INSTITUTO POLITÉCNICO NACIONAL
ESCUELA SUPERIOR DE CÓMPUTO

Administración de Servicios en Red

Practica 2.3

Troubleshooting inter VLAN

PROFESORA: Henestrosa Carrasco Leticia

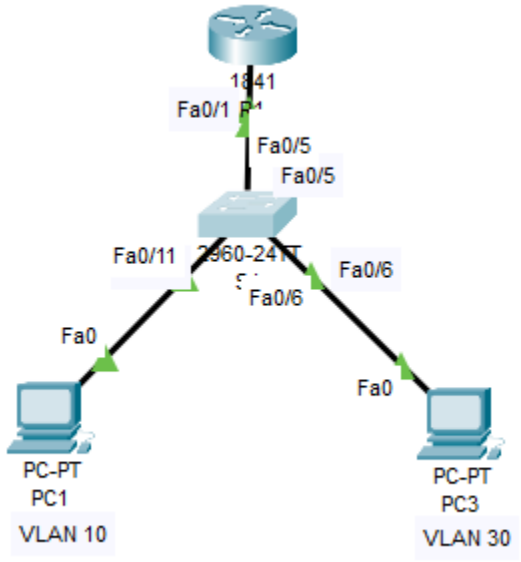
ALUMNA: Ramírez Galindo Karina

GRUPO: 4CV13

Contenido

Desarrollo en Packet tracert

Topología



Tablas de direccionamiento

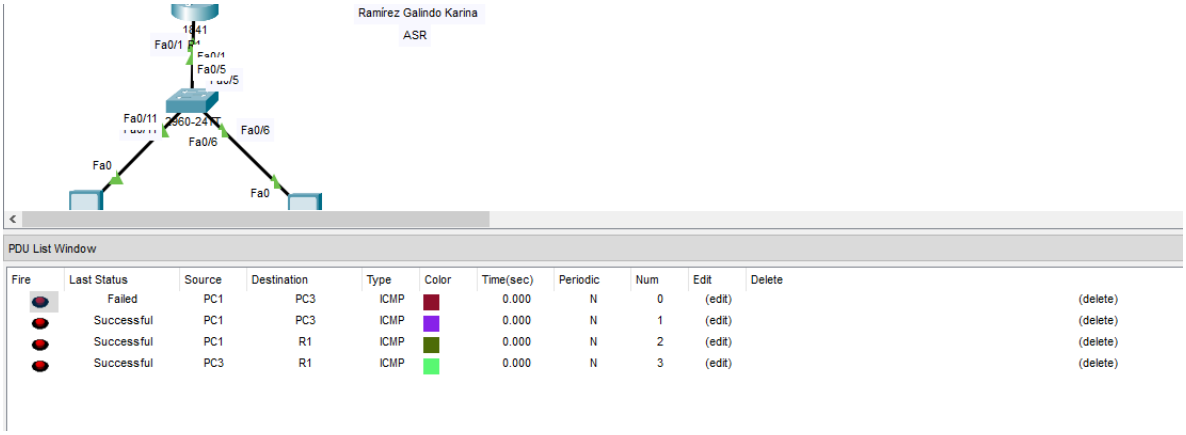
Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa 0/1.10	172.17.10.1	255.255.255.0	N/A
	Fa 0/1.30	172.17.30.1	255.255.255.0	N/A
PC1	NIC	172.17.10.10	255.255.255.0	172.17.10.1
PC3	NIC	172.17.30.10	255.255.255.0	172.17.30.1

Problemas detectados y soluciones

Problemas	Soluciones
La interfaz física Fa0/1 está activa, pero Fa0/1.10 la subinterfaz está administrativamente inactiva.	Implementar el comando no shutdown para habilitar la subinterfaz Fa0/1.10.
La PC3 está configurada con la puerta de enlace predeterminada incorrecta.	Cambiar la puerta de enlace predeterminada en PC3 de **172.17.10.1** a **172.17.30.1**
La interfaz Fa0/5 en el S1 está configurada como un acceso puerto en lugar de puerto troncal.	Use el comando **switchport mode trunk** para cambiar la interfaz de modo de acceso a modo troncal.
Las asignaciones de VLAN de subinterfaz están activadas en R1.	Ejecutar el comando **no encapsulation dot1q** para eliminar la configuración incorrecta. Después, configurar las subinterfaces con la correcta.

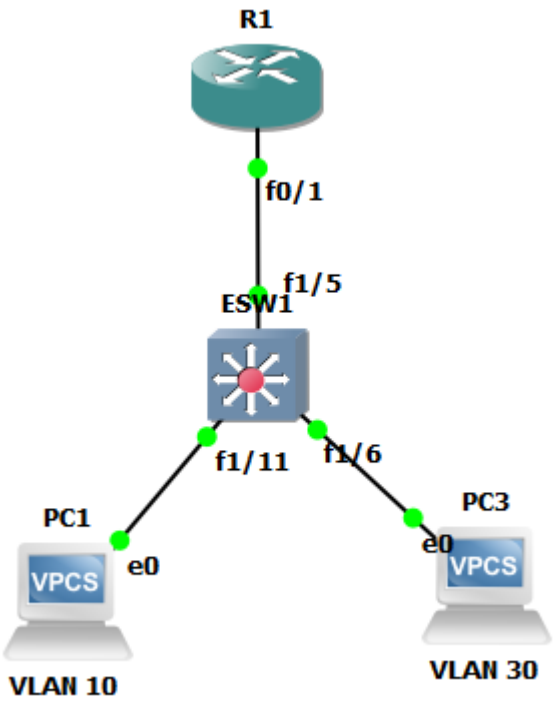
Las asignaciones configuradas no coinciden con las los que se muestran en la tabla de direccionamiento.	Usar el comando **encapsulation dot1q <vlan>.** Volver a entrar en la información correcta de la dirección IP.

Pruebas de funcionamiento



Desarrollo en GNS3

Topología



Configuración

Verificamos las vlans del ESW1

```
ESW1#sh vlan-switch

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa1/0, Fa1/1, Fa1/2, Fa1/3
                                                Fa1/4, Fa1/5, Fa1/6, Fa1/7
                                                Fa1/8, Fa1/9, Fa1/10, Fa1/11
                                                Fa1/12, Fa1/13, Fa1/14, Fa1/15
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        1002   1003
1002 fddi  101002     1500  -      -      -        -    -        1      1003
1003 tr    101003     1500  1005   0      -        -    srb      1      1002
1004 fdnet 101004     1500  -      -      1        ibm  -        0      0
1005 trnet 101005     1500  -      -      1        ibm  -        0      0
ESW1#
```

Creamos las VLAN 10 y 30

```
ESW1(config)#vlan 10
ESW1(config-vlan)#name Faculty/Staff
ESW1(config-vlan)#vlan 30
ESW1(config-vlan)#name Guest(Default)
ESW1(config-vlan)#end
ESW1#wr
*Mar  1 00:02:31.207: %SYS-5-CONFIG_I: Configured from console by console
ESW1#wr
Building configuration...
[OK]
```

Verificamos que se hayan creado correctamente:

```
ESW1#show vlan-switch brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa1/0, Fa1/1, Fa1/2, Fa1/3
                                                Fa1/4, Fa1/5, Fa1/6, Fa1/7
                                                Fa1/8, Fa1/9, Fa1/10, Fa1/11
                                                Fa1/12, Fa1/13, Fa1/14, Fa1/15
10   Faculty/Staff                    active
30   Guest(Default)                   active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup
```

Asignamos las interfaces a las VLANS

```
ESW1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
ESW1(config)#interface f1/11
ESW1(config-if)#switchport mode access
ESW1(config-if)#switchport access vlan 10
ESW1(config-if)#interface f1/6
ESW1(config-if)#switchport mode access
ESW1(config-if)#switchport access vlan 30
ESW1(config-if)#end
ESW1#wr
Building configuration...

*Mar  1 00:04:13.135: %SYS-5-CONFIG_I: Configured from console by console[OK]
```

Y volvemos a verificar que efectivamente hayan sido asignadas:

```
ESW1#show vlan-switch brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa1/0, Fa1/1, Fa1/2, Fa1/3
                                                Fa1/4, Fa1/5, Fa1/7, Fa1/8
                                                Fa1/9, Fa1/10, Fa1/12, Fa1/13
                                                Fa1/14, Fa1/15
10   Faculty/Staff                    active    Fa1/11
30   Guest(Default)                   active    Fa1/6
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup
ESW1#sh int trunk
```

Definimos la interface Fa1/5 como troncal y verificamos:

```
ESW1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
ESW1(config)#interface Fa1/5
ESW1(config-if)#switchport mode trunk
ESW1(config-if)#end
ESW1#wr
*Mar  1 00:05:37.279: %SYS-5-CONFIG_I: Configured from console by console
ESW1#wr
Building configuration...
[OK]
ESW1#sh int trunk

Port        Mode         Encapsulation  Status        Native vlan
Fa1/5       on           802.1q         trunking      1

Port        Vlans allowed on trunk
Fa1/5       1-4094

Port        Vlans allowed and active in management domain
Fa1/5       1,10,30

Port        Vlans in spanning tree forwarding state and not pruned
Fa1/5       none
ESW1#
```

Creamos las subinterfaces correspondientes en el R1

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int fa0/1
R1(config-if)#no shut
R1(config-if)#int fa0/1.10
R1(config-subif)#no shut
R1(config-subif)#int fa0/1.30
R1(config-subif)#no shut
R1(config-subif)#end
R1#w
*Mar  1 00:08:50.551: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
*Mar  1 00:08:51.551: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
R1#wr
Building configuration...
[OK]
R1#
```

Asignamos las VLAN de sub interfaz:

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int fa0/1.10
R1(config-subif)#encapsulation dot1Q 10
R1(config-subif)#ip address 172.17.10.1 255.255.255.0
*Mar  1 00:36:17.531: %SYS-5-CONFIG_I: Configured from console by console
R1(config-subif)#end
R1#
*Mar  1 00:36:30.147: %SYS-5-CONFIG_I: Configured from console by console
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int fa0/1.30
R1(config-subif)#encapsulation dot1Q 30
R1(config-subif)#ip address 172.17.30.1 255.255.255.0
R1(config-subif)#end
R1#w
*Mar  1 00:36:41.111: %SYS-5-CONFIG_I: Configured from console by console
R1#wr
Building configuration...
[OK]
R1#
```

Asignamos ip´s a las PC:

```
PC1> ip 172.17.10.10 255.255.255.0 172.17.10.1
Checking for duplicate address...
PC1 : 172.17.10.10 255.255.255.0 gateway 172.17.10.1
```

```
PC3> ip 172.17.30.10 255.255.255.0 172.17.30.1
Checking for duplicate address...
PC1 : 172.17.30.10 255.255.255.0 gateway 172.17.30.1

PC3>
```

Pruebas de funcionamiento

Por último, verificamos la conectividad

```
PC1> ping 172.17.10.1
84 bytes from 172.17.10.1 icmp_seq=1 ttl=255 time=15.354 ms
84 bytes from 172.17.10.1 icmp_seq=2 ttl=255 time=15.285 ms
84 bytes from 172.17.10.1 icmp_seq=3 ttl=255 time=15.343 ms
84 bytes from 172.17.10.1 icmp_seq=4 ttl=255 time=15.295 ms
84 bytes from 172.17.10.1 icmp_seq=5 ttl=255 time=15.404 ms

PC1> ping 172.17.30.10
172.17.30.10 icmp_seq=1 timeout
172.17.30.10 icmp_seq=2 timeout
84 bytes from 172.17.30.10 icmp_seq=3 ttl=63 time=30.278 ms
84 bytes from 172.17.30.10 icmp_seq=4 ttl=63 time=30.434 ms
84 bytes from 172.17.30.10 icmp_seq=5 ttl=63 time=30.266 ms

PC1>
```

```
PC3> ping 172.17.30.1
84 bytes from 172.17.30.1 icmp_seq=1 ttl=255 time=15.226 ms
84 bytes from 172.17.30.1 icmp_seq=2 ttl=255 time=15.501 ms
84 bytes from 172.17.30.1 icmp_seq=3 ttl=255 time=15.308 ms
84 bytes from 172.17.30.1 icmp_seq=4 ttl=255 time=15.238 ms
84 bytes from 172.17.30.1 icmp_seq=5 ttl=255 time=15.395 ms

PC3> ping 172.17.10.10
84 bytes from 172.17.10.10 icmp_seq=1 ttl=63 time=30.393 ms
84 bytes from 172.17.10.10 icmp_seq=2 ttl=63 time=30.314 ms
84 bytes from 172.17.10.10 icmp_seq=3 ttl=63 time=30.318 ms
84 bytes from 172.17.10.10 icmp_seq=4 ttl=63 time=31.082 ms
84 bytes from 172.17.10.10 icmp_seq=5 ttl=63 time=30.409 ms

PC3>
```