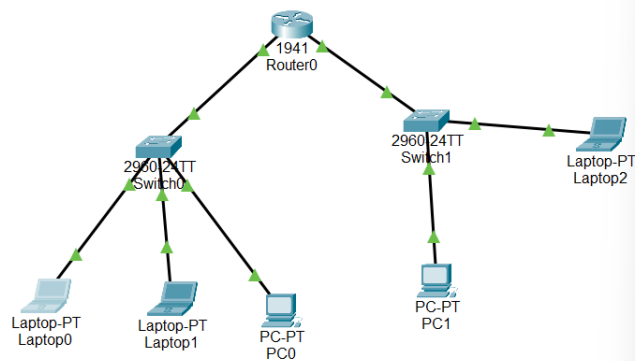


## Esercizio 4 di Ciaschini Giorgio del 25/01/2024

Di seguito troviamo gli screenshot al quale seguiranno le varie spiegazioni.



```
C:\>ping 192.168.100.103

Pinging 192.168.100.103 with 32 bytes of data:

Reply from 192.168.100.103: bytes=32 time<1ms TTL=128
Reply from 192.168.100.103: bytes=32 time<1ms TTL=128
Reply from 192.168.100.103: bytes=32 time=2ms TTL=128
Reply from 192.168.100.103: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.100.103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>ping 192.168.200.100

Pinging 192.168.200.100 with 32 bytes of data:

Reply from 192.168.200.100: bytes=32 time<1ms TTL=127
Reply from 192.168.200.100: bytes=32 time<1ms TTL=127
Reply from 192.168.200.100: bytes=32 time<1ms TTL=127
Reply from 192.168.200.100: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.200.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Come si vede dal command prompt, abbiamo inviato i pacchetti dal Laptop PT0 con indirizzo IP: 192.168.100.100 al PC PT PC0 con indirizzo IP: 192.168.100.103.

Lo stesso dal Laptop PT0 al Laptop PT2 con indirizzo IP: 192.168.200.100; senza perdita di pacchetti.

Quindi i Pc sono in comunicazione tra loro.

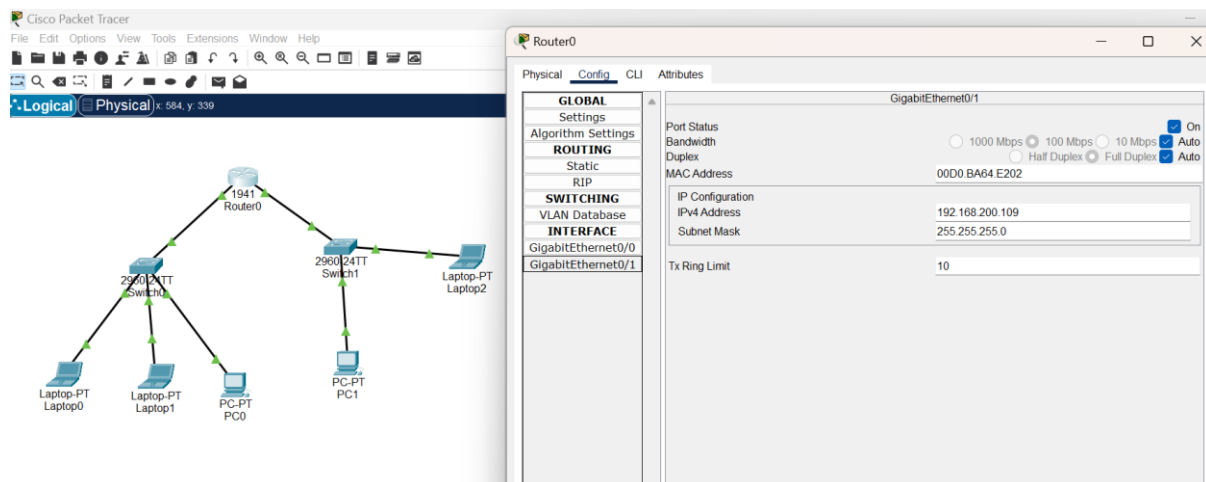
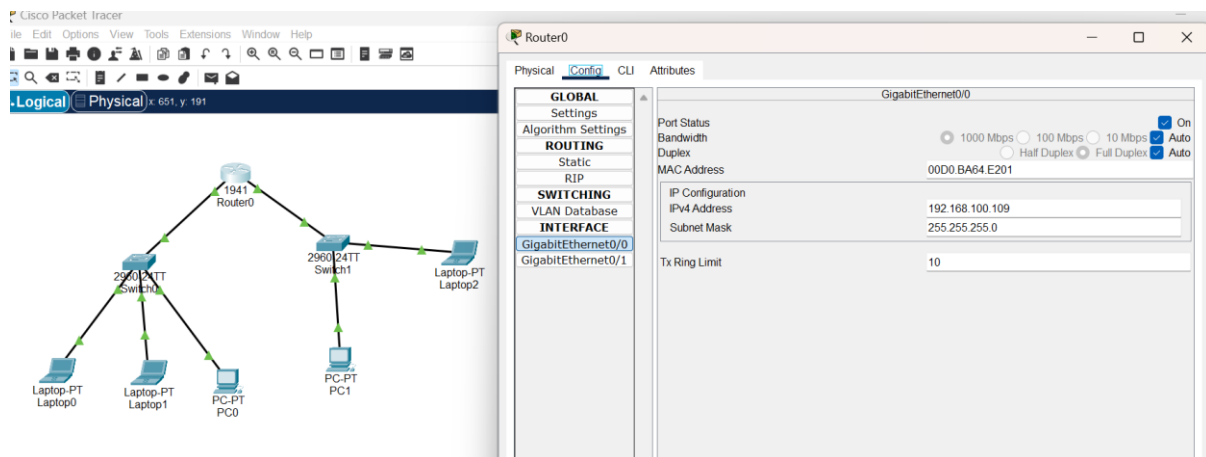
The top screenshot shows the configuration for PC0 in Cisco Packet Tracer. The network diagram on the left shows a topology with a central Router0 (1941) connected to two switches: Switch0 (2960) and Switch1 (2960). Switch0 is connected to Laptop-PT Laptop0, Laptop-PT Laptop1, and PC-PT PC0. Switch1 is connected to PC-PT PC1 and Laptop-PT Laptop2. The configuration window for PC0 is open, showing the following settings:

Interface	FastEthernet0
IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.100.103
Subnet Mask	255.255.255.0
Default Gateway	192.168.100.109
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::20B:BEFF:FE4D:566D
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5

The bottom screenshot shows the configuration for Laptop0 in Cisco Packet Tracer. The network diagram is identical to the top one. The configuration window for Laptop0 is open, showing the following settings:

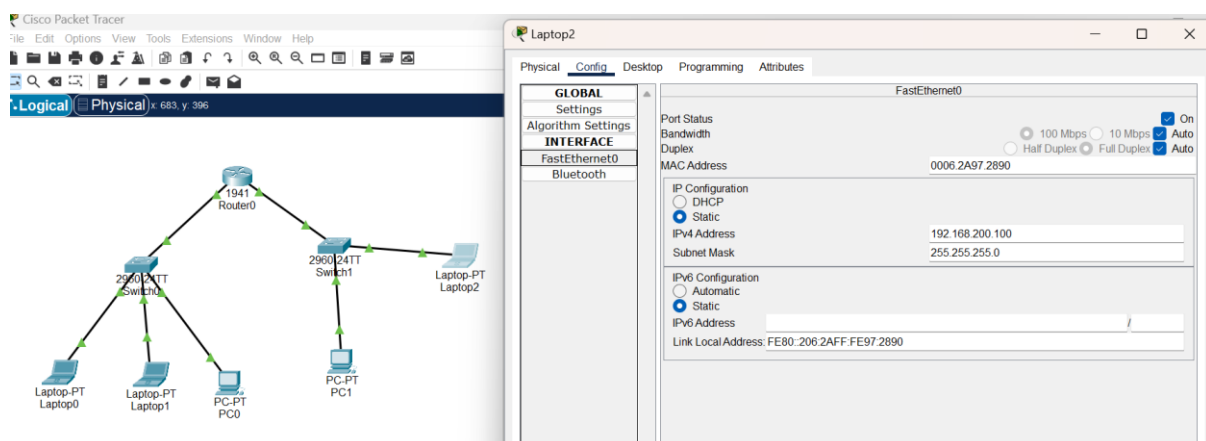
Interface	FastEthernet0
IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.100.100
Subnet Mask	255.255.255.0
Default Gateway	192.168.100.109
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::202:16FF:FEAE:2DE7
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	
Password	

Come possiamo notare i due PC della stessa rete hanno lo stesso Ip Gateway (layer 3 della ISO/OSI) e quindi essendo sulla stessa linea scambiano i pacchetti attraverso il loro MAC address (layer 2 della ISO/OSI).



Da queste immagini capiamo meglio l'importanza del router. A lato sinistro il router possiede una porta ethernet (0/0) con indirizzo IP: 192.168.100.109 che gli permette di mettere in comunicazione il lato sinistro, che ha come indirizzo Gateway 192.168.100.109, con il destro.

I pacchetti passando attraverso il router vengono indirizzati verso la macchina di riferimento grazie agli indirizzi ip della porta di uscita del router che ha Ip gateway 192.168.200.109.



A livello 2 del layer ISO/OSI il sistema lavora con i MAC address.

A livello 3 del layer ISO/OSI invece con gli indirizzi IP.