

Act. 4.2 Relizar un ejercicio de protocolo SPT en GNS3



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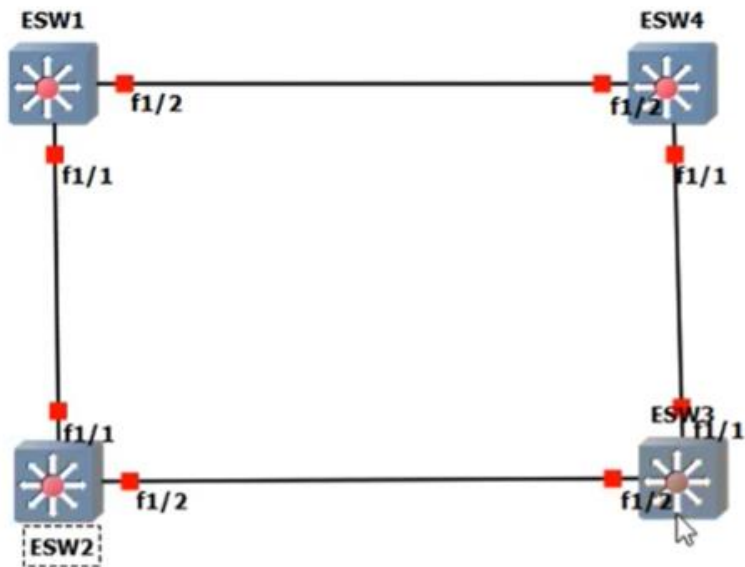
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Carrera: LITDS

Ejemplo:

Si tenemos la siguiente red, el protocolo STP nos ayuda a prevenir bucles de red y minimizar redundancia



Primero veremos cual tiene el root bridge para hacer esto ponemos
Sh spanning tree vlan 1 brief

```

Alias(exec)      : vl - "show vlan-switch brief" command
Alias(configure): va X - macro to add vlan X
Alias(configure): vd X - macro to delete vlan X
*****

ESW1>
ESW1>en
ESW1#sh span
ESW1#sh spanning-tree vlan 1 bri
ESW1#sh spanning-tree vlan 1 bri

VLAN1
  Spanning tree enabled protocol ieee
  Root ID      Priority      32768
               Address      c201.03d7.0000
               This bridge is the root
               Hello Time    2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID    Priority      32768
               Address      c201.03d7.0000
               Hello Time    2 sec  Max Age 20 sec  Forward Delay 15 sec
               Aging Time    300

Interface
Name          Port ID Prio Cost  Sts Cost  Bridge ID          Port ID
-----
FastEthernet1/1 128.42 128   19 FWD   0 32768 c201.03d7.0000 128.42
FastEthernet1/2 128.43 128   19 FWD   0 32768 c201.03d7.0000 128.43

ESW1#

```

Anotaremos el id del bridge y veremos porque el switch 1 es el root bridge

Switch 2:

```

Bridge ID    Priority      32768
Address      c202.03e7.0000
Hello Time    2 sec  Max Age 20 sec  Forward Delay 15 sec
Aging Time    300

```

Switch 3:

```
ESW3#sh spanning-tree vlan 1 bri
```

VLAN1

```
Spanning tree enabled protocol ieee
Root ID    Priority    32768
           Address    c201.03d7.0000
           Cost       38
           Port       43 (FastEthernet1/2)
           Hello Time 2 sec  Max Age 20 sec  Forward Delay 15 sec

Bridge ID   Priority    32768
           Address    c203.03f7.0000
           Hello Time 2 sec  Max Age 20 sec  Forward Delay 15 sec
           Aging Time 300
```

Interface Name	Port ID	Prio	Cost	Sts	Cost	Designated Bridge ID	Port ID
FastEthernet1/1	128.42	128	19	BLK	19	32768 c204.0407.0000	128.42
FastEthernet1/2	128.43	128	19	FWD	19	32768 c202.03e7.0000	128.43

El estado del fast ethernet 1/1 aparece como BLK (bloqueado)

Switch 4:

```
ESW4#sh spanning-tree vlan 1 bri
```

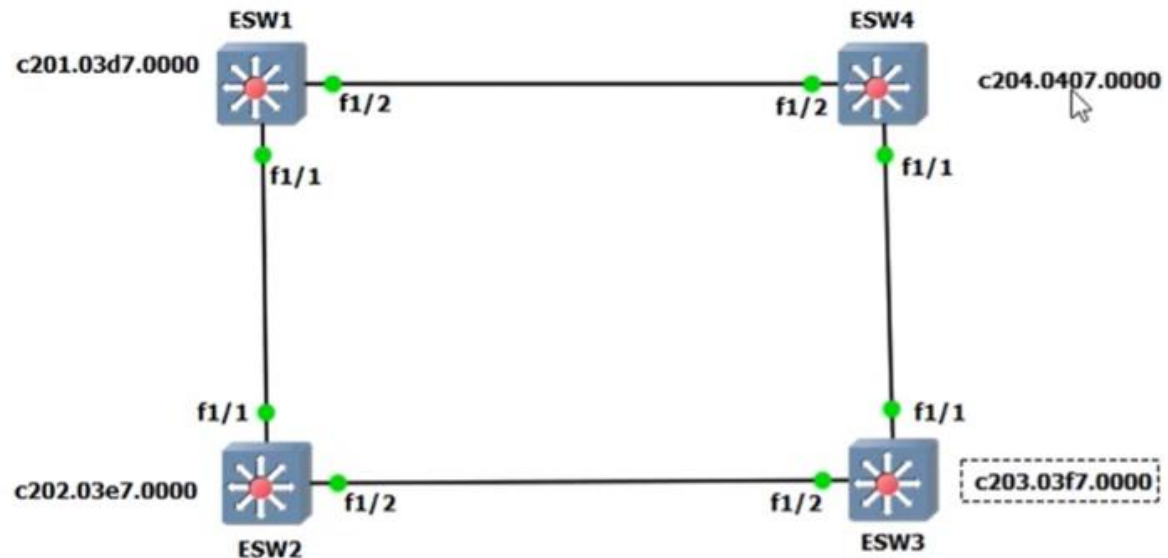
VLAN1

```
Spanning tree enabled protocol ieee
Root ID    Priority    32768
           Address    c201.03d7.0000
           Cost       19
           Port       43 (FastEthernet1/2)
           Hello Time 2 sec  Max Age 20 sec  Forward Delay 15 sec

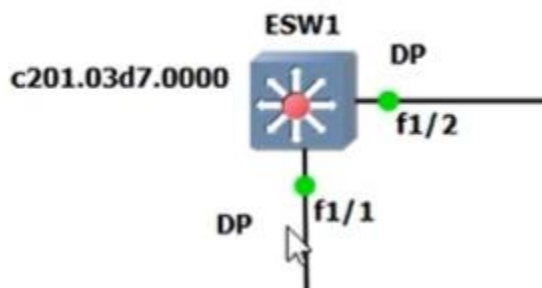
Bridge ID   Priority    32768
           Address    c204.0407.0000
           Hello Time 2 sec  Max Age 20 sec  Forward Delay 15 sec
           Aging Time 300
```

Interface Name	Port ID	Prio	Cost	Sts	Cost	Designated Bridge ID	Port ID
FastEthernet1/1	128.42	128	19	FWD	19	32768 c204.0407.0000	128.42
FastEthernet1/2	128.43	128	19	FWD	0	32768 c201.03d7.0000	128.43

Se vera asi:



Podemos suponer una cosa, el root bridge ese el que tiene el ID mas pequeño, en este caso el Switch 1 comienza con 201, haciendolo el mas pequeño y haciendolo el root bridge, los puertos del switch 1 tambien serán designados, para que otros switches se puedan conectar

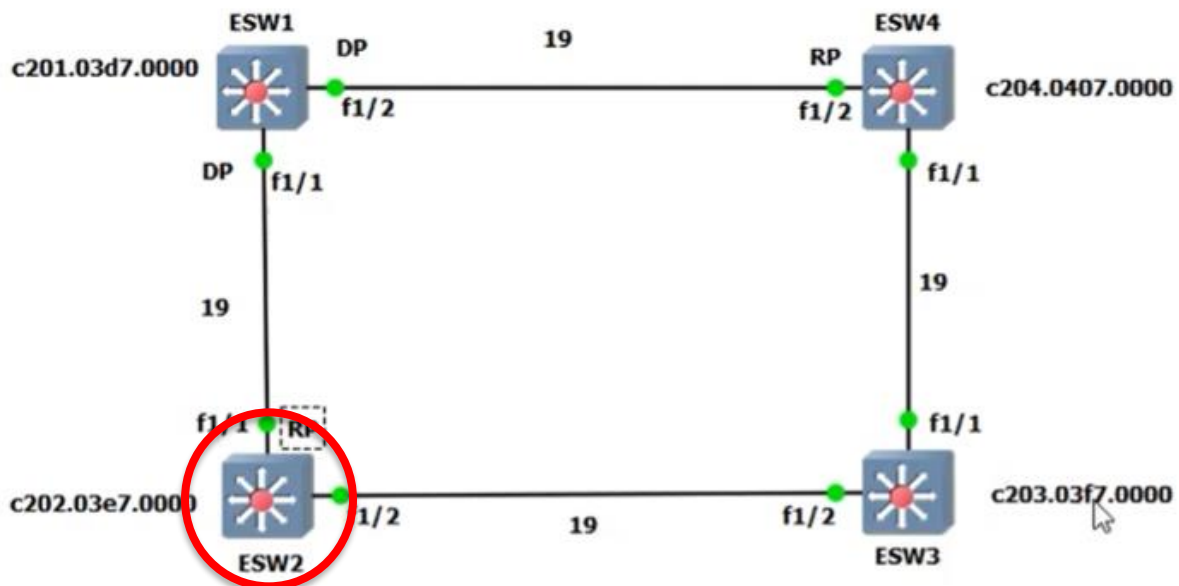


Interface Name	Port	ID	Prio	Cost	Sts	Cost	Designated Bridge ID	Port ID
FastEthernet1/1	128.42	128	128	19	BLK	19	32768 c204.0407.0000	128.42
FastEthernet1/2	128.43	128	128	19	FWD	19	32768 c202.03e7.0000	128.43

ESW3#

El costo es igual del switch 3 para llegar al root bridge, pero elige el camino dependiendo del ID mas pequeño, por eso el ID 204 esta BLK, pero el ID 202 no esta Bloqueado

Supongamos que queremos cambiar el switch 2 a ser el root bridge principal, con Spanning-tree vlan 1 root primary podemos cambiarlo a ser el root bridge principal



```
ESW2(config)#spanning-tree vlan 1 root primary
VLAN 1 bridge priority set to 8192
VLAN 1 bridge max aging time unchanged at 20
VLAN 1 bridge hello time unchanged at 2
VLAN 1 bridge forward delay unchanged at 15
ESW2(config)#end
```

```
ESW2#sh spanning-tree vlan 1 bri
```

```
VLAN1
Spanning tree enabled protocol ieee
Root ID    Priority      8192
Address    c202.03e7.0000
This bridge is the root
Hello Time  2 sec   Max Age 20 sec   Forward Delay 15 sec

Bridge ID  Priority      8192
Address    c202.03e7.0000
Hello Time  2 sec   Max Age 20 sec   Forward Delay 15 sec
Aging Time 300
```