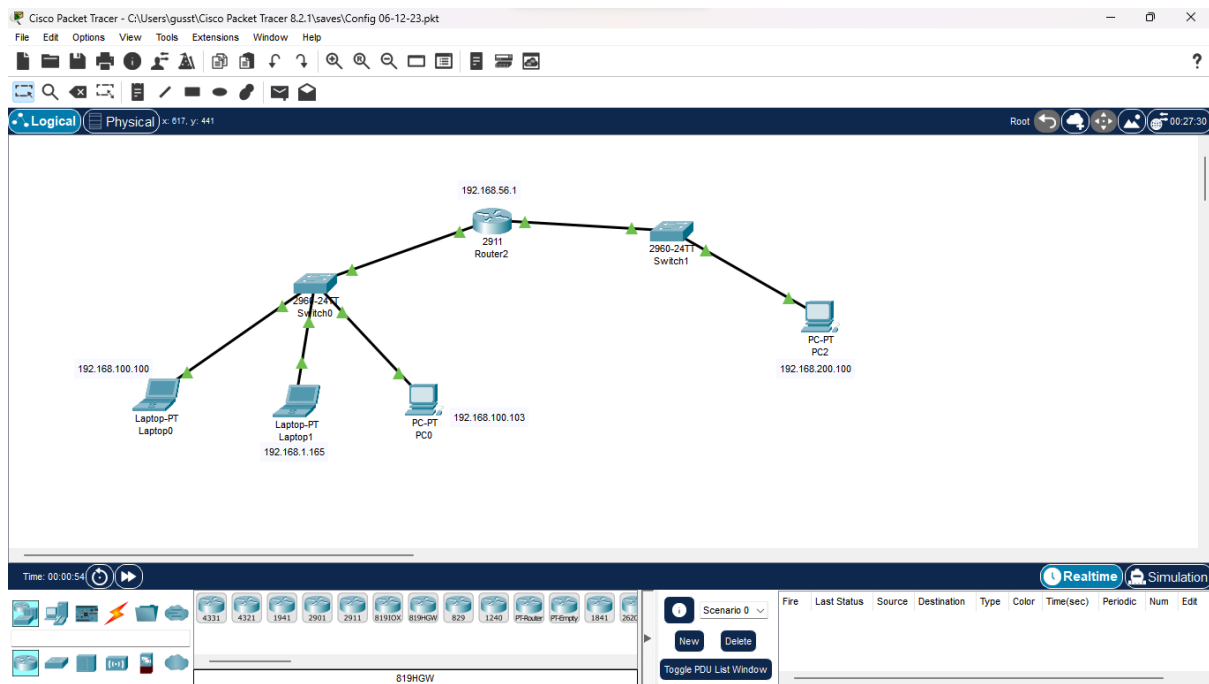


# ANALISI DI UNA RETE DI COMPUTER

1. Per prima cosa si inizia installando Cisco packet tracer

Gia dentro a Cisco, inizio a configurare tutte le mie macchine, router e switch. Come in figura.



Dopo aver messo il setup e cablato, inizio a configurare i miei IP, del router, PC e laptop.

## IP ROUTER 00 E 01

Router2

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/0

Port Status

Bandwidth

Duplex

MAC Address

IP Configuration

IPv4 Address

Subnet Mask

Tx Ring Limit

On

1000 Mbps 100 Mbps 10 Mbps

Auto

Half Duplex Full Duplex

Auto

00D0.BA09.8E01

192.168.100.1

255.255.255.0

10

Equivalent IOS Commands

```
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.100.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip address 192.168.200.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
```

Top

Router2

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/1

Port Status

Bandwidth

Duplex

MAC Address

IP Configuration

IPv4 Address

Subnet Mask

Tx Ring Limit

On

1000 Mbps 100 Mbps 10 Mbps

Auto

Half Duplex Full Duplex

Auto

00D0.BA09.8E02

192.168.200.1

255.255.255.0

10

Equivalent IOS Commands

```
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip address 192.168.100.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip address 192.168.200.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

Top

Dopo aver configurato IP del router inizio a configurare gli IP dei computer.

## IP LAPTOP 0

The screenshot shows the configuration window for 'Laptop0'. The 'Config' tab is active, displaying settings for the 'FastEthernet0' interface. The left sidebar shows a tree view with 'GLOBAL' and 'INTERFACE' sections. The 'INTERFACE' section is expanded, showing 'FastEthernet0' selected. The main configuration area includes:

- Port Status:** ☒ On
- Bandwidth:** ☒ 100 Mbps ☐ 10 Mbps ☒ Auto
- Duplex:** ☐ Half Duplex ☒ Full Duplex ☒ Auto
- MAC Address:** 000C.85A2.103A
- IP Configuration:**
  - ☐ DHCP
  - ☒ Static
  - IPv4 Address:** 192.168.100.100
  - Subnet Mask:** 255.255.255.0
- IPv6 Configuration:**
  - ☐ Automatic
  - ☒ Static
  - IPv6 Address:** /
  - Link Local Address:** FE80::20C:85FF:FEA2:103A

At the bottom left, there is a 'Top' button with a checkbox.

## IP PC0

PC0

Physical

Config

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0090.210E.3BD1

IP Configuration

☐ DHCP

☒ Static

IPv4 Address 192.168.100.103

Subnet Mask 255.255.255.0

IPv6 Configuration

☐ Automatic

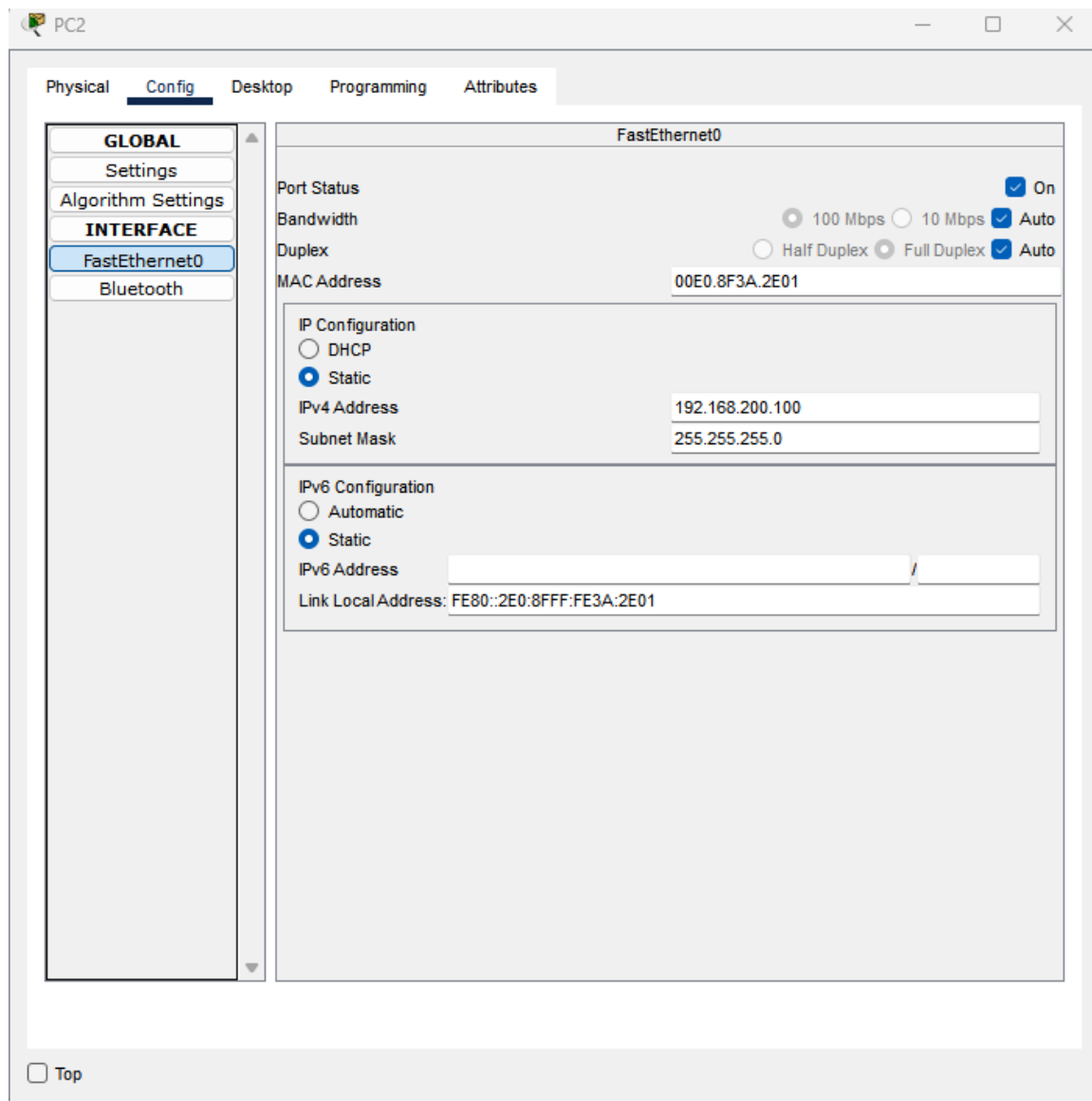
☒ Static

IPv6 Address

Link Local Address: FE80::290:21FF:FE0E:3BD1

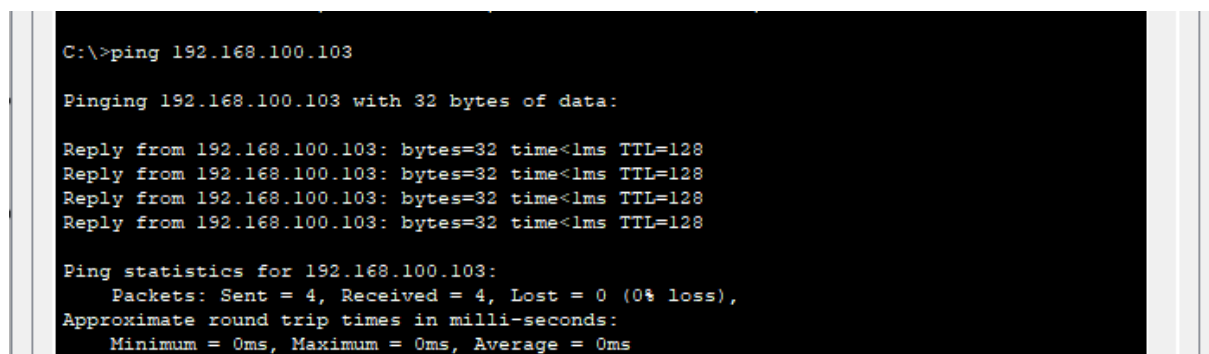
☐ Top

## IP PC2



Dopo aver configurato tutti i miei pc e laptop, provo a pingare il **PC0** dal **laptop0** che in base sarebbero nella mia stessa LAN, quindi dovrebbe andare tutto bene.

## PING LAPTOP0 A PC0



(Dalla immagine il pc0 è raggiungibile)

Dopo questa prima prova, provo a pingare il PC2 che è in un'altra LAN, all'inizio ti risulta PC irraggiungibile. Ma usando o gateway con l'apposita config del router, si riesce a pingare l'altro PC nell'altra LAN.

## GATEWAY LAPTOP0

The screenshot shows the configuration window for 'Laptop0'. The 'Config' tab is selected. On the left, there is a sidebar with 'GLOBAL' (containing 'Settings' and 'Algorithm Settings') and 'INTERFACE' (containing 'FastEthernet0' and 'Bluetooth'). The main area is titled 'Global Settings' and contains the following fields:

- Display Name: Laptop0
- Interfaces: FastEthernet0 (selected from a dropdown)
- Gateway/DNS IPv4:
  - ☐ DHCP
  - ☒ Static
  - Default Gateway: 192.168.100.1
  - DNS Server: (empty field)

## GATEWAY PC2

The screenshot shows the configuration window for 'PC2'. The 'Config' tab is selected. On the left, there is a sidebar with 'GLOBAL' (containing 'Settings' and 'Algorithm Settings') and 'INTERFACE' (containing 'FastEthernet0' and 'Bluetooth'). The main area is titled 'Global Settings' and contains the following fields:

- Display Name: PC2
- Interfaces: FastEthernet0 (selected from a dropdown)
- Gateway/DNS IPv4:
  - ☐ DHCP
  - ☒ Static
  - Default Gateway: 192.168.200.1
  - DNS Server: (empty field)

## PING LAPTOP0 A PC2

```
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=82ms 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 = 82ms, Average = 20ms
```

### NOTA BENE!

Appena pingo il PC2 dal LAPTOP0, uso il comando simulation per riuscire a vedere cosa mi cambia quando passo da una lan all'altra, e infatti guardando dal simulation, si riesce a vedere che il mio indirizzo MAC cambia in base al mio ricevente, in modo tale da avere un "match" tra i due e riuscire a fare il trasferimento dei dati.

E dentro hai switch, riesco a vedere che gli indirizzi IP si scambiano a vicenda, in modo tale da incapsulare tutti i dati e avere un buon trasferimento dei pacchetti e dati all'altro pc