

UNIVERSIDAD AUTÓNOMA DE CHIAPAS || CAMPUS 01 || FACULTAD DE CONTADURÍA Y ADMINISTRACIÓN.



LICENCIATURA EN INGENIERÍA EN DESARROLLO Y
TECNOLOGÍAS DE SOFTWARE.

Materia:

Conmutadores Y Redes Inalámbricas.

Docente:

Gutiérrez Alfaro Luis, Dr.

Actividad:

Act. 1.4 || Realiza la Siguiete práctica en Packet
Tracert configuracion de Vlans.

Alumno:

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Semestre: 7

Grupo: M

Fecha:

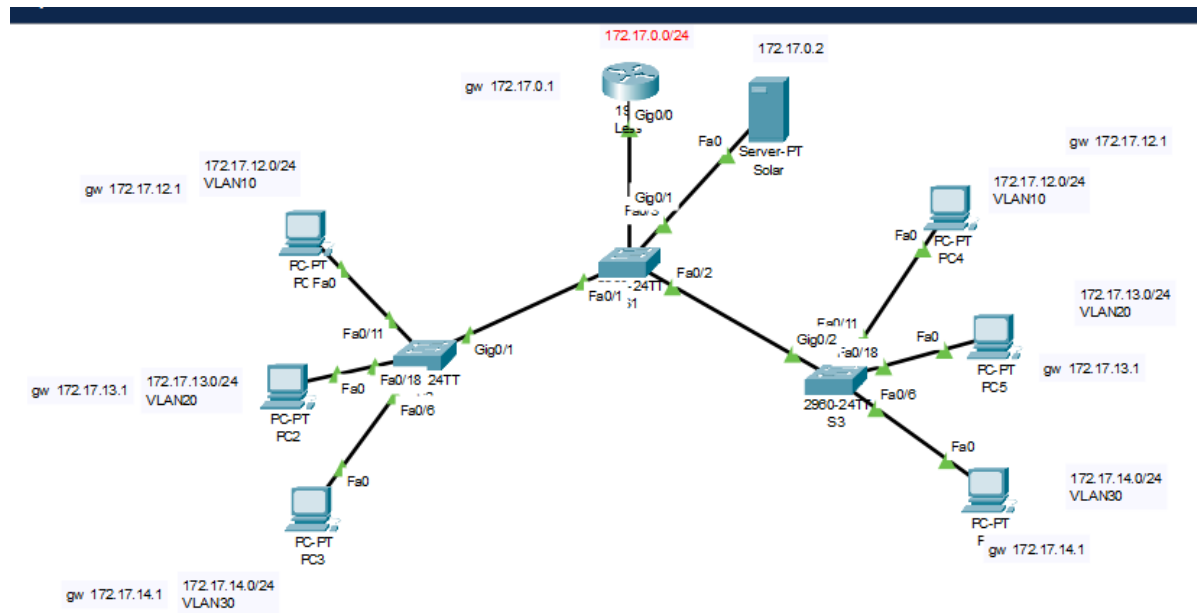
Tuxtla Gutiérrez Chiapas, 22 de agosto de 2024.

Descripción.

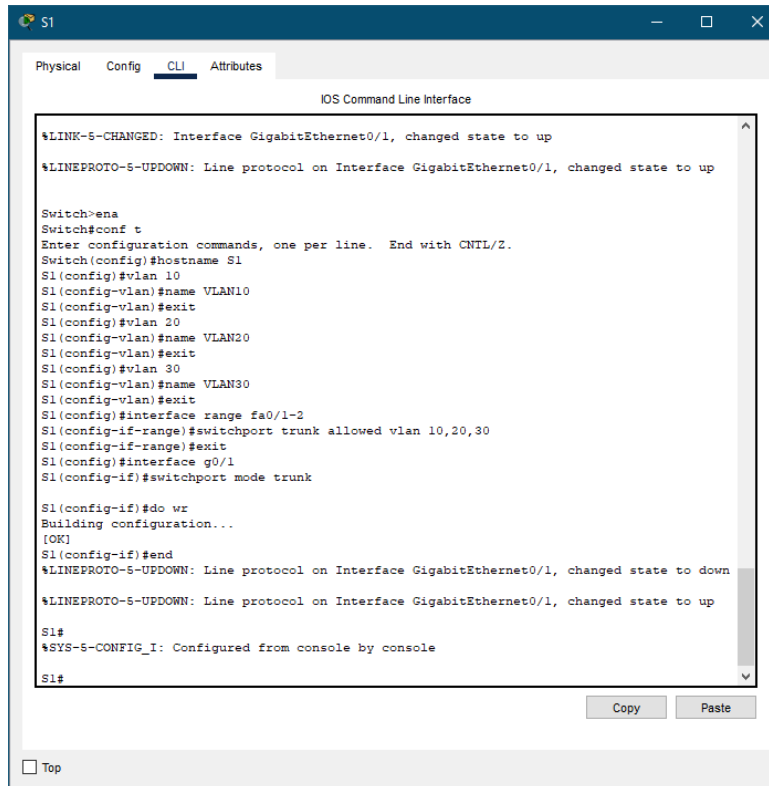
En la red hay tres vlans, con los nombres VLAN1, VLAN2, VLAN3; hay tres switches llamados S1, S2, S3; hay un router llamado Less y un server llamado Solar.

Cada switch tiene las vlans antes mencionadas, y estan conectadas entre sí, la S1 tiene conectado un router y un server. La S2 y S3 tienen conectados PC`s cada PC pertenece a una vlan.

El router y el server proporcionan DHCP a todos los equipos.



En el switch S1 se crean las vlans 10, 20, 30 y los puertos fa0/1 y fa0/2 se pone en modo troncal para las vlans antes mencionadas. En el puerto g0/1 se pone en modo troncal.



```
S1
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

Switch>ena
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1
S1(config)#vlan 10
S1(config-vlan)#name VLAN10
S1(config-vlan)#exit
S1(config)#vlan 20
S1(config-vlan)#name VLAN20
S1(config-vlan)#exit
S1(config)#vlan 30
S1(config-vlan)#name VLAN30
S1(config-vlan)#exit
S1(config)#interface range fa0/1-2
S1(config-if-range)#switchport trunk allowed vlan 10,20,30
S1(config-if-range)#exit
S1(config)#interface g0/1
S1(config-if)#switchport mode trunk

S1(config-if)#do wr
Building configuration...
[OK]
S1(config-if)#end
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

S1#
%SYS-5-CONFIG_I: Configured from console by console

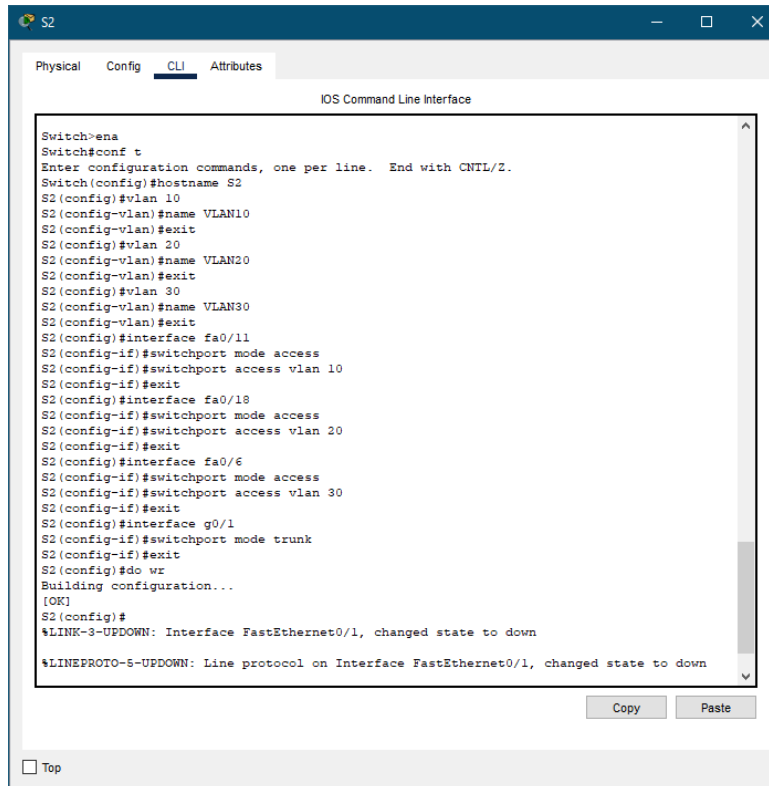
S1#
```

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☐ Top

En el switch S2 se crean las vlans 10, 20, 30 y se asigna los puertos fa0/11, fa0/18 y fa0/6 a cada vlan, respectivamente, se conectan las PC`s a dichos puertos. En el puerto g0/1 se pone en modo troncal.

Para el switch S3 es lo mismo, el único cambio es el puerto g0/1 por el puerto g0/2.



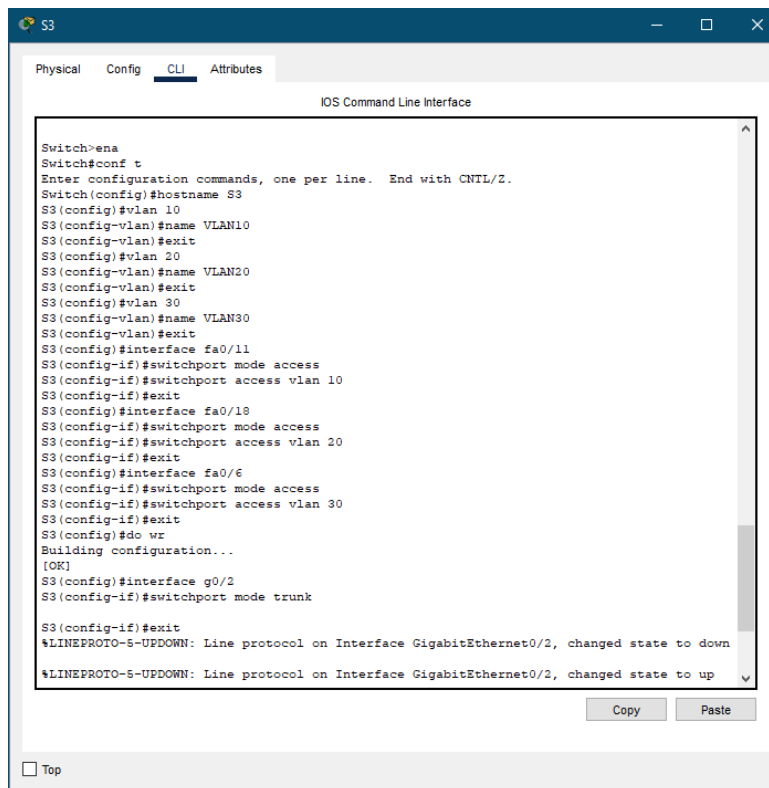
Physical Config CLI Attributes

IOS Command Line Interface

```
Switch>ena
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S2
S2(config)#vlan 10
S2(config-vlan)#name VLAN10
S2(config-vlan)#exit
S2(config)#vlan 20
S2(config-vlan)#name VLAN20
S2(config-vlan)#exit
S2(config)#vlan 30
S2(config-vlan)#name VLAN30
S2(config-vlan)#exit
S2(config)#interface fa0/11
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 10
S2(config-if)#exit
S2(config)#interface fa0/18
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 20
S2(config-if)#exit
S2(config)#interface fa0/6
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 30
S2(config-if)#exit
S2(config)#interface g0/1
S2(config-if)#switchport mode trunk
S2(config-if)#exit
S2(config)#do wr
Building configuration...
[OK]
S2(config)#
%LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
```

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Physical Config CLI Attributes

IOS Command Line Interface

```
Switch>ena
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S3
S3(config)#vlan 10
S3(config-vlan)#name VLAN10
S3(config-vlan)#exit
S3(config)#vlan 20
S3(config-vlan)#name VLAN20
S3(config-vlan)#exit
S3(config)#vlan 30
S3(config-vlan)#name VLAN30
S3(config-vlan)#exit
S3(config)#interface fa0/11
S3(config-if)#switchport mode access
S3(config-if)#switchport access vlan 10
S3(config-if)#exit
S3(config)#interface fa0/18
S3(config-if)#switchport mode access
S3(config-if)#switchport access vlan 20
S3(config-if)#exit
S3(config)#interface fa0/6
S3(config-if)#switchport mode access
S3(config-if)#switchport access vlan 30
S3(config-if)#exit
S3(config)#do wr
Building configuration...
[OK]
S3(config)#interface g0/2
S3(config-if)#switchport mode trunk
S3(config-if)#exit
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
```

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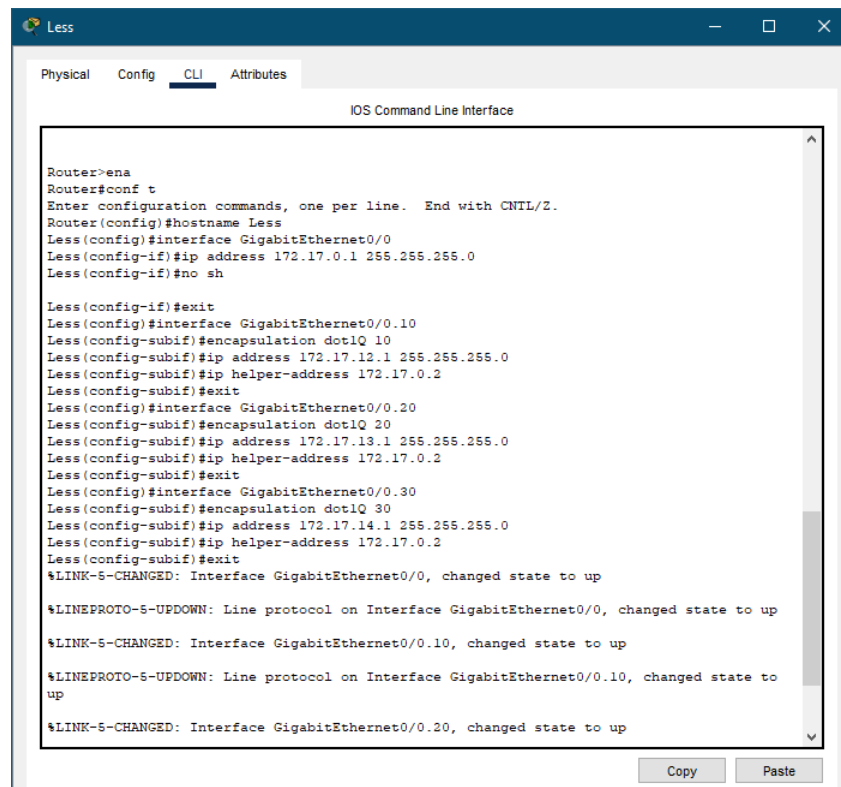
☐ Top

Configuración del router.

En la configuración del router se hace lo siguiente:

Se le asigna al puerto g0/0 una dirección ip y se activa el puerto con el comando “no sh”.

Se encapsula las vlan , cada encapsulación debe tener el identificador de la vlan, una dirección ip asignada y el ip helper al que le pedirá la ip para los equipos.



```
Router>ena
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Less
Less(config)#interface GigabitEthernet0/0
Less(config-if)#ip address 172.17.0.1 255.255.255.0
Less(config-if)#no sh

Less(config-if)#exit
Less(config)#interface GigabitEthernet0/0.10
Less(config-subif)#encapsulation dot1Q 10
Less(config-subif)#ip address 172.17.12.1 255.255.255.0
Less(config-subif)#ip helper-address 172.17.0.2
Less(config-subif)#exit
Less(config)#interface GigabitEthernet0/0.20
Less(config-subif)#encapsulation dot1Q 20
Less(config-subif)#ip address 172.17.13.1 255.255.255.0
Less(config-subif)#ip helper-address 172.17.0.2
Less(config-subif)#exit
Less(config)#interface GigabitEthernet0/0.30
Less(config-subif)#encapsulation dot1Q 30
Less(config-subif)#ip address 172.17.14.1 255.255.255.0
Less(config-subif)#ip helper-address 172.17.0.2
Less(config-subif)#exit
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

%LINK-5-CHANGED: Interface GigabitEthernet0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.10, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0.20, changed state to up
```

Configuración del Servidor.

Solar

Physical Config Services **Tools** Desktop Programming Attributes

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 172.17.0.2

Subnet Mask: 255.255.255.0

Default Gateway: 172.17.0.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::200:FFFF:FE54:490B

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: RADIUS

Username:

Password:

☐ Top

Solar

Physical Config **Services** Desktop Programming Attributes

SERVICES

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: VLAN10

Default Gateway: 172.17.12.1

DNS Server: 0.0.0.0

Start IP Address: 172.17.12.17

Subnet Mask: 255.255.255.0

Maximum Number of Users: 30

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
VLAN30	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
VLAN20	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
VLAN10	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	172.17.0.0 255.255...	512	0.0.0.0	0.0.0.0	0.0.0.0

☐ Top

Solar

Physical Config **Services** Desktop Programming Attributes

SERVICES

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: VLAN20

Default Gateway: 172.17.13.1

DNS Server: 0.0.0.0

Start IP Address: 172.17.13.17

Subnet Mask: 255.255.255.0

Maximum Number of Users: 30

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
VLAN30	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
VLAN20	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
VLAN10	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	172.17.0.0 255.255...	512	0.0.0.0	0.0.0.0	0.0.0.0

☐ Top

Solar

Physical Config **Services** Desktop Programming Attributes

SERVICES

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: VLAN30

Default Gateway: 172.17.14.1

DNS Server: 0.0.0.0

Start IP Address: 172.17.14.17

Subnet Mask: 255.255.255.0

Maximum Number of Users: 30

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
VLAN30	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
VLAN20	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
VLAN10	172.17.1... 0.0.0.0	0.0.0.0	172.17.1... 255.255...	30	0.0.0.0	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	172.17.0.0 255.255...	512	0.0.0.0	0.0.0.0	0.0.0.0

☐ Top

Probando que los equipos tomen DHCP.

PC5

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 172.17.13.25

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:B0FF:FE59:36D3

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

PC5

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful

IPv4 Address: 172.17.13.4

Subnet Mask: 255.255.255.0

Default Gateway: 172.17.13.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:B0FF:FE59:36D3

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:







Password:

Comunicación entre equipos.

Scenario 0

Delete

List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC1	PC4	ICMP		0.000	N	0	(edit)
	Successful	PC2	PC5	ICMP		0.000	N	1	(edit)
	Successful	PC3	PC6	ICMP		0.000	N	2	(edit)

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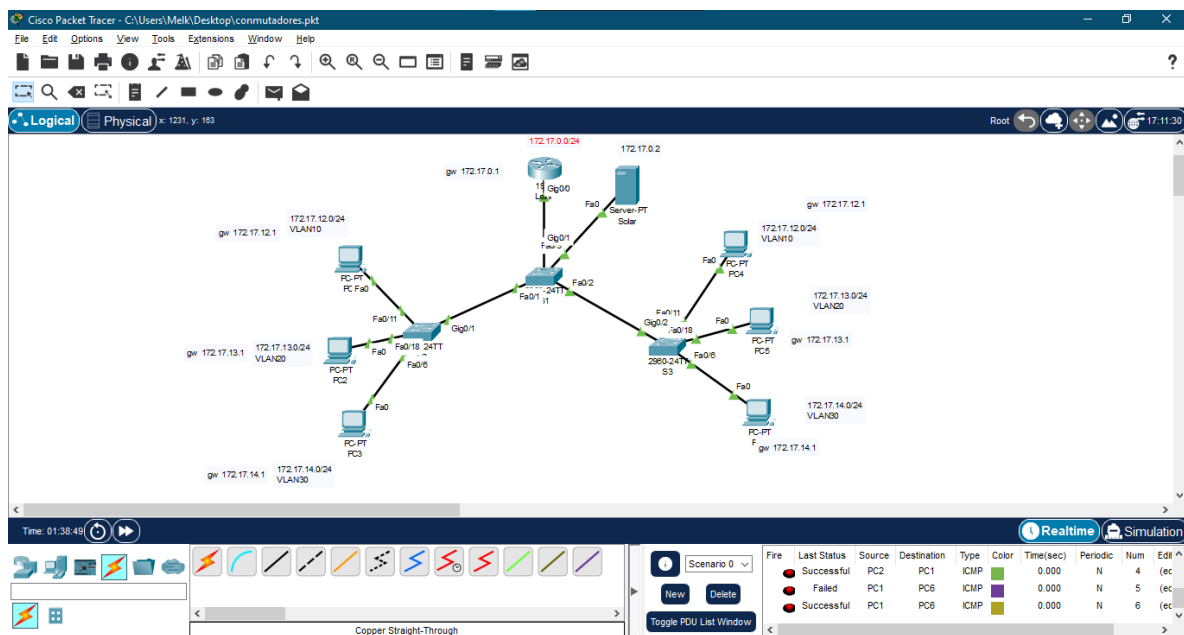
Realtime

Simulation

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC2	PC1	ICMP		0.000	N	4	(ec
	Failed	PC1	PC6	ICMP		0.000	N	5	(ec
	Successful	PC1	PC6	ICMP		0.000	N	6	(ec

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Link de github:

https://github.com/JosseeMelk/conmutadores_7m.git