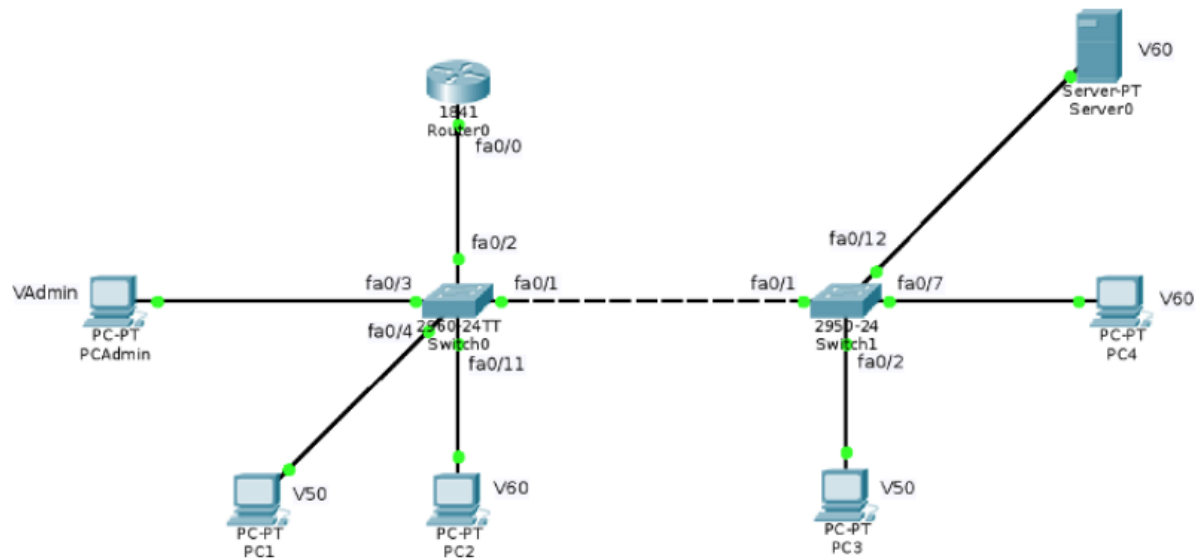


## Activitat 2.2. Enrutament complex d'VLAN

Donada la següent topologia:



Amb les següents VLAN:

- VLAN 1 - Nativa
- VLAN 50 - 172.24.50.0/24
- VLAN 60 - 172.24.60.0/24
- VLAN 100 (Administració) - 172.24.100.0/24

I la següent distribució entre VLAN, switchs i ports:

VLAN	Switch0	Switch1
1	fa0/1 i fa0/2	fa0/1
50	fa0/4 - fa0/10	fa0/2 - fa0/6
60	fa0/11 - fa0/24	fa0/7 - fa0/12
100	fa0/3	-

Digueu quines són les configuracions necessàries per tal que: tots els PC i el Server0 s'han de poder fer ping entre ells.

Als switch s'ha de configurar les vlan amb interfícies troncales(al S0 la fa0/1 i fa0/2 i al S1 la fa0/1).

Al Router s'ha de configurar les tres interfícies virtuals.

#### **Switch0**

##### **CONFIGURAR LES VLAN**

```
Switch(config)#int range fa0/4-10
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 50
% Access VLAN does not exist. Creating vlan 50
Switch(config-if-range)#no shutdown
Switch(config-if-range)#exit
```

```
Switch(config)#int range fa0/11-24
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 60
% Access VLAN does not exist. Creating vlan 60
Switch(config-if-range)#exit
```

```
Switch(config)#int range fa0/11-24
Switch(config-if-range)#no shutdown
Switch(config-if-range)#int fa0/3
Switch(config-if)#int fa0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 100
% Access VLAN does not exist. Creating vlan 100
Switch(config-if)#no shutdown
Switch(config-if)#exit
```

```
Switch(config)#int fa0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 50,60
Switch(config-if)#no shutdown
Switch(config-if)#exit
```

```
Switch(config)#int fa0/2
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 50,60,100
Switch(config-if)#no shutdown
Switch(config-if)#exit
```

#### **Switch1**

##### **CONFIGURAR LES VLAN**

```
Switch(config)#int range fa0/2-6
Switch(config-if-range)#switchport access vlan 50
% Access VLAN does not exist. Creating vlan 50
Switch(config-if-range)#no shutdown
Switch(config-if-range)#exit
```

```
Switch(config)#int range fa0/7-12
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 60
```

```
Switch(config-if-range)#exit
```

### **Router0**

#### **CONFIGURAR LES INTERFÍCIES VIRTUALS I LES VLAN**

```
Router(config)#int fa0/0.50
```

```
Router(config-subif)#ip address 172.24.50.1 255.255.255.0
```

```
Router(config-subif)#encapsulation dot1Q 50
```

```
Router(config-subif)#exit
```

```
Router(config)#int fa0/0.60
```

```
Router(config-subif)#ip address 172.24.60.1 255.255.255.0
```

```
Router(config-subif)#encapsulation dot1Q 60
```

```
Router(config-subif)#exit
```

```
Router(config)#int fa0/0.100
```

```
Router(config-subif)#ip address 172.24.100.1 255.255.255.0
```

```
Router(config-subif)#encapsulation dot1Q 100
```

```
Router(config-subif)#exit
```

#### **Comprovacions de connectivitat**

##### **PCAdmin**

```
C:\>ping 172.24.60.3
```

Pinging 172.24.60.3 with 32 bytes of data:

```
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127
```

```
Reply from 172.24.60.3: bytes=32 time=1ms TTL=127
```

```
Reply from 172.24.60.3: bytes=32 time=1ms TTL=127
```

Ping statistics for 172.24.60.3:

Packets: Sent = 3, Received = 3, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 1ms, Average = 0ms

##### **PC1**

```
C:\>ping 172.24.60.3
```

Pinging 172.24.60.3 with 32 bytes of data:

```
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127
```

```
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127
```

```
Reply from 172.24.60.3: bytes=32 time=15ms TTL=127
```

```
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127
```

Ping statistics for 172.24.60.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 15ms, Average = 3ms

##### **PC2**

```
C:\>ping 172.24.60.3
```

Pinging 172.24.60.3 with 32 bytes of data:

Reply from 172.24.60.3: bytes=32 time<1ms TTL=128  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=128  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=128  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=128

Ping statistics for 172.24.60.3:

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

### **PC3**

C:\>ping 172.24.60.3

Pinging 172.24.60.3 with 32 bytes of data:

Reply from 172.24.60.3: bytes=32 time<1ms TTL=127  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=127

Ping statistics for 172.24.60.3:

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

### **PC4**

C:\>ping 172.24.60.3

Pinging 172.24.60.3 with 32 bytes of data:

Reply from 172.24.60.3: bytes=32 time=4ms TTL=128  
Reply from 172.24.60.3: bytes=32 time<1ms TTL=128  
Reply from 172.24.60.3: bytes=32 time=5ms TTL=128  
Reply from 172.24.60.3: bytes=32 time=5ms TTL=128

Ping statistics for 172.24.60.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 0ms, Maximum = 5ms, Average = 3ms