

Tutorial of Packet Tracer. The Cisco Network Simulator



Step 1

- Download the latest versión from the Cisco Networking Academy:
- Use your account credentials to download the file
- Start Packet Tracer. Again, introduce your Cisco account credentials

The screenshot shows the Cisco Networking Academy website. The top navigation bar includes links for 'My NetAcad', 'Resources', 'Courses', 'Careers', and 'More'. Below this is a breadcrumb trail: 'Home / Resources / Packet Tracer Resources'. The main heading is 'Packet Tracer Resources'. Underneath, it says 'Version 8.2.1' and 'Downloads can be found in the Packet Tracer Resources folders and also on the Packet Tracer Downloads page'. The 'Downloads' link is circled in blue. Below this is an 'Overview' section. It states: 'Packet Tracer is an innovative network configuration simulation and visualization tool used for activities in Cisco Networking Academy courses:'. It then lists 'The benefits of using Packet Tracer include:' followed by a bulleted list of seven benefits.

Working Academy

My NetAcad ▾ Resources ▾ Courses ▾ Careers ▾ More ▾

Home / Resources / Packet Tracer Resources

Packet Tracer Resources

Version 8.2.1

Downloads can be found in the [Packet Tracer Resources](#) folders and also on the [Packet Tracer Downloads](#) page

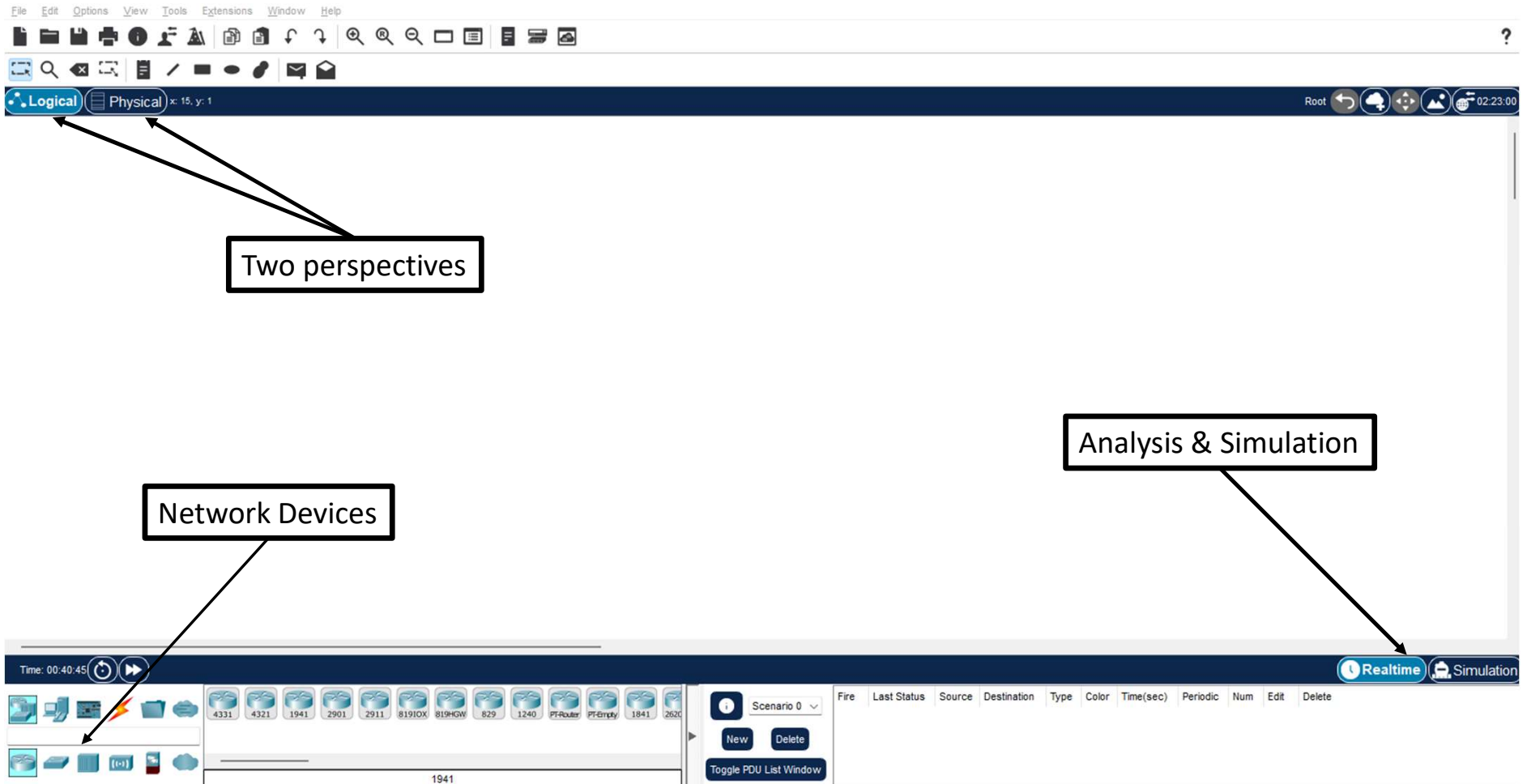
Overview

Packet Tracer is an innovative network configuration simulation and visualization tool used for activities in Cisco Networking Academy courses:

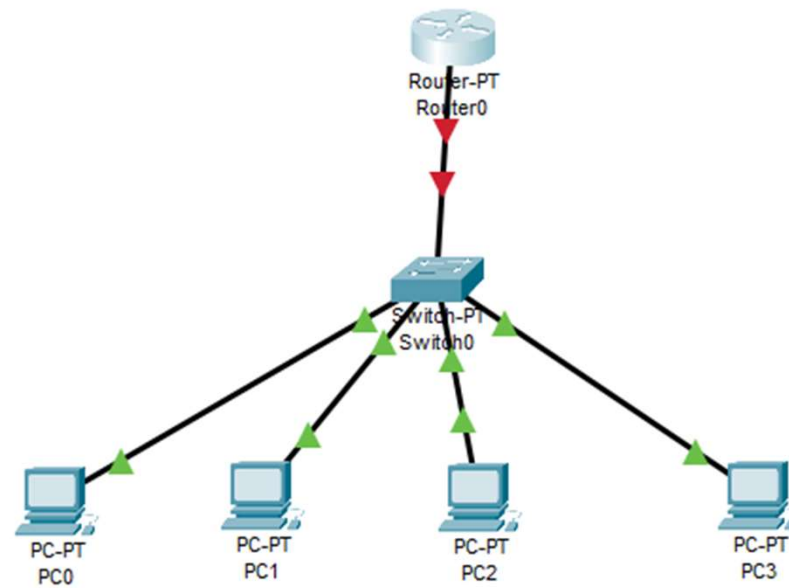
The benefits of using Packet Tracer include:

- Supplement classroom equipment with realistic simulations and visualize internal processes in real time
- Multiuser, real-time collaboration and competition for dynamic learning
- Authoring and localization of structured learning activities such as labs, demonstrations, quizzes, and exams
- Students explore concepts, conduct experiments, and test their understanding of network building
- Design, build, configure, and troubleshoot complex networks using virtual equipment
- Can be used for lectures, group and individual labs, homework, games, and competitions
- Supports feature expansion through external applications using an API

The first view of Packet Tracer



Physical connection of the LAN



1st Exercise. Static network configuration

The screenshot shows the 'PC0' configuration window with the 'Config' tab selected. The 'IP Configuration' section is expanded, showing the 'FastEthernet0' interface. The 'Static' option is selected for IP Configuration. The IPv4 Address is set to 192.168.1.10, Subnet Mask to 255.255.255.0, Default Gateway to 192.168.1.1, and DNS Server to 8.8.8.8. The IPv6 Configuration section shows the 'Static' option selected, with the Link Local Address set to FE80::20D:BDF:FE34:AADB. The 802.1X section shows the 'Use 802.1X Security' checkbox unchecked, with the Authentication dropdown set to MD5. The Username and Password fields are empty. A 'Top' button is located at the bottom left of the configuration window.

PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.10

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 8.8.8.8

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::20D:BDF:FE34:AADB

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

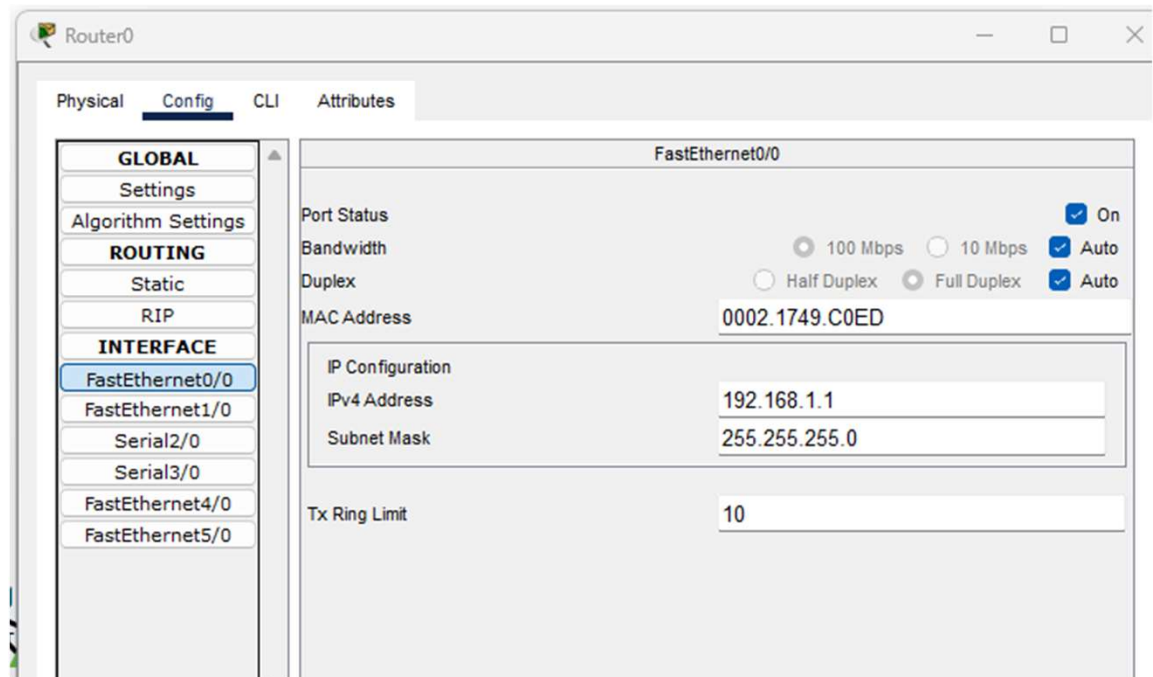
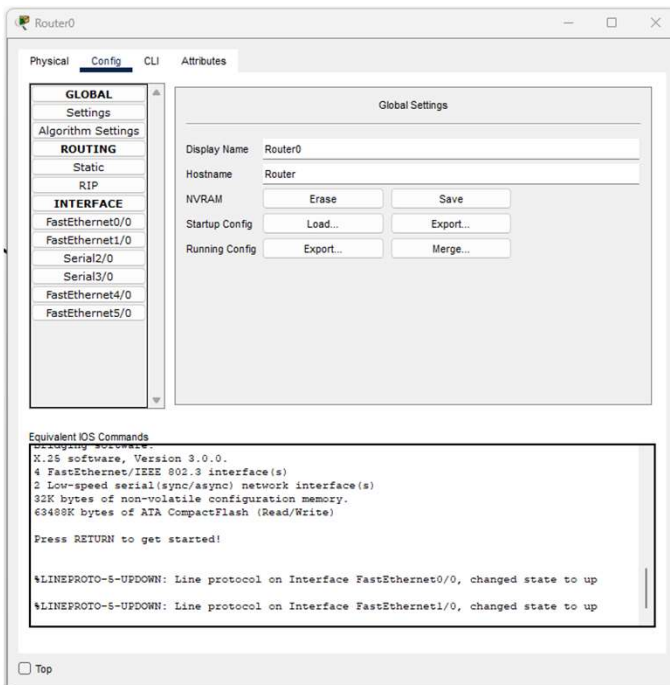
Username:

Password:

☐ Top

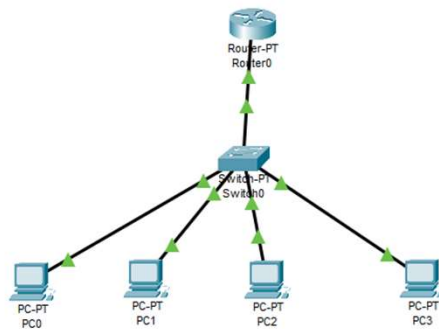
Configuring the router for static IP

- Click on the router and select config
- Click the proper interface. In this case Fast Ethernet 0/0 and 1/0



1st Exercise: Static Network configuration

- Once, the IP address, mask and Gateway is well configured, the interfaces become green



```
Command Prompt

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Physical Address.....: 000D.BD34.AADB
Link-local IPv6 Address.....: FE80::20D:BDFF:FE34:AA DB
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.10
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                        192.168.1.1
DHCP Servers.....: 0.0.0.0
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-52-70-49-98-00-0D-BD-34-AA-DB
DNS Servers.....: ::
                        8.8.8.8

Bluetooth Connection:

Connection-specific DNS Suffix...:
Physical Address.....: 0001.425C.7648
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                        0.0.0.0
DHCP Servers.....: 0.0.0.0
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-52-70-49-98-00-0D-BD-34-AA-DB
DNS Servers.....: ::
                        8.8.8.8

C:\>ping 192.168.1.1

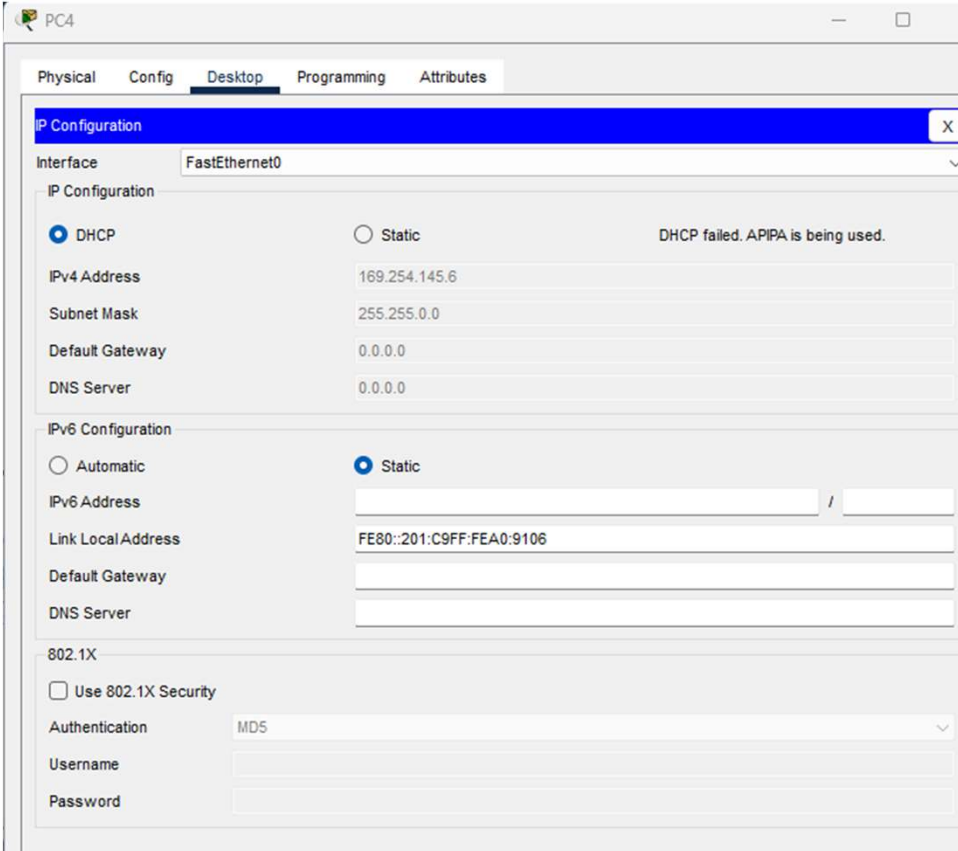
Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=4ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=4ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 2ms

C:\>
```

2nd Exercise: Defining a DHCP network



The screenshot shows the configuration window for a PC4 device, specifically the 'Desktop' tab. The 'IP Configuration' section is active, showing settings for the 'FastEthernet0' interface. The 'DHCP' option is selected, and a message indicates 'DHCP failed. APIPA is being used.' The IPv4 Address is set to 169.254.145.6, Subnet Mask to 255.255.0.0, Default Gateway to 0.0.0.0, and DNS Server to 0.0.0.0. The IPv6 Configuration section shows 'Static' selected, with fields for IPv6 Address, Link Local Address (FE80::201:C9FF:FEA0:9106), Default Gateway, and DNS Server. The 802.1X section shows 'Use 802.1X Security' unchecked, Authentication set to MD5, and fields for Username and Password.

PC4

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP failed. APIPA is being used.

IPv4 Address 169.254.145.6

Subnet Mask 255.255.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::201:C9FF:FEA0:9106

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

2nd Exercise: Defining a DHCP network

```
Press RETURN to get started!

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#
Router(config)#
Router(config)#interface FastEthernet1/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
ip address 192.168.2.1 255.255.255.0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#exit
Router(config)#ip dhcp pool xaxxa
Router(dhcp-config)#network 192.168.2.0 255.255.255.0
Router(dhcp-config)#default-r
Router(dhcp-config)#default-router 192.168.2.1
Router(dhcp-config)#dns
Router(dhcp-config)#dns-server 8.8.8.8
Router(dhcp-config)#exit
Router(config)#int Fa1/0
Router(config-if)#ip he
Router(config-if)#ip helpe
Router(config-if)#ip helper-address 192.168.2.1
Router(config-if)#exit
Router(config)#
```

Excercise 3: Interconnecting networks

```
PC4
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=5ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

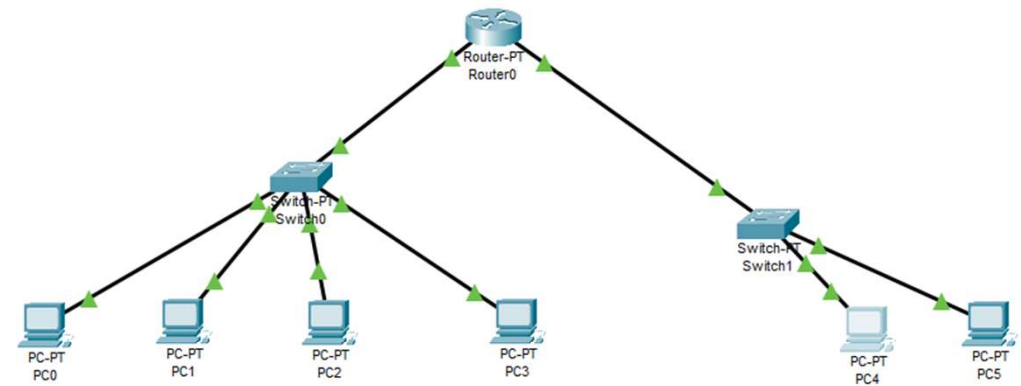
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

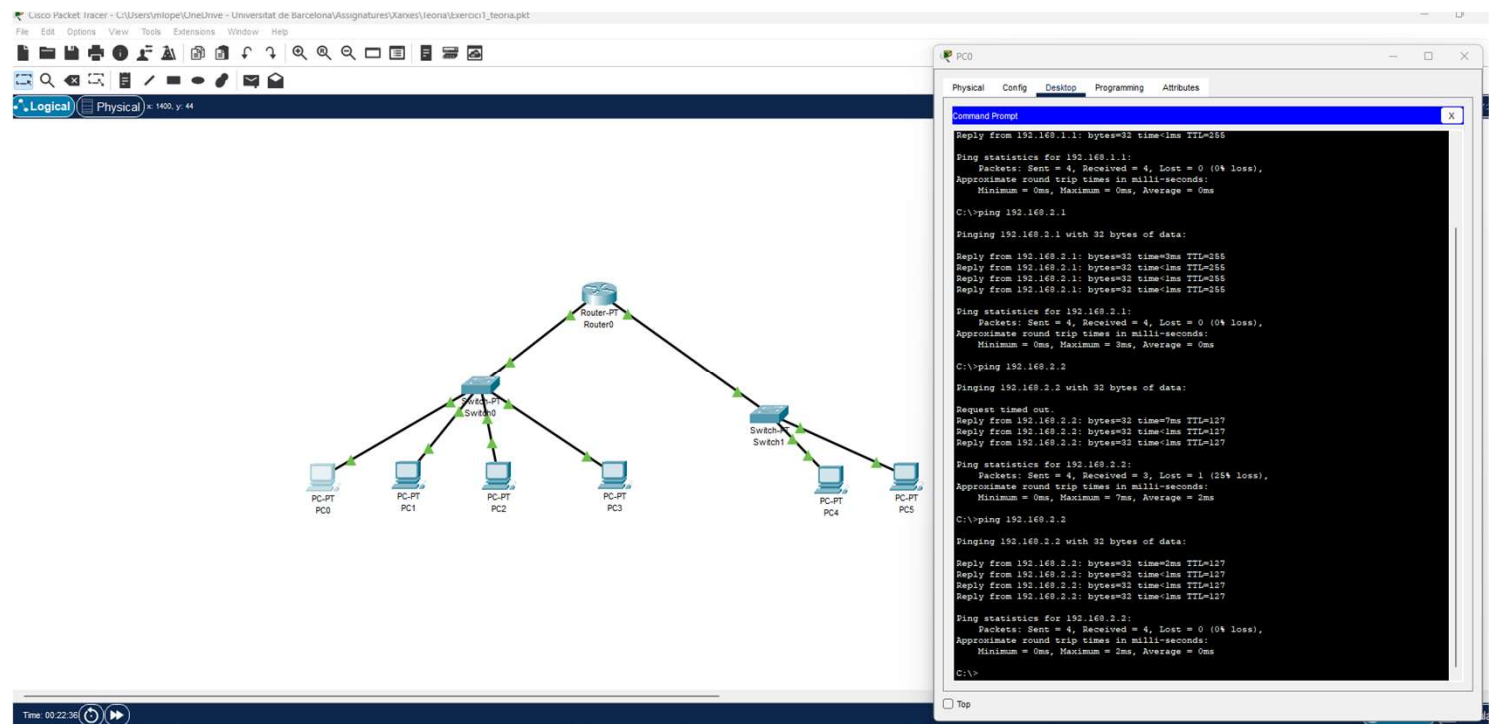
Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

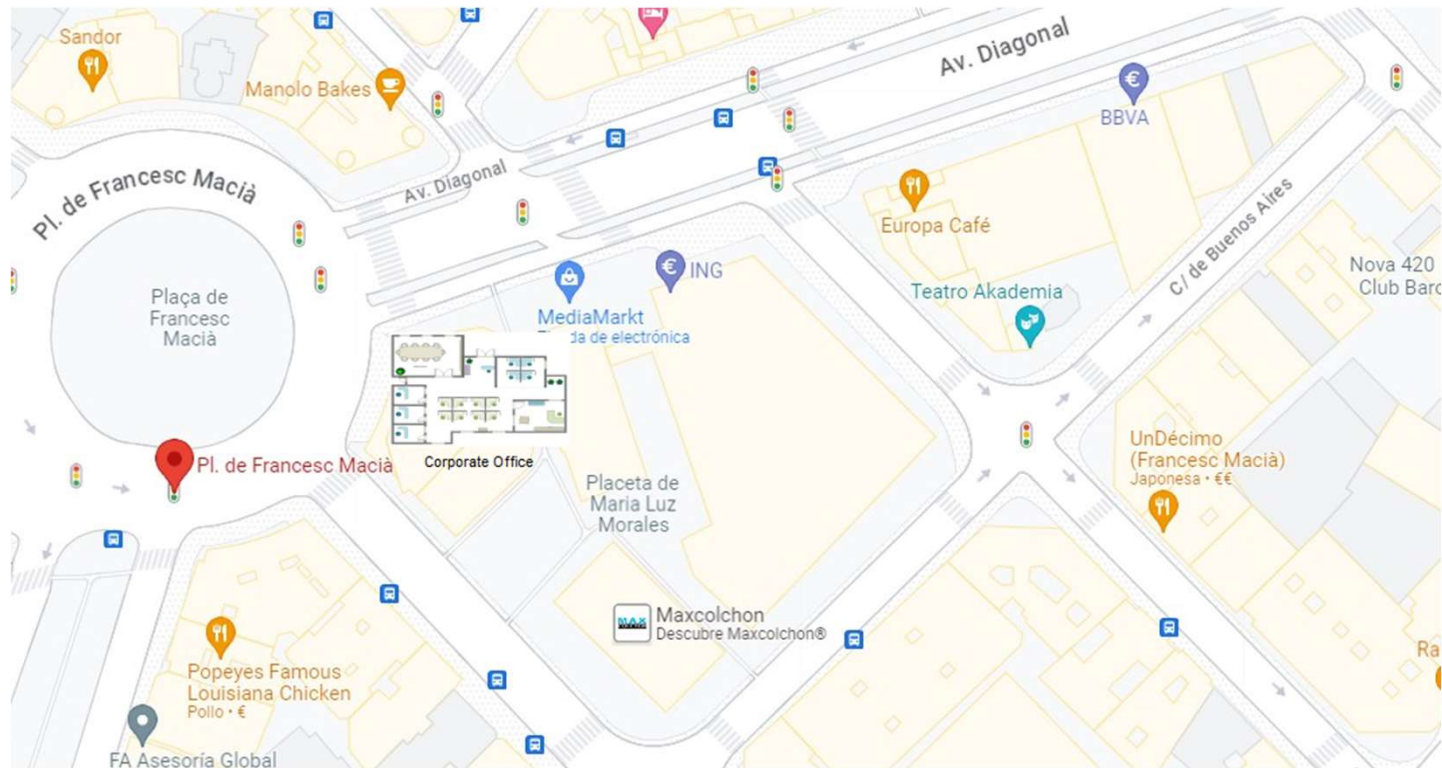


Excercise 3: Interconnecting networks

- Sometimes it need to take its time to conect all the interfaces. Shut down the router, or, if it still does not work, restart Packet Tracer



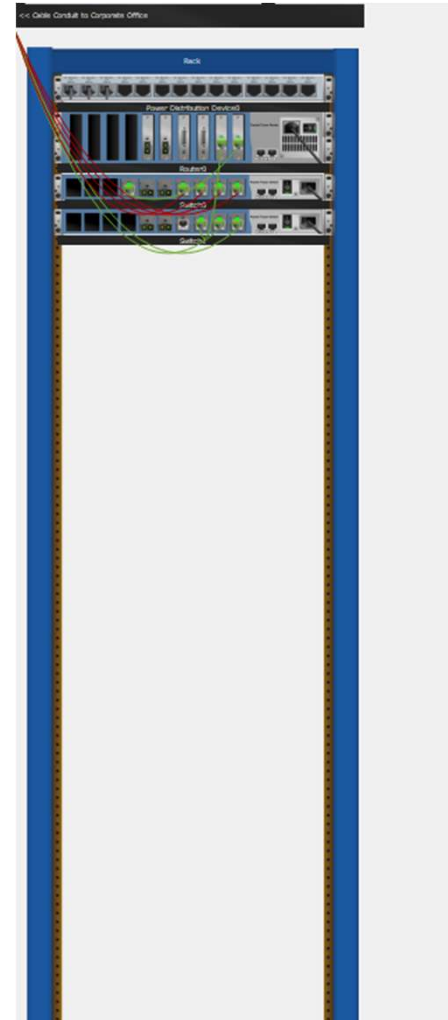
The Physical Point of view



The Physical Point of View



The Physical Point of View





GARRAF



GARRAF



ESTACIO
RENFE

Barcelona
30 min.

Sitges / Vilanova
10 min.



Port de Garraf
Latitud 41° 15' N - Longitud 01° 54' E



clubnàuticgarraf



Capitania/ Harbour office/ Boreau du port



Dutxes/ Duchas/ Shower / Douches



Serveis / Servicio / Toilette



Gasolinera/ Petrol station / Station de gaz



Restaurant Nàutic Garraf: Bar - Restaurant



Bugaderia / Lavanderia / Laundry / Blanchisserie



Rampa de varada / Slipway



Aparcament / Aparcamiento / Parking



Escala accés/ Escalera acceso / Access stairs / Échelle d'accès



Pàdel / Padel / Paddle



Gimnàs / Gimnasio / Gym



Piscina / Swimming pool / Piscine



Sauna



Platja / Playa / Plage / Beach

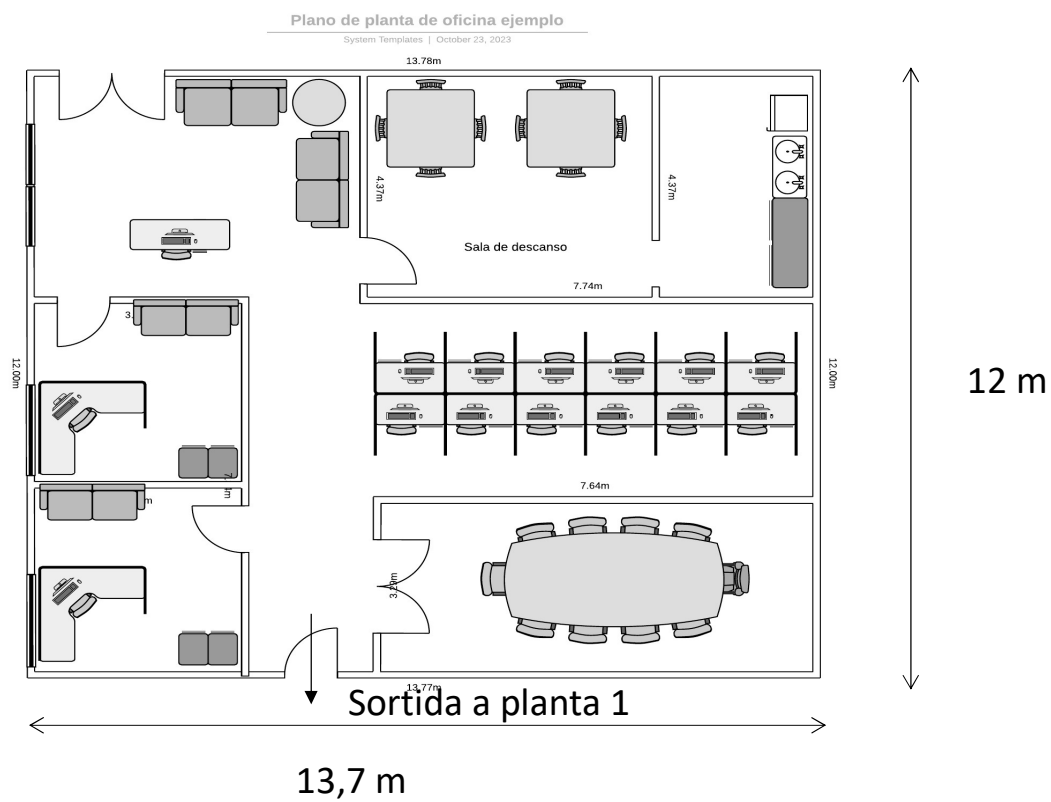


20 Tm. Pòrtic elevator / Pòrtico elevator / Boat lift / Travel lift



5 Tm. Grua / Grúa / Crane / Grue

Planta 0



Planta 1

