

Actividad | 2 | Administración de Redes y Servidores

Calculando direcciones

Ingeniería en Desarrollo de Software



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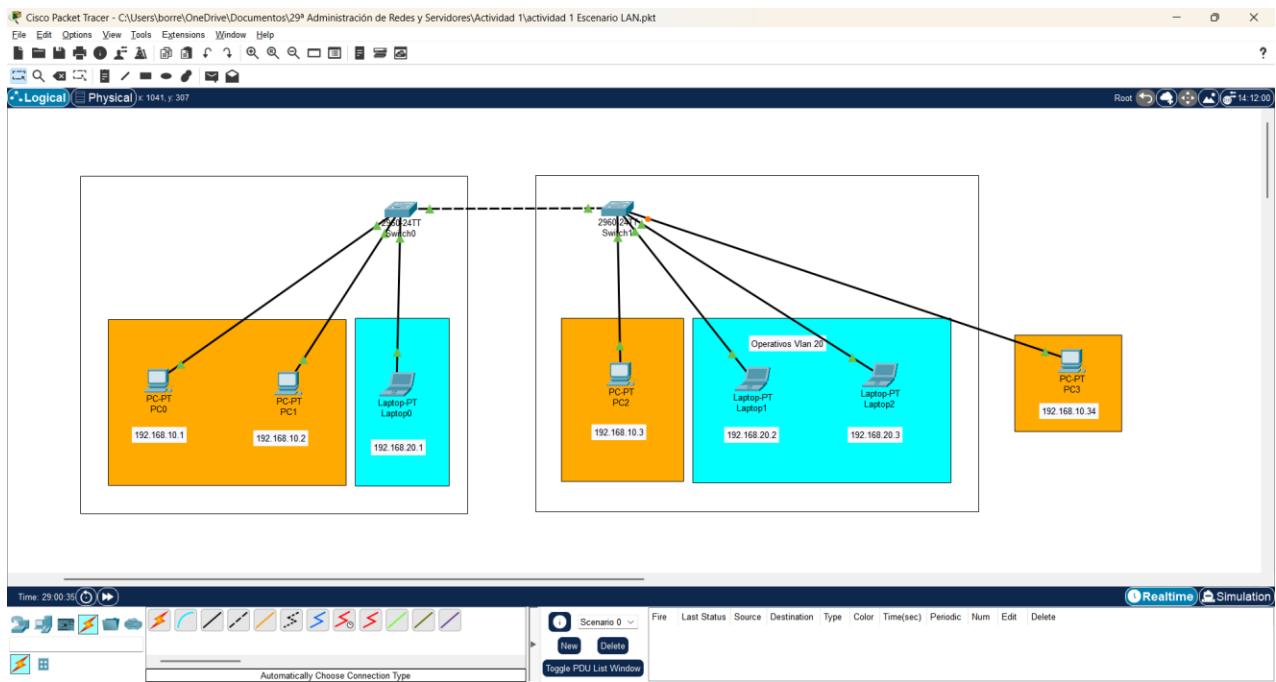
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Índice

| | |
|----------------------------|----|
| Creación de escenario..... | 1 |
| Comandos utilizados..... | 1 |
| Capturas de pantalla..... | 6 |
| Conclusión..... | 19 |

Creación de escenario



Comandos utilizados

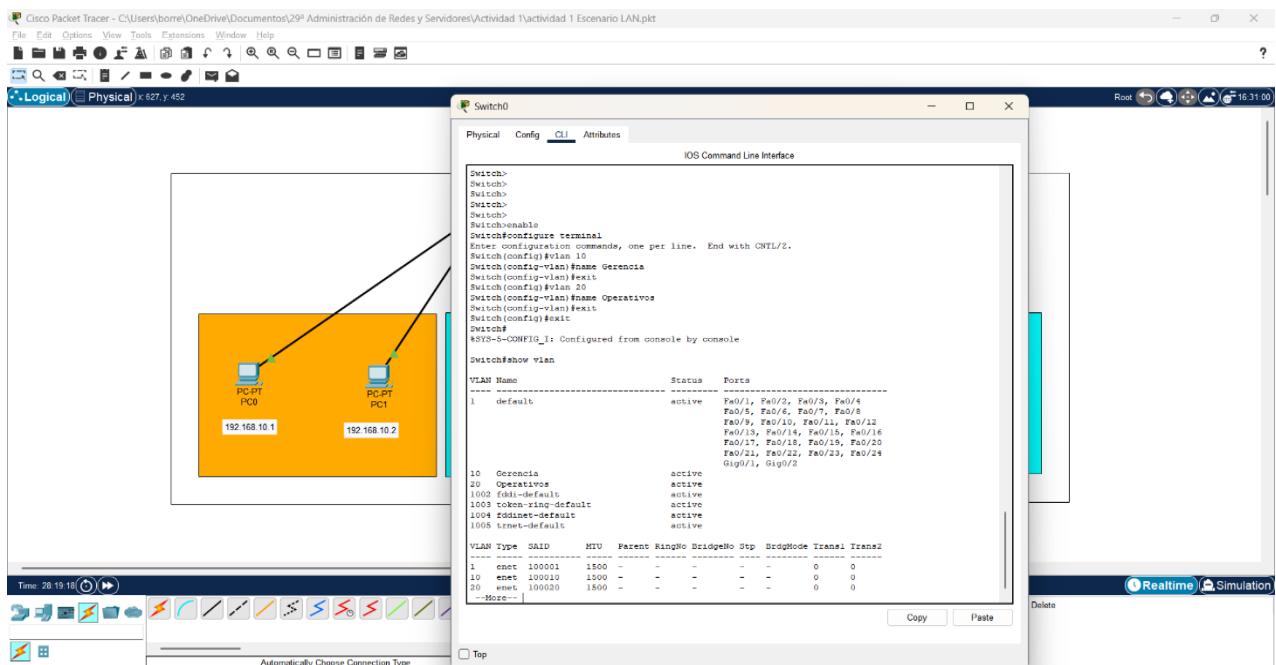
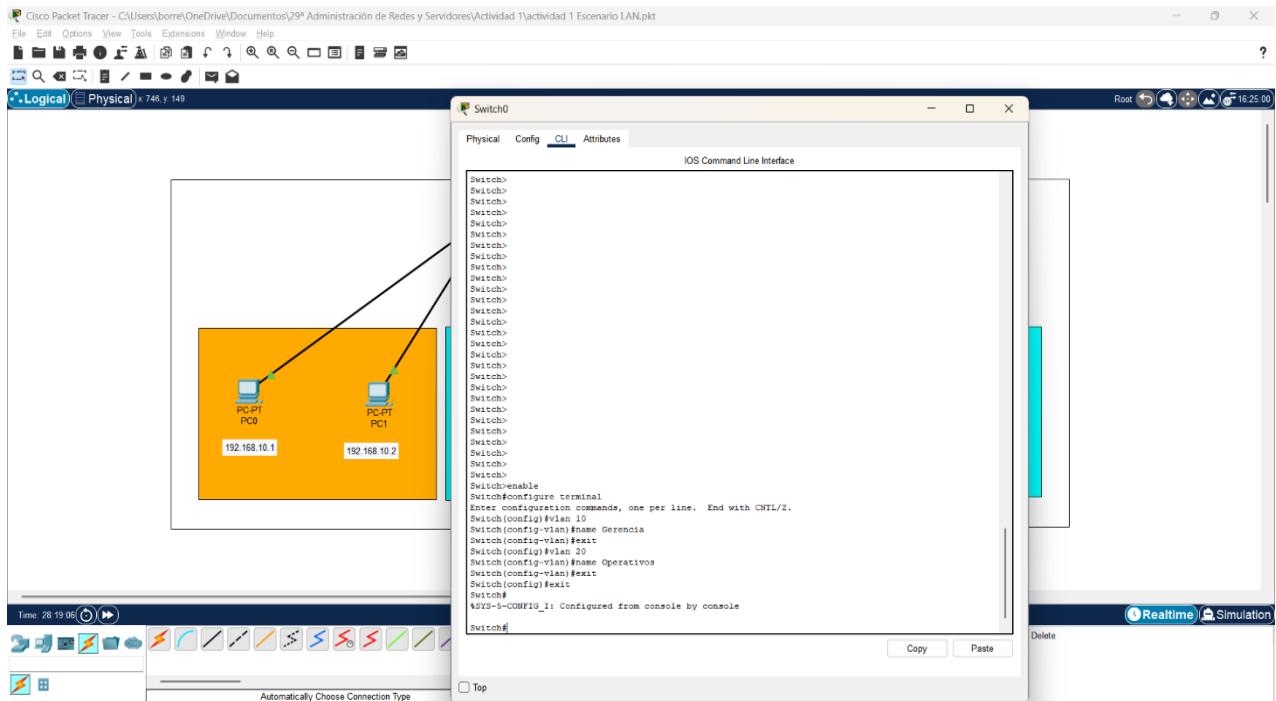
Comandos para crear Vlan en switch:

1. enable
2. configure terminal
3. Vlan 10
4. name "Gerencia"
5. exit

y

1. enable
2. configure terminal
3. Vlan 20
4. name "Operativos"
5. exit

Esto para cada uno de los SWITCH



Comandos para asignar un puerto Vlan:

Switch0

1. enable
2. configure terminal
3. interface fastethernet 0/1
4. switchport mode access
5. switchport access vlan 10
6. exit
7. interface fastethernet 0/2
8. switchport mode Access
9. switchport access vlan 10
10. exit
11. interface fastethernet 0/3
12. switchport mode Access
13. switchport access vlan 20
14. exit

The screenshot shows the Cisco IOS CLI interface. The title bar says "Switch0". Below it, there are tabs: Physical, Config, **CLI**, and Attributes. The main area is titled "IOS Command Line Interface". It displays the configuration commands listed above, followed by the output of the "show vlan" command. The "show vlan" command output is as follows:

| VLAN | Name | Status | Forts |
|------|--------------------|--------|--|
| 1 | default | active | Fao/4, Fao/5, Fao/6, Fao/7 Fao/8, Fao/9, Fao/10, Fao/11 Fao/12, Fao/13, Fao/14, Fao/15 Fao/16, Fao/17, Fao/18, Fao/19 Fao/20, Fao/21, Fao/22, Fao/23 Fao/24, Gigo/1, Gigo/2 |
| 10 | Gerencia | active | Fao/1, Fao/2 |
| 20 | Operativos | active | Fao/3 |
| 1002 | fdci-default | active | |
| 1003 | token-ring-default | active | |
| 1004 | fdinnet-default | active | |
| 1005 | trinet-default | active | |

Below the VLAN table, there is another table for VLAN details:

| VLAN | Type | SAID | MTU | Parent | RingNo | BridgeNo | Stp | BrdgMode | Trans1 | Trans2 |
|------|------|--------|------|--------|--------|----------|-----|----------|--------|--------|
| 1 | enet | 100001 | 1500 | - | - | - | - | 0 | 0 | 0 |
| 10 | enet | 100010 | 1500 | - | - | - | - | 0 | 0 | 0 |
| 20 | enet | 100020 | 1500 | - | - | - | - | 0 | 0 | 0 |
| 1002 | fdci | 101002 | 1500 | - | - | - | - | 0 | 0 | 0 |

At the bottom of the CLI window, there are "Copy" and "Paste" buttons, and a "Top" button.

Switch1

1. enable
2. configure terminal
3. interface fastethernet 0/1
4. switchport mode access
5. switchport access vlan 10
6. exit
7. interface fastethernet 0/2
8. switchport mode Access
9. switchport access vlan 20
10. exit
11. interface fastethernet 0/3
12. switchport mode Access
13. switchport access vlan 20
14. exit
15. interface fastethernet 0/20
16. switchport mode Access
17. switchport access vlan 10
18. exit

The screenshot shows the Cisco IOS CLI interface for 'Switch1'. The window has tabs for Physical, Config, CLI (which is selected), and Attributes. The CLI area displays the configuration steps listed above. Below the configuration, the output of the 'show vlan' command is shown in two tables.

```
Switch# *SYS-S-CONFIG_I: Configured from console by console
show vlan

VLAN Name Status Ports
--- -- --
1 default active 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

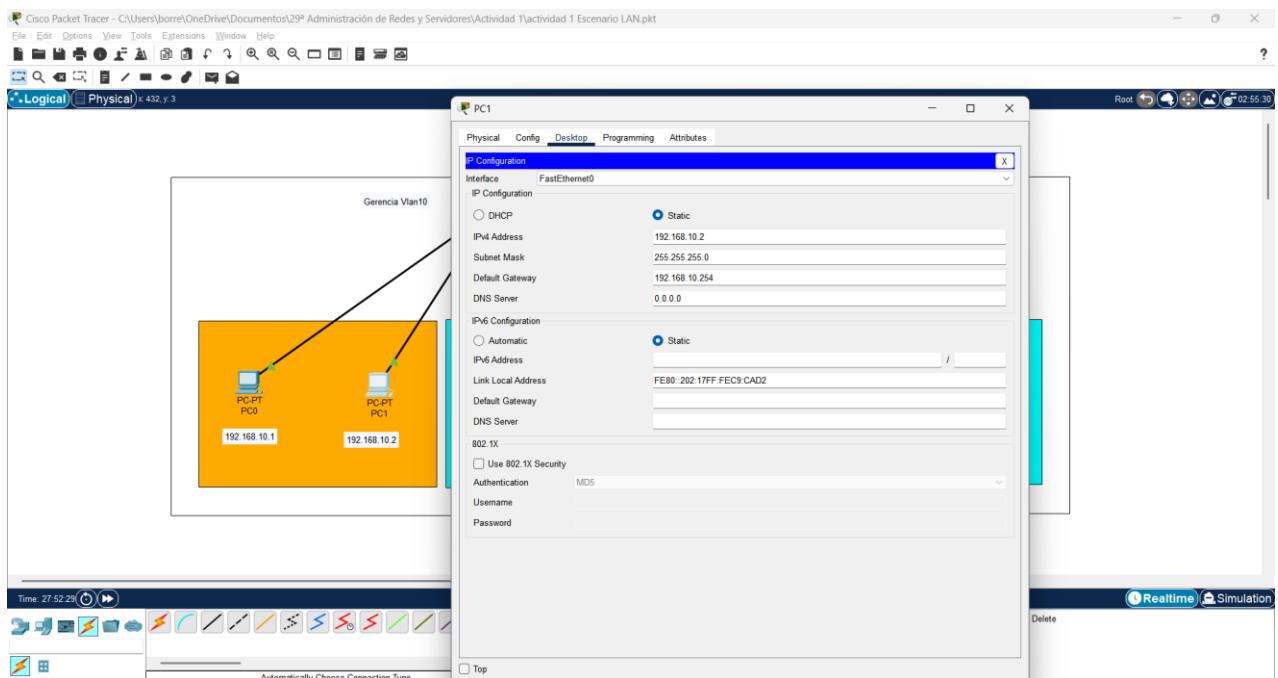
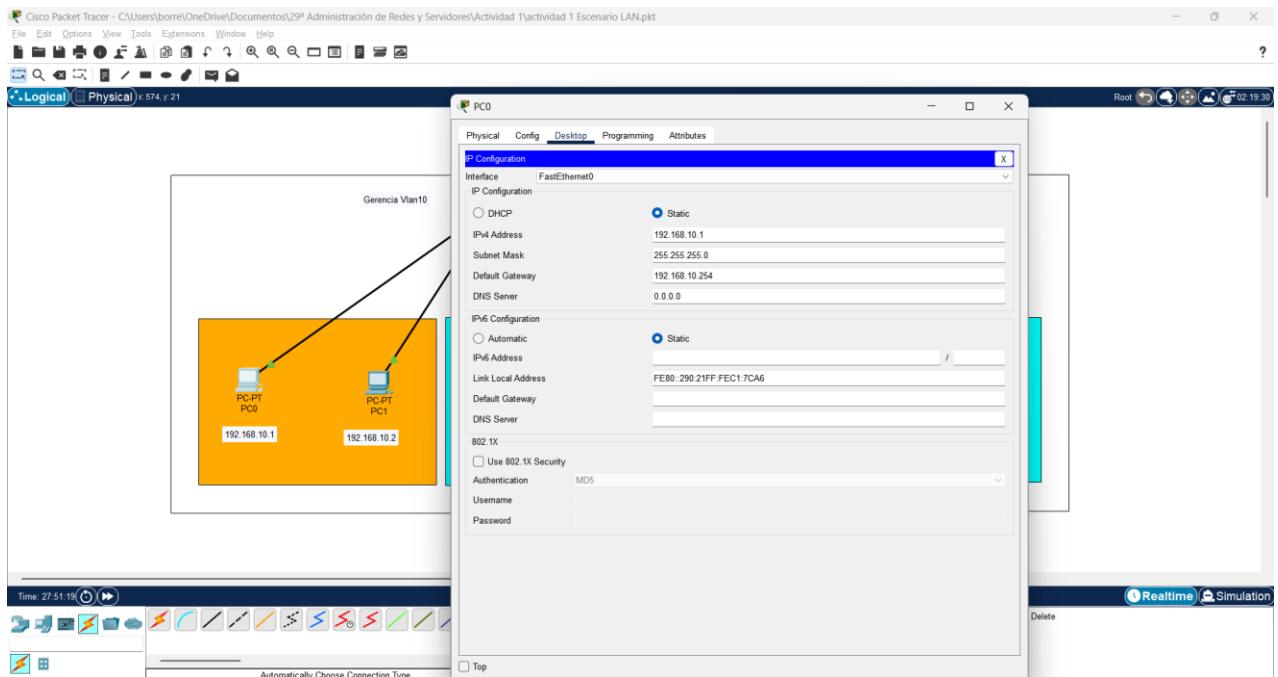
10 Gerencia active Fa0/1
20 Operativos active Fa0/2, Fa0/3

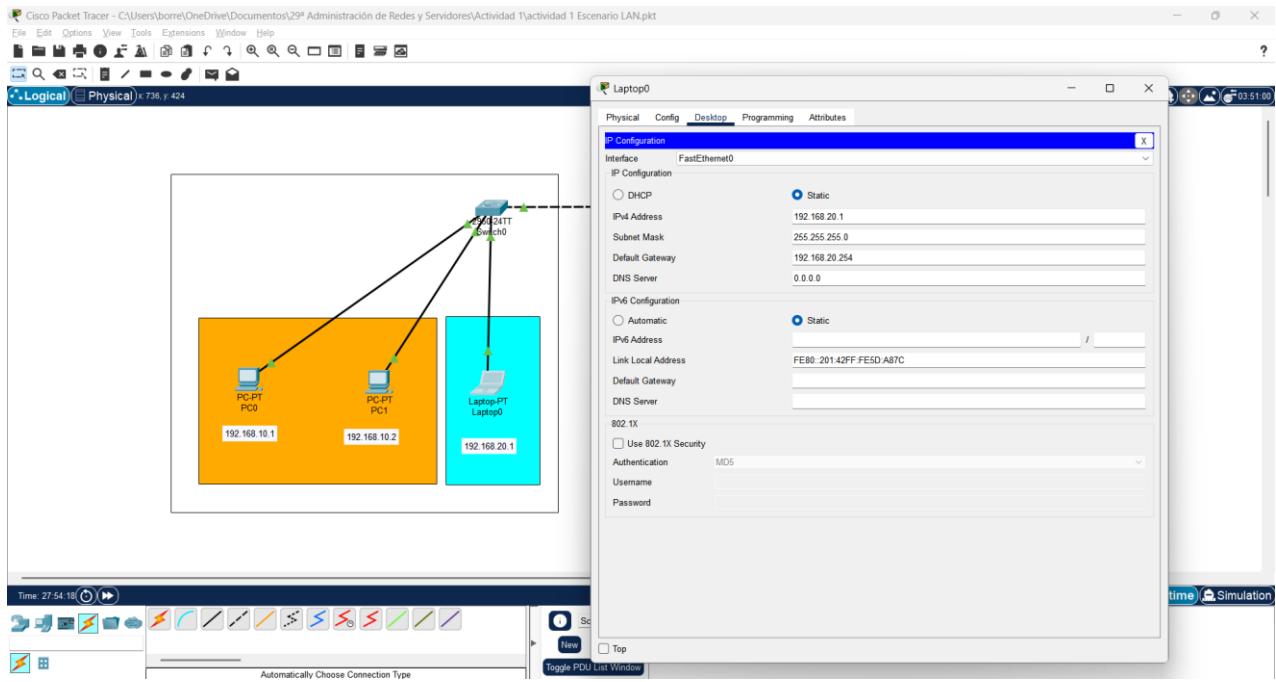
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Transl Trans2
--- -- --
1 enet 100001 1500 - - - - o o
10 enet 100010 1500 - - - - o o
20 enet 100020 1500 - - - - o o
1002 rddi 101002 1500 - - - - o o
--More--
```

Comandos para los puertos de switch a switch:

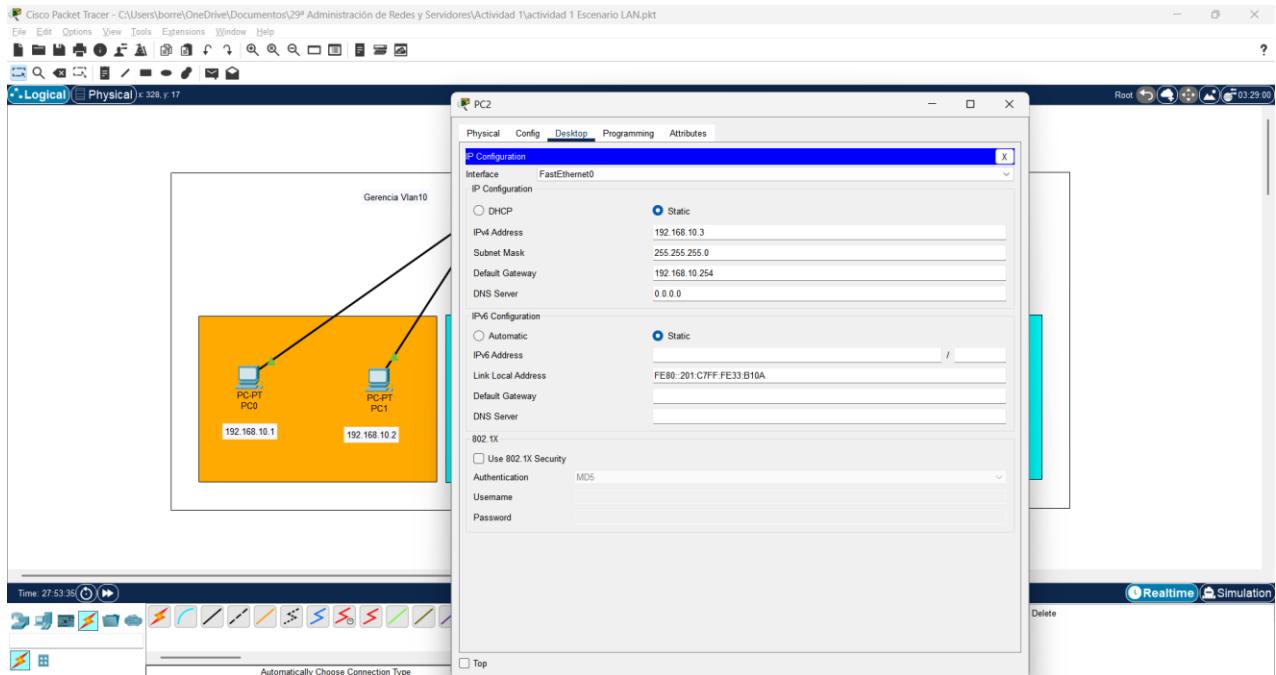
- enable
 - configure terminal
 - interface Gigabit 0/1
 - switchport mode trunk
 - switchport trunk native vlan 1
 - exit

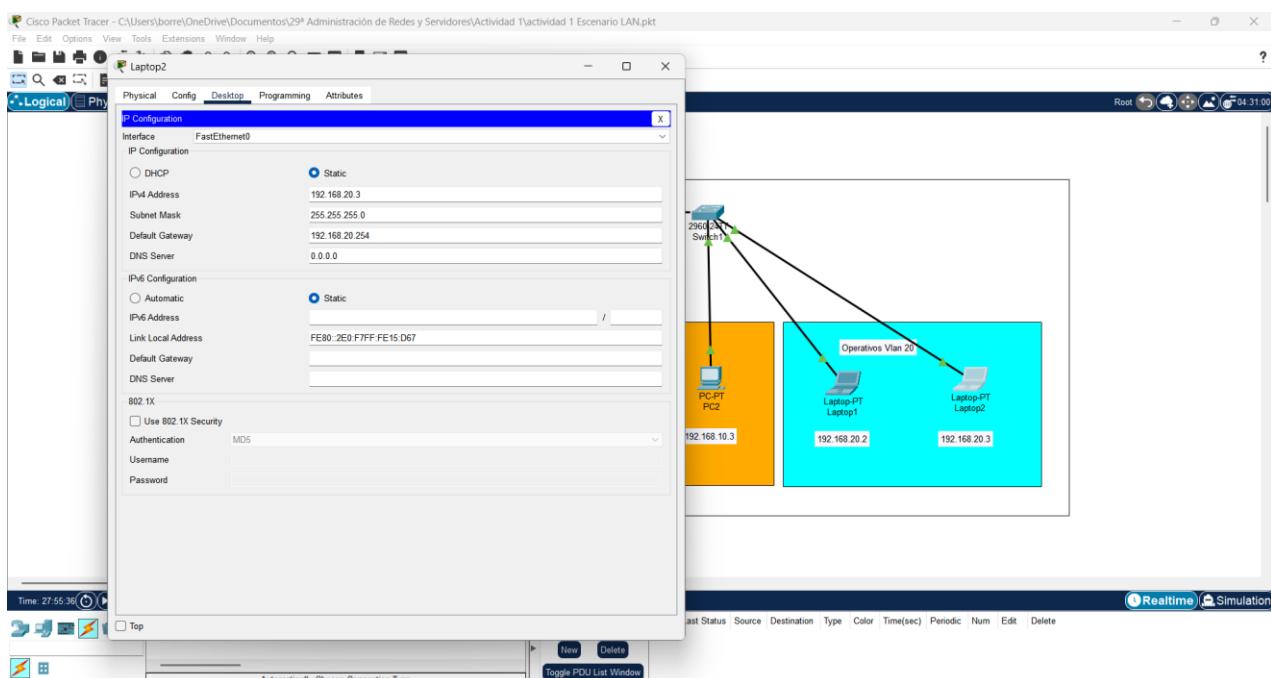
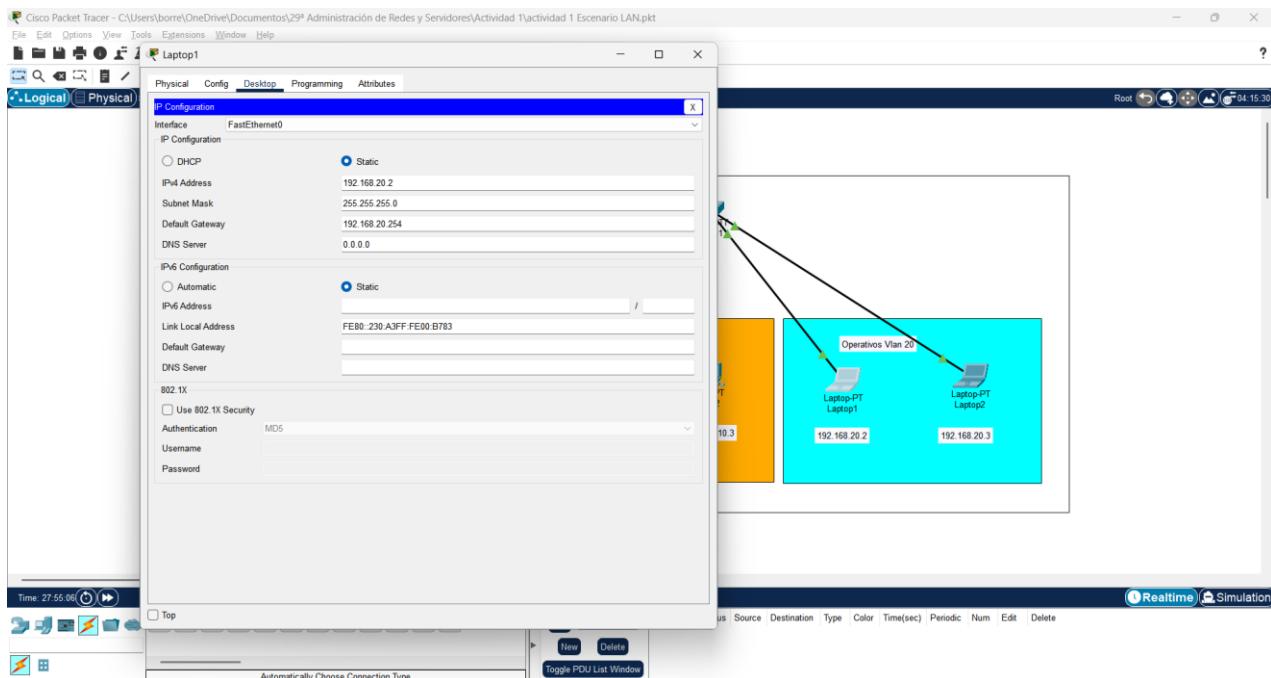
Capturas de pantalla





Aquí estaremos verificando las IP de cada una de las CP y Laptops de SWICHT0 siendo
192.168.10.1, 192.168.10.2, 192.168.20.1





De igual manera se revisarán las IP de los PC y Laptops de SWICHT1 teniendo 192.168.10.3, 192.168.20.2, 192.168.20.3

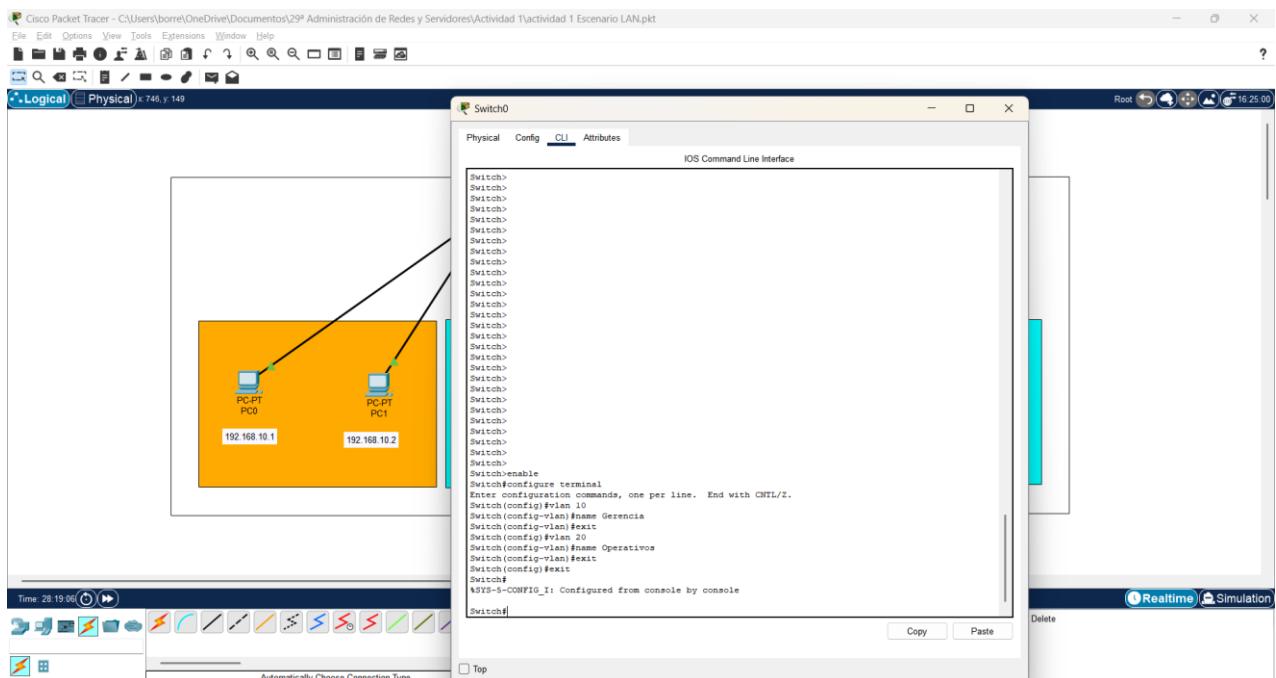
En esta parte le estaremos dando una dirección IP y una puerta de enlace a cada uno de los dispositivos siendo los dientes

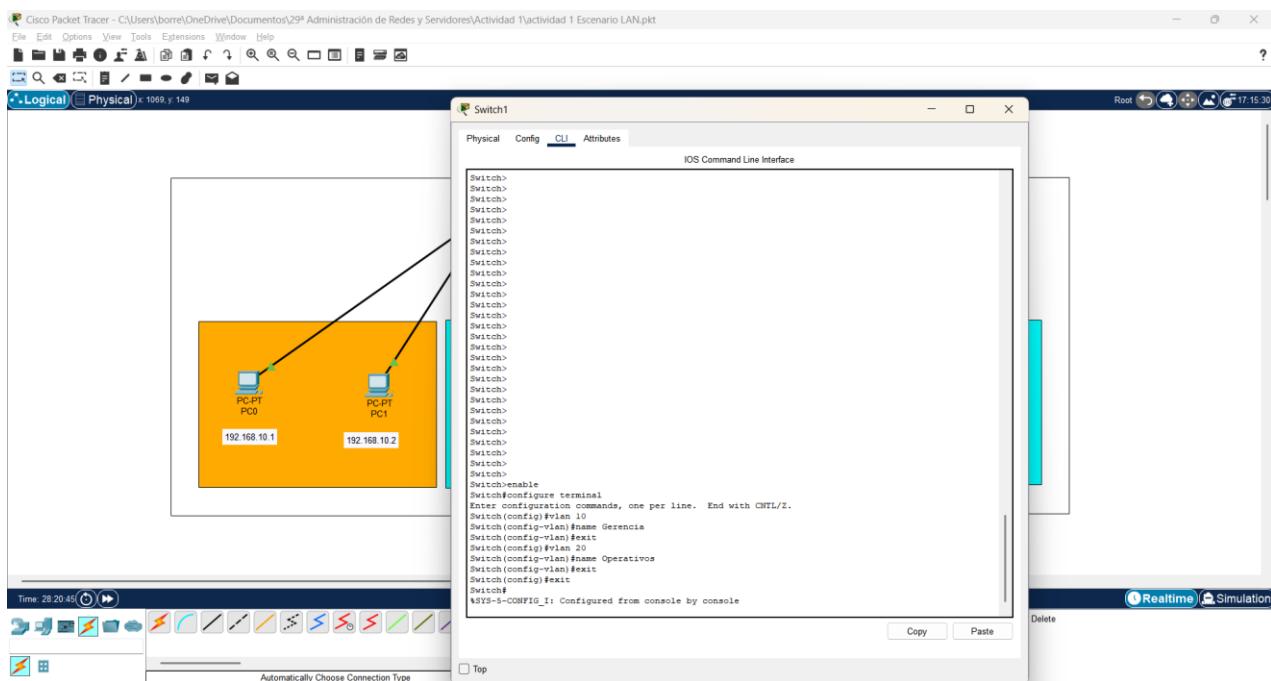
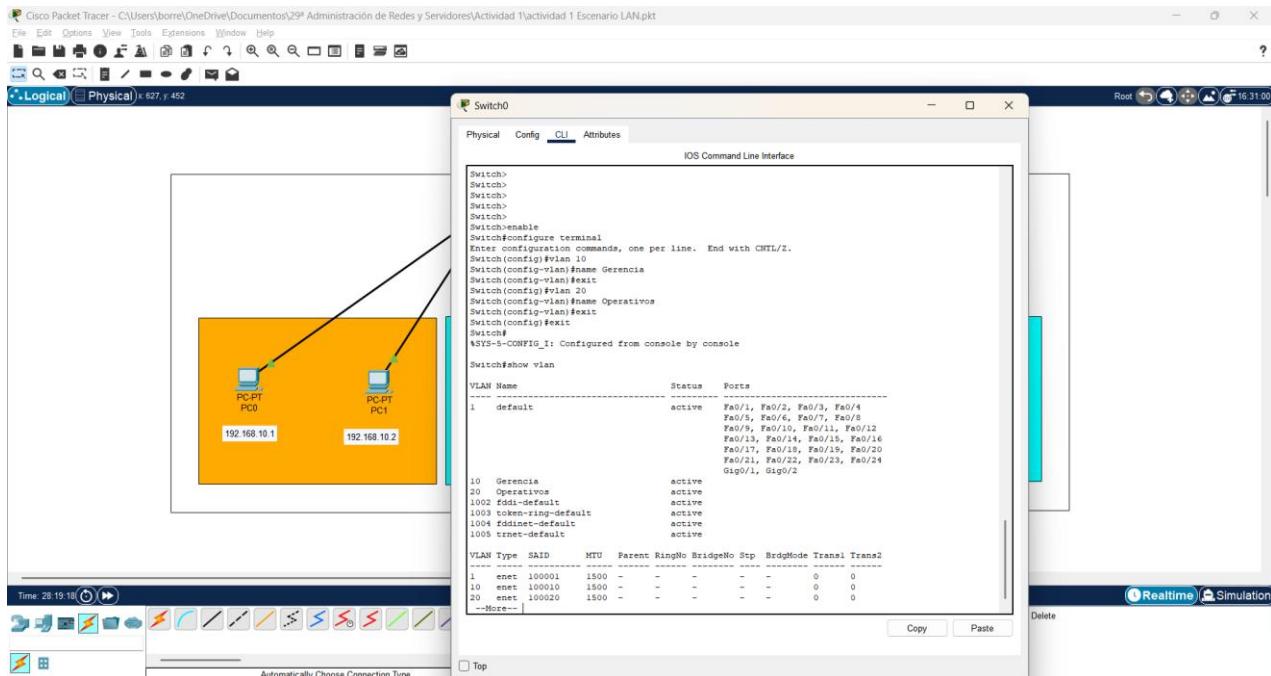
SWITCH0

1. PC0: 192.168.10.1 / 192.169.10.254
 2. PC1: 192.168.10.2 / 192.169.10.254
 3. Laptop0: 192.168.20.1 / 192.169.20.254

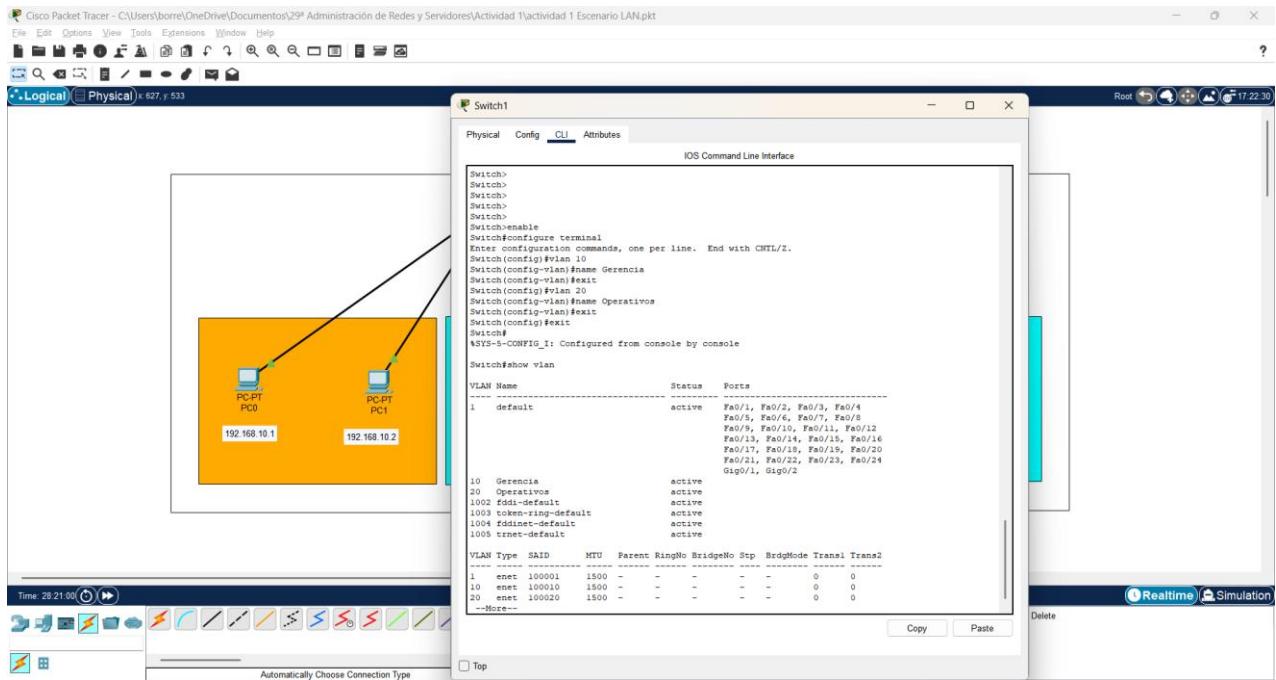
SWITCH1

1. PC2: 192.168.10.3 / 192.169.10.254
 2. Laptop1: 192.168.20.2 / 192.169.20.254
 3. Laptop2: 192.168.20.3 / 192.169.20.254

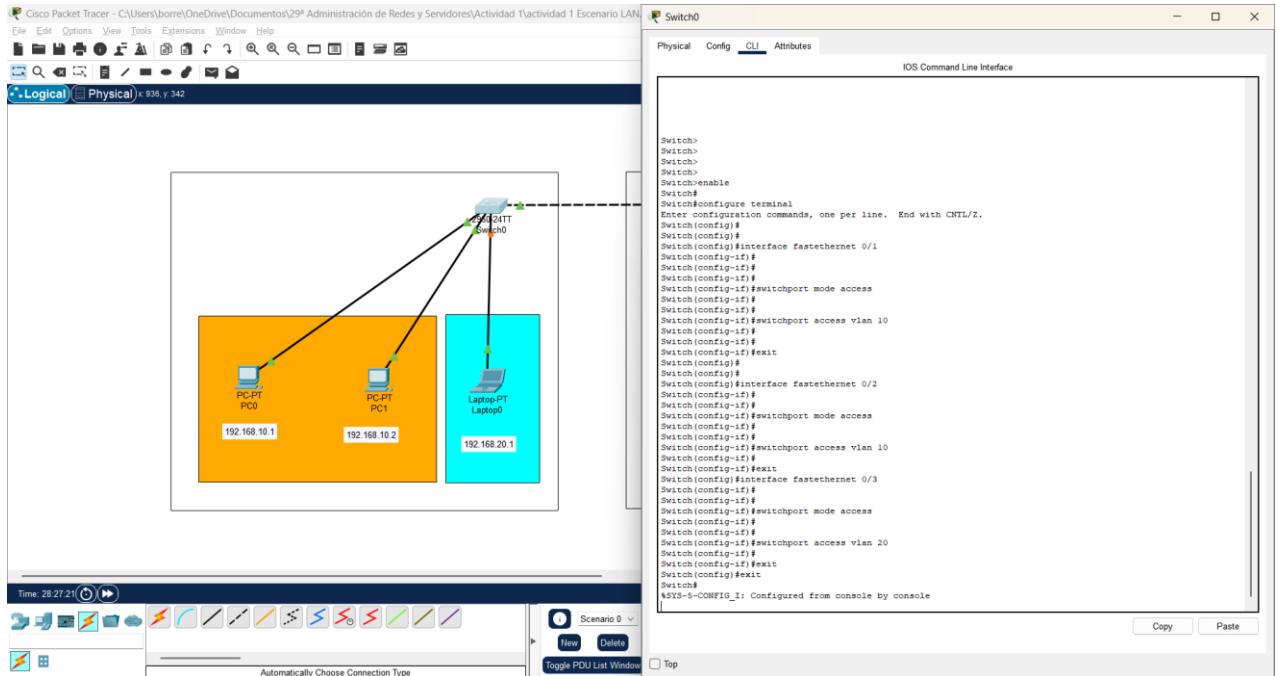


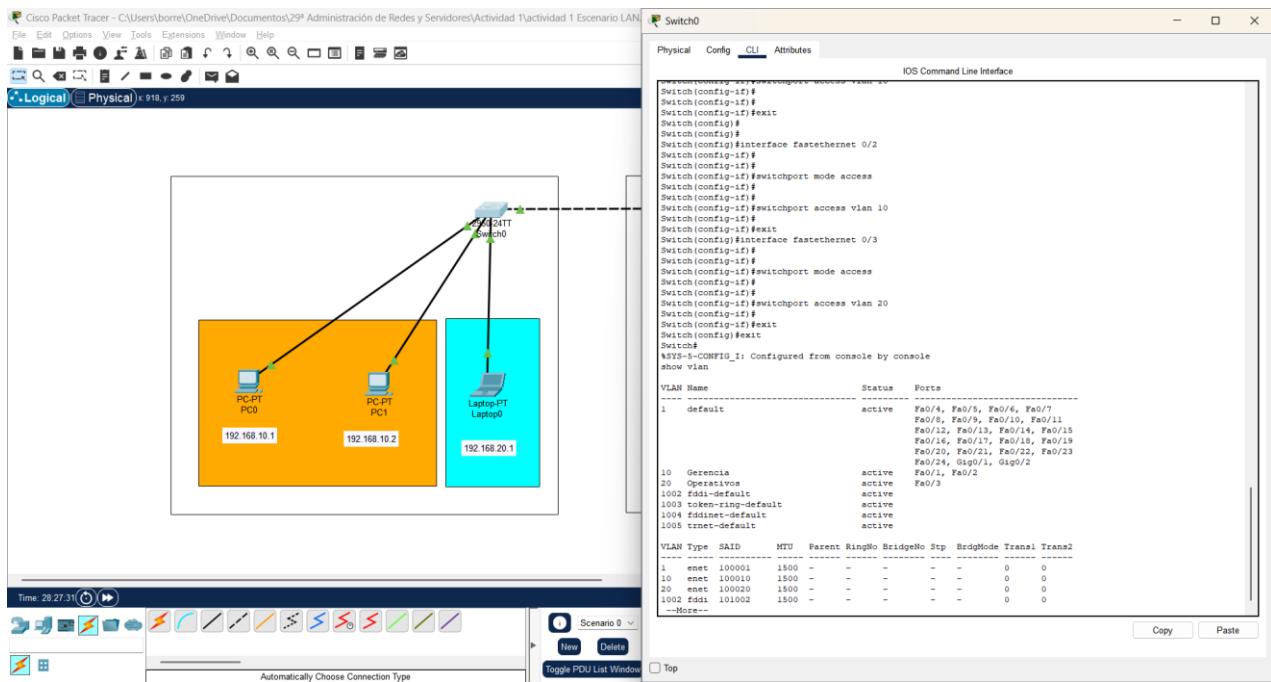


los comandos utilizados aquí son para creación de la Vlan dentro de los switch desde activar el modo privilegio, entra en configuración global para la configuración de interfaces crear vlan también asignar un nombre para las vlan y salir de la configuración.



Como vimos se estarán creando dos Vlan siendo la 10 y la 20 al igual que darles un nombre descriptivo Gerencia y Operativos.





La utilización del comando **interface fastethernet 0/1, interface fastethernet 0/2, interface fastethernet 0/3** nos permitirá seleccionar en que puerto vamos a trabajar.

El comando **switchport mode Access** asignará que este puerto solo le pertenecerá a un vlan siendo el segundo comando **switchport access vlan 10, switchport access vlan 20** marcanos que el puerto pertenecerá ya sea el 10 o 20.

Lo que en resumen seria que cada PC o laptop se conecta al switch y forme parte ala vlan correcta

En el caso seria esta la representación correcta:

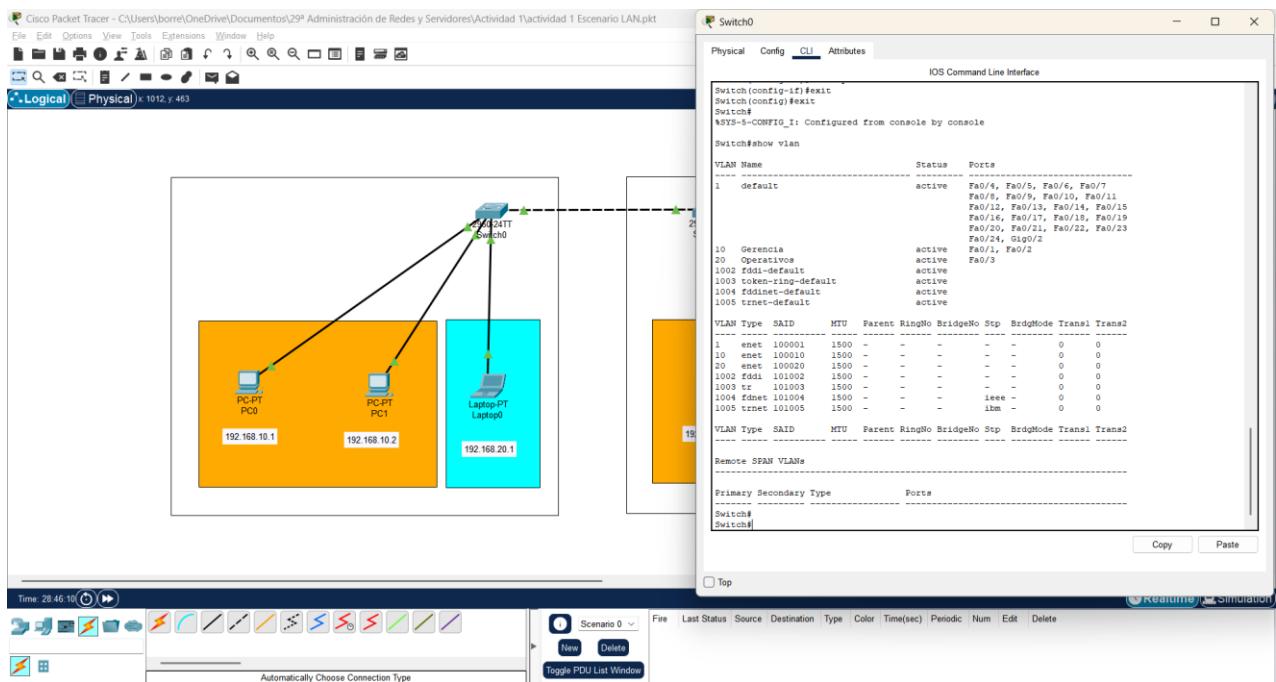
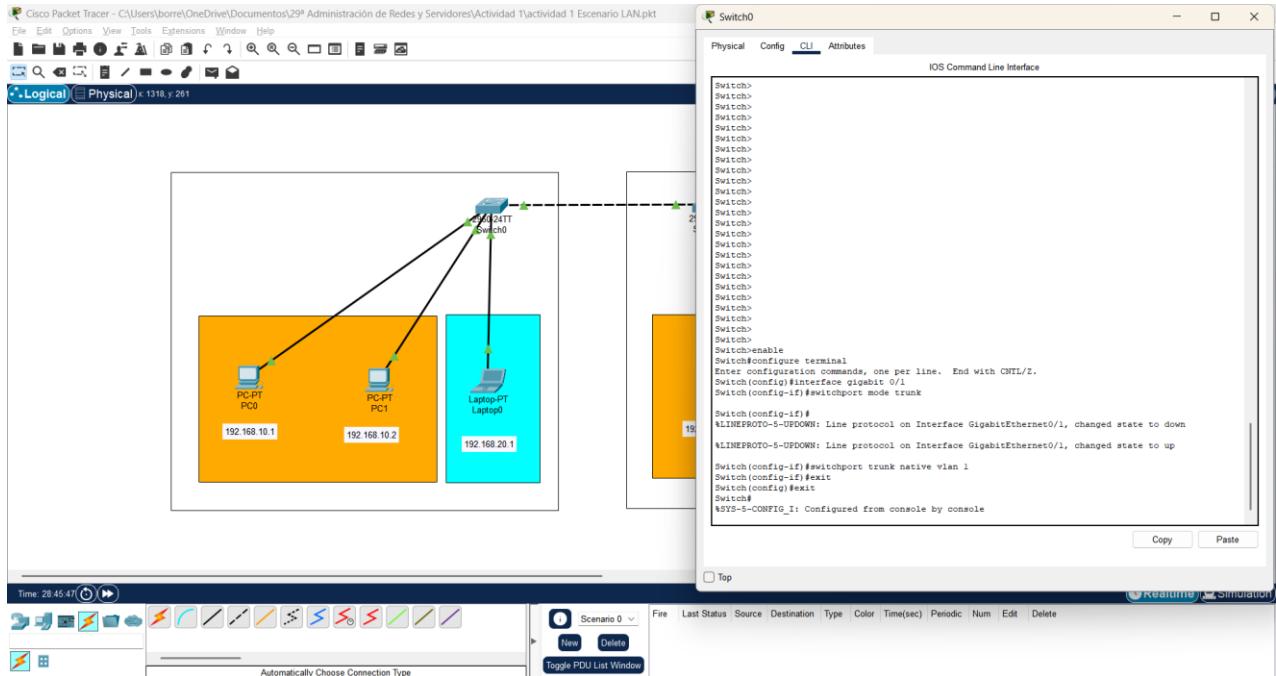
Switch0

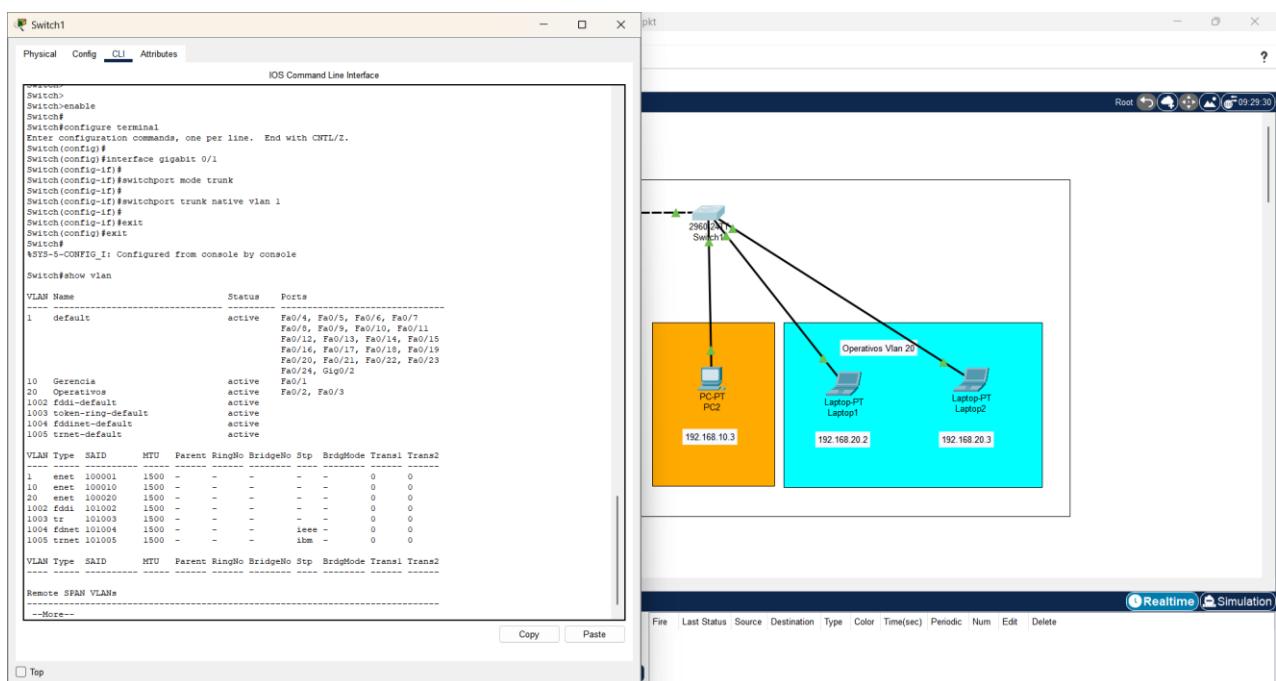
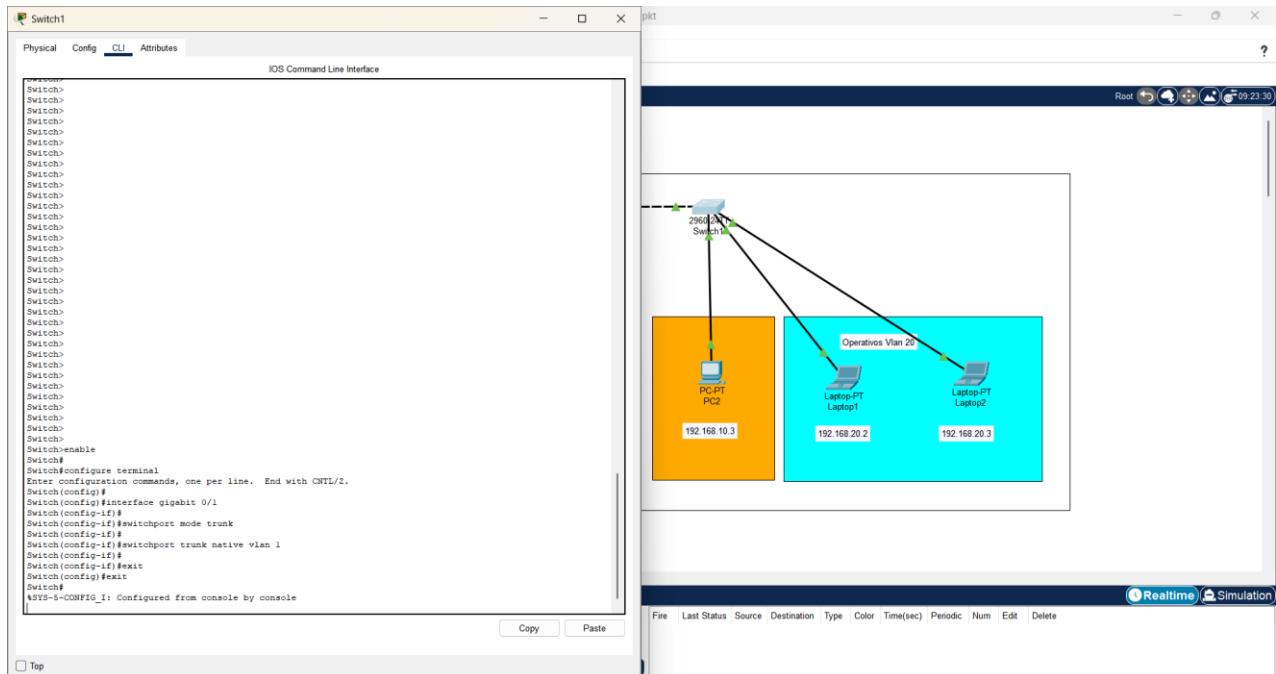
1. Puertos 0/1 y 0/2 PC de Gerencia Vlan 10
2. Puerto 0/3 PC de Operativos Vlan20

Switch1

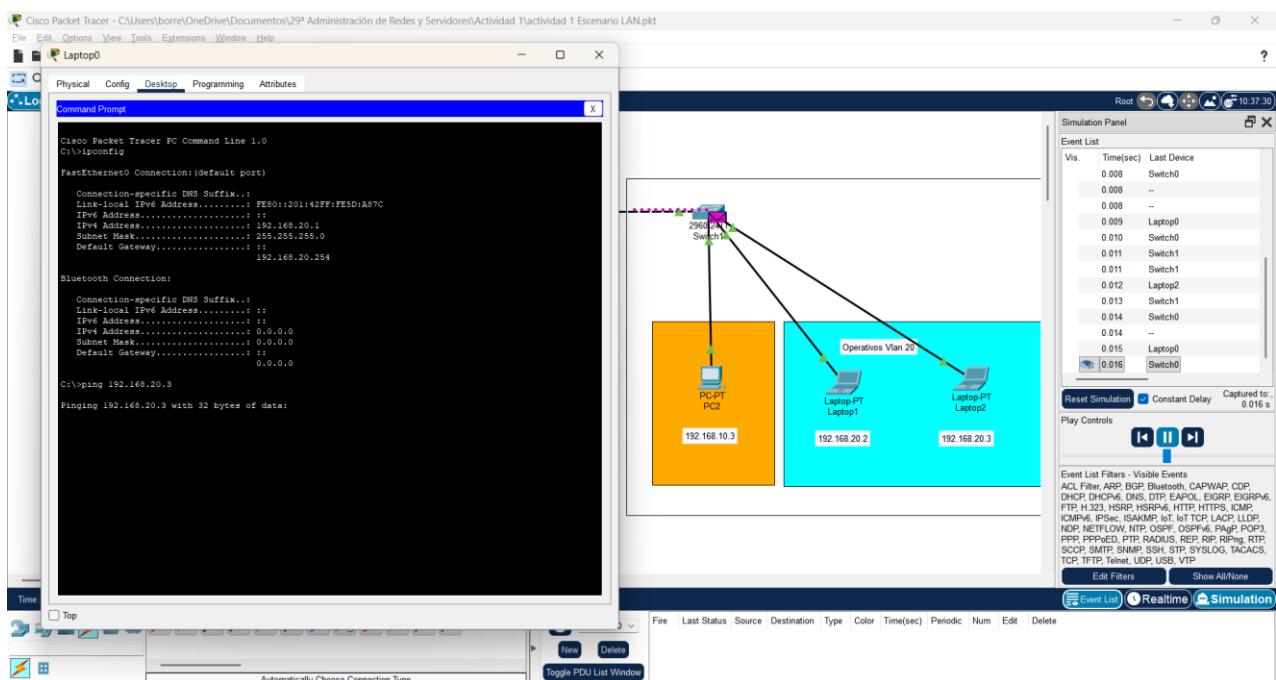
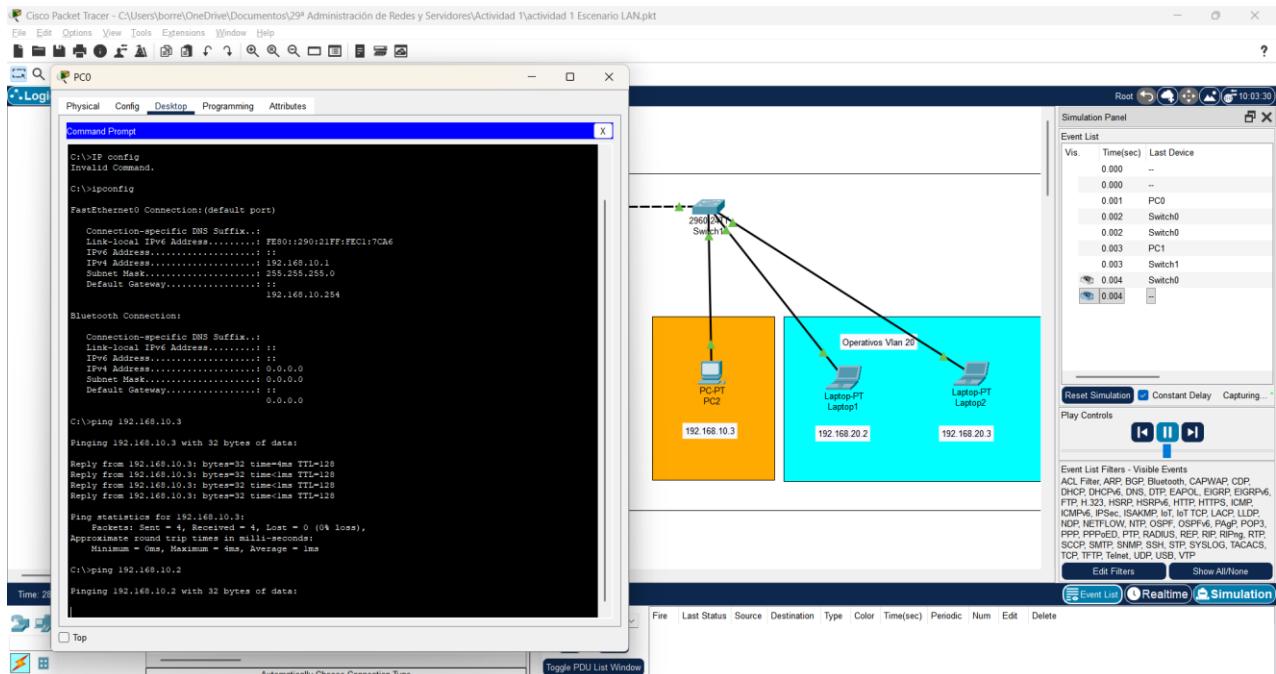
1. Puertos 0/1 PC de Gerencia Vlan10

2. Puerto 0/2 0/3 PC de Operativos Vlan20

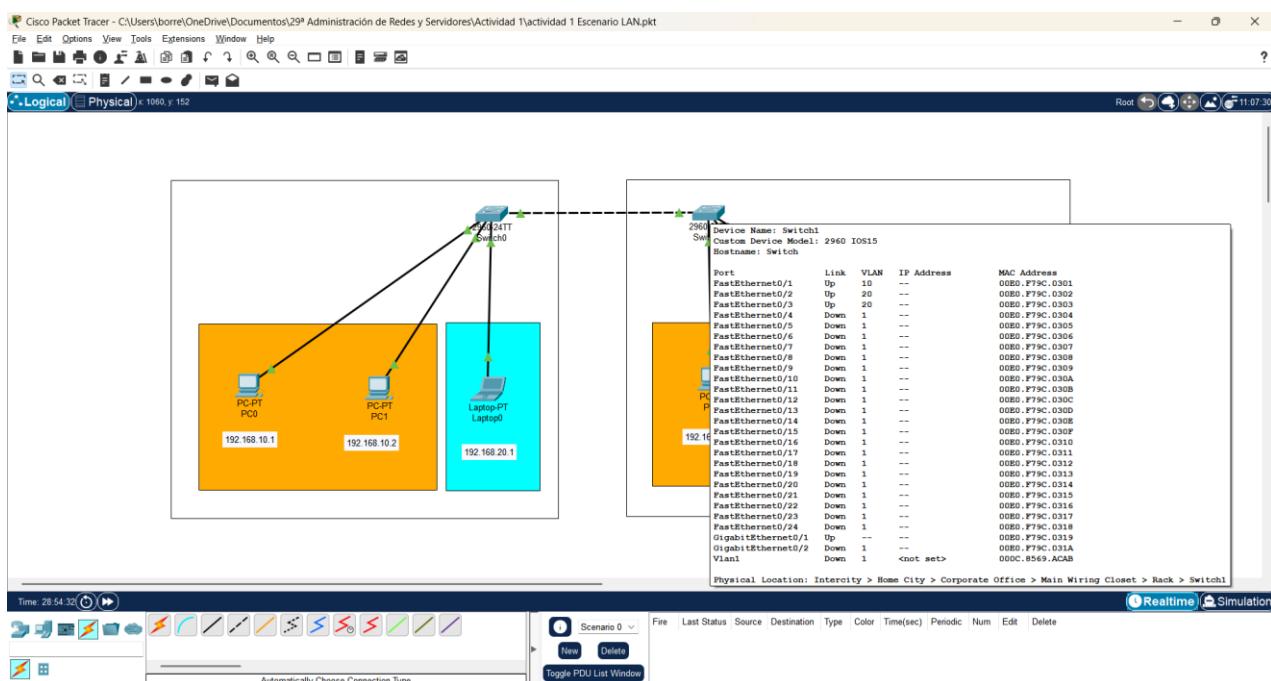
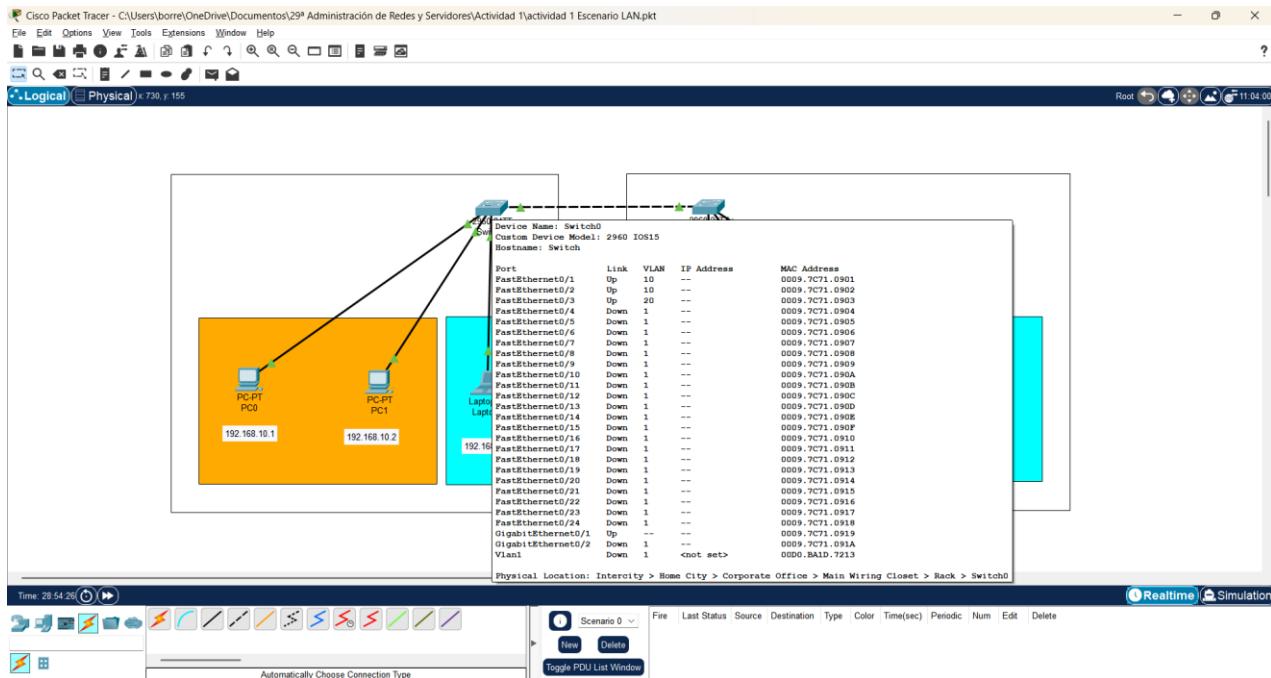




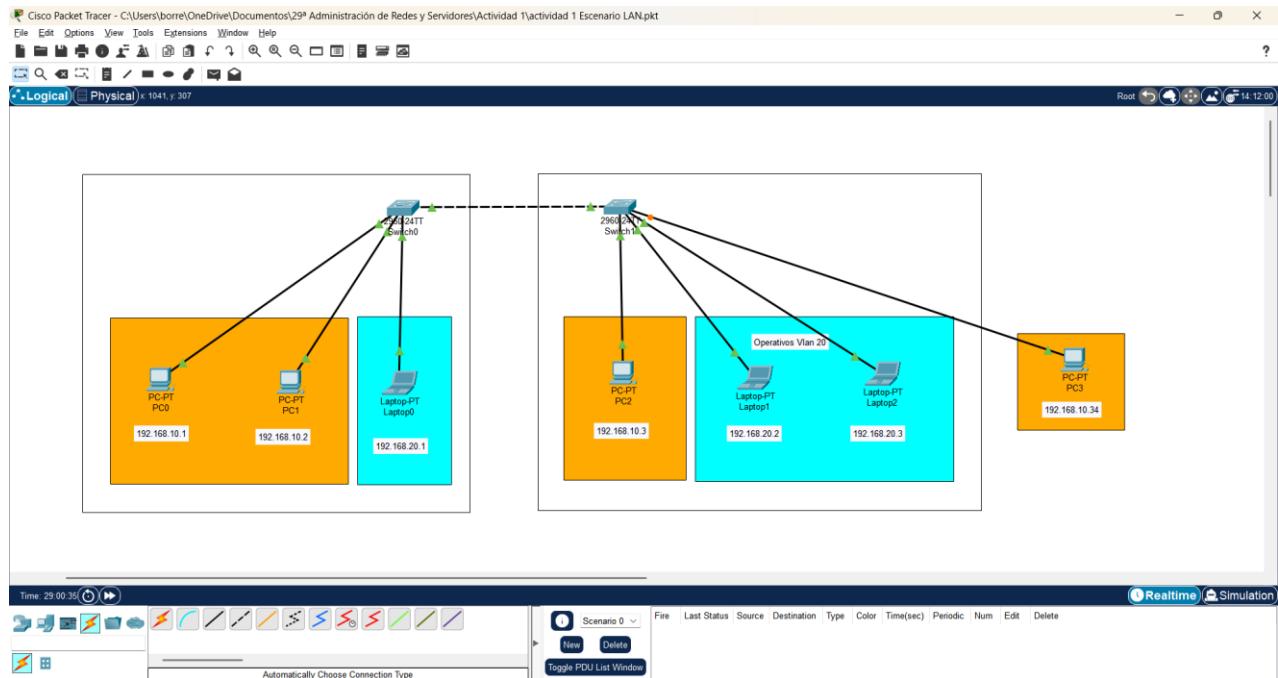
En estos comandos después de los dos primeros comandos para modo privilegio y configuración global el comando **interface Gigabit 0/1** sirve para seleccionar el puerto con el cual se va a trabajar siendo normal mente este, **switchport mode trunk** nos sirve para conectar switch entre si **switchport trunk native vlan 1** el cual va asegurar la comunicación usando la misma vlan.



Estaremos mandando ping a IP para asegurar la correcta configuración.



Vemos como es que quedo organizada los puertos.



Crearemos una nueva PC la cual nos demostrará como al no tener una configuración del puerto con la VLAN asignada no permitirá una conexión con las demás de la misma VLAN 10

```

PC3
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::201:97FF:FE87:9E53
IPv6 Address.....: :::
IPv4 Address.....: 192.168.10.34
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.10.254

Bluetooth Connection:
Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: :::
IPv6 Address.....: :::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: 0.0.0.0

C:\>ping 192.168.10.1
Pinging 192.168.10.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.10.1:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>

```

Switch1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/20, changed state to up

Switch>show vlan

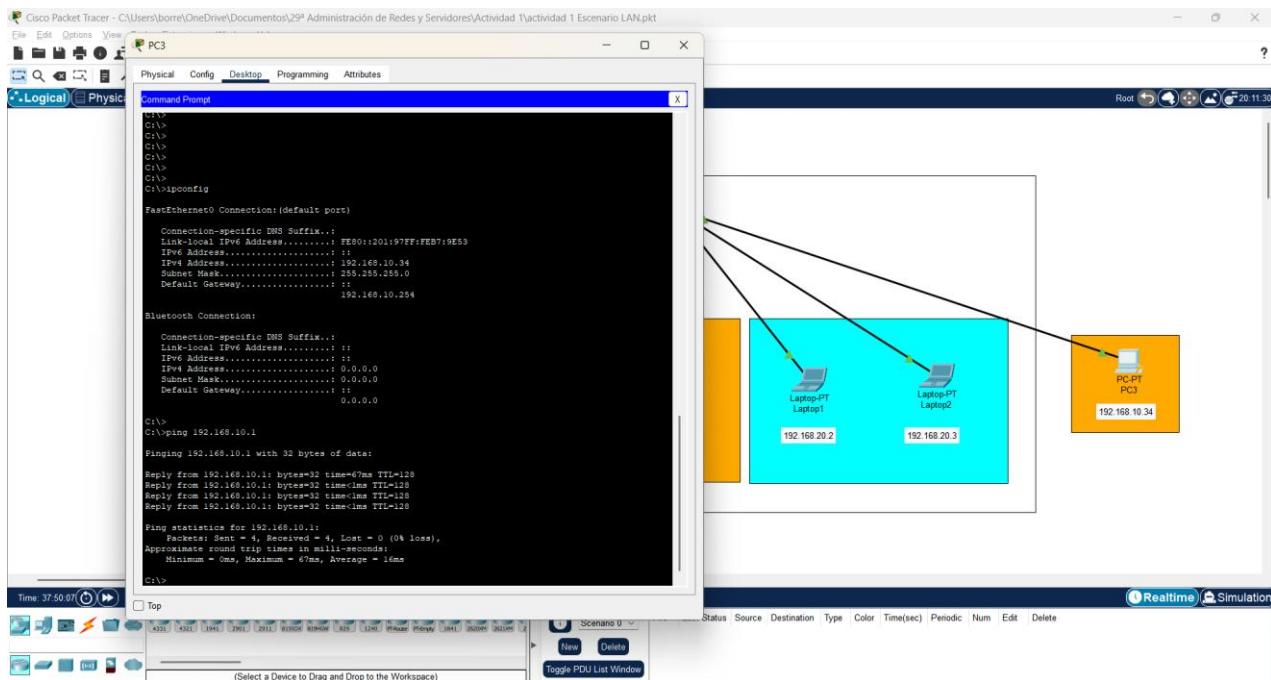
VLAN Name          Status      Ports
---- --
1    default        active     Fa0/4, Fa0/5, Fa0/6, Fa0/7
                           Fa0/8, Fa0/9, Fa0/10, Fa0/11
                           Fa0/12, Fa0/13, Fa0/14, Fa0/15
                           Fa0/16, Fa0/17, Fa0/18, Fa0/19
                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                           Giga0/2
10   Gerencia       active     Fa0/1, Fa0/20
20   Operativos     active     Fa0/2, Fa0/3
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 Transl Trans2
---- --
1    enet  100001 1500 -      -      -      -      0      0
10   enet  100010 1500 -      -      -      -      0      0
20   enet  100020 1500 -      -      -      -      0      0
1002  fddi  101002 1500 -      -      -      -      0      0
--More--

Switch con0 is now available
```

Top

Al asignar un puerto 20 a la vlan 10 a la pc tendremos una conexión demostrada en la siguiente imagen



Conclusión

Con esta segunda actividad los conceptos quedaron más claros al momento de hablar de admiración de redes desde como segmentar la red mediante Vlan esto para poder asignar puertos específicas a cada Vlan para así poder organizar a los usuarios, sin olvidar el como en Lazar los SWITCH esto mediante los puertos TRUNK siendo este importante ya que si esta no se podría enviar las Vlan correctas de un switch a otro y no habría comunicación estando las vlan 10 y 20 en diferente switch.

Todo esto me permitió entender mas como es que funciona una red real con áreas separadas.

Enlace GitHub

<https://github.com/juanitolamaravilla/Administraci-n-de-Redes-y-Servidores.git>