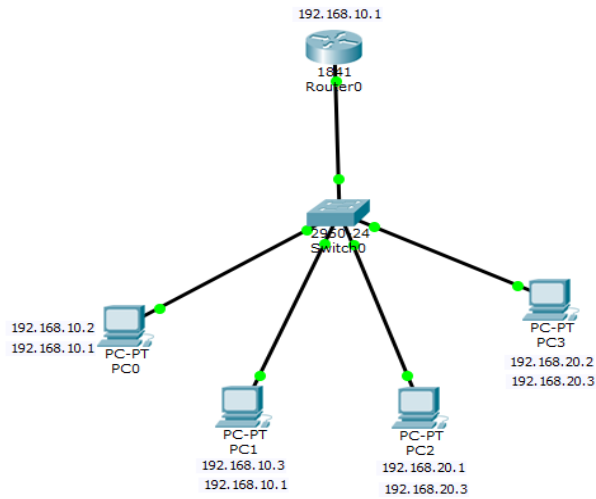


Lab-08- To configure a virtual LAN on top of the physical LAN and enable communication between physical and virtual LAN.

Topology:



Switch Configuration:

Switch0

Physical Config CLI

VLAN Configuration

VLAN Number

VLAN Name

| VLAN No | VLAN Name |
|---------|--------------------|
| 1 | default |
| 20 | VLAN1 |
| 1002 | fddi-default |
| 1003 | token-ring-default |
| 1004 | fddinet-default |
| 1005 | trnet-default |

GLOBAL

Settings

Algorithm Settings

SWITCH

VLAN Database

INTERFACE

FastEthernet0/1

FastEthernet0/2

FastEthernet0/3

FastEthernet0/4

FastEthernet0/5

FastEthernet0/6

FastEthernet0/7

FastEthernet0/8

FastEthernet0/9

FastEthernet0/10

Router configuration:

```
Router#enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0.1
Router(config-subif)#ip address 192.168.20.3 255.255.255.0
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.3 255.255.255.0
Router(config-subif)#no shutdown
Router(config-subif)#exit
Router(config)#
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#exit
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

Router(vlan)#
%SYS-5-CONFIG_I: Configured from console by console

Router(vlan)#exit
APPLY completed.
Exiting....
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

Output:

```
PC>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time=0ms TTL=255
Reply from 192.168.10.1: bytes=32 time=0ms TTL=255
Reply from 192.168.10.1: bytes=32 time=2ms TTL=255
Reply from 192.168.10.1: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

PC>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time=1ms TTL=128
Reply from 192.168.10.3: bytes=32 time=0ms TTL=128
Reply from 192.168.10.3: bytes=32 time=0ms TTL=128
Reply from 192.168.10.3: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.20.1

Pinging 192.168.20.1 with 32 bytes of data:

Reply from 192.168.20.1: bytes=32 time=0ms TTL=127
Reply from 192.168.20.1: bytes=32 time=0ms TTL=127
Reply from 192.168.20.1: bytes=32 time=0ms TTL=127
Reply from 192.168.20.1: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.20.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

Observation:

Bajna Gold
Date 03/12/24

Aim: To configure a virtual LAN on top of the physical LAN & enable communication b/w Physical & virtual LAN

Diagram illustrating the network setup:

- Router (1841) with IP 192.168.10.1
- Switch (2950-24) with IP 192.168.20.1
- PCs (PC0, PC1, PC2, PC3) with IP addresses: 192.168.10.2, 192.168.10.3, 192.168.20.1, 192.168.20.2

Configuration Steps

1. Select 4 PC's & a switch (2950-24) & a router (1841) and connect all the devices.
2. Set IP & Gateway addresses.
IP Gateway
Router 1 192.168.10.1
PC0 192.168.10.2 192.168.10.1
PC1 192.168.10.3 192.168.10.1
PC2 192.168.20.1 192.168.20.3
PC3 192.168.20.2 192.168.20.3
3. Select Switch >> select VLAN Database >> add a VLAN, 20, VLAN1
4. Select fastethernet 0/3 & change VLAN to 20 do the something for fastethernet 0/4.
5. select fastethernet 0/5 & change to trunk & select VLAN to 20
6. In the Router's CLI configure the following commands:

```

Router # enable
Router # configt
Router (config) # interface fastEthernet 0/0.1
Router (config-subif) # ip address 192.168.20.3
255.255.255.0
Router (config-subif) # encapsulation dot1q 20
Router (config-subif) # ip address 192.168.20.3
255.255.255.0

Router (config-subif) # no shutdown
Router (config-subif) # exit
Router (config) # for exit
Router # vlan database
Router (vlan) #
Router (vlan) # exit

```

7. Now, ping from PC.

Output:

```

PC> ping 192.168.10.1
pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time=0ms TTL=255
_____1_____2ms
_____1_____

```

Ping statistics for 192.168.10.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip in milli-seconds:

Minimum = 0ms, Maximum = 2ms, Average = 0ms.

```

PC> ping 192.168.10.2
pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time=0ms TTL=255
_____1_____
_____1_____

```

Ping statistics for 192.168.20.2:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

~~Leela.B~~
~~3/11/24~~

~~Seen~~

