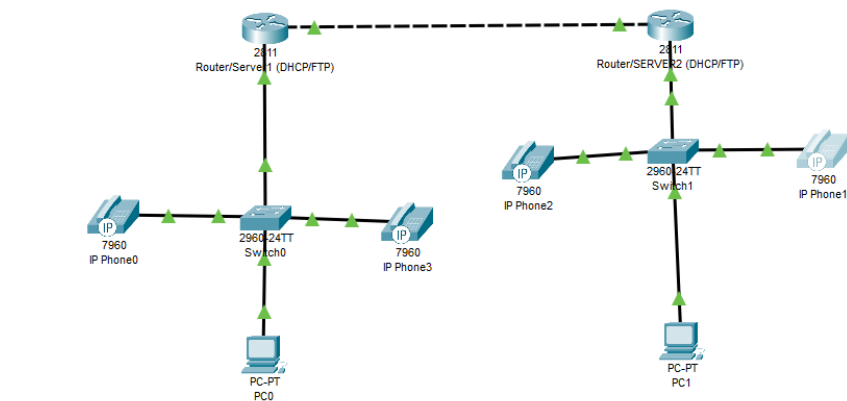
**2024-2025**

**Le 07/03/2025**

## Exécution du TD

▪ Processus de configuration d'un réseau VoIP en utilisant des routeurs, des commutateurs, et des téléphones IP.

Implémentation des services nécessaires pour la communication VoIP (DHCP, TFTP, et Call Manager Express - CME)..



% Invalid input detected at '^' marker.

```
serveur_dhcp_ftp(config-router)# network 192.168.2.0 0.0.0.255 area 0
serveur_dhcp_ftp(config-router)# network 10.10.10.0 0.0.0.3 area 0
serveur_dhcp_ftp(config-router)# do wr
Building configuration...
[OK]
serveur_dhcp_ftp(config-router)#dial-peer voice 10 voip
serveur_dhcp_ftp(config-dial-peer)# destination-pattern 1..
serveur_dhcp_ftp(config-dial-peer)# session target ipv4:10.10.10.1
serveur_dhcp_ftp(config-dial-peer)# do wr
Building configuration...
[OK]
serveur_dhcp_ftp(config-dial-peer)#
```

```
serveur_dhcp_ftp(config)#interface f0/1
serveur_dhcp_ftp(config-if)# router ospf 10
serveur_dhcp_ftp(config-router)# network 192.168.1.0 0.0.0.255 area 0
serveur_dhcp_ftp(config-router)# network 10.10.10.0 0.0.0.3 area 0
serveur_dhcp_ftp(config-router)# do wr
Building configuration...
[OK]
serveur_dhcp_ftp(config-router)#dial-peer voice 10 voip
serveur_dhcp_ftp(config-dial-peer)# destination-pattern 2..
serveur_dhcp_ftp(config-dial-peer)# session target ipv4:10.10.10.2
serveur_dhcp_ftp(config-dial-peer)# do wr
Building configuration...
[OK]
serveur_dhcp_ftp(config-dial-peer)#
```

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S2
S2(config)# interface range fa 0/1-24
S2(config-if-range)# switchport mode access
S2(config-if-range)# switchport voice vlan 1
S2(config-if-range)# exit
S2(config)#
```

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1
S1(config)# interface range fa 0/1-24
S1(config-if-range)# switchport mode access
S1(config-if-range)# switchport voice vlan 1
S1(config-if-range)# exit
S1(config)#
```

Router/SERVER2 (DHCP/FTP)

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# hostname serveur_dhcp_ftp
serveur_dhcp_ftp(config)# interface f0/0
serveur_dhcp_ftp(config-if)# ip address 192.168.2.1 255.255.255.0
serveur_dhcp_ftp(config-if)# no shutdown

serveur_dhcp_ftp(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

serveur_dhcp_ftp(config)# interface f0/1
serveur_dhcp_ftp(config-if)# ip address 10.10.10.2 255.255.255.252
serveur_dhcp_ftp(config-if)# no shutdown

serveur_dhcp_ftp(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

serveur_dhcp_ftp(config)# ip dhcp pool VOIP
serveur_dhcp_ftp(dhcp-config)# network 192.168.2.0 255.255.255.0
serveur_dhcp_ftp(dhcp-config)# default-router 192.168.2.1
serveur_dhcp_ftp(dhcp-config)# option 150 ip 192.168.2.1
serveur_dhcp_ftp(dhcp-config)# exit
serveur_dhcp_ftp(config)# telephony-service
serveur_dhcp_ftp(config-telephony)# max-ephone 5
serveur_dhcp_ftp(config-telephony)# max-dn 5
serveur_dhcp_ftp(config-telephony)# ip source-address 192.168.2.1 port 2000
serveur_dhcp_ftp(config-telephony)# auto assign 1 to 5
serveur_dhcp_ftp(config-telephony)# exit
serveur_dhcp_ftp(config)# ephone-dn 1
serveur_dhcp_ftp(config-ephone-dn)# number 201
serveur_dhcp_ftp(config-ephone-dn)# exit%LINK-3-UPDOWN: Interface ephone_dsp DN 1.1, changed state to up

serveur_dhcp_ftp(config)# ephone-dn 2
```

Router/Server1 (DHCP/FTP)

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# hostname serveur_dhcp_ftp
serveur_dhcp_ftp(config)# interface f0/0
serveur_dhcp_ftp(config-if)# ip address 192.168.1.1 255.255.255.0
serveur_dhcp_ftp(config-if)# no shutdown

serveur_dhcp_ftp(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

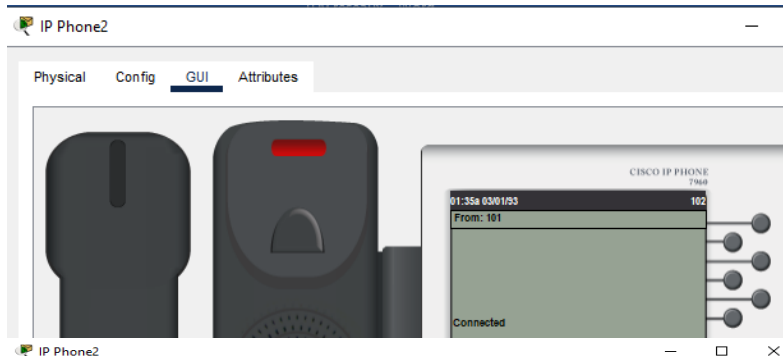
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

serveur_dhcp_ftp(config)# interface f0/1
serveur_dhcp_ftp(config-if)# ip address 10.10.10.1 255.255.255.252
serveur_dhcp_ftp(config-if)# no shutdown

serveur_dhcp_ftp(config-if)# exit
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

serveur_dhcp_ftp(config)# ip dhcp pool VOIP
serveur_dhcp_ftp(dhcp-config)# network 192.168.1.0 255.255.255.0
serveur_dhcp_ftp(dhcp-config)# default-router 192.168.1.1
serveur_dhcp_ftp(dhcp-config)# option 150 ip 192.168.1.1
serveur_dhcp_ftp(dhcp-config)# EXIT
serveur_dhcp_ftp(config)# telephony-service
serveur_dhcp_ftp(config-telephony)# max-ephone 5
serveur_dhcp_ftp(config-telephony)# max-dn 5
serveur_dhcp_ftp(config-telephony)# ip source-address 192.168.1.1 port 2000
serveur_dhcp_ftp(config-telephony)# auto assign 1 to 5
serveur_dhcp_ftp(config-telephony)# exit
serveur_dhcp_ftp(config)# ephone-dn 1
serveur_dhcp_ftp(config-ephone-dn)# number 101
serveur_dhcp_ftp(config-ephone-dn)# exit%LINK-3-UPDOWN: Interface ephone_dsp DN 1.1, changed state to up

serveur_dhcp_ftp(config)# ephone-dn 2
serveur_dhcp_ftp(config-ephone-dn)# number 102
serveur_dhcp_ftp(config-ephone-dn)# exit%LINK-3-UPDOWN: Interface ephone_dsp DN 2.1, changed state to up
```



Laptop0

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.1.4: bytes=32 time<1ms TTL=255
Reply from 192.168.1.4: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

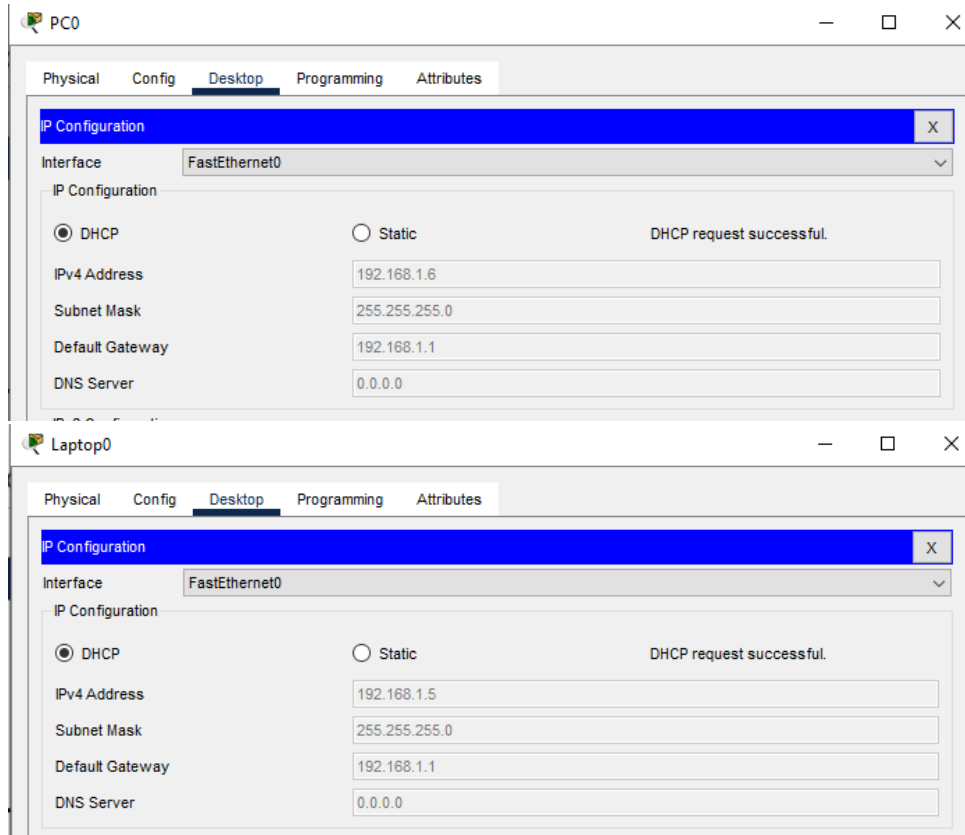
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.2: bytes=32 time<1ms TTL=255
Reply from 192.168.1.2: bytes=32 time<1ms TTL=255
Reply from 192.168.1.2: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
```





```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1
S1(config)# interface range fa 0/1-24
S1(config-if-range)# switchport mode access
S1(config-if-range)# switchport voice vlan 1
S1(config-if-range)# exit
S1(config)#
```

```
serveur_dhcp_ftp(config)#class-map match-any VOICE
serveur_dhcp_ftp(config-cmap)#match protocol rtp
serveur_dhcp_ftp(config-cmap)#policy-map VOICE_POLICY
serveur_dhcp_ftp(config-pmap)#class VOICE
serveur_dhcp_ftp(config-pmap-c)# priority percent 70
serveur_dhcp_ftp(config-pmap-c)# interface f0/0
serveur_dhcp_ftp(config-if)# service-policy output VOICE_POLICY
serveur_dhcp_ftp(config-if)#
```

```
serveur_dhcp_ftp(config)#ephone-dn 1
serveur_dhcp_ftp(config-ephone-dn)# number 101
serveur_dhcp_ftp(config-ephone-dn)# exit%LINK-3-UPDOWN: Interface ephone_dsp DN 1.1,
changed state to up
```

```
serveur_dhcp_ftp(config)# ephone-dn 2
serveur_dhcp_ftp(config-ephone-dn)# number 102
serveur_dhcp_ftp(config-ephone-dn)# exit%LINK-3-UPDOWN: Interface ephone_dsp DN 2.1,
changed state to up
```

```
serveur_dhcp_ftp(config)#
```

---

```
serveur_dhcp_ftp(config)# telephony-service
serveur_dhcp_ftp(config-telephony)# max-ephone 5
serveur_dhcp_ftp(config-telephony)# max-dn 5
serveur_dhcp_ftp(config-telephony)# ip source-address 192.168.1.1 port 2000
serveur_dhcp_ftp(config-telephony)# auto assign 1 to 5
serveur_dhcp_ftp(config-telephony)# exit
serveur_dhcp_ftp(config)#
```

---

```
serveur_dhcp_ftp(config)#ip dhcp excluded-address 192.168.1.1
serveur_dhcp_ftp(config)# ip dhcp pool VOIP
serveur_dhcp_ftp(dhcp-config)# network 192.168.1.0 255.255.255.0
serveur_dhcp_ftp(dhcp-config)# default-router 192.168.1.1
serveur_dhcp_ftp(dhcp-config)# option 150 ip 192.168.1.1
serveur_dhcp_ftp(dhcp-config)#exit
serveur_dhcp_ftp(config)#
```

---

```
Router>enable
```

```
Router# configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)# hostname serveur_dhcp_ftp
```

```
serveur_dhcp_ftp(config)# interface f0/0
```

```
serveur_dhcp_ftp(config-if)# ip address 192.168.1.1 255.255.255.0
```

```
serveur_dhcp_ftp(config-if)# no shutdown
```

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

```
serveur_dhcp_ftp(config)#
```

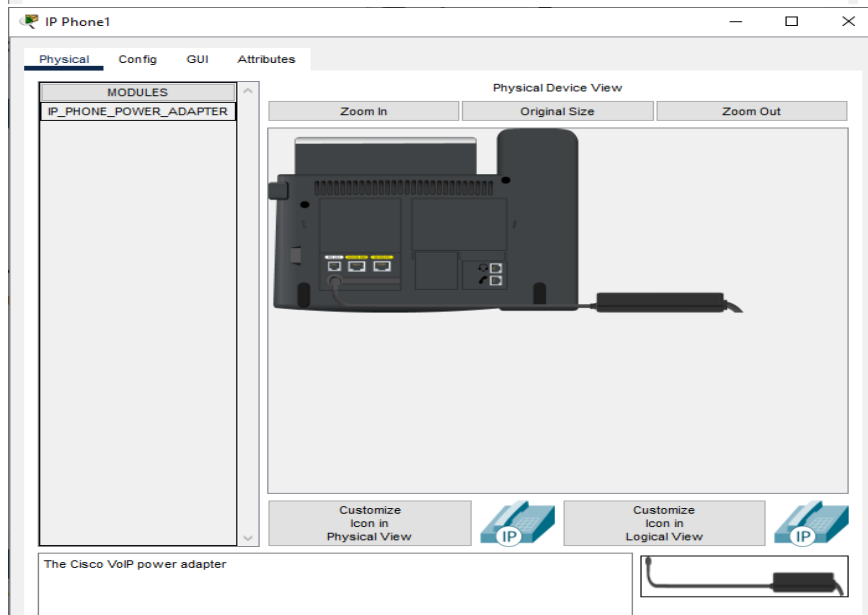
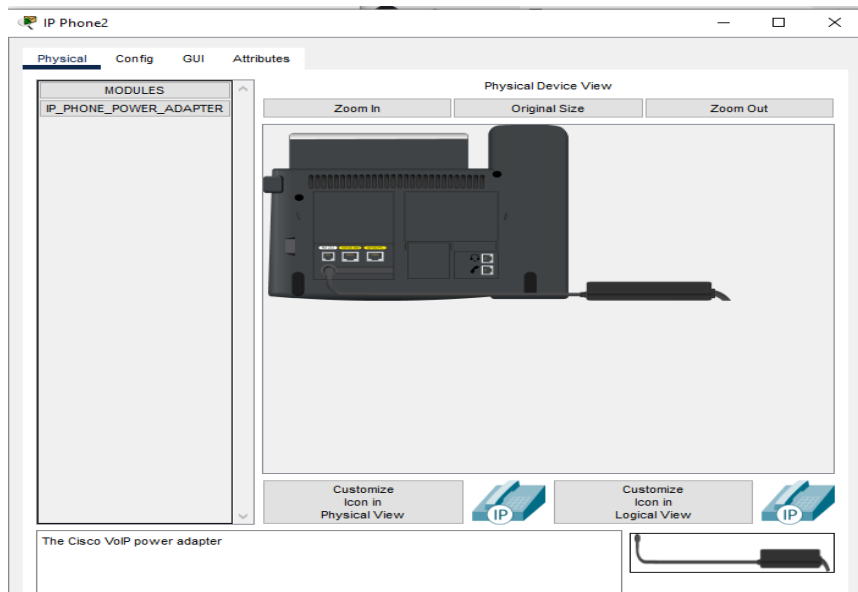
```
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
```

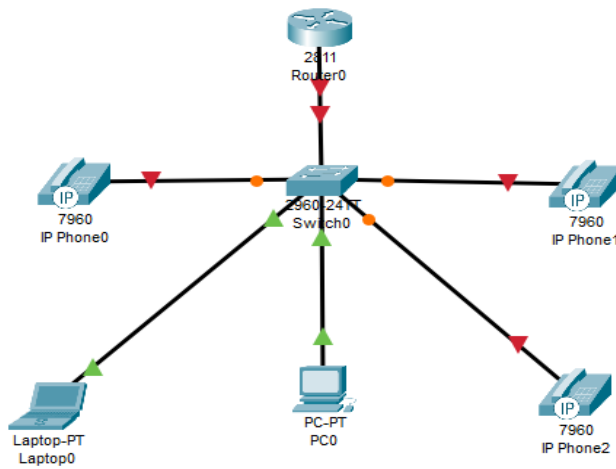
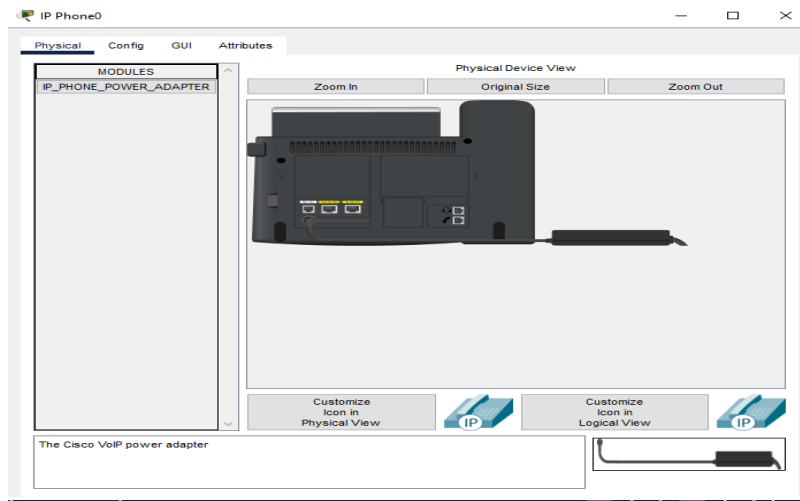
```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
```

```
serveur_dhcp_ftp(config)#
```

---







En conclusion, ce cours nous permet de configurer la VoIP (Voix sur IP) dans un réseau simulé à l'aide de Cisco Packet Tracer tout en Implémentant les services nécessaires et en configurant le réseau VoIP en utilisant des routeurs, des commutateurs, et des téléphones IP.