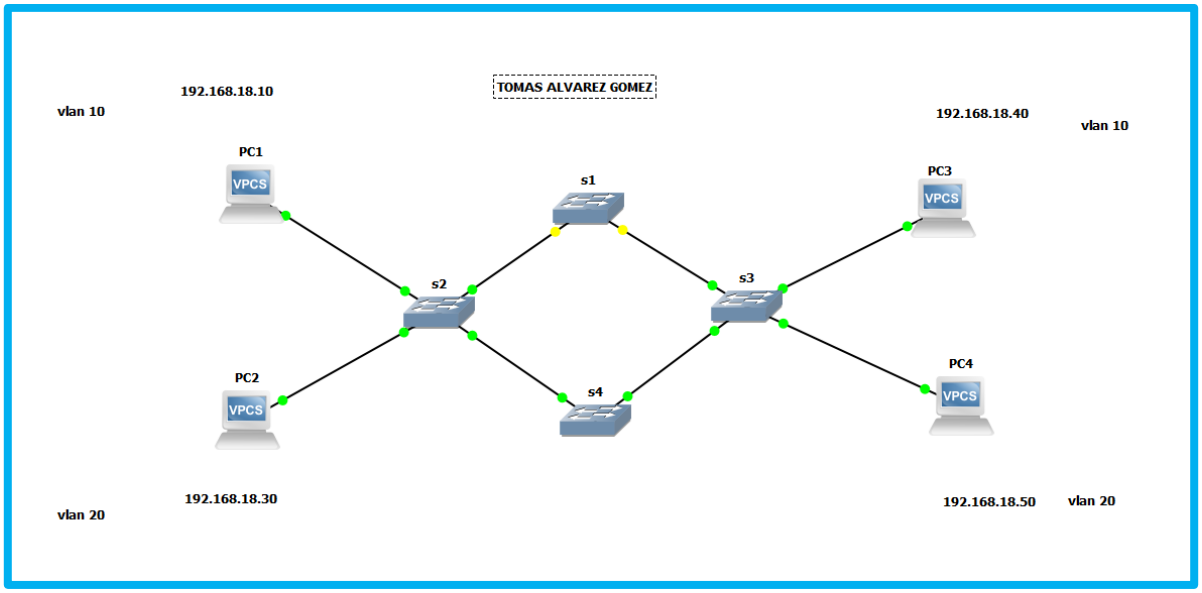
Act. 4.2 Realizar un ejercicio de protocolo SPT en GNS3

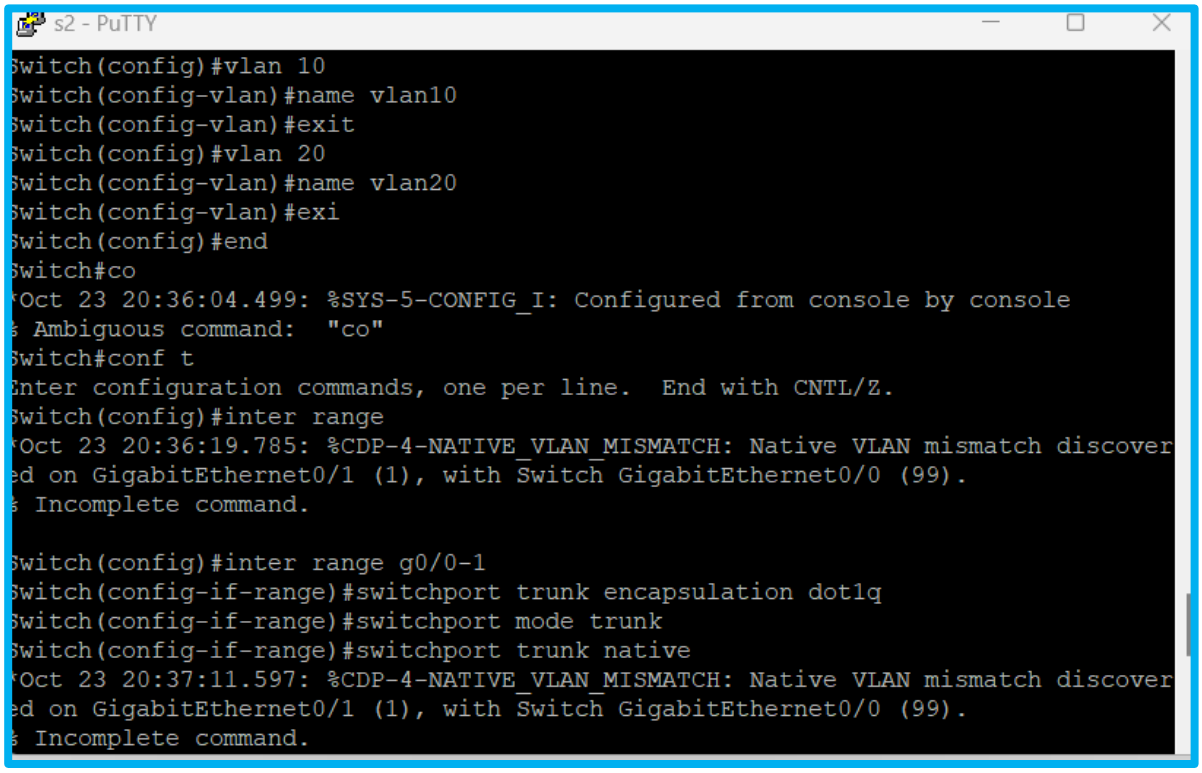


Lo primero que tenemos que hacer es crear vlasn en los cuartro switch y truncar los puertos correspondientes

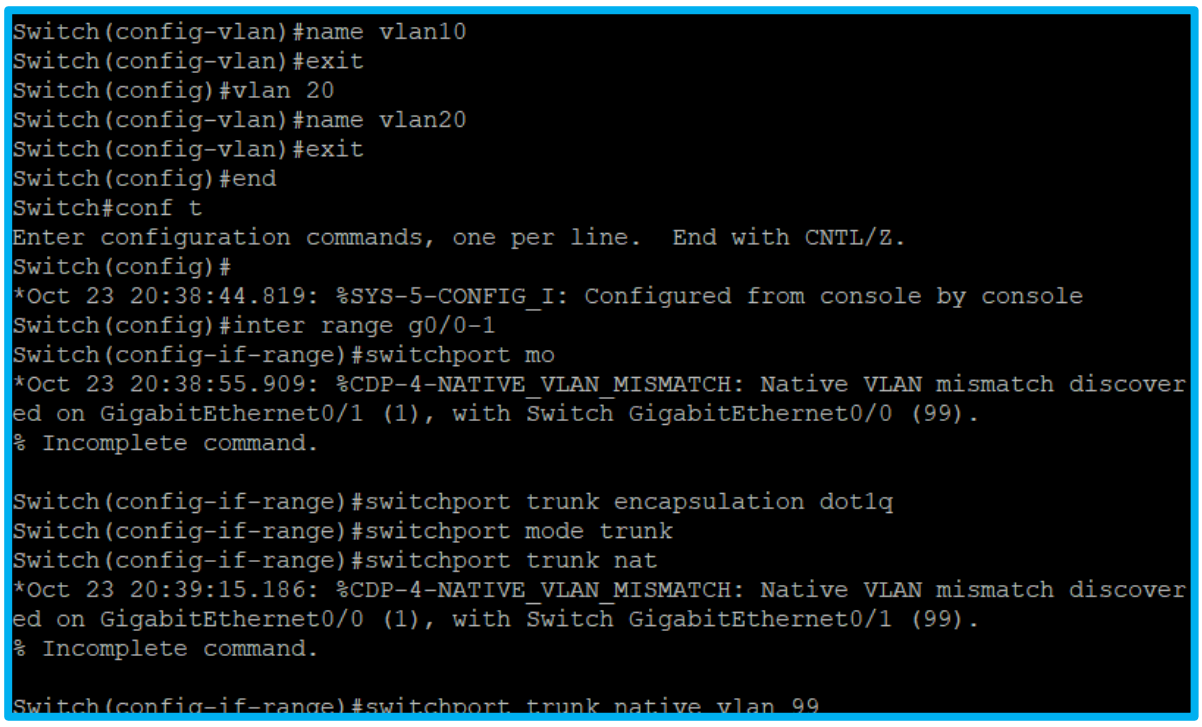
S1

```
**************************************************************************
Switch>ena
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name vlan10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
Switch(config-vlan)#exit
Switch(config)#end
Switch#
*Oct 23 20:34:30.040: %SYS-5-CONFIG_I: Configured from console by console
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#inter range g0/0-1
Switch(config-if-range)#switchport trunk encapsulation dot1q
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk native vlan 99
Switch(config-if-range)#end
Switch#
*Oct 23 20:35:26.870: %SYS-5-CONFIG_I: Configured from console by console
```

S2


s2 - PuTTY
witch(config)#vlan 10
witch(config-vlan)#name vlan10
witch(config-vlan)#exit
witch(config)#vlan 20
witch(config-vlan)#name vlan20
witch(config-vlan)#exi
witch(config)#end
witch#co
Oct 23 20:36:04.499: %SYS-5-CONFIG_I: Configured from console by console
Ambiguous command: "co"
witch#conf t
nter configuration commands, one per line. End with CNTL/Z.
witch(config)#inter range
Oct 23 20:36:19.785: %CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discover
d on GigabitEthernet0/1 (1), with Switch GigabitEthernet0/0 (99).
Incomplete command.
witch(config)#inter range g0/0-1
witch(config-if-range)#switchport trunk encapsulation dot1q
witch(config-if-range)#switchport mode trunk
witch(config-if-range)#switchport trunk native
Oct 23 20:37:11.597: %CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discover
d on GigabitEthernet0/1 (1), with Switch GigabitEthernet0/0 (99).
Incomplete command.

S3


Switch(config-vlan)#name vlan10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
Switch(config-vlan)#exit
Switch(config)#end
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
*Oct 23 20:38:44.819: %SYS-5-CONFIG_I: Configured from console by console
Switch(config)#inter range g0/0-1
Switch(config-if-range)#switchport mo
*Oct 23 20:38:55.909: %CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discover
ed on GigabitEthernet0/1 (1), with Switch GigabitEthernet0/0 (99).
% Incomplete command.
Switch(config-if-range)#switchport trunk encapsulation dot1q
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk nat
*Oct 23 20:39:15.186: %CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discover
ed on GigabitEthernet0/0 (1), with Switch GigabitEthernet0/1 (99).
% Incomplete command.
Switch(config-if-range)#switchport trunk native vlan 99

S4

```
Switch>
Switch>ena
Switch#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name vlan10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name vlan20
*Oct 23 20:37:21.261: %CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discover
ed on GigabitEthernet0/1 (1), with Switch GigabitEthernet0/0 (99).
Switch(config-vlan)#exit
Switch(config)#end
Switch#
*Oct 23 20:37:31.216: %SYS-5-CONFIG_I: Configured from console by console
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#inter range g0/0-1
Switch(config-if-range)#switchport trunk encapsulation dot1q
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk native vlan  99
```

Posteriormente tendremos que ingresarle prioridades a las vlan que creamos.

S1

```
Switch(config)#
Switch(config)#
Switch(config)#
Switch(config)#
Switch(config)#spanning-tre vlan 1 priority 4096
Switch(config)#spanning-tre vlan 10 priority 4096
Switch(config)#spanning-tre vlan 20 priority 8192
Switch(config)#exit
Switch#
Switch#
*Oct 23 20:45:02.287: %SYS-5-CONFIG_I: Configured from conso
Switch#wr
```

S4

```
Switch>
Switch>
Switch>ena
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/
Switch(config)#spanning-tre vlan 1 priority 8192
Switch(config)#spanning-tre vlan 10 priority 8192
Switch(config)#spanning-tre vlan 20 priority 12288
Switch(config)#exit
Switch#
*Oct 23 20:54:51.745: %SYS-5-CONFIG_I: Configured from cons
Switch#wr
Building configuration
```

Ahora entraremos a la configuración de spanning-tre el el switch s1

La vlan 1 tiene como raíz al switch 1 y de igual forma con las demás vlan la 10 y la 20

```
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID     Priority    4097
              Address     0ca9.5361.0000
              This bridge is the root
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    4097   (priority 4096 sys-id-ext 1)
              Address     0ca9.5361.0000
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300 sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
```

```
VLAN0010
  Spanning tree enabled protocol ieee
  Root ID     Priority    4106
              Address     0ca9.5361.0000
              This bridge is the root
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    4106   (priority 4096 sys-id-ext 10)
              Address     0ca9.5361.0000
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300 sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
Gi0/0               Desg FWD 4         128.1    P2p
Gi0/1               Desg FWD 4         128.2    P2p


VLAN0020
  Spanning tree enabled protocol ieee
  Root ID     Priority    8212
              Address     0ca9.5361.0000
              This bridge is the root
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    8212   (priority 8192 sys-id-ext 20)
              Address     0ca9.5361.0000
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300 sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
Gi0/0               Desg FWD 4         128.1    P2p
```

Ahora entramos a la configuración spanning-tre del switch 4.

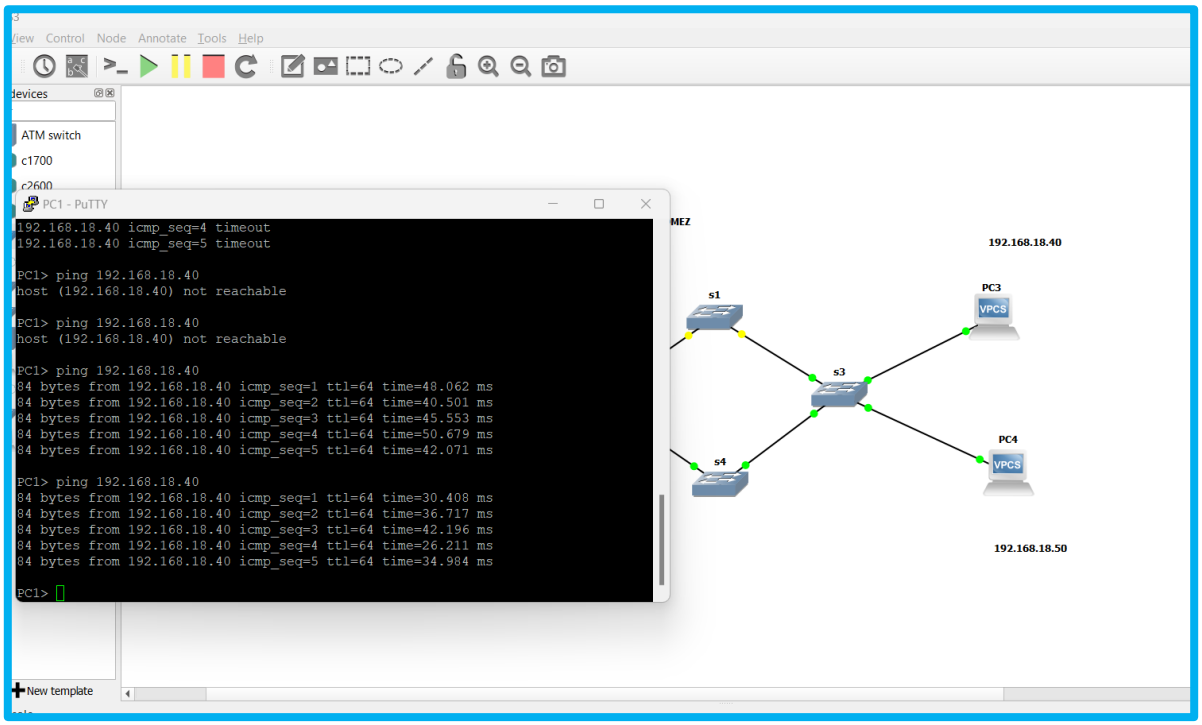
Las vlan 1,10,20 no tiene como raíz al switch 4

```
VLAN0001
  Spanning tree enabled protocol ieee
  Root ID     Priority    4097
              Address     0ca9.5361.0000
              Cost        8
              Port        2 (GigabitEthernet0/1)
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    8193   (priority 8192 sys-id-ext 1)
              Address     0c7b.01a9.0000
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300 sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
Gi0/0               Altn BLK 4         128.1    P2p
Gi0/1               Root FWD 4         128.2    P2p
Gi0/2               Desg FWD 4         128.3    P2p
Gi0/3               Desg FWD 4         128.4    P2p
```

```
VLAN0010
  Spanning tree enabled protocol ieee
  Root ID     Priority    4106
              Address     0ca9.5361.0000
              Cost        8
              Port        2 (GigabitEthernet0/1)
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    8202   (priority 8192 sys-id-ext 10)
              Address     0c7b.01a9.0000
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300 sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
Gi0/0               Altn BLK 4         128.1    P2p
Gi0/1               Root FWD 4         128.2    P2p


VLAN0020
  Spanning tree enabled protocol ieee
  Root ID     Priority    8212
              Address     0ca9.5361.0000
              Cost        8
              Port        2 (GigabitEthernet0/1)
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    12308  (priority 12288 sys-id-ext 20)
              Address     0c7b.01a9.0000
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300 sec

Interface           Role Sts Cost      Prio.Nbr Type
------------------- ---- --- --------- -------- --------------------------------
Gi0/0               Altn BLK 4         128.1    P2p
Gi0/1               Root FWD 4         128.2    P2p
```

Lo último que tendríamos que hacer es hacer una prueba deshabilitando el switch root para ver si el switch secundario hacer su trabajo.

Deshabilitaremos el switch 1



Por un momento se pierde la conexión y ya no se pueden enviar paquetes, pero después de un poco de tiempo se reestablece la conexión.

En este caso hicimos un ping de la pc1 a la pc3 que son parte de la vlan 10