

ESERCIZIO S2/L1

Esercizio di oggi:

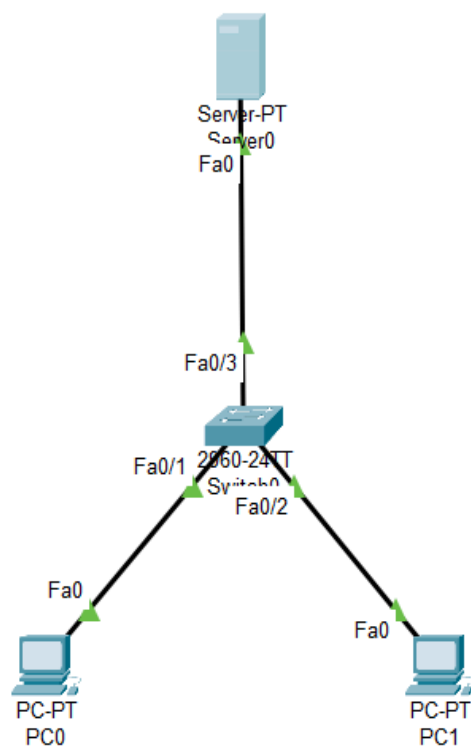
Configurazione di un Server DHCP su Cisco Packet Tracer Obiettivo:

Configurare un server DHCP per la distribuzione automatica degli indirizzi IP.

Attività:

- Installare e configurare un server DHCP Cisco Packet Tracer).
- Configurare il server per assegnare indirizzi IP in un range specifico.

RISPOSTA



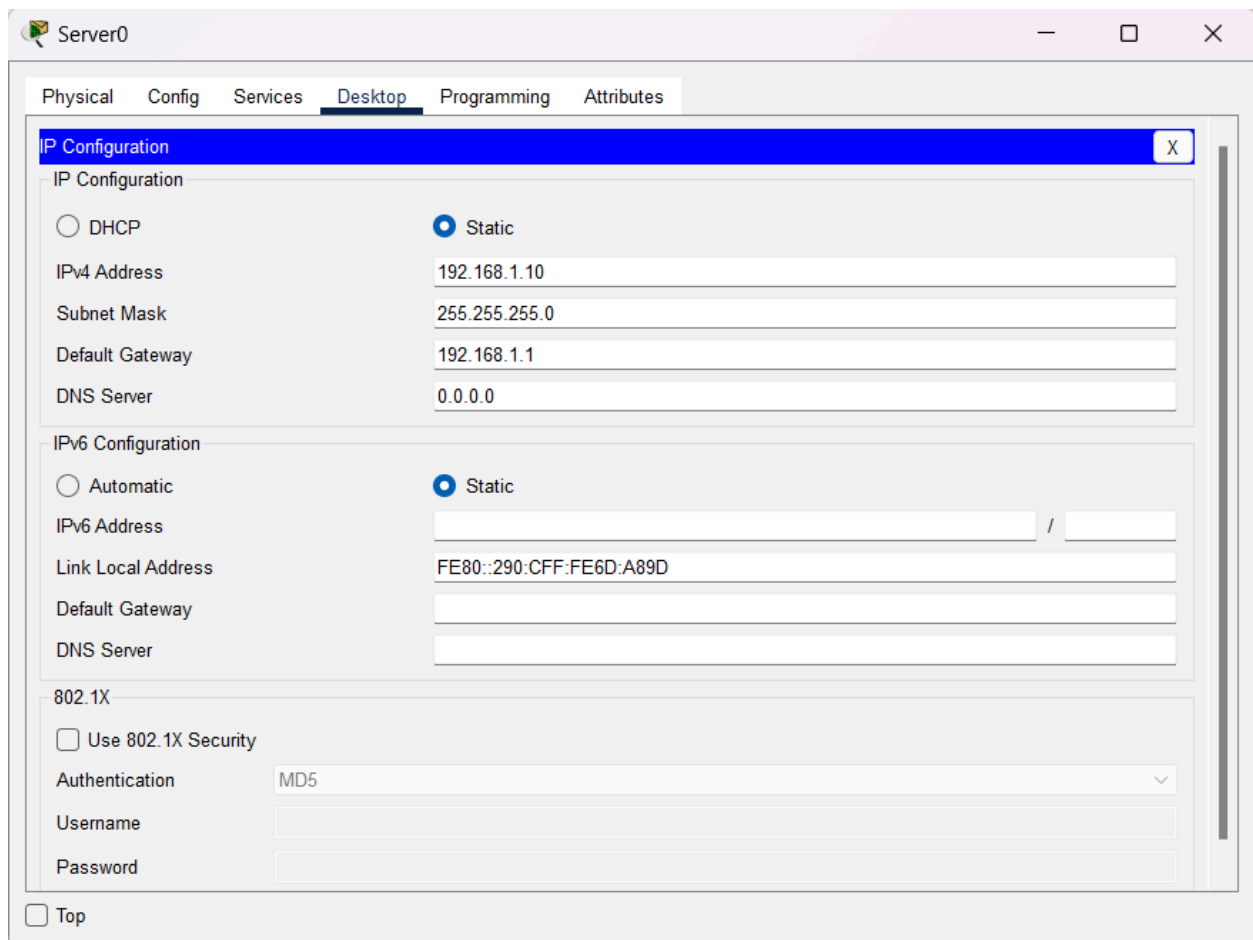
A livello topologico ho impostato la rete con due pc collegati ad uno switch a sua volta collegato ad un server.

Procedo con la configurazione del server dalla sezione Desktop > IP Config lasciando innanzitutto l'IP Configuration su "static" e poi inserendo i rispettivi indirizzi e subnet mask come visibile dall'immagine

IPv4 Address >>> 192.168.1.10

Subnet Mask >>> 255.255.255.0

Default Gateway >>> 192.168.1.1



The screenshot shows a window titled "Server0" with a tabbed interface. The "Desktop" tab is selected, and the "IP Configuration" section is highlighted. The "Static" radio button is selected for both IPv4 and IPv6 configurations. The IPv4 fields are filled with 192.168.1.10 for the address, 255.255.255.0 for the subnet mask, and 192.168.1.1 for the default gateway. The IPv6 fields are empty for the address and default gateway, and the link local address is set to FE80::290:CFF:FE6D:A89D. The 802.1X section is also visible with "Use 802.1X Security" unchecked and "Authentication" set to MD5.

Section	Option	Value
IPv4 Configuration	Static	<input checked="" type="radio"/>
	IPv4 Address	192.168.1.10
	Subnet Mask	255.255.255.0
	Default Gateway	192.168.1.1
	DNS Server	0.0.0.0
IPv6 Configuration	Static	<input checked="" type="radio"/>
	IPv6 Address	
	Link Local Address	FE80::290:CFF:FE6D:A89D
	Default Gateway	
	DNS Server	
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MD5
	Username	
	Password	

Successivamente passo nella sezione "Services" >>> "DHCP" dove inserisco

Default Gateway >>> 192.168.1.1

Start IP Address >>> 192.168.1.11

Subnet Mask >>> 255.255.255.0

Clicco su “Salva” per salvare le impostazioni di configurazione.

The screenshot shows the 'Server0' configuration window with the 'Services' tab selected. The 'DHCP' service is highlighted in the left sidebar. The main area displays the DHCP configuration for the 'FastEthernet0' interface. The 'Service' is currently set to 'Off'. The configuration fields include: Pool Name (serverPool), Default Gateway (192.168.1.1), DNS Server (0.0.0.0), Start IP Address (192.168.1.1), Subnet Mask (255.255.255.0), Maximum Number of Users (155), TFTP Server (0.0.0.0), and WLC Address (0.0.0.0). Below these fields are 'Add', 'Save', and 'Remove' buttons. At the bottom, a table lists the configured DHCP pool.

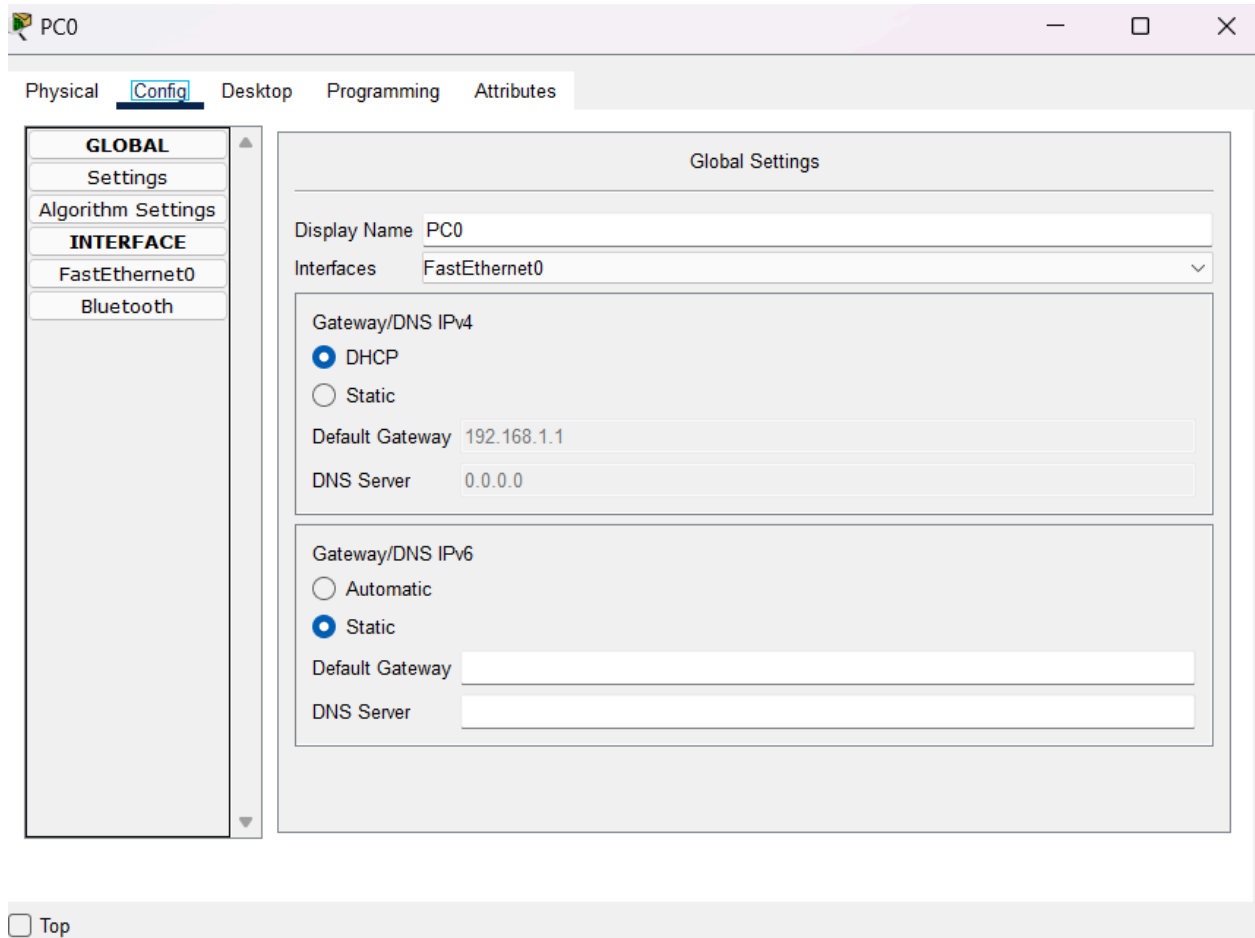
Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.1	0.0.0.0	192.168.1.1	255.255.255.0	155	0.0.0.0	0.0.0.0

Ora passo alla configurazione dei due pc

PC0

PC1

Attivo il DHCP dalla sezione “Config” di entrambi i pc come da immagine sottostante



Ora torno nel server per attivare il protocollo DHCP nella sezione “Services” come nell’immagine. Attivo il DHCP cliccando su “on”.

Server0

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DHCP

Interface

FastEthernet0

Service

On

Off

Pool Name

serverPool

Default Gateway

192.168.1.1

DNS Server

0.0.0.0

Start IP Address :

192

168

1

11

Subnet Mask:

255

255

255

0

Maximum Number of Users :

155

TFTP Server:

0.0.0.0

WLC Address:

0.0.0.0

Add

Save

Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.1	0.0.0.0	192.168.1...	255.255.2...	155	0.0.0.0	0.0.0.0

Una volta attivato il protocollo torno nella configurazione dei pc per visualizzare se l'assegnazione degli indirizzi IP è avvenuta correttamente.

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.1.11

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::240:BFF:FED9:A2D4

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

☐ Top

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.1.12

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::2D0:58FF:FEA6:B627

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

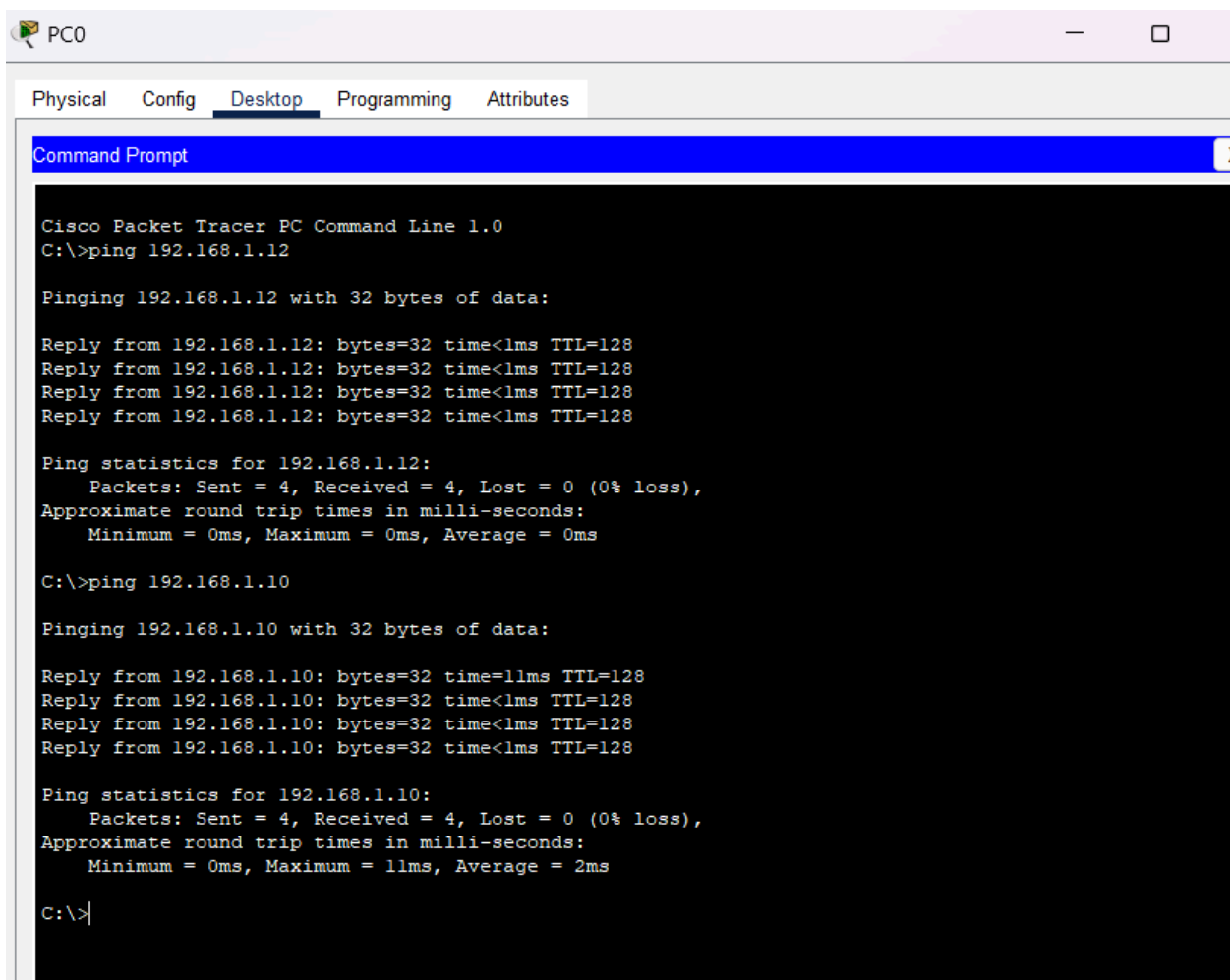
Come possiamo vedere, gli indirizzi IP sono stati assegnati correttamente, ritrovandoci rispettivamente i seguenti indirizzi IP

PC0 >>> 192.168.1.11

PC1 >>> 192.168.1.12

Ora non mi resta che testare la connettività tra PC e Server e tra i PC stessi.

Utilizzo il comando “ping” da PC0 al Server e successivamente da PC0 a PC1.



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.12

Pinging 192.168.1.12 with 32 bytes of data:

Reply from 192.168.1.12: bytes=32 time<lms TTL=128
Reply from 192.168.1.12: bytes=32 time<lms TTL=128
Reply from 192.168.1.12: bytes=32 time<lms TTL=128
Reply from 192.168.1.12: bytes=32 time<lms TTL=128

Ping statistics for 192.168.1.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time=11ms TTL=128
Reply from 192.168.1.10: bytes=32 time<lms TTL=128
Reply from 192.168.1.10: bytes=32 time<lms TTL=128
Reply from 192.168.1.10: bytes=32 time<lms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 2ms

C:\>
```

CONCLUSIONE

Il protocollo DHCP ha svolto correttamente la sua funzione di assegnazione automatica degli indirizzi IP per ciascun PC e la comunicazione tra essi avviene correttamente. Aggiungo che

l'implementazione del protocollo DHCP riduce le tempistiche di configurazione e automatizzando i processi di assegnazione IP riduce anche l'errore umano.