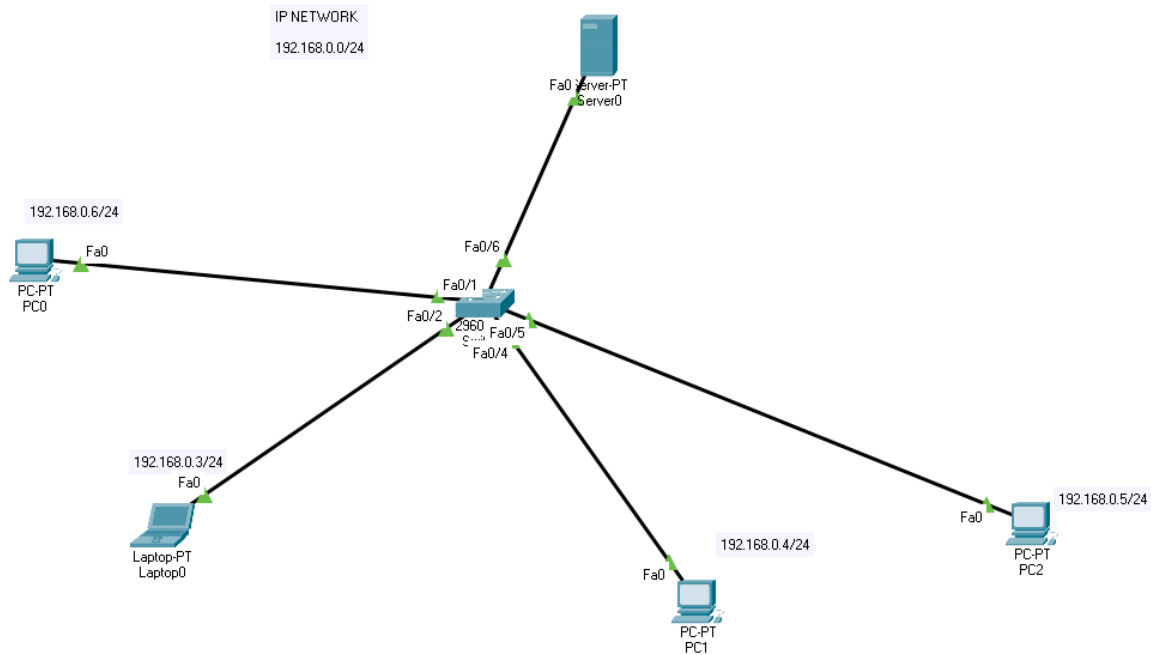


S2 - L1 - Configurazione rete con server DHCP



Come riportato nell'immagine sopra creo la rete con ip network 192.168.0.0/24 composta da 5 host di cui un server e uno switch che li mette in comunicazione.

Configuro il server con il servizio DHCP così da assegnare automaticamente ad ogni host il proprio indirizzo IP.

Per farlo inizio configurando l'indirizzo IP del server che sarà il seguente: 192.168.0.2 successivamente mi sposto in "Services" e alla porta FastEthernet0 abilito il servizio DHCP inserendo come Ip Gateway e DNS 192.168.0.1 e come Start IP Address 192.168.0.3. Quest'ultimo sarà il primo indirizzo ip che verrà assegnato agli host della rete.

(Vedi immagini successive)

The screenshot shows the 'Server0' configuration window with the 'Desktop' tab selected. The 'IP Configuration' section is expanded, showing the following settings:

Section	Option	Value
IP Configuration	<input type="radio"/> DHCP	
	<input checked="" type="radio"/> Static	
	IPv4 Address	192.168.0.2
	Subnet Mask	255.255.255.0
	Default Gateway	0.0.0.0
IPv6 Configuration	<input type="radio"/> Automatic	
	<input checked="" type="radio"/> Static	
	IPv6 Address	
	Link Local Address	FE80::20A:41FF:FE2A:3C6A
	Default Gateway	
802.1X	<input type="checkbox"/> Use 802.1X Security	
	Authentication	MD5
	Username	
	Password	

At the bottom left of the window, there is a checkbox labeled 'Top' which is currently unchecked.

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

192.168.0.1

DNS Server

192.168.0.1

Start IP Address :

192

168

0

3

Subnet Mask:

255

255

255

0

Maximum Number of Users :

253

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	192.168.0.1	192.168.0.1	192.168.0.1	255.255.255.0	253	0.0.0.0	0.0.0.0

Top

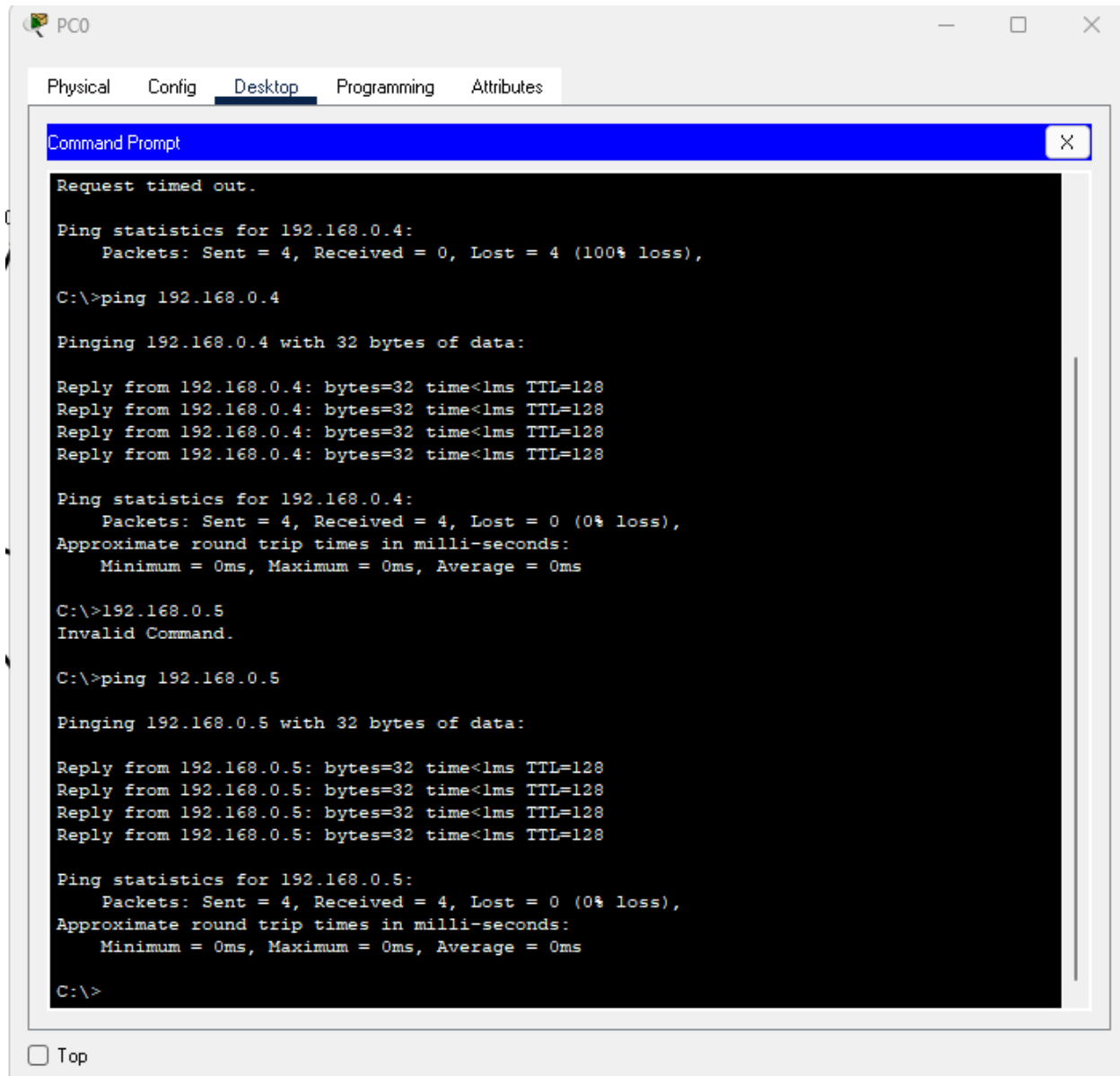
Ora per far sì che vengano assegnati automaticamente gli indirizzi IP, per ogni host entro in “Desktop” - “Ip Configuration” e seleziono DHCP in questo modo se il servizio DHCP è configurato correttamente verrà assegnato un indirizzo IP appartenente alla rete in maniera automatica. (Vedi figura successiva)

The screenshot shows a configuration window for PC0 with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying the IP Configuration section for the FastEthernet0 interface. The DHCP option is selected under IP Configuration, and the Static option is selected under IPv6 Configuration. The 802.1X section is also visible.

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
IPv4 Address	192.168.0.6
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS Server	192.168.0.1
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	/
Link Local Address	FE80::201:63FF:FE50:9B2C
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	
Password	

☐ Top

Di seguito invece il comando ping come prova che la rete funziona e tutti gli host possono comunicare tra loro.



The screenshot shows a window titled "PC0" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of a ping command to 192.168.0.4, which initially times out but then succeeds after four attempts. It then shows an attempt to ping 192.168.0.5, which is initially an invalid command but then succeeds after four attempts. The Command Prompt window has a "Top" button at the bottom left.

```
Request timed out.

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.0.4

Pinging 192.168.0.4 with 32 bytes of data:

Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>192.168.0.5
Invalid Command.

C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

☐ Top

CONCLUSIONI

Configurando una rete con il servizio DHCP ne guadagniamo in termini di velocità e gestione di configurazione della rete stessa, in quanto questo servizio ci permette appunto di poter assegnare automaticamente ad ogni dispositivo sulla rete un indirizzo IP temporaneo.

In questo caso non abbiamo assegnato una scadenza di leasing ma è sicuramente opportuno farlo soprattutto per quanto riguarda reti “pubbliche” come ad esempio la rete di un bar.