PROGETTO COSTRUZIONE-RETE

Panoramica della Topologia

La rete rappresentata è suddivisa in due gruppi principali, "GRUPPO 1" e "GRUPPO 2", collegati tramite un router centrale (Cisco 4331) e due switch (2960-24TT).

Dispositivi e Collegamenti

Router (ISR4331):

IP Gateway: 192.168.50.1 e 192.168.51.1

Collegato direttamente a uno switch centrale.

Switch (2960-24TT):

Due switch sono utilizzati per collegare i dispositivi finali al router.

Switch 0 e Switch 1 sono collegati tra loro e al router centrale.

GRUPPO 1:

Include tre PC (PC0, PC1, PC2) con indirizzi IP 192.168.50.102/24, 192.168.50.103/24, 192.168.50.104/24

rispettivamente.

Tutti i PC sono collegati a uno switch che è poi collegato al router.

GRUPPO 2:

Include quattro PC (PC3, PC4, PC6, PC8) con indirizzi IP 192.168.51.105/24, 192.168.51.108/24, 192.168.51.107/24 rispettivamente.

Un server con indirizzo IP 192.168.51.110/24 è presente in questo gruppo.

Tutti i dispositivi sono collegati a uno switch che è poi collegato al router.

Dispositivi Wireless:

Un Access Point (AP) è collegato allo Switch 1.

Dispositivi mobili come Laptop, Smartphone e Tablet connessi all'Access Point utilizzano indirizzi IP nella sottorete 192.168.50.0/24.

Configurazione IP:

Ogni dispositivo ha un indirizzo IP statico configurato nella rispettiva sottorete.

Routing:

Il router è configurato con interfacce su entrambe le sottoreti e funge da gateway per il traffico tra le due sottoreti.

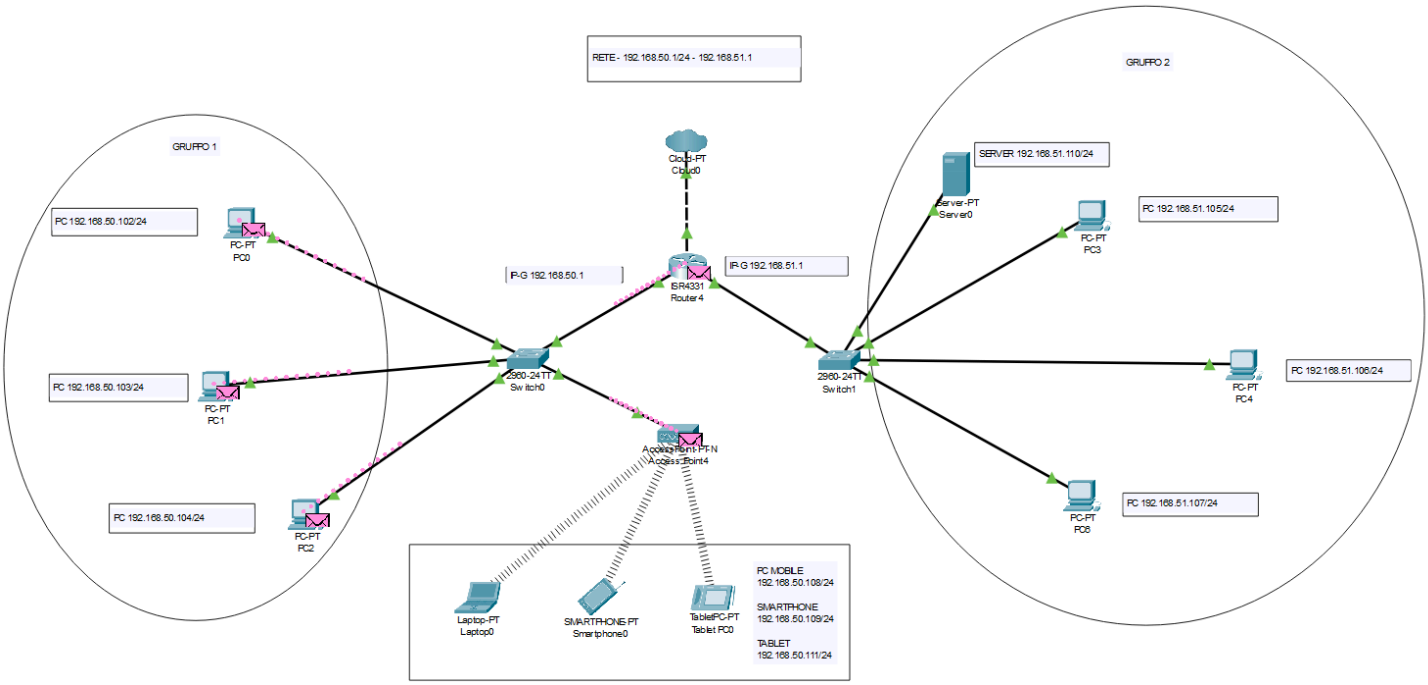
IP PRESENTI:

Gruppo 1:
192.168.50.102 (pc0)
192.168.50.103 (pc1)
192.168.50.104 (pc2)
192.168.50.111 (tablet)
192.168.50.108 (laptop)
192.168.50.109 (smartphone)

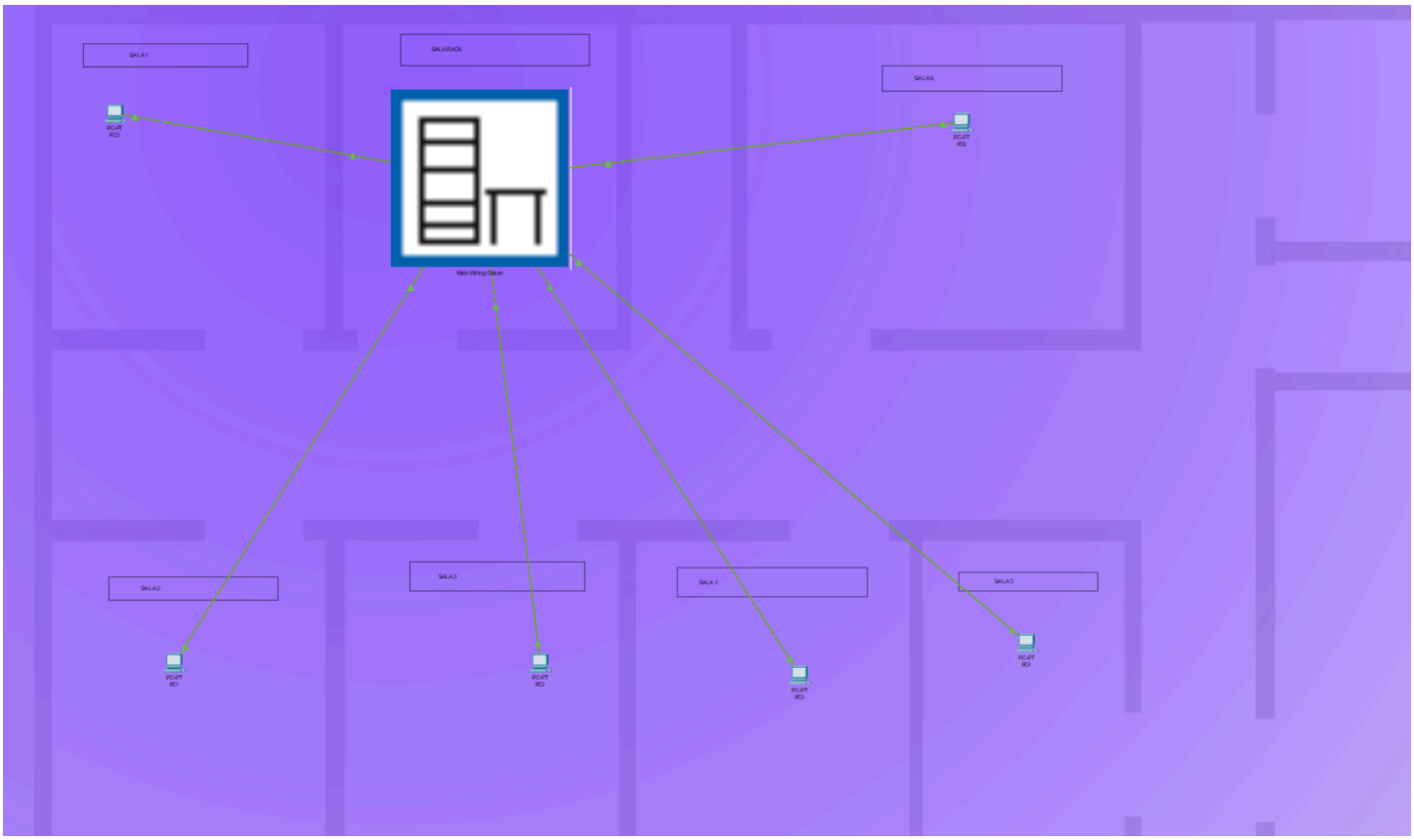
Gruppo 2:
192.168.50.105 (pc3)

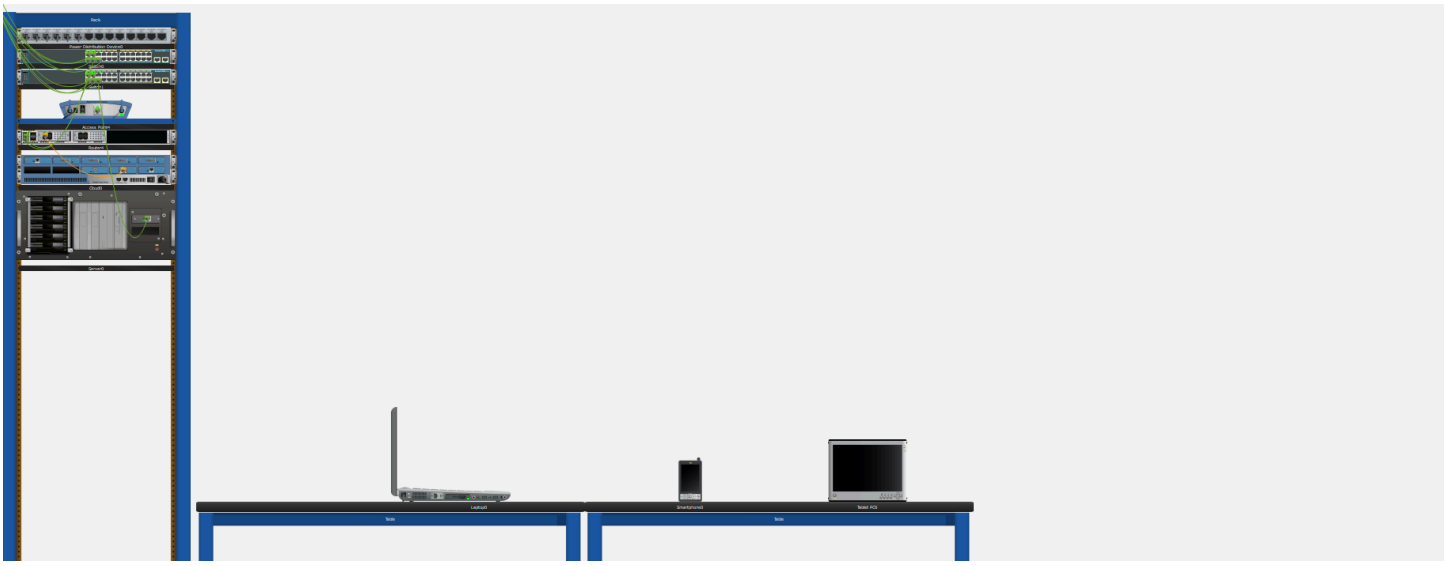
192.168.50.106 (pc4)
192.168.50.107 (pc6)
192.168.50.110 (server)

MAPPA LOGICA:



UFFICIO & SALA RACK:





ESEMPI DI PING CON ROUTING:

```
C:\>ping 192.168.51.110

Pinging 192.168.51.110 with 32 bytes of data:

Reply from 192.168.51.110: bytes=32 time<1ms TTL=127
Reply from 192.168.51.110: bytes=32 time<1ms TTL=127
Reply from 192.168.51.110: bytes=32 time<1ms TTL=127
Reply from 192.168.51.110: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.51.110:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

```
C:\>ping 192.168.51.106

Pinging 192.168.51.106 with 32 bytes of data:

Reply from 192.168.51.106: bytes=32 time<1ms TTL=127
Reply from 192.168.51.106: bytes=32 time<1ms TTL=127
Reply from 192.168.51.106: bytes=32 time<1ms TTL=127
Reply from 192.168.51.106: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.51.106:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.51.107

Pinging 192.168.51.107 with 32 bytes of data:

Request timed out.
Reply from 192.168.51.107: bytes=32 time=10ms TTL=127
Reply from 192.168.51.107: bytes=32 time=6ms TTL=127
Reply from 192.168.51.107: bytes=32 time=29ms TTL=127

Ping statistics for 192.168.51.107:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 29ms, Average = 15ms

C:\>
```

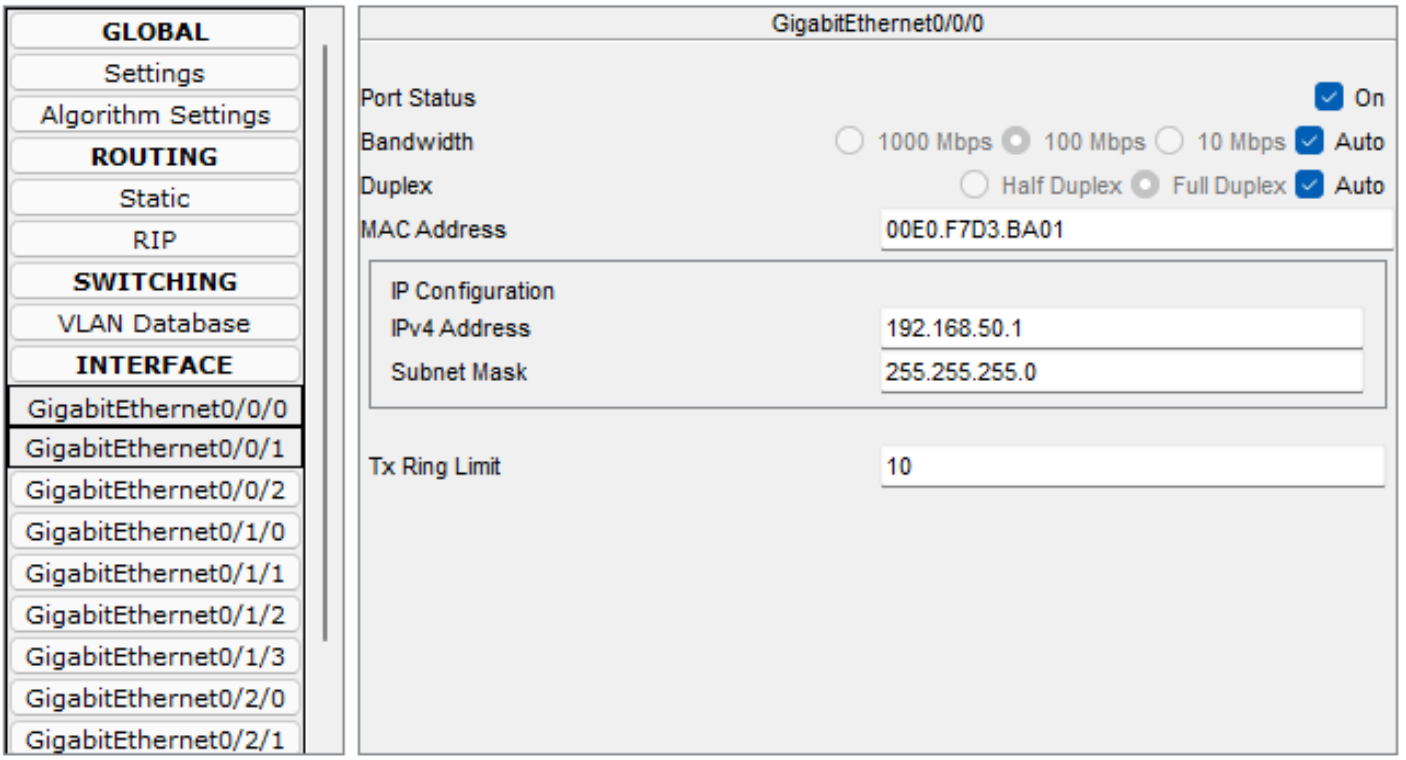
TABELLA ARP GRUPPO 1:

```
C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.50.1          00e0.f7d3.ba01        dynamic
  192.168.50.105        0004.9a58.6e23        dynamic
  192.168.50.106        000b.be41.5e1a        dynamic
  192.168.50.109        00e0.f90e.639d        dynamic
  192.168.50.110        0060.70ad.8777        dynamic

C:\>
```

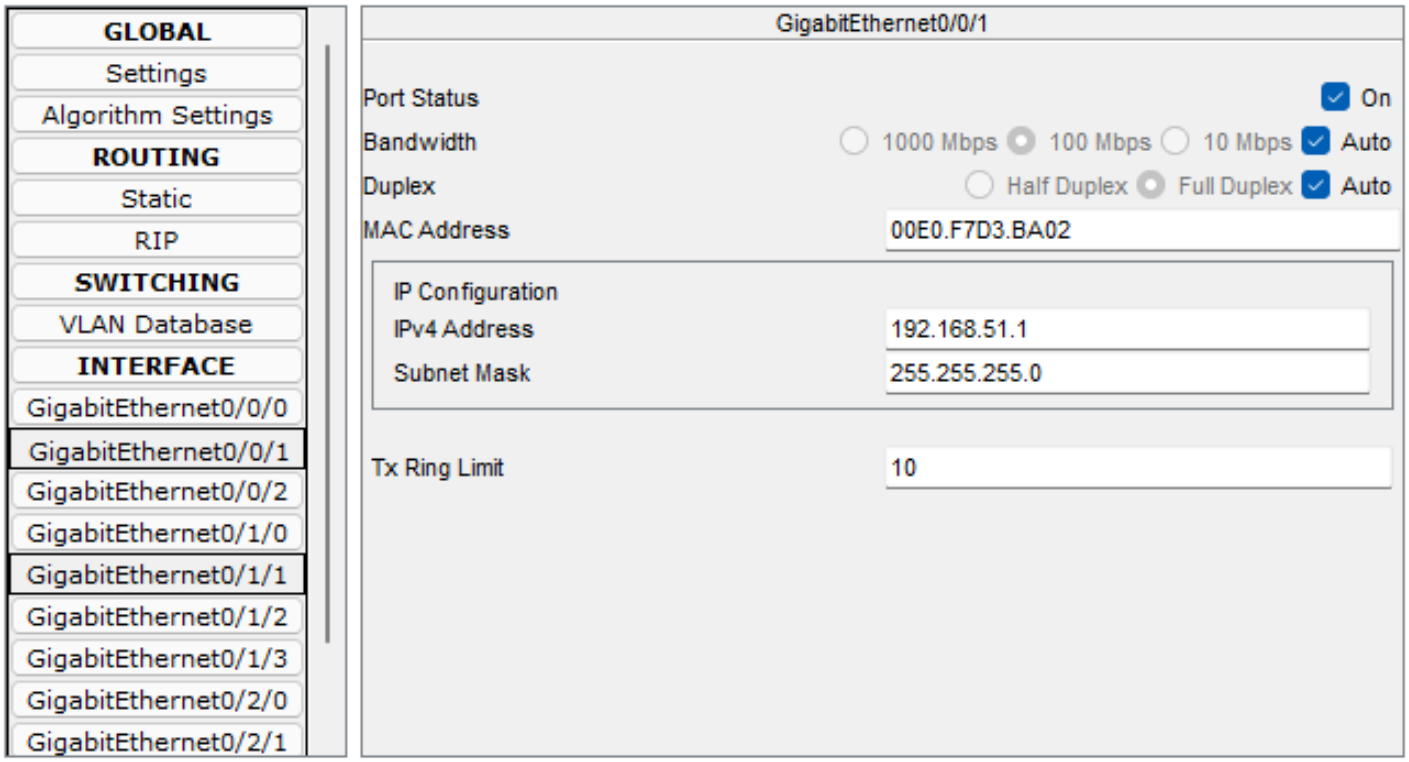
TABELLA ARP GRUPPO 2:

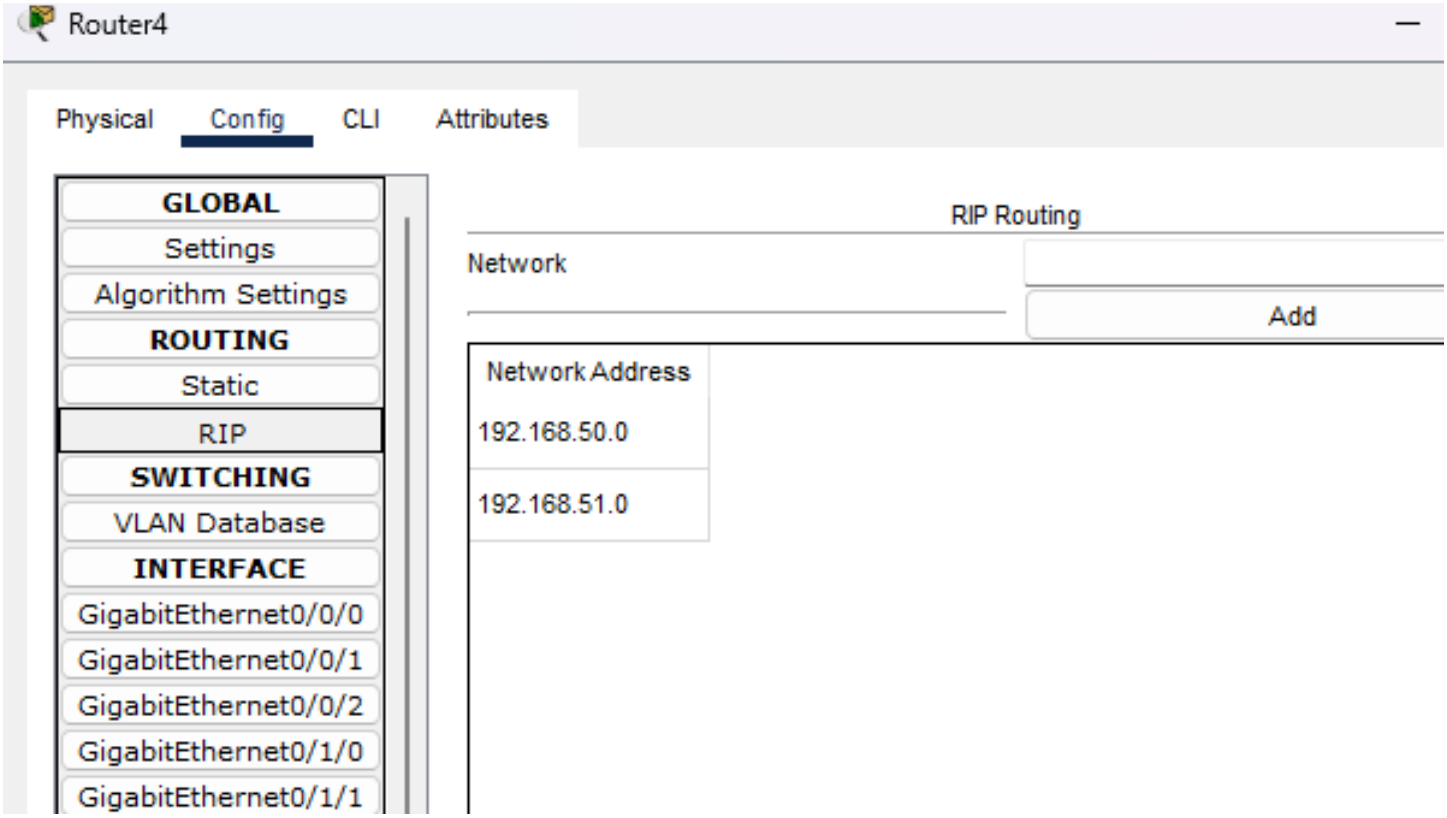
```
C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.51.1          00e0.f7d3.ba02        dynamic
  192.168.51.105        0004.9a58.6e23        dynamic
  192.168.51.110        0060.70ad.8777        dynamic

C:\>
```

CONFIGURAZIONE ROUTER:



Equivalent IOS Commands




Router4
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0/0
GigabitEthernet0/0/1
GigabitEthernet0/0/2
GigabitEthernet0/1/0
GigabitEthernet0/1/1
RIP Routing
Network
Add
Network Address
192.168.50.0
192.168.51.0