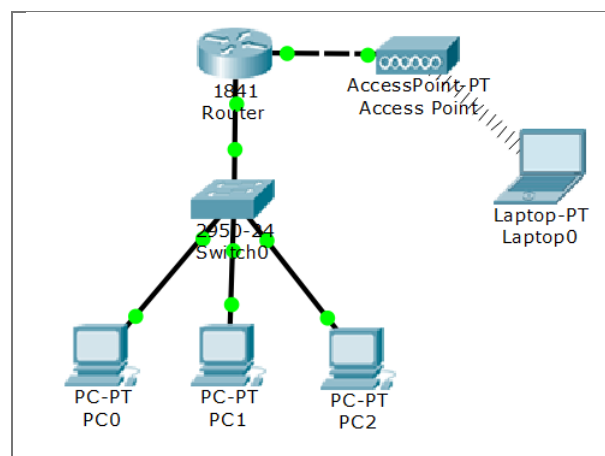


Test router

Consegna

Connettere una rete wireless con una rete cablata con l'utilizzo di un router e poi verificarne il funzionamento con dei ping

Schema della rete



Nello schema sono presenti 2 reti connesse tra loro da un router, una rete wireless, composta da un'access point e un portatile, e una rete cablata formata da uno switch e tre computer fissi.

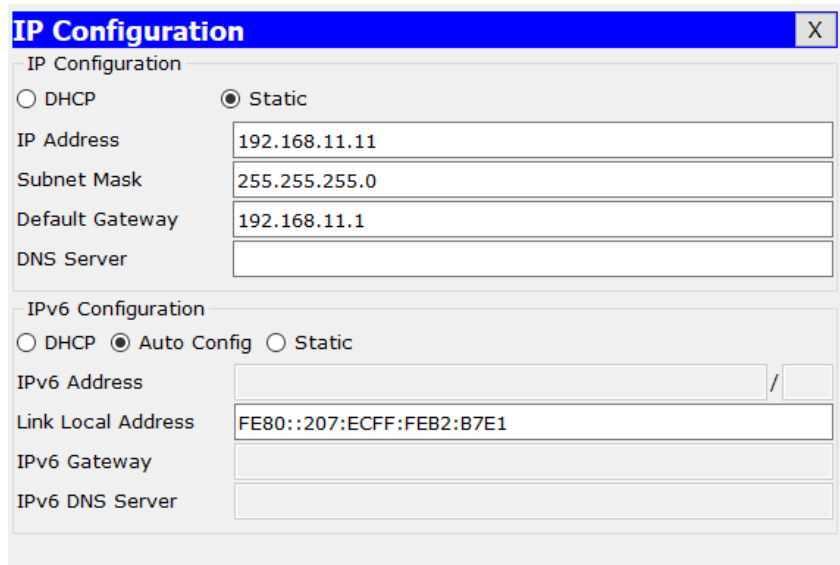
Creazione della rete cablata

Ho inserito uno switch e l'ho connesso con il cavo ai 3 dispositivi fissi e dopodiché ho impostato l'indirizzo IP, la subnet mask e l'indirizzo del default gateway (il router) sui tre dispositivi.

PC0:

| IP Configuration | |
|---|---|
| IP Configuration | |
| <input type="radio"/> DHCP | <input checked="" type="radio"/> Static |
| IP Address | 192.168.11.10 |
| Subnet Mask | 255.255.255.0 |
| Default Gateway | 192.168.11.1 |
| DNS Server | |
| IPv6 Configuration | |
| <input type="radio"/> DHCP | <input type="radio"/> Auto Config |
| <input checked="" type="radio"/> Static | |
| IPv6 Address | |
| Link Local Address | FE80::20C:85FF:FE9D:522C |
| IPv6 Gateway | |
| IPv6 DNS Server | |

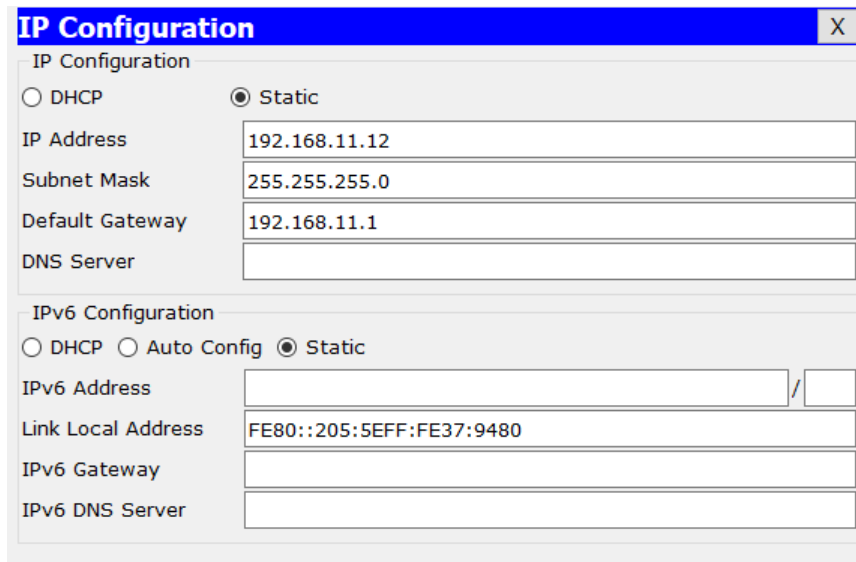
PC1:



The IP Configuration window for PC1 shows the following settings:

- IP Configuration:** Static is selected. IP Address: 192.168.11.11, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.11.1, DNS Server: (empty).
- IPv6 Configuration:** Auto Config is selected. IPv6 Address: (empty), Link Local Address: FE80::207:ECFF:FEB2:B7E1, IPv6 Gateway: (empty), IPv6 DNS Server: (empty).

PC2:



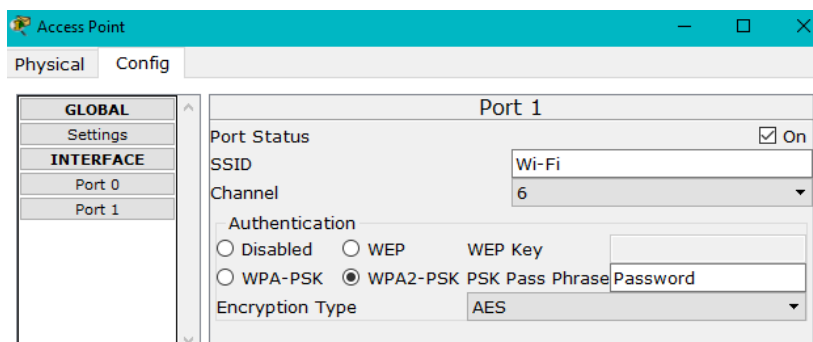
The IP Configuration window for PC2 shows the following settings:

- IP Configuration:** Static is selected. IP Address: 192.168.11.12, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.11.1, DNS Server: (empty).
- IPv6 Configuration:** Static is selected. IPv6 Address: (empty), Link Local Address: FE80::205:5EFF:FE37:9480, IPv6 Gateway: (empty), IPv6 DNS Server: (empty).

Creazione della rete Wireless

Per creare una rete wireless ho utilizzato un access point e un laptop. Per farlo però ho dovuto configurarli inserendo per i dati necessari alla connessione Wi-Fi.

ACCESS POINT:



The Access Point configuration window shows the following settings for Port 1:

- Port Status:** On (checked).
- SSID:** Wi-Fi
- Channel:** 6
- Authentication:** WPA2-PSK is selected. WEP Key: (empty), WPA2-PSK PSK Pass Phrase: Password.
- Encryption Type:** AES

LAPTOP:

ho dovuto rimuovere l'attacco ethernet e inserire al posto l'antenna wireless WPC300N e inserire l'indirizzo del default gateway (il router).

The screenshot shows the MikroTik WinBox interface for configuring the Wireless0 interface. The left sidebar has tabs for GLOBAL, Settings, Algorithm Settings, INTERFACE, and Wireless0. The main panel is titled 'Wireless0' and contains the following settings:

- Port Status: ☒ On
- Bandwidth: 54 Mbps
- MAC Address: 0001.9628.3EE6
- SSID: Wi-Fi
- Authentication:
 - ☐ Disabled
 - ☐ WEP
 - ☐ WPA-PSK
 - ☒ WPA2-PSK
 - ☐ WPA
 - ☐ WPA2
- WEP Key: (empty field)
- PSK Pass Phrase: Password
- User ID: (empty field)
- Password: (empty field)
- Encryption Type: AES
- IP Configuration:
 - ☐ DHCP
 - ☒ Static
- IP Address: 172.16.11.11
- Subnet Mask: 255.255.0.0
- IPv6 Configuration:
 - ☐ DHCP
 - ☐ Auto Config
 - ☒ Static
- IPv6 Address: (empty field)
- Link Local Address: FE80::201:96FF:FE28:3EE6

The screenshot shows the 'IP Configuration' dialog box in MikroTik WinBox. It contains the following settings:

- IP Configuration:
 - ☐ DHCP
 - ☒ Static
- IP Address: 172.16.11.11
- Subnet Mask: 255.255.0.0
- Default Gateway: 172.16.11.1
- DNS Server: (empty field)
- IPv6 Configuration:
 - ☐ DHCP
 - ☐ Auto Config
 - ☒ Static
- IPv6 Address: (empty field)
- Link Local Address: FE80::201:96FF:FE28:3EE6
- IPv6 Gateway: (empty field)
- IPv6 DNS Server: (empty field)

Connessione tramite il router

Ho collegato l'access point e lo switch al router e ho impostato le 2 porte

Router

Physical Config CLI

FastEthernet0/0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 000C.856A.3301

IP Configuration

IP Address 192.168.11.1

Subnet Mask 255.255.255.0

Tx Ring Limit 10

Equivalent IOS Commands

```

Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#

```

Router

Physical Config CLI

FastEthernet0/1

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 000C.856A.3302

IP Configuration

IP Address 172.16.11.1

Subnet Mask 255.255.0.0

Tx Ring Limit 10

Equivalent IOS Commands

```

Router(config)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#

```













Ho poi dovuto collegare le 2 porte tramite una funzione che inoltra i messaggi da una rete all'altra. Per farlo ho utilizzato la configurazione tramite riga di codice utilizzando i comandi:

```

Router# enable
Router# configure
(premere invio per confermare)
Router# ip route 0.0.0.0 0.0.0.0 FastEthernet0/1

```

Ping

| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num |
|---|-------------|---------|-------------|------|---|-----------|----------|-----|
|  | Successful | PC1 | Laptop0 | ICMP |  | 0.000 | N | 0 |
|  | Successful | PC0 | Laptop0 | ICMP |  | 0.000 | N | 1 |
|  | Successful | PC2 | Laptop0 | ICMP |  | 0.000 | N | 2 |
|  | Successful | Laptop0 | PC2 | ICMP |  | 0.000 | N | 3 |
|  | Successful | Laptop0 | PC1 | ICMP |  | 0.000 | N | 4 |
|  | Successful | Laptop0 | PC0 | ICMP |  | 0.000 | N | 5 |

Tutti i ping hanno avuto successo perché tutte le reti sono collegate tra loro dal router.