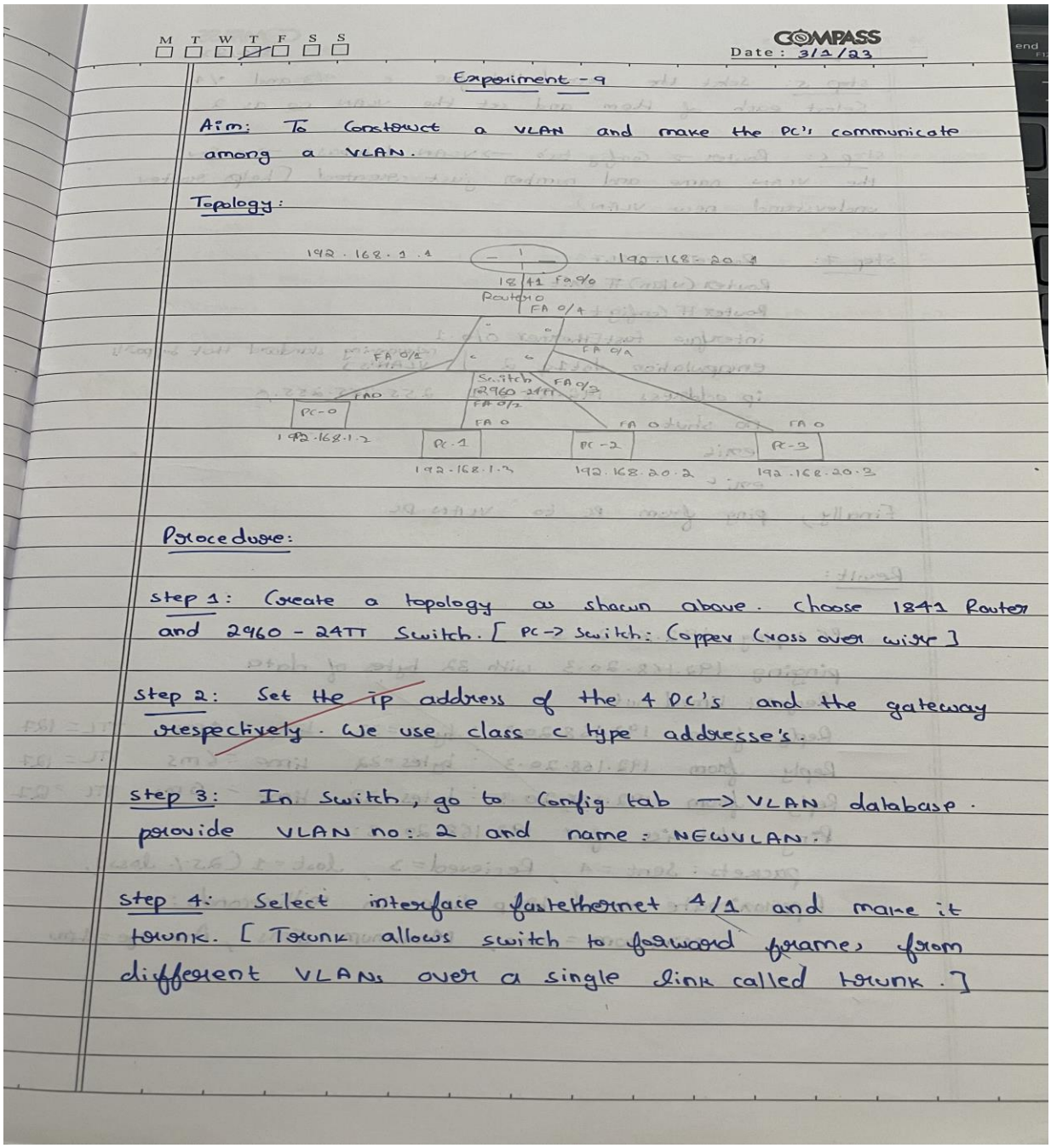
LAB PROGRAM – 9

Q) To construct a VLAN and make the PC's communicateamong a VLAN

Procedure :



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COMPASS

Date : 3/2/23

Experiment - 9

Aim: To Constouct a VLAN and make the PC's communicate among a VLAN.

Topology:

Procedure:

step 1: Create a topology as shown above. Choose 1841 Router and 2960 - 24TT Switch. [PC -> Switch: Copper Cross over wire]

step 2: Set the ip address of the 4 PC's and the gateway respectively. We use class c type addresse's.

step 3: In Switch, go to Config tab -> VLAN database. provide VLAN no: 2 and name : NEWVLAN.

step 4: Select interface fastethernet 4/1 and make it trunk. [Trunk allows switch to forward frames from different VLANs over a single link called trunk.]

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step 5: Select the second interface i.e 0/3 and 0/4. Select each of them and set the VLAN no as 2.

step 6: Router → Config tab → VLAN database → enter the VLAN name and number just created. [helps router understand new VLAN]

step 7:
```
Router → CLI
Router(vlan)# exit
Router# Config t
interface fastEthernet 0/0.1
encapsulation dot1q 2 [ networking standard that supports VLAN's ]
ip address 192.168.2.1 255.255.255.0
no shut
exit
exit
```

Finally, ping from PC to VLAN PC

Result:

```
PC > ping 192.168.20.3
pinging 192.168.20.3 with 32 bytes of data
Request timed out
Reply from 192.168.20.3 : bytes = 32 time = 0ms TTL = 127
Reply from 192.168.20.3 : bytes = 32 time = 6ms TTL = 127
Reply from 192.168.20.3 : bytes = 32 time = 0ms TTL = 127
Ping statistics for 192.168.20.3:
  packets: Sent = 4, Recieved = 3, lost = 1 (25% loss),
Approximate round trip times in milliseconds:
  Minimum = 0ms, Maximum = 6ms, Average = 1ms
```

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Date : 3/1/23

observation:

VLAN - (virtual local area network) is a logical subnetwork of devices in a broadcast domain that is partioned by network switches so as to Act as it's own LAN.

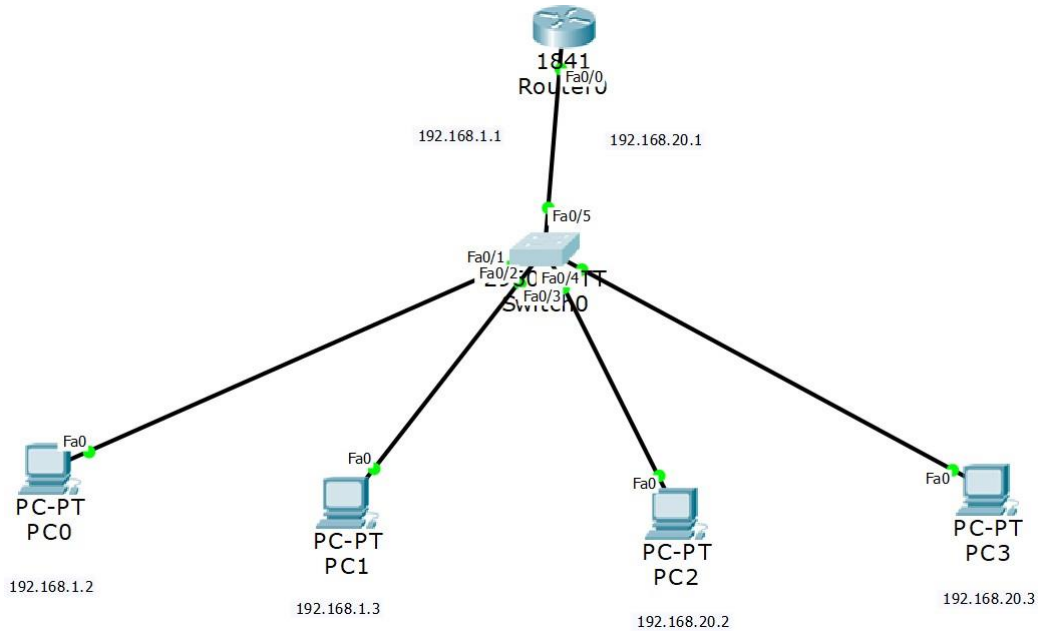
VLAN operate either at layer 2 (DLL) or layer 3 NL.

VLAN creates multiple standalone networks out of the same networking backbone. This is more secure, and it reduces the no of broadcasts individual devices receive.

VLAN's don't use IP addresses they deal with subnets or class (type Addresses.

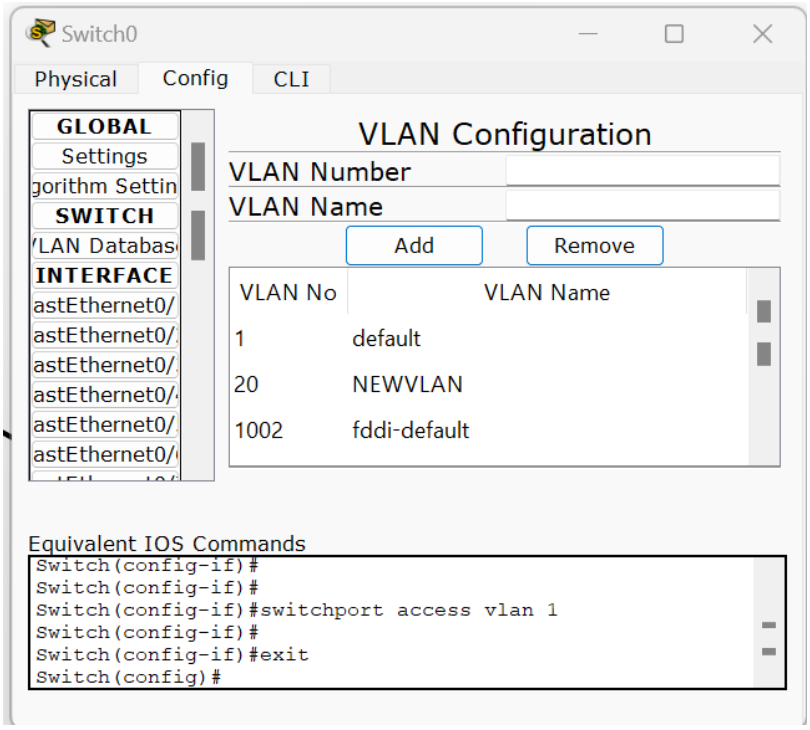
31/8/23

Topology:

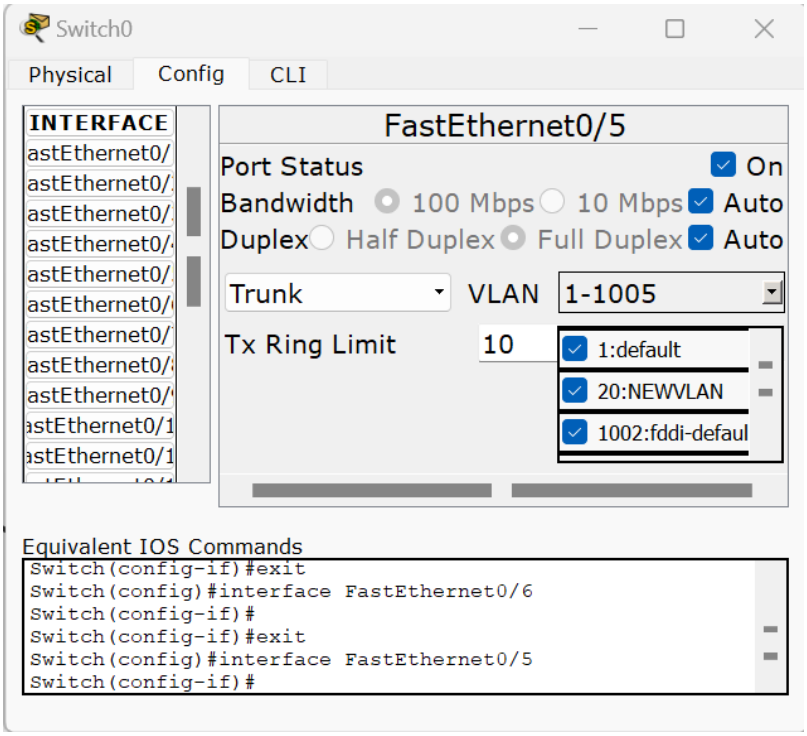


Configurations:

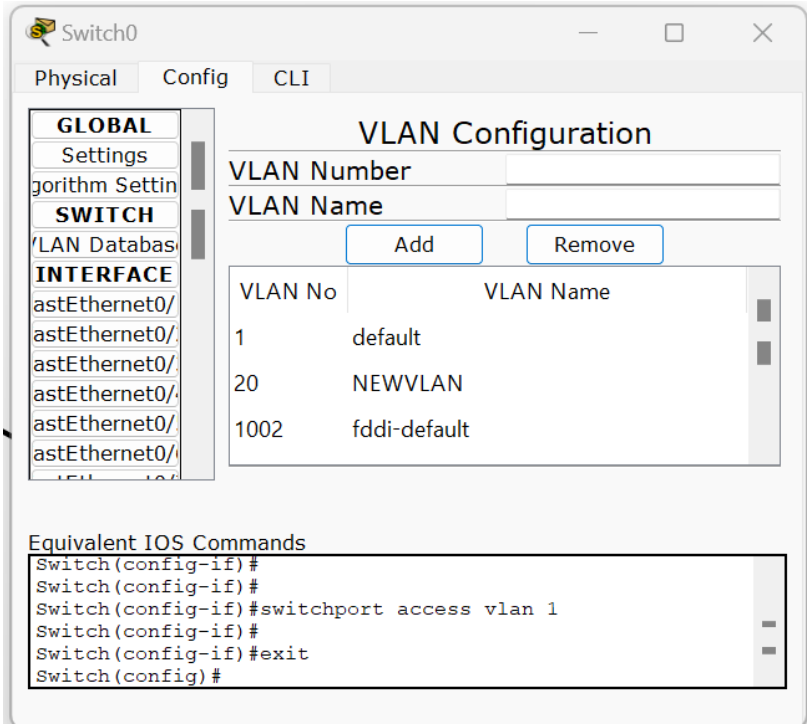
Switch VLAN Database:



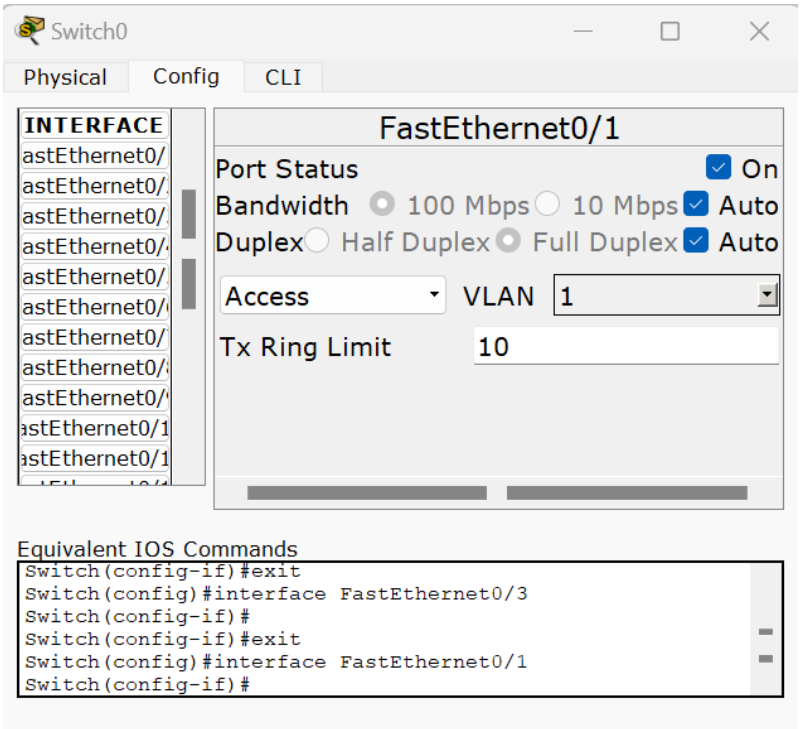
Switch FastEthernet0/5



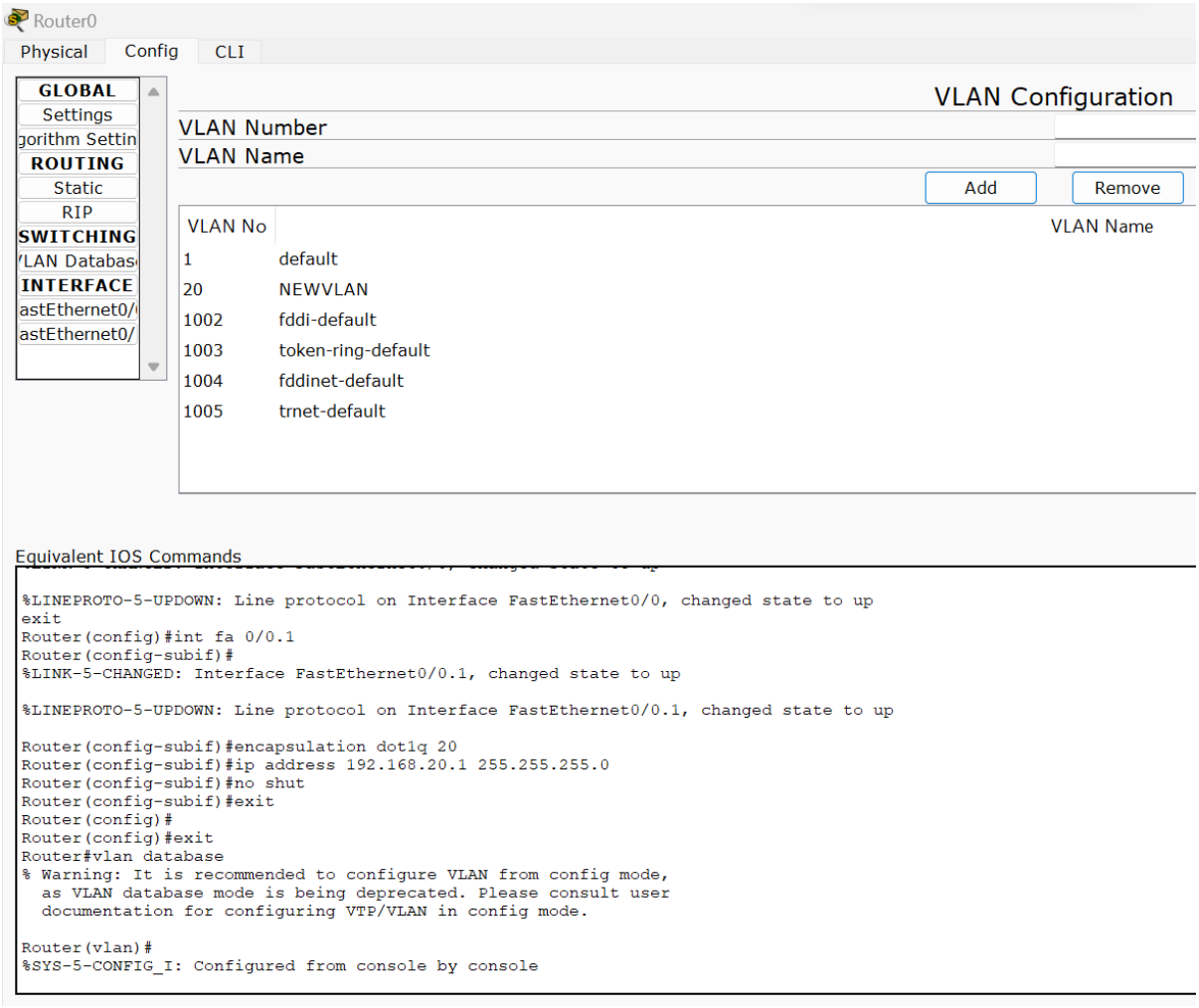
Switch FastEthernet0/3 and FastEthernet0/4



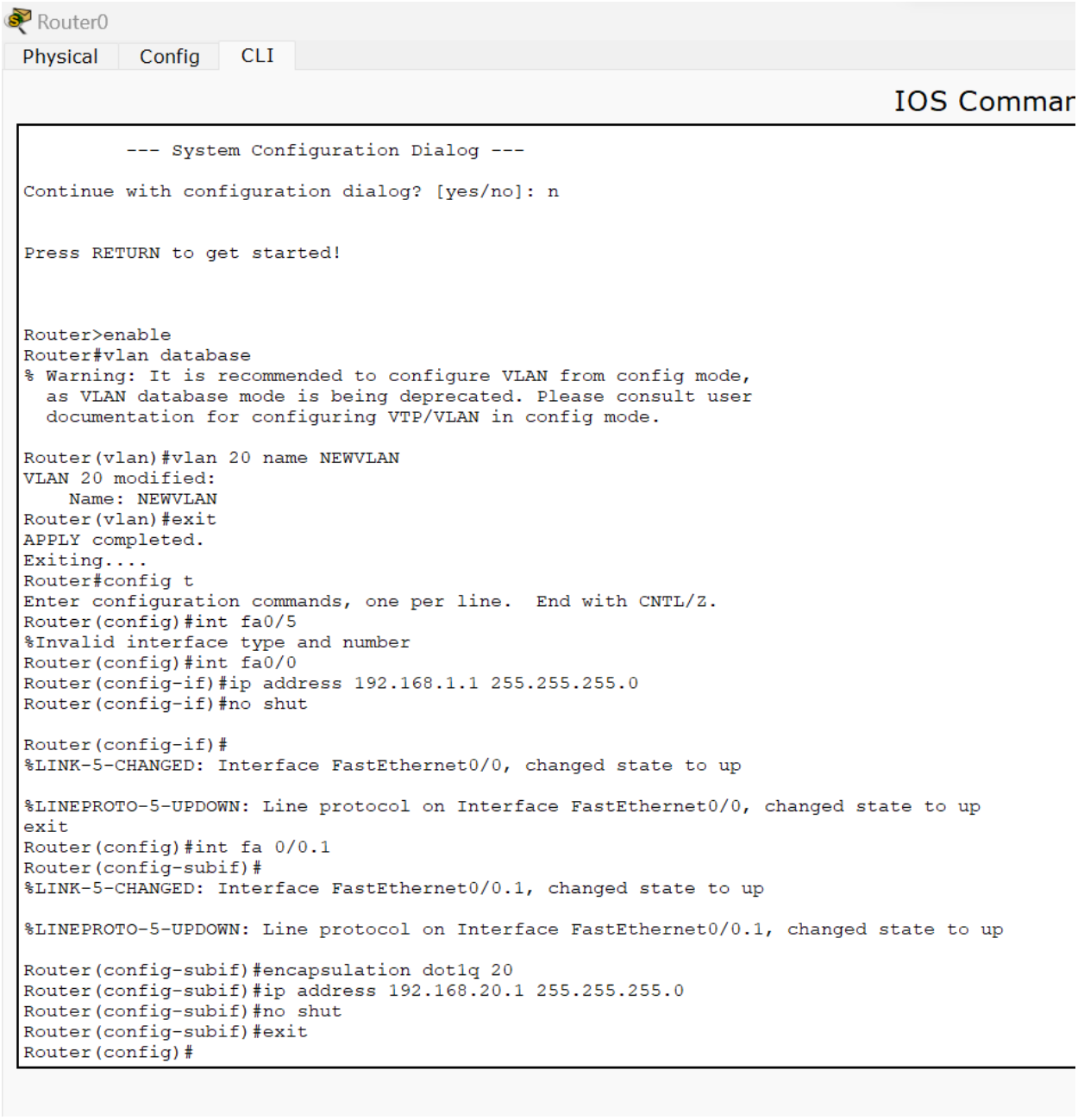
Switch FastEthernet0/1 and FastEthernet0/2



Router R0 :
VLAN DataBase:



Router R0 :
CLI:



Ping Result :

P0: [Before and after VLAN configuration was successful.]