Ingeniería en Desarrollo de Software

Actividad | 2 | Calculando direcciones

Nombre del curso

Ingeniería en Desarrollo de Software

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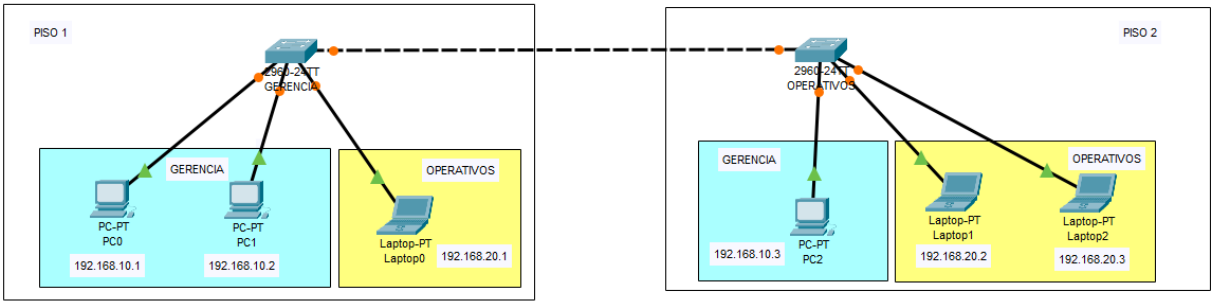
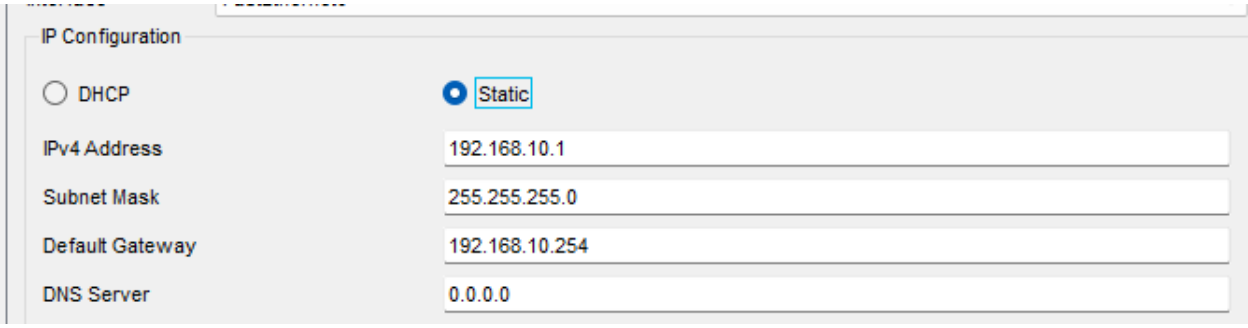
Tabla de Contenido

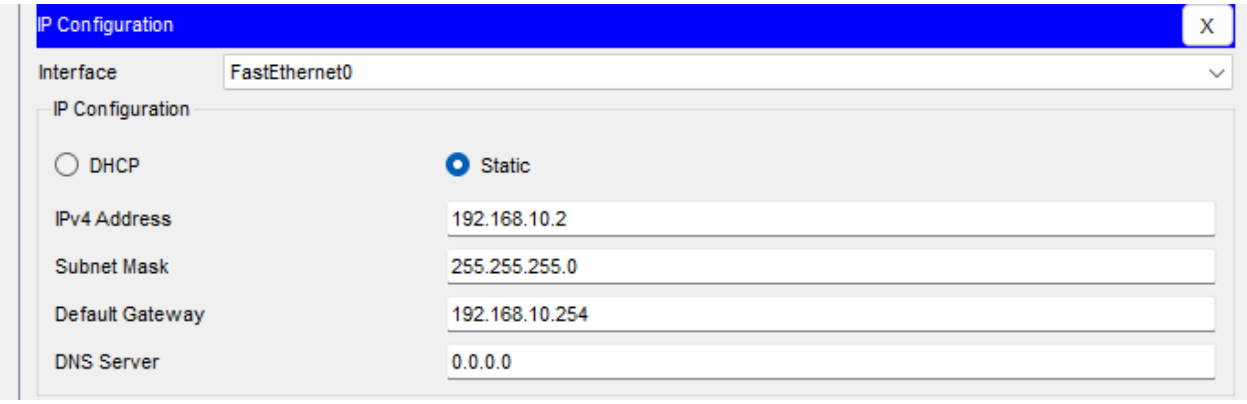
Desarrollo

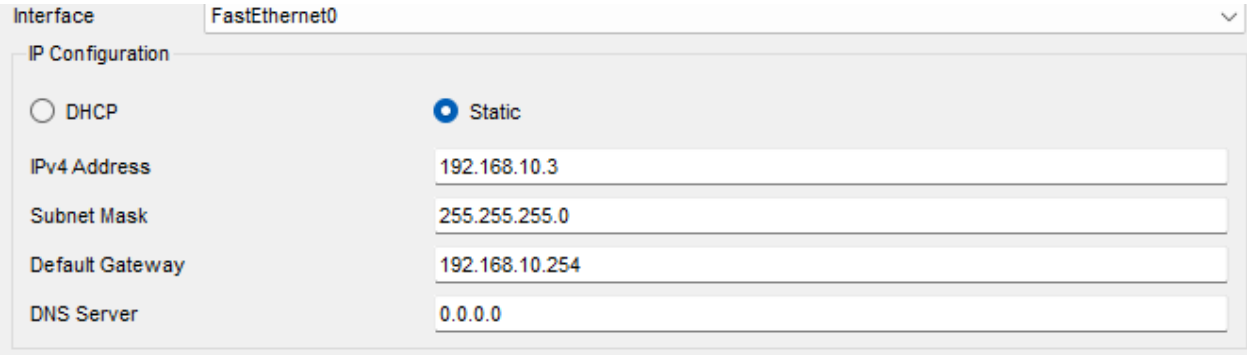
Iniciamos abriendo la aplicación de Cisco Packet Tracer:

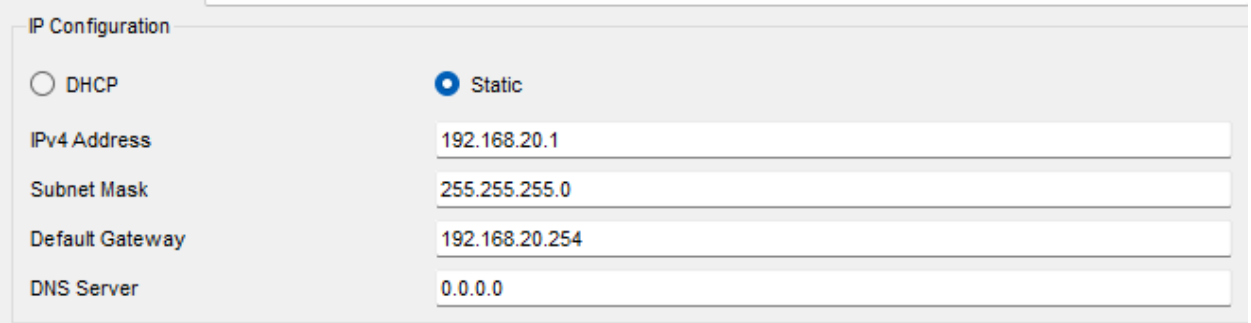


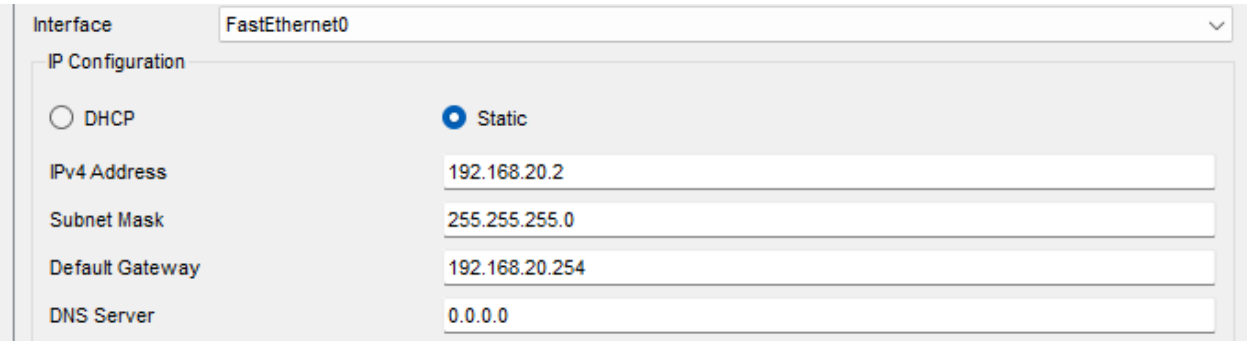
Tenemos que configurar las direcciones IP de las PC y de las laptops:

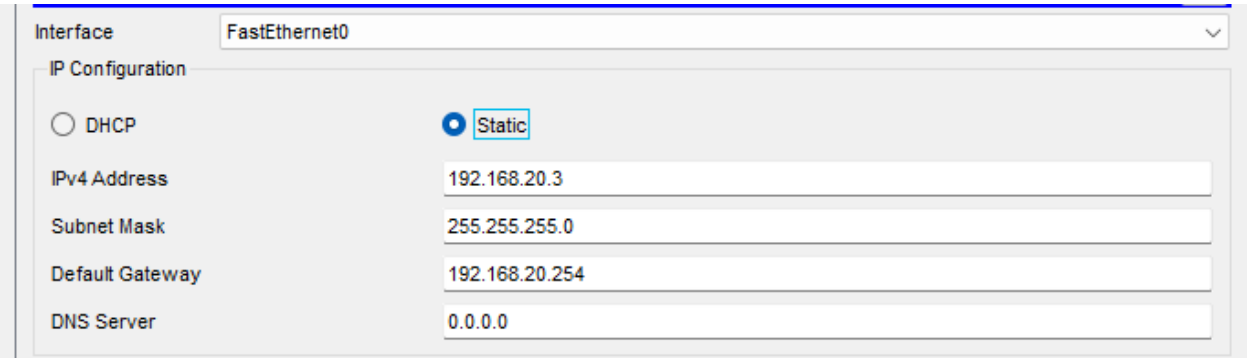












Comandos utilizados para la configuración del switch para la actividad #2:

- Enable.
- Configure terminal.
- interface fastEthernet 0/1
- switchport mode access.
- switchport access vlan 10 or 20.
- Exit

```
Switch#
Switch#Enable
Switch#Config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#Interface FastEthernet 0/1
Switch(config-if)#Vlan 10
Switch(config-vlan)#Name GERENCIA
Switch(config-vlan)#exit
Switch(config)#Vlan 20
Switch(config-vlan)#Name OPERATIVOS
Switch(config-vlan)#Exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#Show Vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, 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
20   OPERATIVOS                       active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
```

Seguimos con los comandos necesarios:

```
Switch#
Switch#enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fastethernet 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access Vlan 10
Switch(config-if)#exit
Switch(config)#interface fastethernet 0/2
Switch(config-if)#
Switch(config-if)#switchport mode access
Switch(config-if)#
Switch(config-if)#switchport access Vlan 10
Switch(config-if)#exit
Switch(config)#
Switch(config)#interface fastethernet 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access Vlan 20
Switch(config-if)#
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

```
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
                                                Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                Fa0/24, Gig0/1, Gig0/2
10   GERENCIA                         active    Fa0/1, Fa0/2
20   OPERATIVOS                       active    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 Trans1 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(config)#interface fastethernet 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10),
with Switch FastEthernet0/4 (1).
interface fastethernet 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#interface fastethernet 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#ex
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (10),
with Switch FastEthernet0/4 (1).
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Switch#
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
                                                Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                Fa0/24, Gig0/1, Gig0/2
10   GERENCIA                         active    Fa0/1, Fa0/2
20   OPERATIVOS                       active    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 Trans1 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--
```

Comandos para los puertos switch a switch:

- Enable.
- Configure terminal.
- Interface gigabyte 0/1.
- Switchport mode trunk.
- Switchport trunk native vlan 1*.
- Exit.

```
Switch#
Switch#enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface gigabitethernet 0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk native vlan 1
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

```
Switch#enable
Switch#Configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#Interface Gigabitethernet 0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk native vlan 1
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

Procedemos a realizar el comando ipconfig a cada computadora:

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::201:42FF:FE4C:D463
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.10.1
   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:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::2D0:D3FF:FEBE:3B5A
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.10.2
   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:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::240:BFF:FE2D:A931
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.10.3
   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:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::230:F2FF:FEAA:207
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.20.1
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                192.168.20.254

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:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::201:97FF:FE91:EB5D
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.20.2
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 192.168.20.254

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:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::209:7CFF:FED0:7400
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.20.3
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 192.168.20.254

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
```

Conclusión

En esta segunda actividad logramos otorgarle a cada PC y laptop su dirección IP correspondiente y enlazarlos con la Vlan que corresponde al switch indicado en la actividad anterior. Todos estos comandos que se realizan para configurar lo necesario se puede realizar de dos formas, la primera; por medio de clics, puedes acceder sin problema al dispositivo deseado y modificar los atributos por medio de la tabla y las diferentes opciones que aparecen, o, la más recomendada, por medio de la sintaxis correcta y comandos adecuados para editar los atributos y tener más conocimiento de lo que se está realizando. También logramos apreciar sobre las diferentes interfaces que se pueden conectar los dispositivos, ya sea Fast Ethernet o Gigabit Ethernet, que depende de cada una es la velocidad con la que el tráfico de datos se moverá y por ultimo también se vio el enlace troncal, un enlace que permite la conexión de dos puntos, en este caso con los dos switch que la actividad nos pidió que colocáramos.

Link de GitHub

https://github.com/UZLOP984/Administraci-n-_de-_Redes-_y-_Servidores.git

Referencias

JumpCloud. (2025, 14 febrero). *What is VLAN Trunking? - JumpCloud*. https://jumpcloud.com/it-index/what-is-vlan-trunking