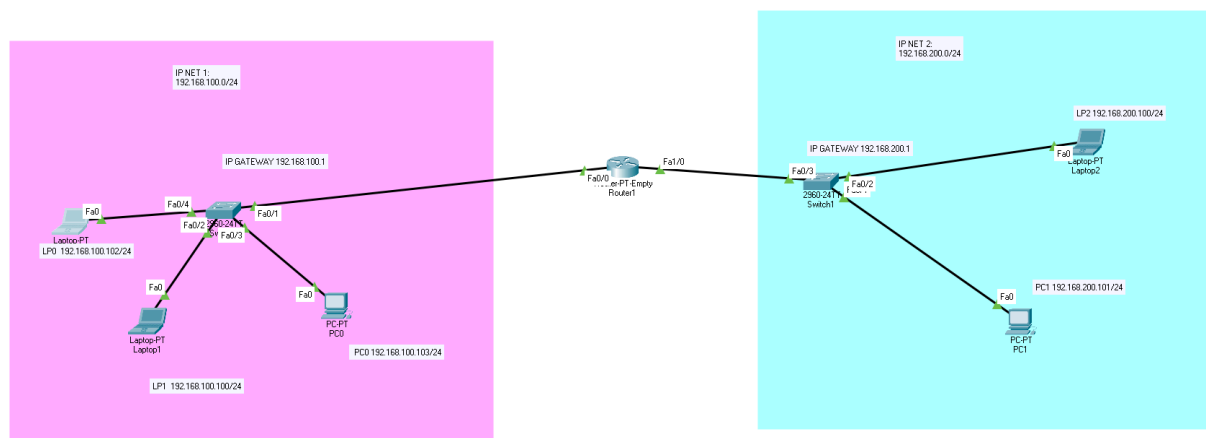


CONFIGURAZIONE RETE DI CALCOLATORI

Dagli indirizzi IP di due dispositivi appartenenti a reti diverse determino i rispettivi IP NETWORK delle reti e il loro IP Gateway convenzionale.

DISPOSITIVI	IP HOST	IP NETWORK	IP GATEWAY
Laptop 1	192.168.100.100/24	192.168.100.0/24	192.168.100.1
Laptop 0	192.168.100.102/24		
PC0	192.168.100.103/24		
Laptop 2	192.168.200.100/24	192.168.200.0/24	192.168.200.1
PC1	192.168.200.101/24		

Di seguito la rete su Cisco Packet Tracer



Una volta creata la rete inizio la configurazione dei singoli host e dispositivi:

Partendo dagli host della rete 1: inserisco i rispettivi indirizzi IP e l'indirizzo IP Gateway e faccio lo stesso con gli host della rete 2.

Laptop4

Physical

Config

Desktop

Programming

Attributes

IP Configuration

×

Interface

FastEthernet0

▼

IP Configuration

☐ DHCP

☒ Static

IPv4 Address

192.168.100.102

Subnet Mask

255.255.255.0

Default Gateway

192.168.100.1

DNS Server

0.0.0.0

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address

/

Link Local Address

FE80::20D:BDFF:FE11:8340

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

▼

Username

Password

☐ Top

Laptop2

Physical

Config

Desktop

Programming

Attributes

IP Configuration

InterfaceFastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

192.168.200.100

Subnet Mask

255.255.255.0

Default Gateway

192.168.200.1

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::260:70FF:FE4A:9D45

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

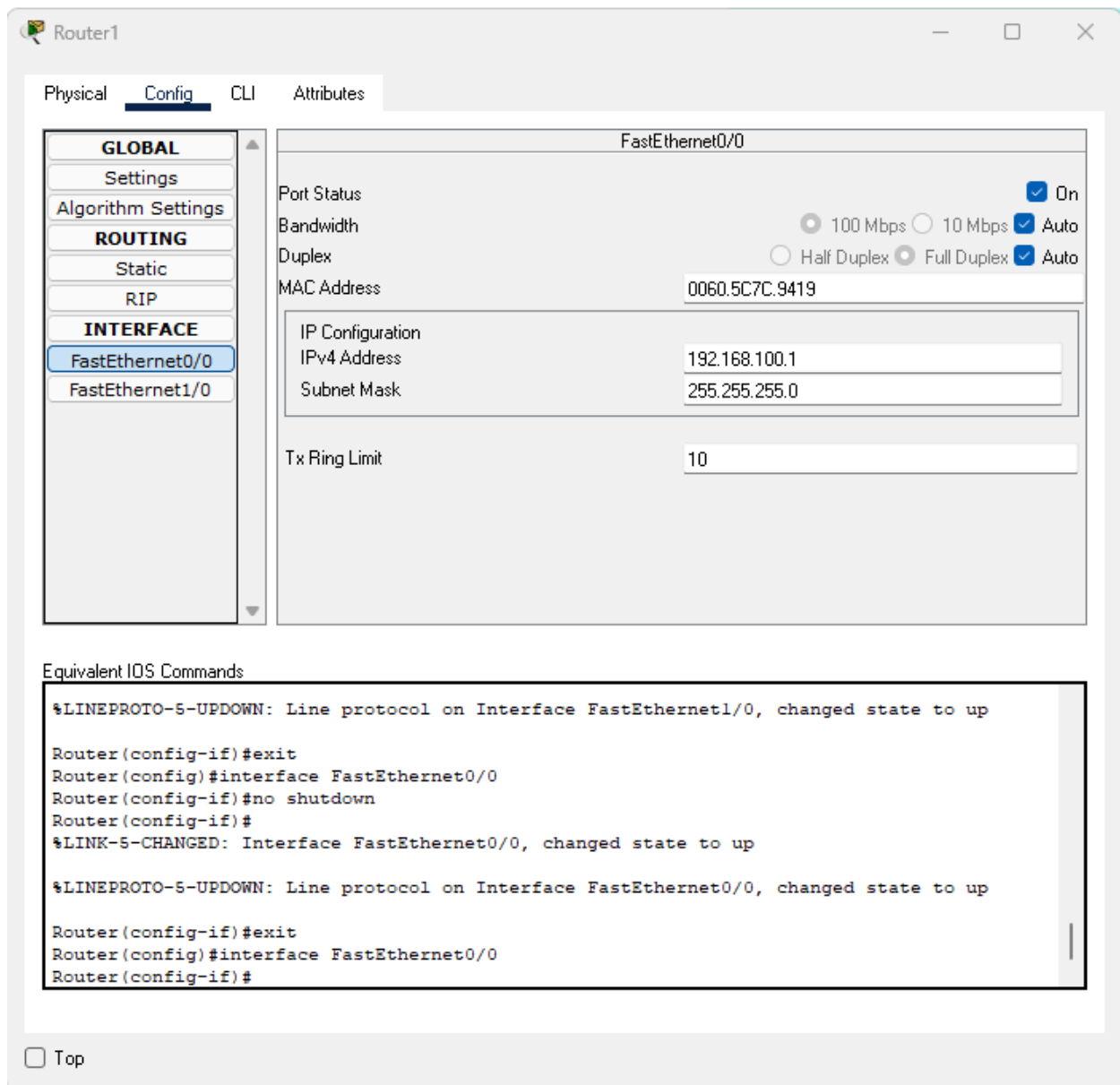
MD5

Username

Password

Top

Inseriti correttamente tutti gli indirizzi IP passo alla configurazione del router abilitando le 2 porte che si conatteranno agli switch di rete1 e rete2 e inserendo l'indirizzo ip gateway delle rispettive reti.



The screenshot shows the configuration window for Router1, specifically the 'Config' tab. The left sidebar contains a tree view with the following categories: GLOBAL (Settings, Algorithm Settings), ROUTING (Static, RIP), and INTERFACE (FastEthernet0/0, FastEthernet1/0). The 'FastEthernet0/0' interface is selected. The main configuration area for this interface includes: Port Status (On), Bandwidth (100 Mbps), Duplex (Full Duplex), MAC Address (0060.5C7C.9419), IP Configuration (IPv4 Address: 192.168.100.1, Subnet Mask: 255.255.255.0), and Tx Ring Limit (10). Below the configuration area, there is a section titled 'Equivalent IOS Commands' containing a list of commands and status messages. At the bottom left, there is a 'Top' button.

Router1

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

ROUTING

- Static
- RIP

INTERFACE

- FastEthernet0/0**
- FastEthernet1/0

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0060.5C7C.9419

IP Configuration

IPv4 Address 192.168.100.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

☐ Top

Router1

PhysicalConfigCLIAttributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

FastEthernet1/0

Port Status

☒ On

Bandwidth

☒ 100 Mbps☐ 10 Mbps

☒ Auto

Duplex

☐ Half Duplex☒ Full Duplex

☒ Auto

MAC Address00E0.F702.8522

IP Configuration

IPv4 Address192.168.200.1

Subnet Mask255.255.255.0

Tx Ring Limit10

Equivalent IOS Commands

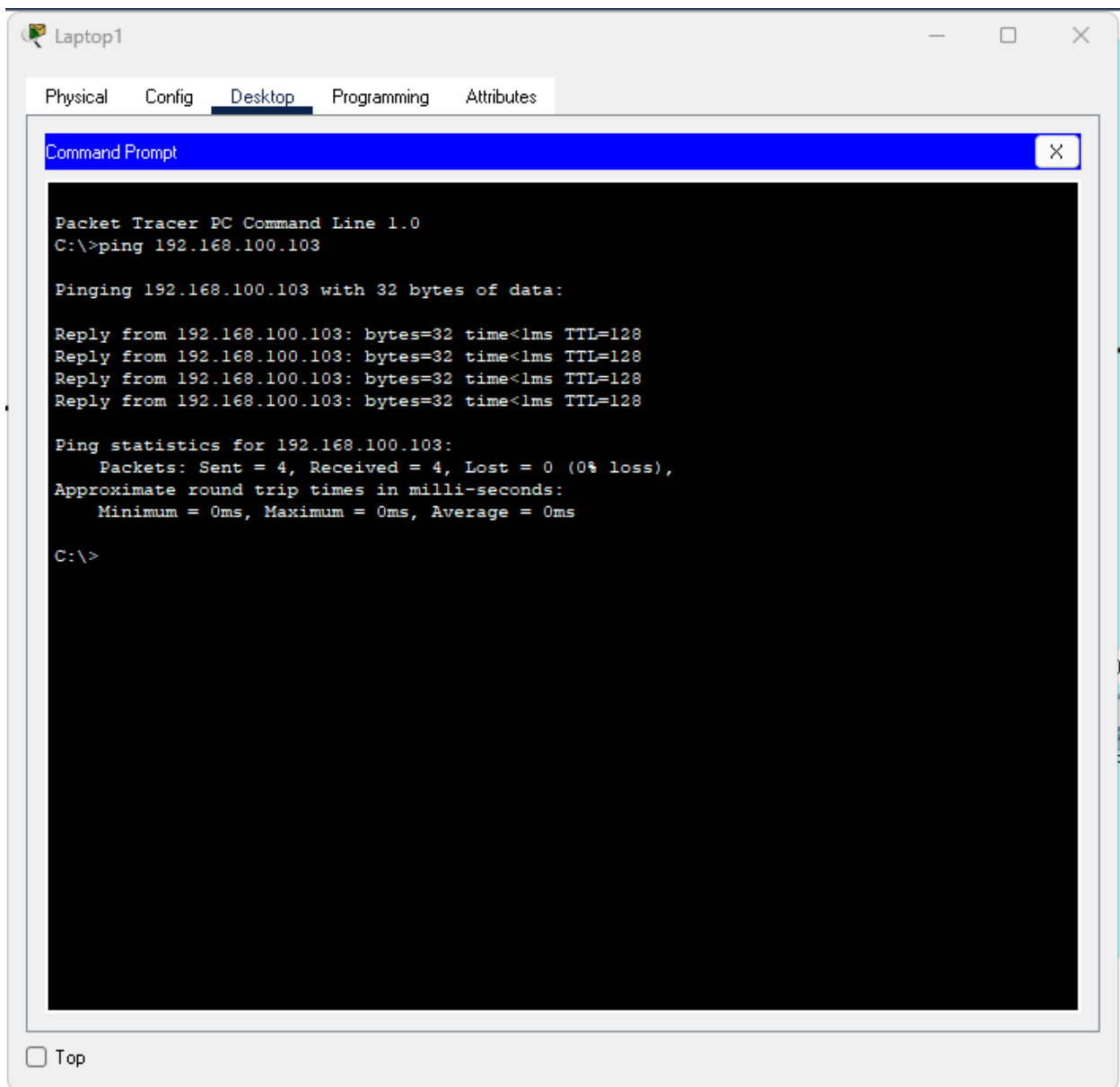
```
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
```

☐ Top

Una volta completata l'intera configurazione della rete verifico tramite PING se effettivamente i dispositivi possono comunicare tra loro, sia se sono appartenenti alla stessa ip network sia che non lo sono.



```
Packet Tracer PC Command Line 1.0
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<1ms 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 = 0ms, Average = 0ms

C:\> ping 192.168.200.100

Pinging 192.168.200.100 with 32 bytes of data:

Request timed out.
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 = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

☐ Top

Laptop 1 192.168.100.100/24 con Laptop 2 192.168.200/24 sono appartenenti a reti diverse. Il pacchetto inviato da laptop 1 arriva allo Switch che lo inoltra al Router. Avendo configurato correttamente l'IP Gateway il router spacchetta il pacchetto appena ricevuto, legge l'IP di destinazione e lo invia al secondo switch che di conseguenza leggerà l'indirizzo MAC e lo invia al dispositivo di destinazione, in questo modo Laptop 1 e Laptop 2 appartenenti a IP network diverse comunicheranno tra loro.