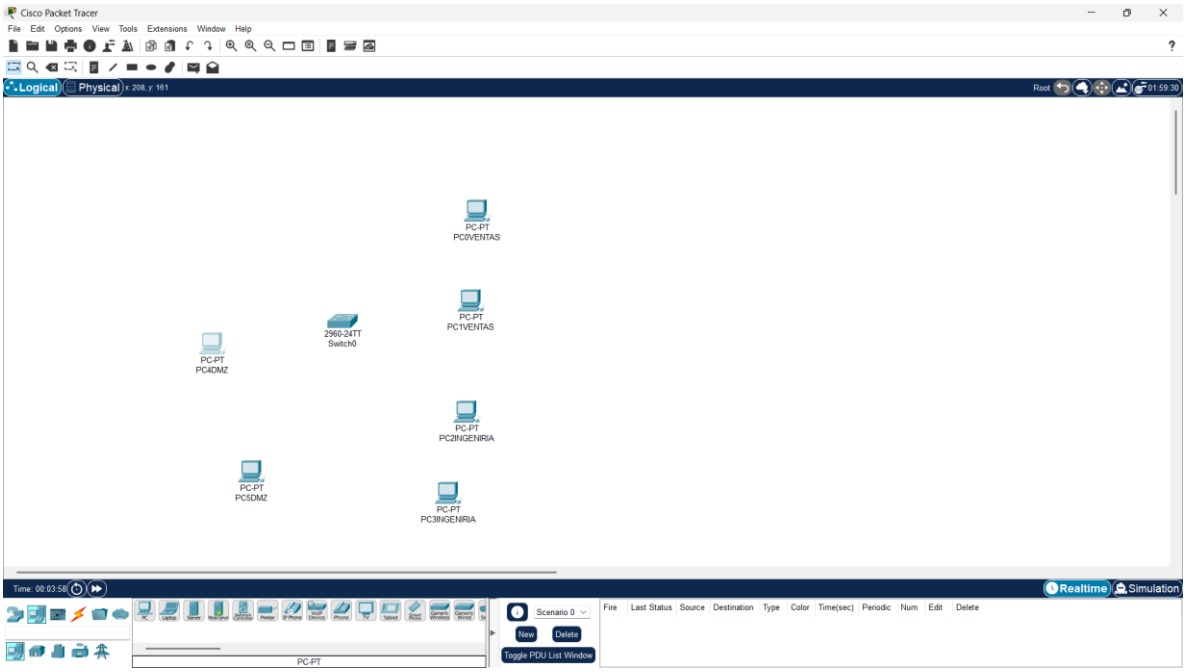
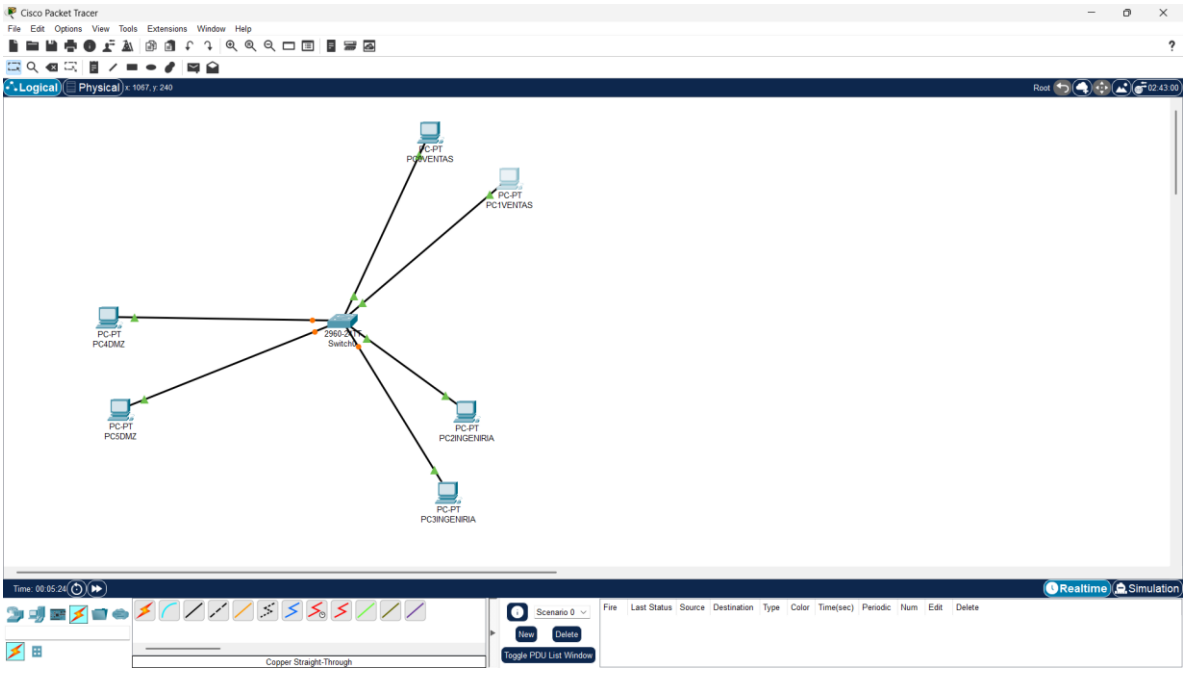
Se establecen las VLANs Ventas, Ingenieria y DMZ para los dispositivos



Se conectan los dispositivos al switch para definir las VLANs



Se ejecuta el comando ***show vlan*** para observar las redes vlan predefinidas.

```
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

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

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up


Switch>show vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                 Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                 Gig0/1, Gig0/2
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0
 --More--
```

Con ***show vlan brief*** Podemos ver la información resumida

```
Switch>show vlan brief

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                 Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                 Gig0/1, Gig0/2
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
Switch>
```

Iniciamos el switch en modo configuración

```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#
```

Se crean las nuevas vlans en los rangos establecidos, se dan los nombres para su uso.

```
Switch(config)#vlan 10
Switch(config-vlan)#name ventas
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name ingenieria
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name DMZ
Switch(config-vlan)#exit
Switch(config)#
```

Si ejecutamos de nuevo el comando ***show vlan*** podremos observas las nuevas VLANs creadas

```
Switch>show vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                 Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                 Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                 Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                 Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                 Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                 Gig0/1, Gig0/2
10   ventas                            active
20   ingenieria                        active
30   DMZ                               active
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
 --More--
```

Ahora vamos a asignar las interfaces a las VLANs

- VLAN Ventas

```
Switch(config)#interface range f0/1 - f0/2
Switch(config-if-range)#sw
Switch(config-if-range)#switchport a
Switch(config-if-range)#switchport m
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#sw
Switch(config-if-range)#switchport ac
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#
```

- VLAN Ingenieria

```
Switch(config)#interface range f0/3 - f0/4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
Switch(config)#
```

- VLAN DMZ

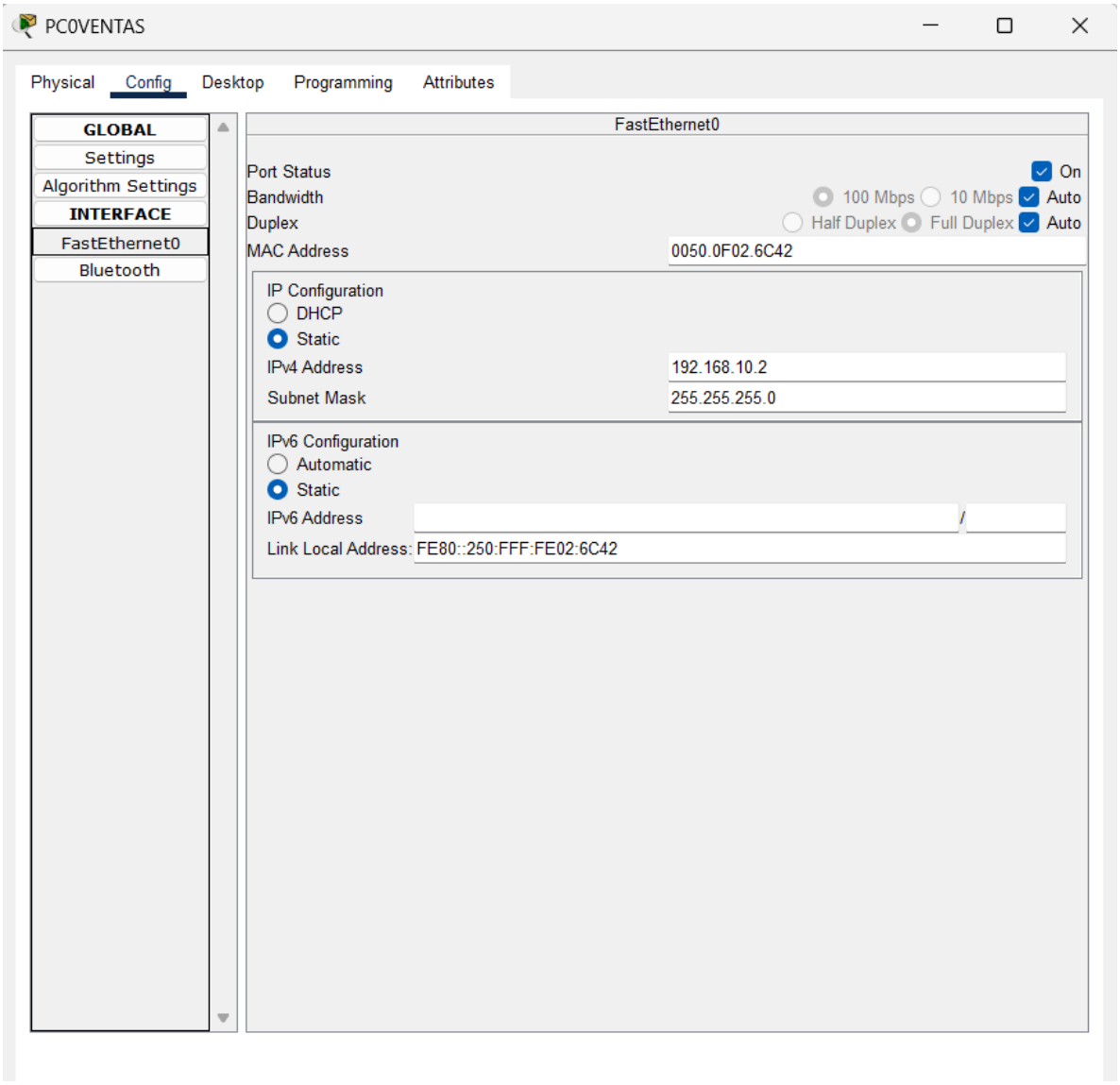
```
Switch(config)#interface range f0/5 - f0/6
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 30
Switch(config-if-range)#exit
Switch(config)#
```

Si ejecutamos el comando show vlan brief podremos observar las VLANs creadas y los puertos asociados

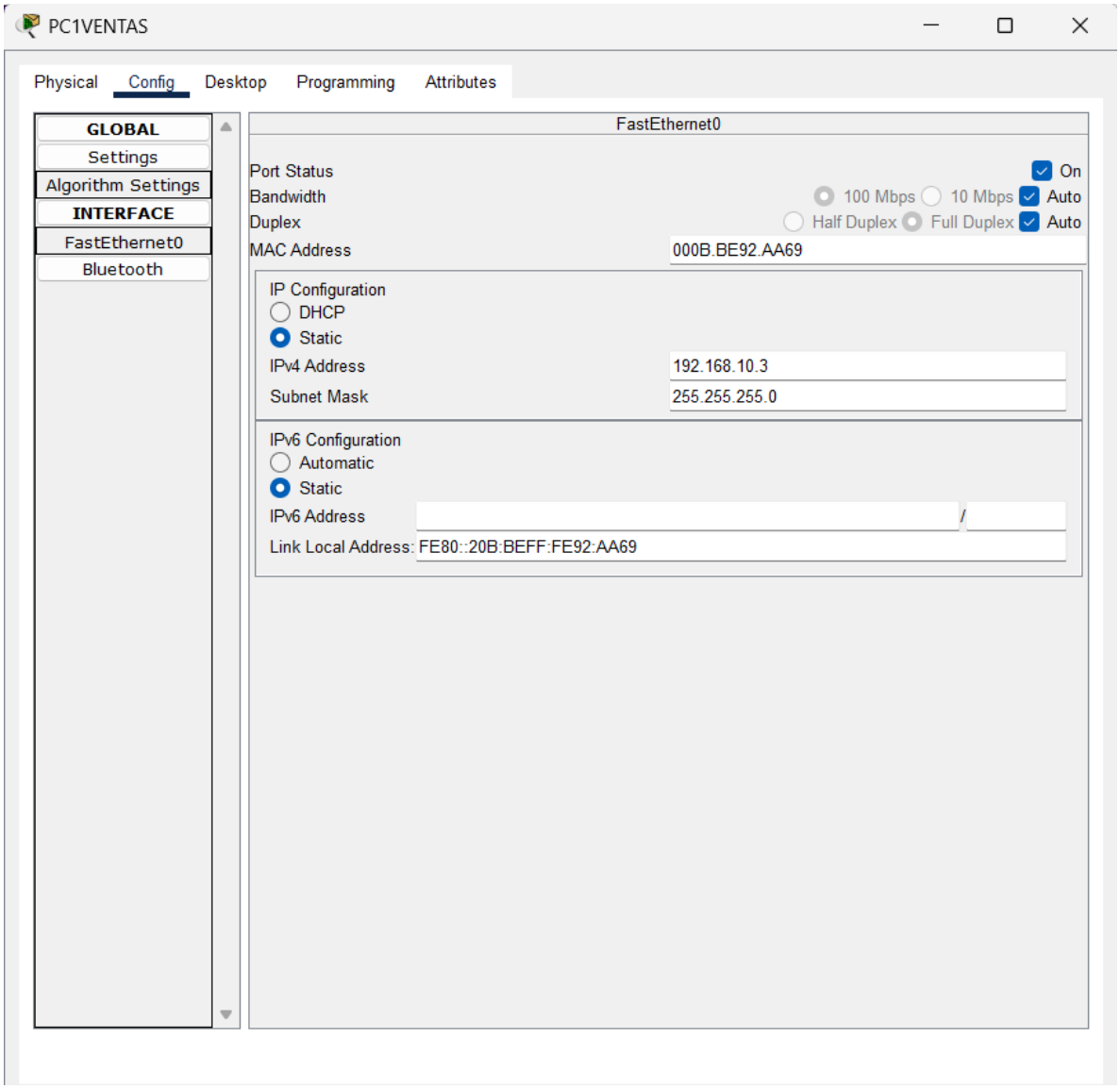
```
Switch>show vlan brief

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                 Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                 Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                 Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                 Fa0/23, Fa0/24, Gig0/1, Gig0/2
10   ventas                            active    Fa0/1, Fa0/2
20   ingenieria                        active    Fa0/3, Fa0/4
30   DMZ                               active    Fa0/5, Fa0/6
1002 fddi-default                      active
1003 token-ring-default                active
1004 fddinet-default                   active
1005 trnet-default                     active
Switch>
```

Ahora procederemos a configurar los PCs

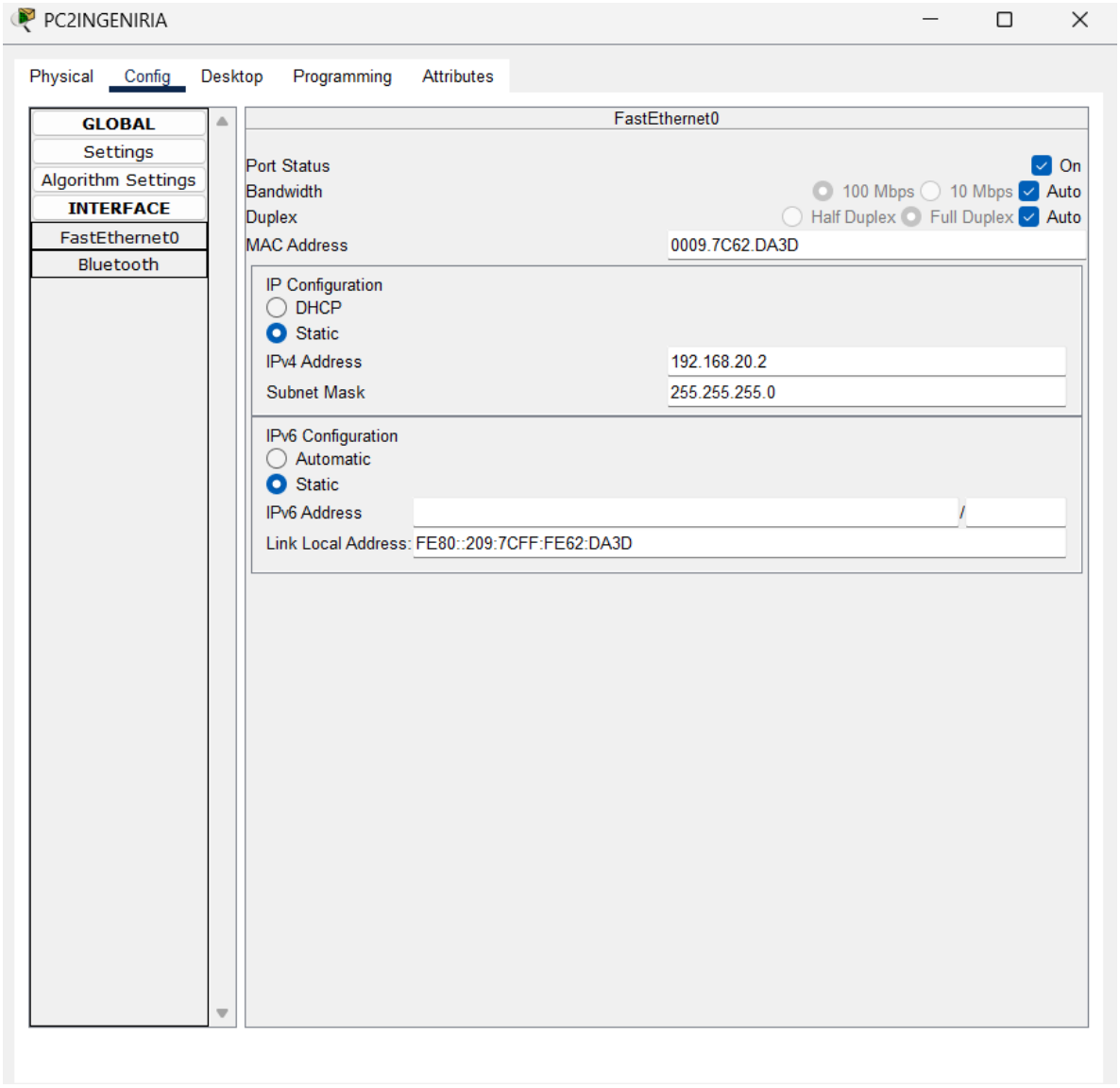
- PC0VENTAS


PC0VENTAS
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0050.0F02.6C42
IP Configuration
DHCP
Static
IPv4 Address
192.168.10.2
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address:
FE80::250:FFF:FE02:6C42

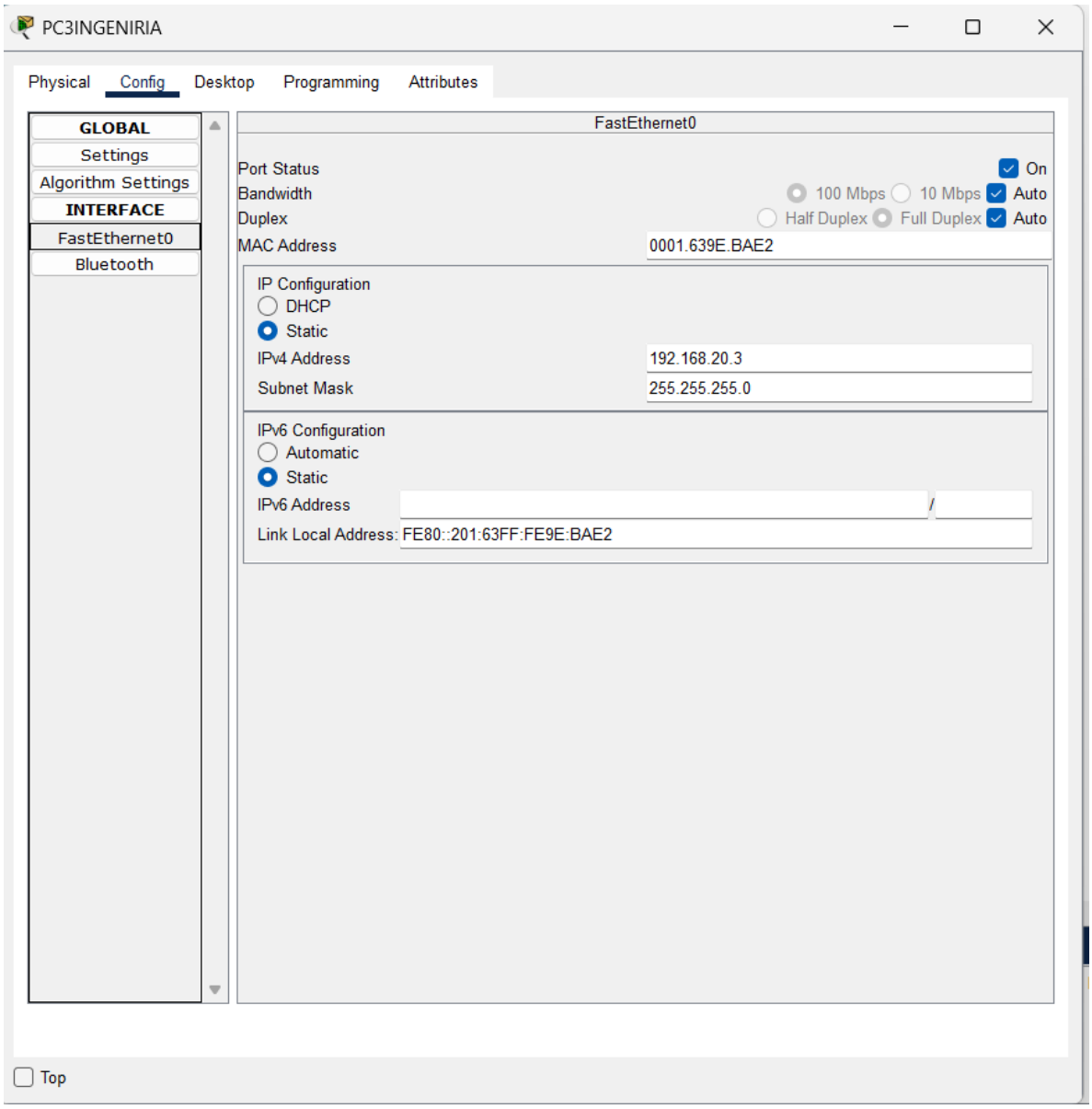
- PC1VENTAS



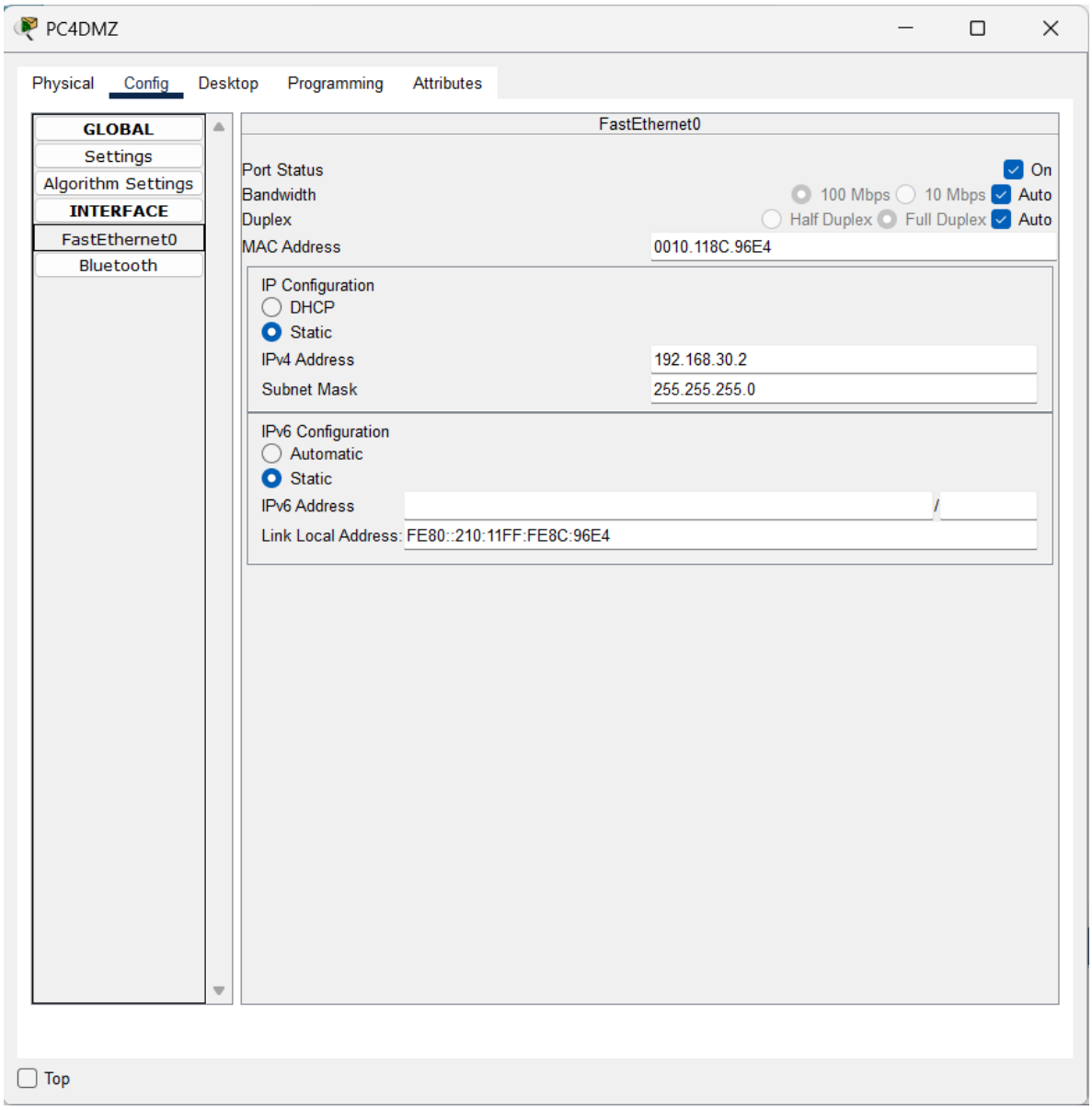
- PC2INGENIERIA



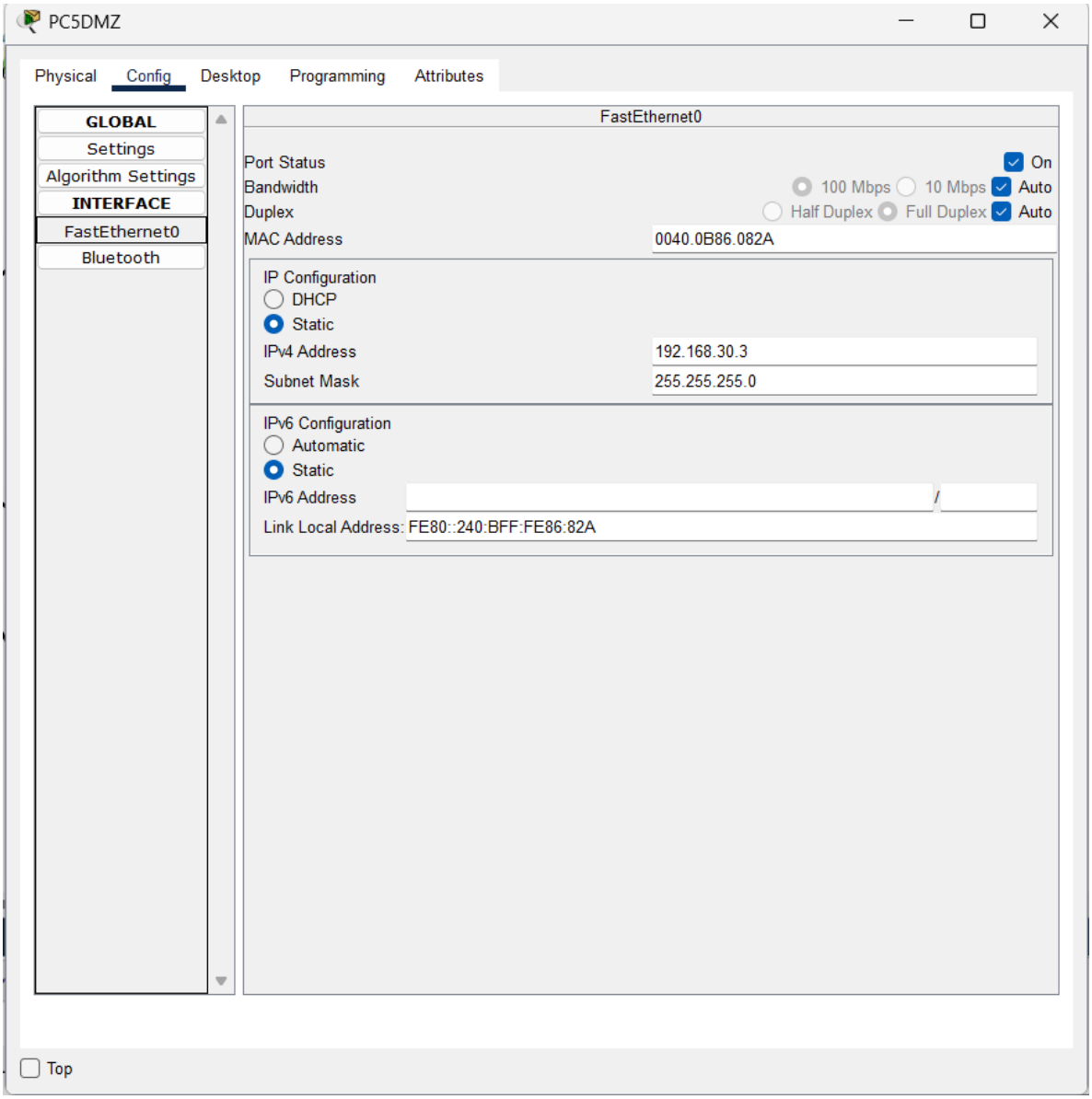
- PC3INGENIERIA


PC3INGENIRIA
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.639E.BAE2
IP Configuration
DHCP
Static
IPv4 Address
192.168.20.3
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:63FF:FE9E:BAE2
Top

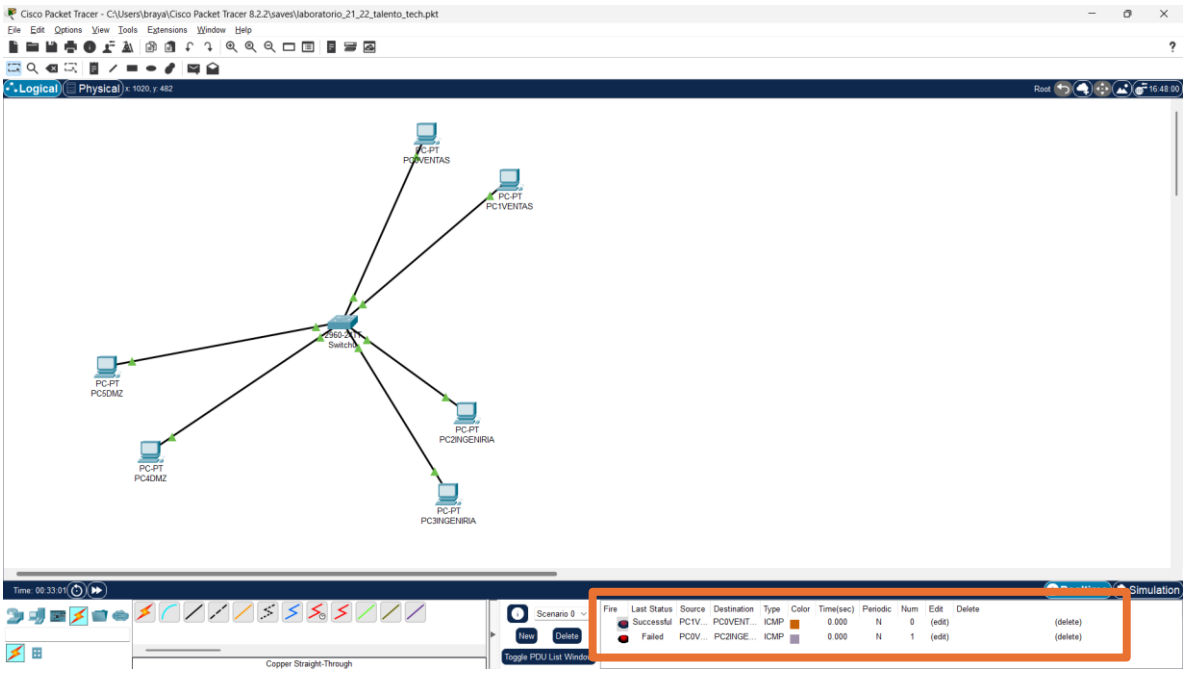
- PC4DMZ


PC4DMZ
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0010.118C.96E4
IP Configuration
DHCP
Static
IPv4 Address
192.168.30.2
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address:
FE80::210:11FF:FE8C:96E4
Top

- PC5DMZ

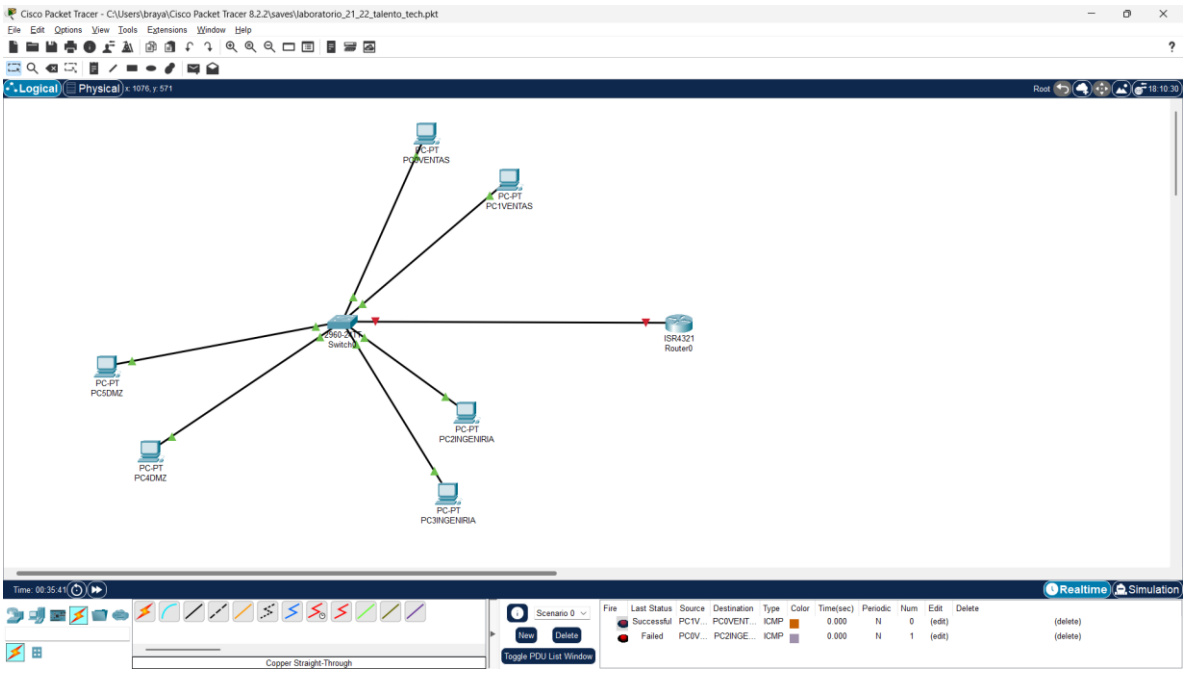


A continuación, podremos observar que si mandamos paquetes entre pcs de la misma VLAN y otras VLAN, si es la misma es aceptado y si es de otra VLAN falla



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1V...	PC0VENT...	ICMP		0.000	N	0	(edit)	(delete)
	Failed	PC0V...	PC2INGE...	ICMP		0.000	N	1	(edit)	(delete)

Ahora, agregamos un Router para comunicarnos entre VLANs



Configuramos el switch para que por medio del router pueda comunicar las VLAN

```
Switch>sw
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#sw
Switch(config)#interface f0/24
Switch(config-if)#sw
Switch(config-if)#switchport mode trunk
Switch(config-if)#
Switch(config-if)#sw
Switch(config-if)#switchport trunk allowed vlan 10, 20, 30
                                                        ^
% Invalid input detected at '^' marker.

Switch(config-if)#switchport trunk allowed vlan 10,20,30
Switch(config-if)#exit
Switch(config)#
```

Configuración del router para la VLAN de ventas

```
Router>
Router>
Router>interface
Translating "interface"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#in
Router(config)#interface GogabitEthernet0/0/1.10
                          ^
% Invalid input detected at '^' marker.

Router(config)#interface GigabitEthernet0/0/1.10
Router(config-subif)#en
% Ambiguous command: "en"
Router(config)#en
Router(config)#interface GigabitEthernet0/0/1.10
Router(config-subif)#en
Router(config-subif)#encapsulation dotlq 10
                                        ^
% Invalid input detected at '^' marker.

Router(config-subif)#encapsulation dotlq 10
Router(config-subif)#ip adress 192.168.10.1 255.255.255.0
                          ^
% Invalid input detected at '^' marker.

Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#
```

VLAN Ingenieria

```
Router(config)#interface GigabitEthernet0/0/1.20
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#exit
Router(config)#
```

VLAN DMZ

```
Router(config)#interface GigabitEthernet0/0/1.30
Router(config-subif)#encapsulation dot1q 30
Router(config-subif)#ip address 192.168.30.1 255.255.255.0
Router(config-subif)#exit
Router(config)#
```

Ahora, mostrará que todo está correcto

```
Router(config)#interface GigabitEthernet0/0/1
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/1.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1.10, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/1.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1.20, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/1.30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1.30, changed state to up
```