

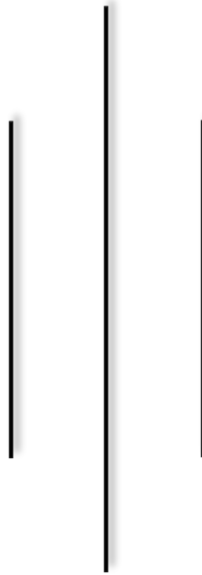


TRIBHUWAN UNIVERSITY

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### **LAB WORK ON**

Dot Net Technology

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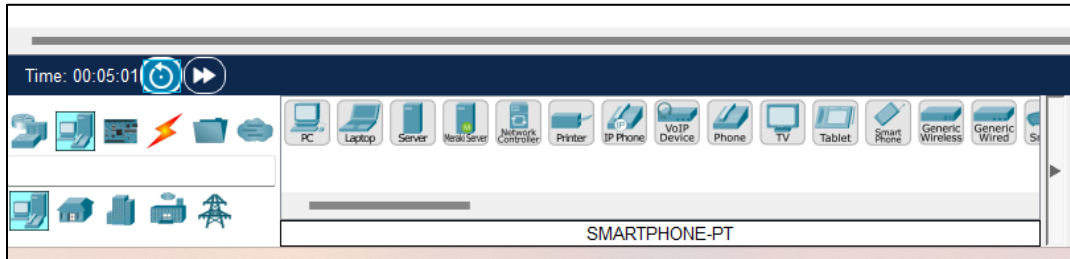
SWOYAMBHU INT'L COLLEGE

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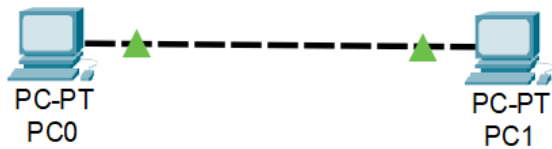
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# Lab 1. Creating and configuring a simple peer to peer network having two pcs and testing the connectivity.

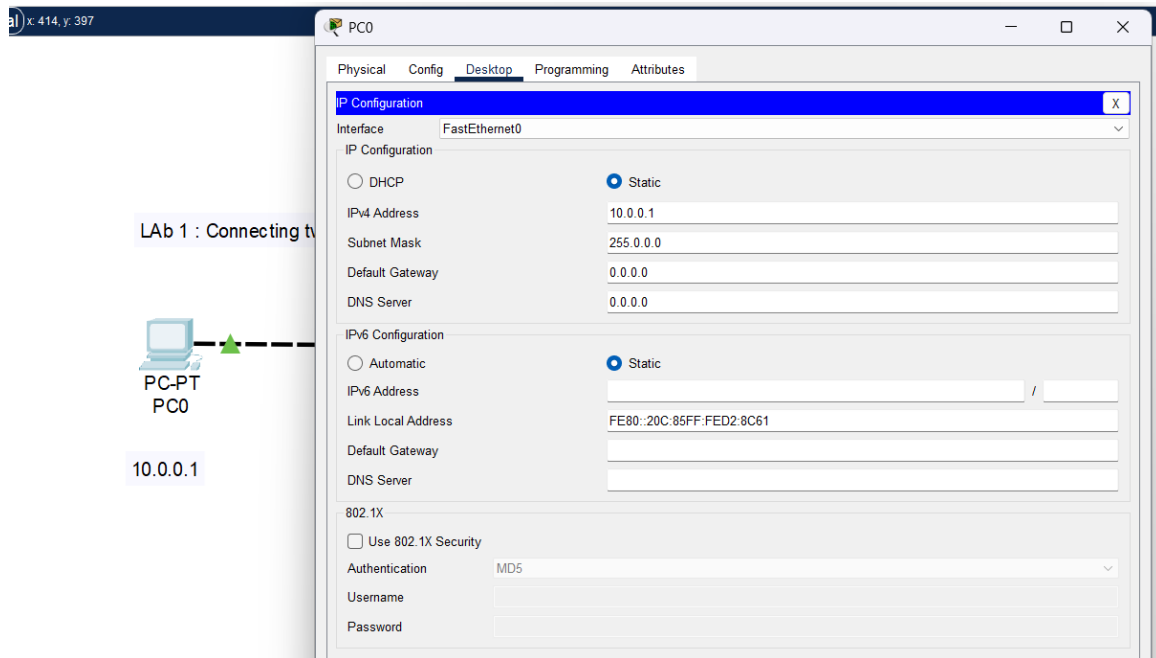
**Step 1:** select and drag two any desired pcs and create connection between them using connection cable (preferred automated cable) from menu below.



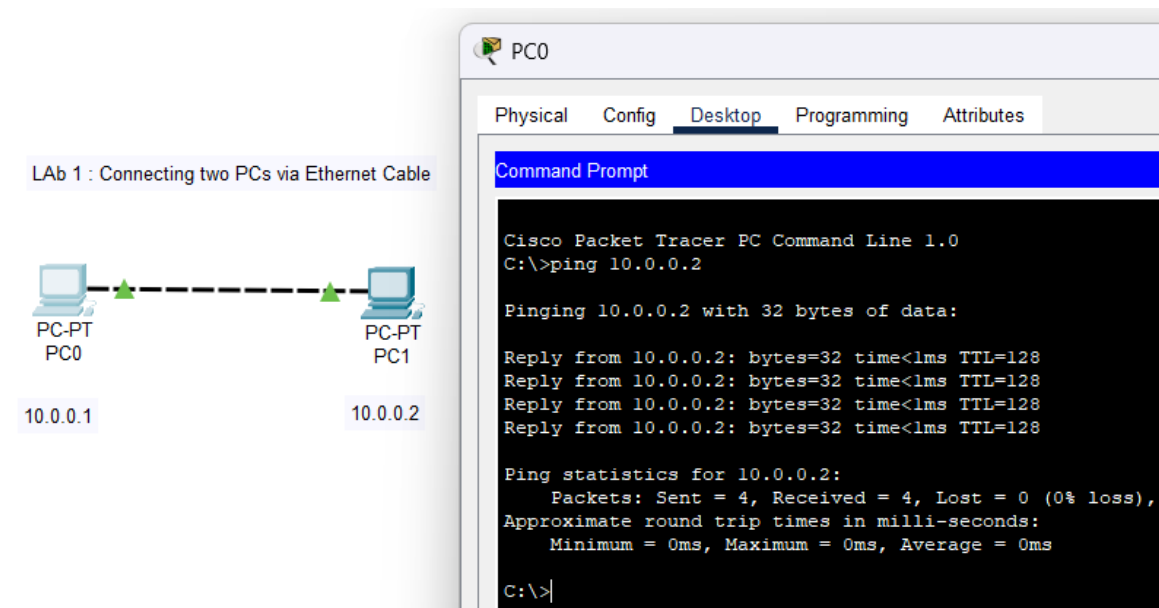
**Step 2:** The network should look like this:



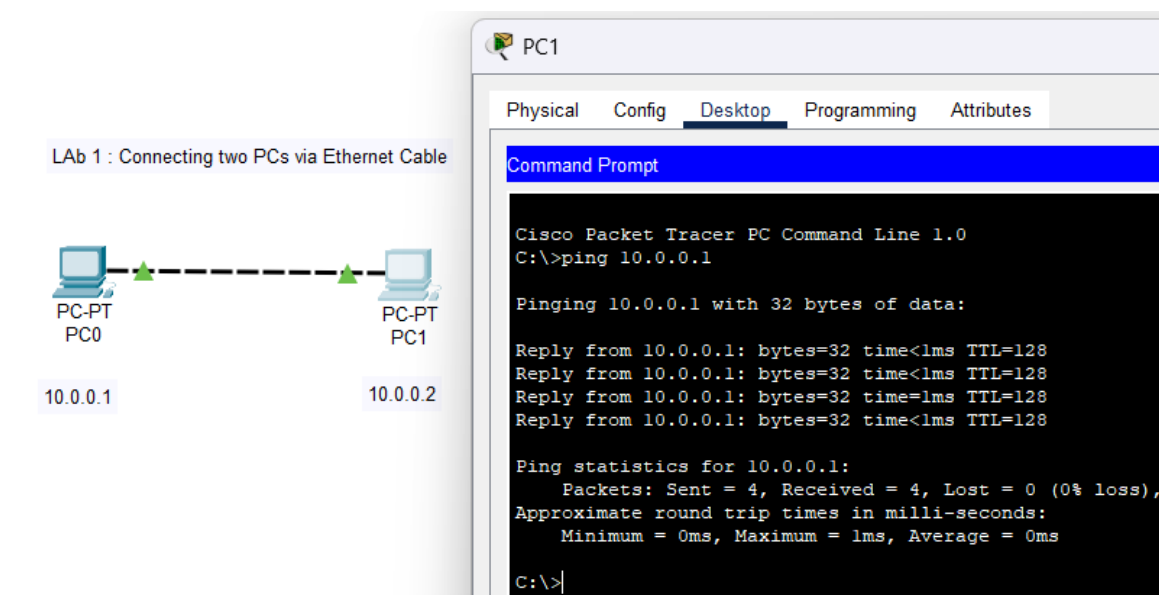
**Step 3:** Assign IP addresses to both PCs by clicking a computer, then clicking on Desktop, and finally selecting IP configuration. Enter the IP address in the appropriate field.



**Step 4:** To check the connectivity between the two PCs, you can ping PC2's IP address from PC1. For that open command prompt from PC1 and ping PC2's IP address.



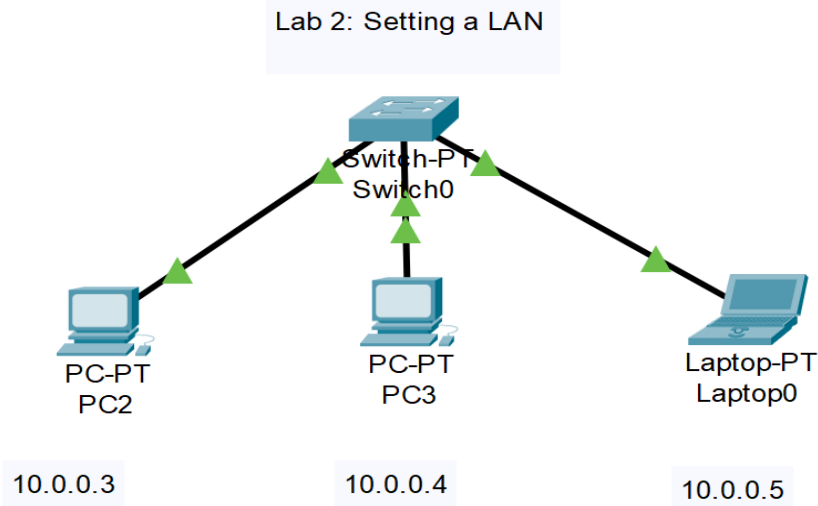
**Step 5:** Having received a response from PC2, we then pinged PC1 from PC2.



**Step 6:** Therefore, we received reply from both PC which proves there is connection between them.

## Lab 2. Creating a simple LAN network

**Step 1:** Select and drag a switch (preferred 2950-24), two or more pcs and create connection between them using connection cable and assign IP address to all PCs.



**Step 2:** To check the connectivity between the PCs, you can ping PC2's and PC3's IP address from PC1 and vice versa. For that open command prompt from PC1 and ping PC2's IP address.

From PC1 to PC2 and PC3:

```
Lab 2: Setting a LAN
```

```
Switch-PT Switch0
```

```
PC-PT PC2                      PC-PT PC3                      Laptop-PT Laptop0
```

```
10.0.0.3                      10.0.0.4                      10.0.0.5
```

```
Command Prompt
```

```
Cisco Packet Tracer PC Command Line 1.0
```

```
C:\>ping 10.0.0.3
```

```
Pinging 10.0.0.3 with 32 bytes of data:
```

```
Reply from 10.0.0.3: bytes=32 time=2ms TTL=128
```

```
Reply from 10.0.0.3: bytes=32 time=6ms TTL=128
```

```
Reply from 10.0.0.3: bytes=32 time=1ms TTL=128
```

```
Reply from 10.0.0.3: bytes=32 time=8ms TTL=128
```

```
Ping statistics for 10.0.0.3:
```

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

```
    Approximate round trip times in milli-seconds:
```

```
        Minimum = 1ms, Maximum = 8ms, Average = 4ms
```

```
C:\>ping 10.0.0.4
```

```
Pinging 10.0.0.4 with 32 bytes of data:
```

```
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
```

```
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
```

```
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
```

```
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
```

```
Ping statistics for 10.0.0.4:
```

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

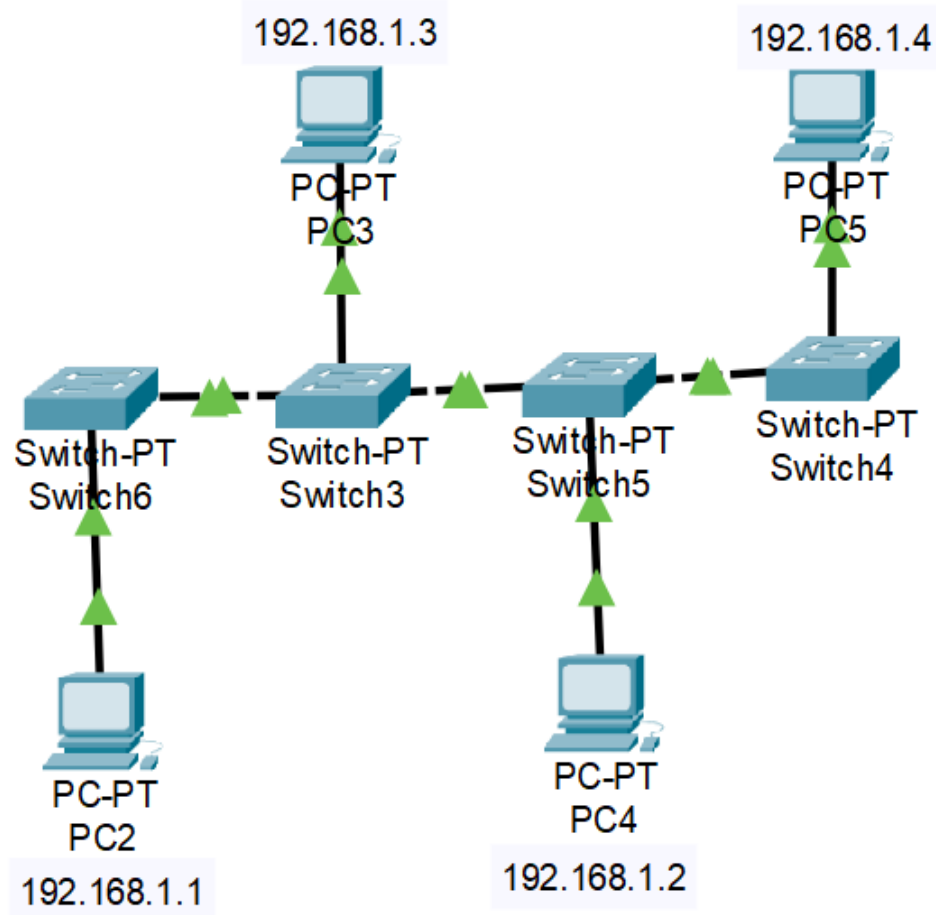
```
    Approximate round trip times in milli-seconds:
```

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

### Lab 3: Simulating BUS topology

**Step 1:** Select and drag multiple switches (preferred 2950-24), pcs and create connection between them in such a way that each computer is connected with a switch and all the switch are connected with a single cable using connection cable and assign IP address to all PCs.

#### Lab 5: Simulating Bus Topology in CISCO packet tracer



**Step 2:** To check the connectivity between the PCs, you can ping PC3's, PC4's and PC5's IP address from PC1 and vice versa. For that open command prompt from PC0 and ping other PC's IP address.

From PC0 to PC1, PC2 and PC3:

Lab 5: Simulating Bus Topology in CISCO packet tracer

```

Physical  Config  Desktop  Programming  Attributes
Command Prompt
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=5ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:

```

From PC1 to PC0, PC2 and PC3

Lab 5: Simulating Bus Topology in CISCO packet tracer

```

PC4
Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
 Top

```

## From PC2 to PC0, PC1 and PC3

Lab 5: Simulating Bus Topology in CISCO packet tracer

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time=3ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 0ms

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
    
```

## From PC3 to PC0, PC1, PC2

Lab 5: Simulating Bus Topology in CISCO packet tracer

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=13ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 3ms

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

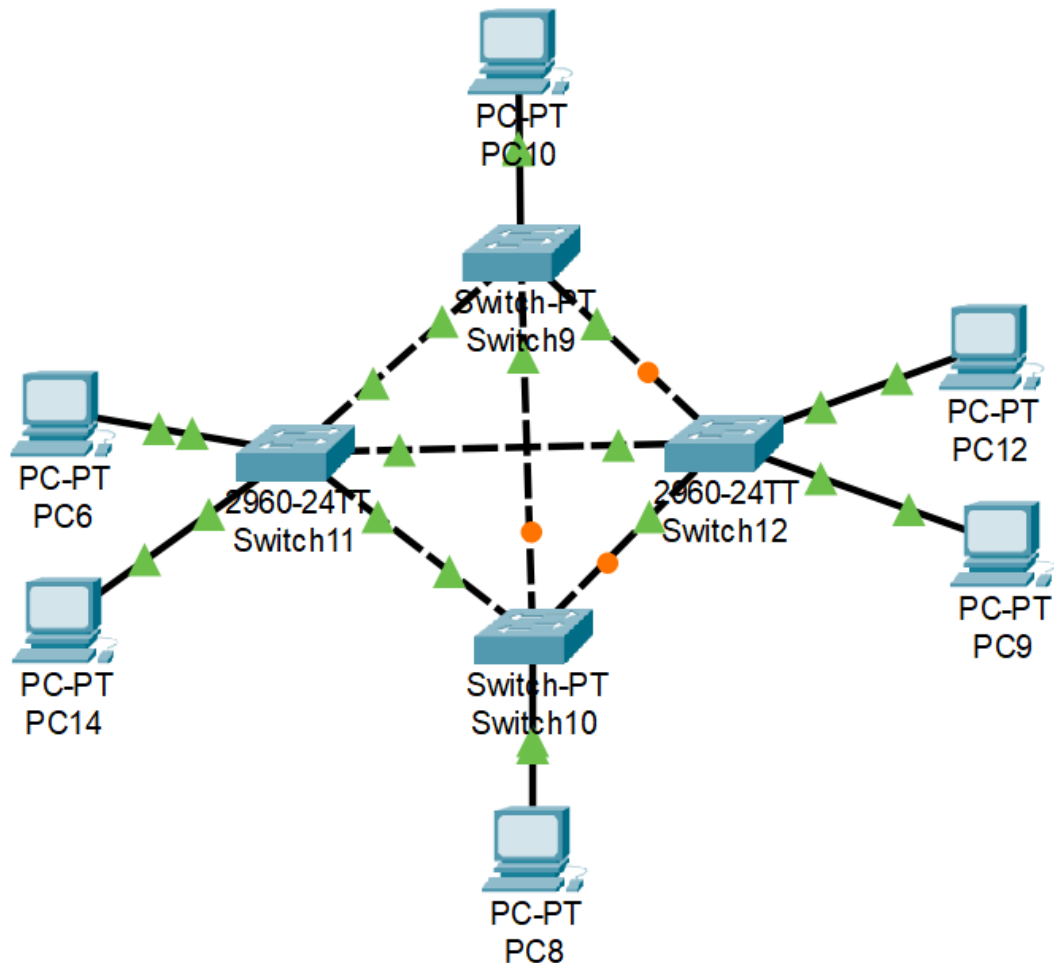
Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
    
```

## Lab 4. Simulating mesh topology

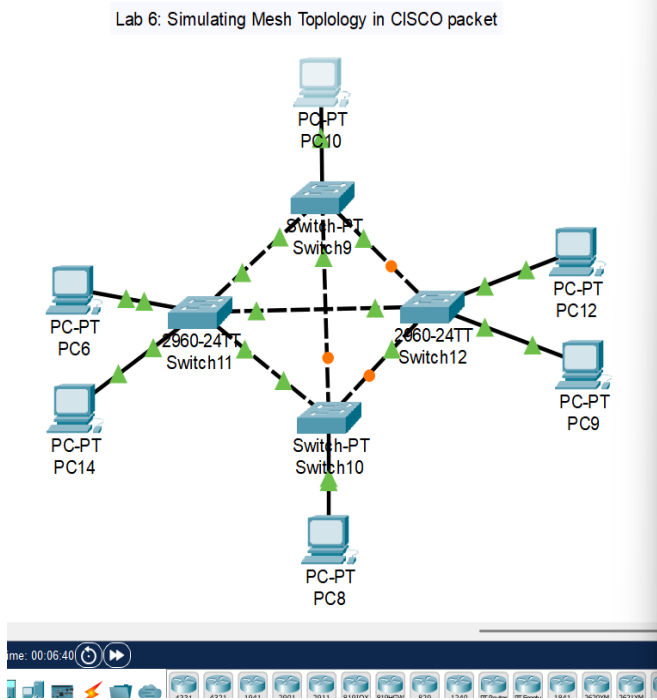
**Step 1:** Select and drag multiple switches and PCs and create connection between them using cable. Assign IP address to all PCs.

Lab 6: Simulating Mesh Topology in CISCO packet



**Step 2:** To check the connectivity between the PCs, you can ping PC6's, PC8's and PC9's IP address from PC10 and vice versa. For that open command prompt from PC0 and ping other PC's IP address.

From PC10 to PC6, PC8 and PC9:



```

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.9

Pinging 192.168.1.9 with 32 bytes of data:

Reply from 192.168.1.9: bytes=32 time<1ms TTL=128
Reply from 192.168.1.9: bytes=32 time<1ms TTL=128
Reply from 192.168.1.9: bytes=32 time<1ms TTL=128
Reply from 192.168.1.9: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.9:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.1.8

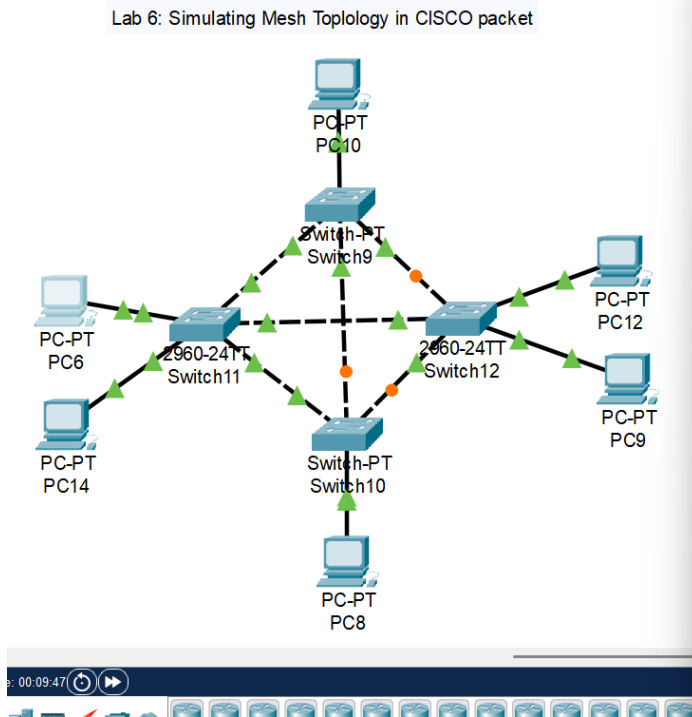
Pinging 192.168.1.8 with 32 bytes of data:

Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 14ms, Average = 3ms

C:\>
  
```

From PC6 to PC10, PC12 and PC14:



```

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.12

Pinging 192.168.1.12 with 32 bytes of data:

Reply from 192.168.1.12: bytes=32 time<1ms TTL=128
Reply from 192.168.1.12: bytes=32 time<1ms TTL=128
Reply from 192.168.1.12: bytes=32 time<1ms TTL=128
Reply from 192.168.1.12: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.12:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.14

Pinging 192.168.1.14 with 32 bytes of data:

Reply from 192.168.1.14: bytes=32 time<1ms TTL=128
Reply from 192.168.1.14: bytes=32 time<1ms TTL=128
Reply from 192.168.1.14: bytes=32 time<1ms TTL=128
Reply from 192.168.1.14: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
  
```

From PC9 to PC6, PC8 and PC10:

Lab 6: Simulating Mesh Topology in CISCO packet

```

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time=10ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 2ms

C:\>ping 192.168.1.8

Pinging 192.168.1.8 with 32 bytes of data:

Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128
Reply from 192.168.1.8: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

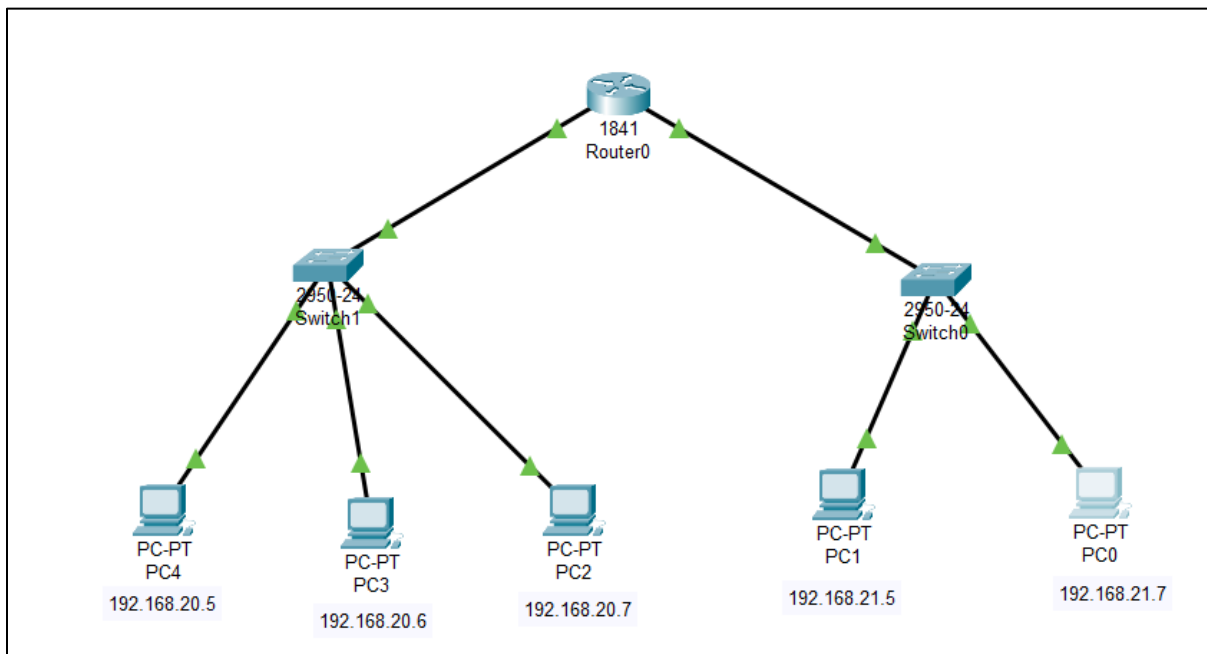
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
  
```

## Lab 5. Connecting two networks using a router

**Step 1:** Select and drag a router (preferred 1841), two switches, multiple PCs and create connection between them. Assign IP address to all PC and router's both connections.



**Step 2:** To check the connectivity between the PCs, you can ping PC1's, PC2's and PC3's IP address from PC0 and vice versa. For that open command prompt from PC0 and ping other PC's IP address.

From PC0 to P1, PC2, PC3, PC4:

The screenshot displays a network simulation environment. On the left, a Command Prompt window is open on PC0, showing the results of several ping commands. The commands and their outputs are as follows:

```
C:\>ping 192.168.20.5
Pinging 192.168.20.5 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.5: bytes=32 time<1ms TTL=127
Reply from 192.168.20.5: bytes=32 time<1ms TTL=127
Reply from 192.168.20.5: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.5:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.20.6
Pinging 192.168.20.6 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.6: bytes=32 time<1ms TTL=127
Reply from 192.168.20.6: bytes=32 time<1ms TTL=127
Reply from 192.168.20.6: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.6:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.20.7
Pinging 192.168.20.7 with 32 bytes of data:
Request timed out.
Reply from 192.168.20.7: bytes=32 time<1ms TTL=127
Reply from 192.168.20.7: bytes=32 time<1ms TTL=127
Reply from 192.168.20.7: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.20.7:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192
Ping request could not find host 192. Please check the name and try again.
C:\>ping 192.168.21.5
Pinging 192.168.21.5 with 32 bytes of data:
Reply from 192.168.21.5: bytes=32 time<1ms TTL=128
Reply from 192.168.21.5: bytes=32 time<1ms TTL=128
Reply from 192.168.21.5: bytes=32 time<1ms TTL=128
Reply from 192.168.21.5: bytes=32 time<1ms TTL=128
```

On the right, a network diagram shows a central 24-port switch connected to two PCs. PC1 (192.168.21.5) and PC0 (192.168.21.7) are connected to the switch. The switch is labeled '24-port Switch'.

From PC1 to P0, PC2, PC3, PC4:

The network diagram shows a central 2950-24 Switch connected to a 1841 Router0. Three PC-PT devices are connected to the switch: PC4 (192.168.20.5), PC3 (192.168.20.6), and PC2 (192.168.20.7).

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.5

Pinging 192.168.20.5 with 32 bytes of data:

Reply from 192.168.20.5: bytes=32 time<lms TTL=127
Reply from 192.168.20.5: bytes=32 time<lms TTL=127
Reply from 192.168.20.5: bytes=32 time<lms TTL=127
Reply from 192.168.20.5: bytes=32 time<lms TTL=127

Ping statistics for 192.168.20.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.20.6

Pinging 192.168.20.6 with 32 bytes of data:

Reply from 192.168.20.6: bytes=32 time<lms TTL=127
Reply from 192.168.20.6: bytes=32 time<lms TTL=127
Reply from 192.168.20.6: bytes=32 time<lms TTL=127
Reply from 192.168.20.6: bytes=32 time<lms TTL=127

Ping statistics for 192.168.20.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.21.7

Pinging 192.168.21.7 with 32 bytes of data:

Reply from 192.168.21.7: bytes=32 time<lms TTL=128
Reply from 192.168.21.7: bytes=32 time<lms TTL=128
Reply from 192.168.21.7: bytes=32 time<lms TTL=128
Reply from 192.168.21.7: bytes=32 time<lms TTL=128

Ping statistics for 192.168.21.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
  
```

From PC2 to PC0, PC1, PC3, PC4:

The network diagram shows a central 2950-24 Switch connected to a 1841 Router0. Three PC-PT devices are connected to the switch: PC2 (192.168.20.7), PC1 (192.168.21.5), and PC0 (192.168.21.7).

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.21.5

Pinging 192.168.21.5 with 32 bytes of data:

Reply from 192.168.21.5: bytes=32 time<lms TTL=127
Reply from 192.168.21.5: bytes=32 time<lms TTL=127
Reply from 192.168.21.5: bytes=32 time<lms TTL=127
Reply from 192.168.21.5: bytes=32 time<lms TTL=127

Ping statistics for 192.168.21.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.21.7

Pinging 192.168.21.7 with 32 bytes of data:

Reply from 192.168.21.7: bytes=32 time<lms TTL=127
Reply from 192.168.21.7: bytes=32 time<lms TTL=127
Reply from 192.168.21.7: bytes=32 time<lms TTL=127
Reply from 192.168.21.7: bytes=32 time<lms TTL=127

Ping statistics for 192.168.21.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.20.7

Pinging 192.168.20.7 with 32 bytes of data:

Reply from 192.168.20.7: bytes=32 time=15ms TTL=128
Reply from 192.168.20.7: bytes=32 time=10ms TTL=128
Reply from 192.168.20.7: bytes=32 time=9ms TTL=128
Reply from 192.168.20.7: bytes=32 time=12ms TTL=128

Ping statistics for 192.168.20.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 15ms, Average = 11ms
  
```

From PC3 to PC0, PC1, PC2, PC4:

The screenshot displays a Windows desktop environment with a Command Prompt window open on the left and a network diagram on the right.

**Command Prompt Output:**

```
C:\>ping 192.168.21.5
Pinging 192.168.21.5 with 32 bytes of data:
Reply from 192.168.21.5: bytes=32 time<1ms TTL=127
Reply from 192.168.21.5: bytes=32 time<1ms TTL=127
Reply from 192.168.21.5: bytes=32 time<1ms TTL=127
Reply from 192.168.21.5: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.21.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.21
Ping request could not find host 192.168.21. Please check the name and
try again.
C:\>ping 192.168.21.7

Pinging 192.168.21.7 with 32 bytes of data:

Reply from 192.168.21.7: bytes=32 time<1ms TTL=127
Reply from 192.168.21.7: bytes=32 time<1ms TTL=127
Reply from 192.168.21.7: bytes=32 time<1ms TTL=127
Reply from 192.168.21.7: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.21.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.20.7

Pinging 192.168.20.7 with 32 bytes of data:

Reply from 192.168.20.7: bytes=32 time<1ms TTL=128
Reply from 192.168.20.7: bytes=32 time<1ms TTL=128
Reply from 192.168.20.7: bytes=32 time=1ms TTL=128
Reply from 192.168.20.7: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.20.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

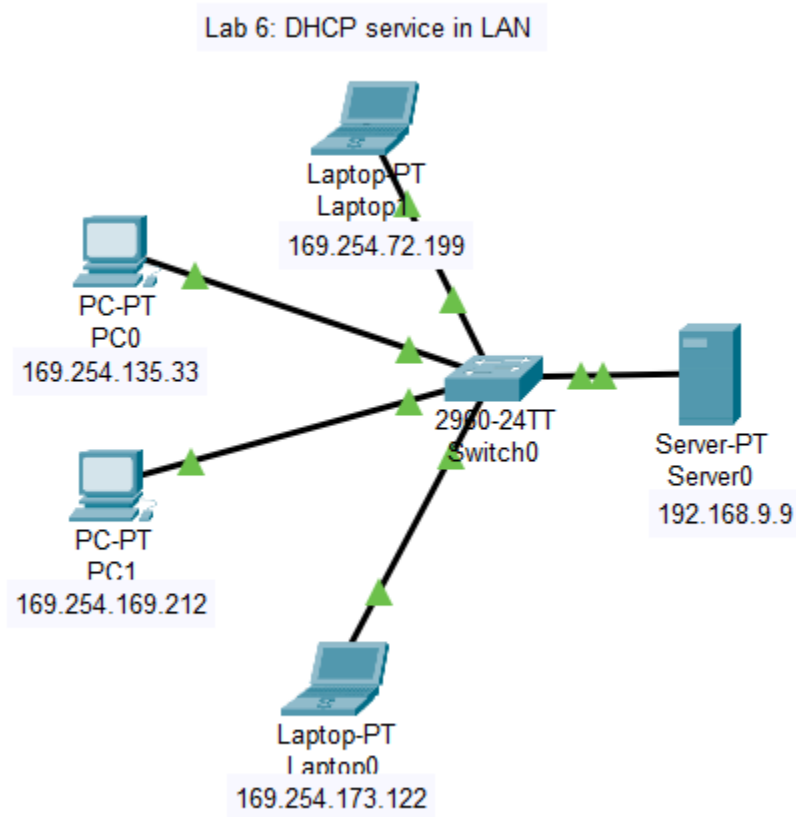
**Network Diagram:**

The network diagram shows a central 2950-24 Switch connected to three PCs: PC-PT PC2 (IP 192.168.20.7), PC-PT PC1 (IP 192.168.21.5), and PC-PT PC0 (IP 192.168.21.7). A 1841 Router0 is connected to the switch and PC2.

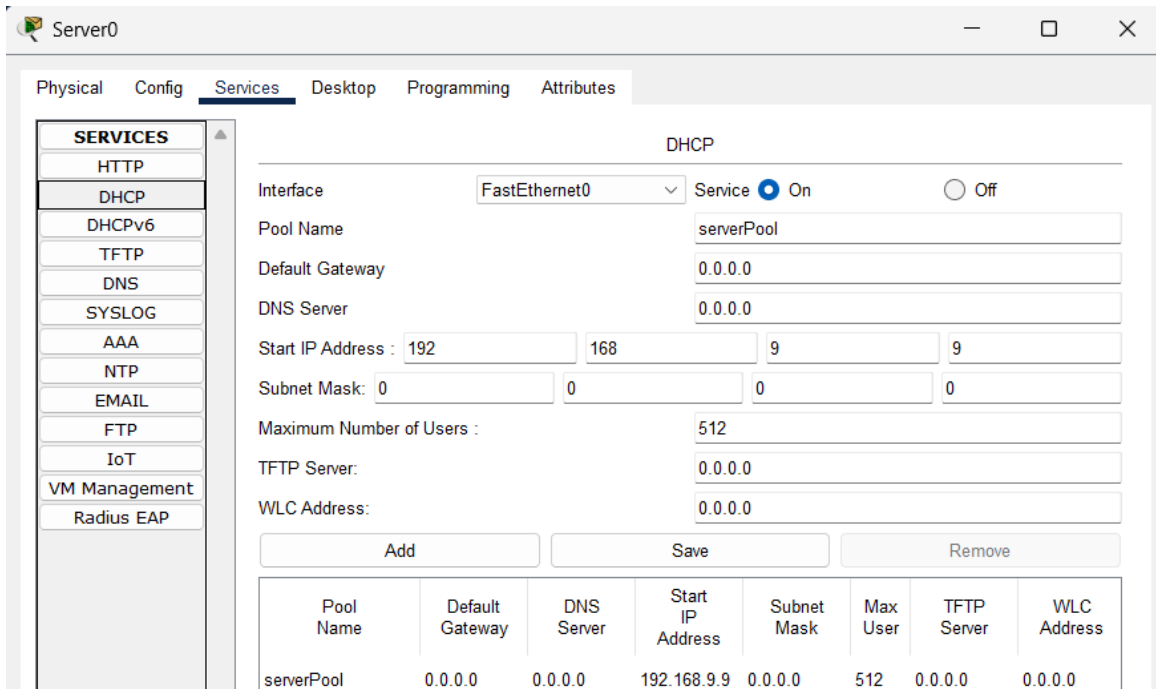
```
graph TD
    Router0[1841 Router0] --- Switch[2950-24 Switch]
    Switch --- PC2[PC-PT PC2  
192.168.20.7]
    Switch --- PC1[PC-PT PC1  
192.168.21.5]
    Switch --- PC0[PC-PT PC0  
192.168.21.7]
```

## Lab 6. Configure and Implement DHCP service in a Local Area Network.

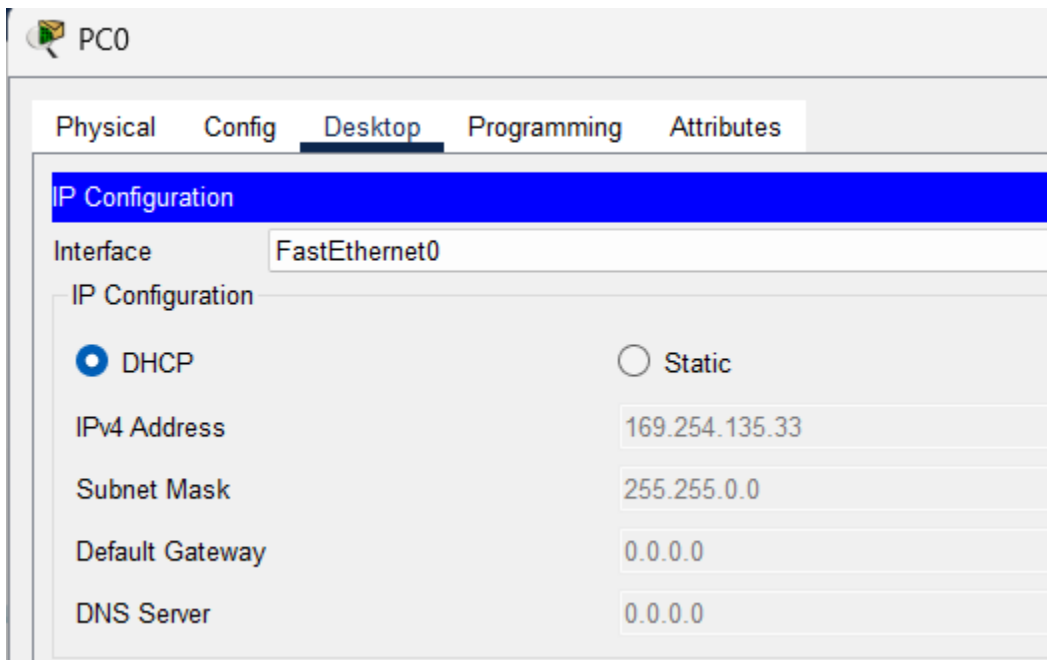
**Step 1:** Select and drag a switch (preferred 2950-4), two or more pcs, a server and create connection between them using connection cable.



**Step 2:** To assign IP address to all connected devices within a network we use server. Click on server then services > DHCP to configure it.



**Step 3:** Change IP configuration on all PC from static to DHCP.



**Step 4:** Now we check connectivity among PC by pinging them. If it pings there is connection, if it doesn't there is no connection.

From laptop to PC0 and PC1:

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 169.254.135.33

Pinging 169.254.135.33 with 32 bytes of data:

Reply from 169.254.135.33: bytes=32 time<lms TTL=128
Reply from 169.254.135.33: bytes=32 time<lms TTL=128
Reply from 169.254.135.33: bytes=32 time<lms TTL=128
Reply from 169.254.135.33: bytes=32 time<lms TTL=128

Ping statistics for 169.254.135.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

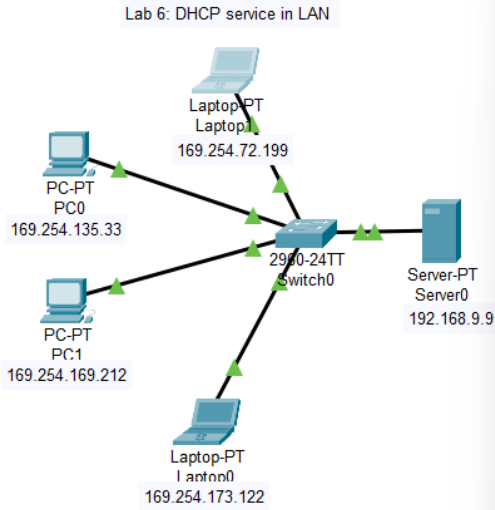
C:\>ping 169.254.169.212

Pinging 169.254.169.212 with 32 bytes of data:

Reply from 169.254.169.212: bytes=32 time<lms TTL=128
Reply from 169.254.169.212: bytes=32 time<lms TTL=128
Reply from 169.254.169.212: bytes=32 time<lms TTL=128
Reply from 169.254.169.212: bytes=32 time<lms TTL=128

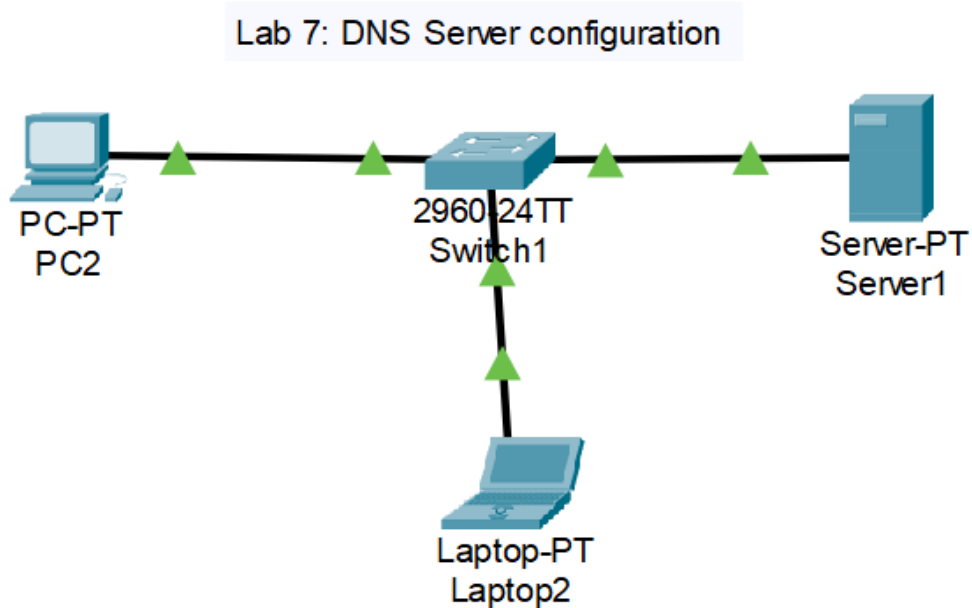
Ping statistics for 169.254.169.212:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

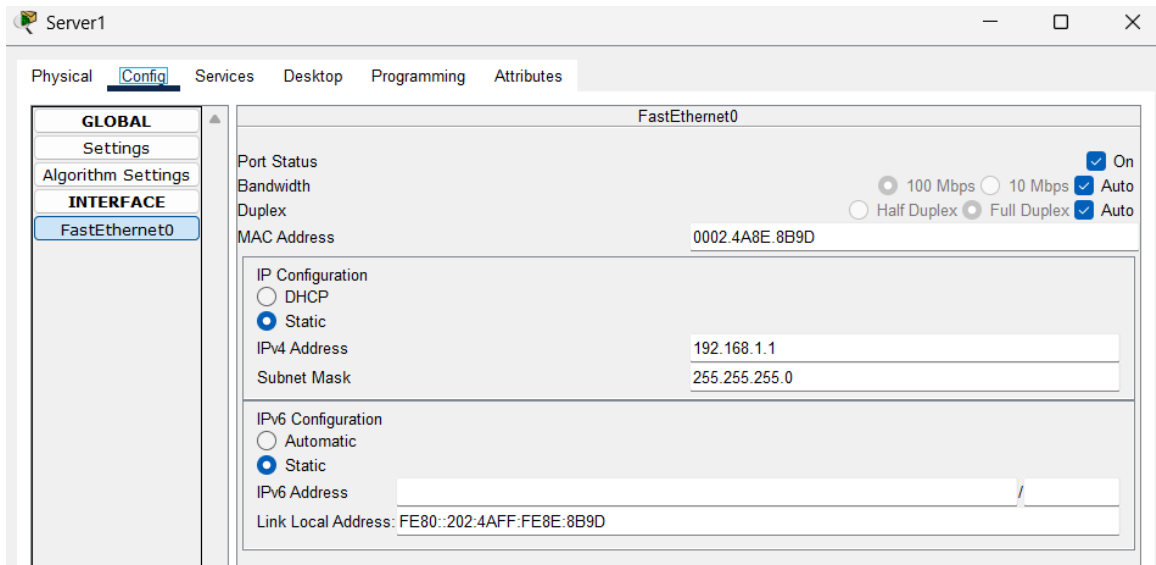


## Lab 7. DNS server configuration.

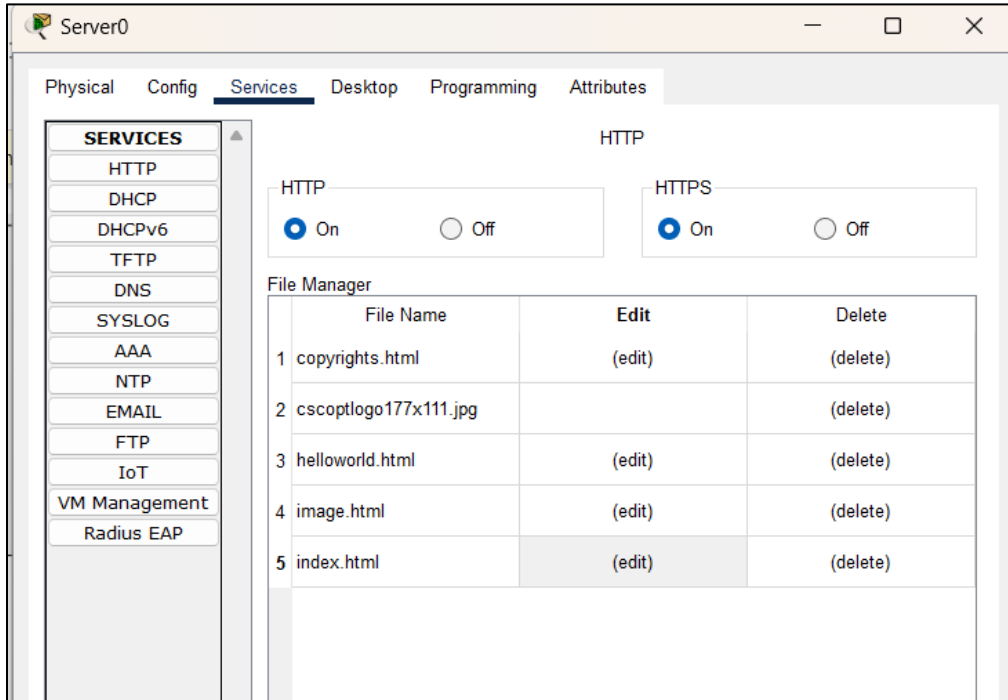
**Step 1:** Select and drag a switch (preferred Switch-PT), two or more pcs, a server and create connection between them using connection cable.



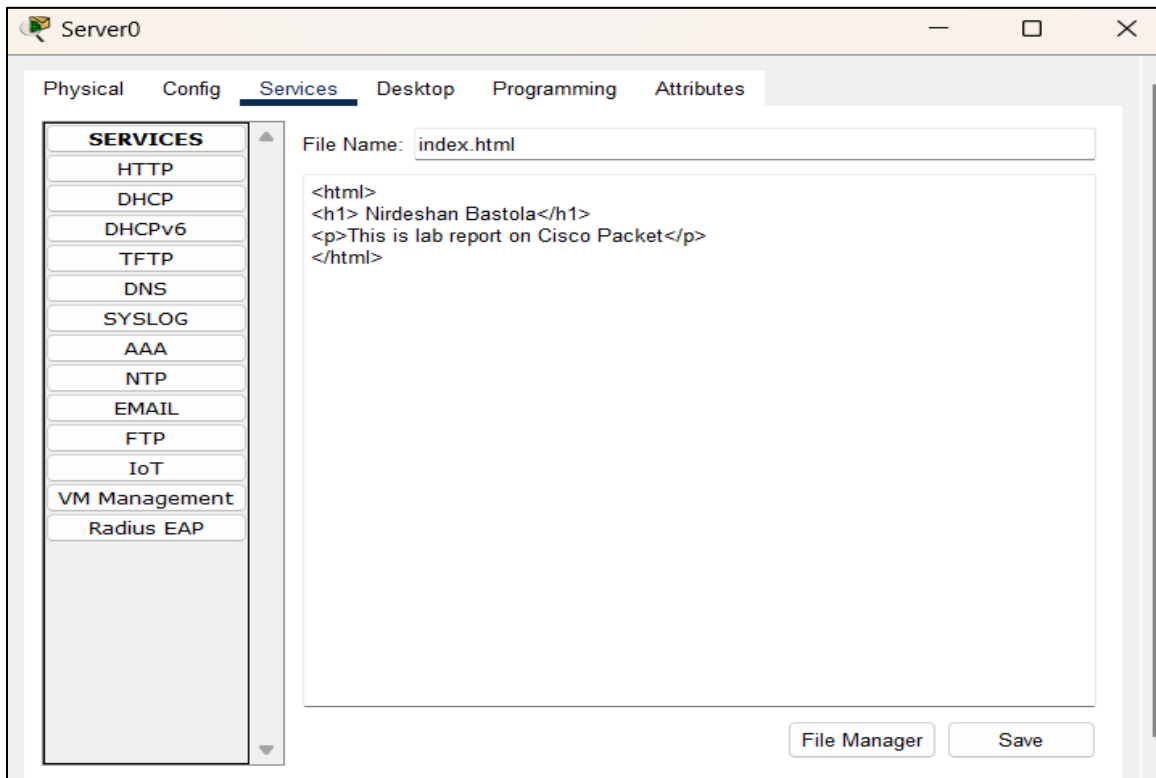
**Step 2:** Now click on server to open menu and from config>Interface>FastEthernet0. Select FastEthernet0 and set IP Configuration to Static and assign IP address i.e. 192.168.1.1.



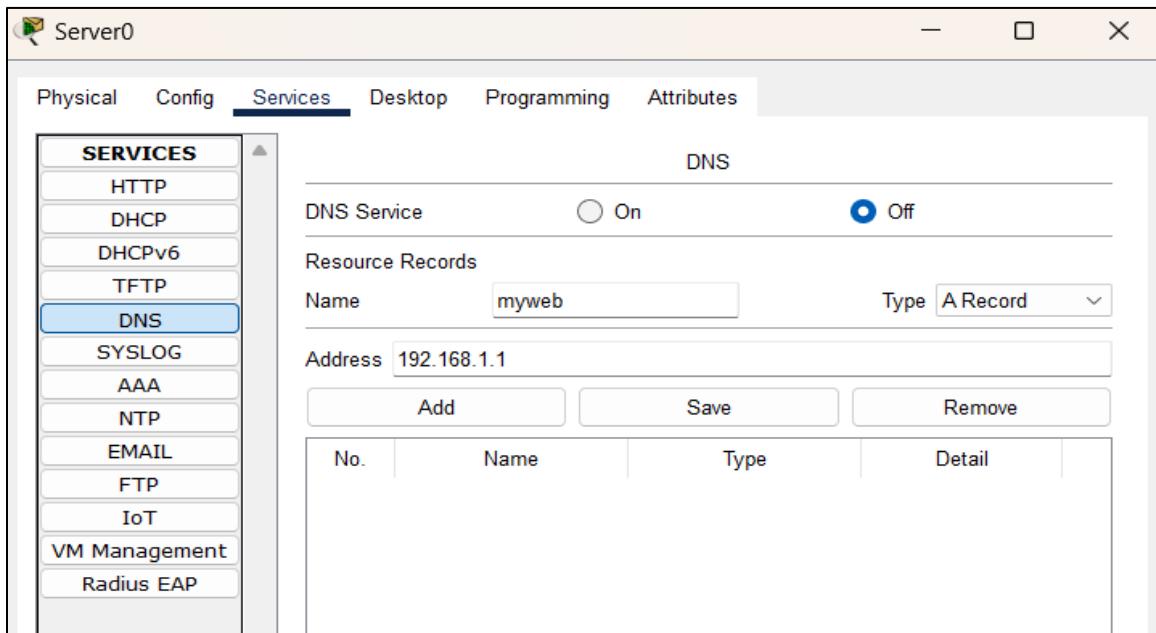
**Step 3:** From services menu click on edit button of index.html.



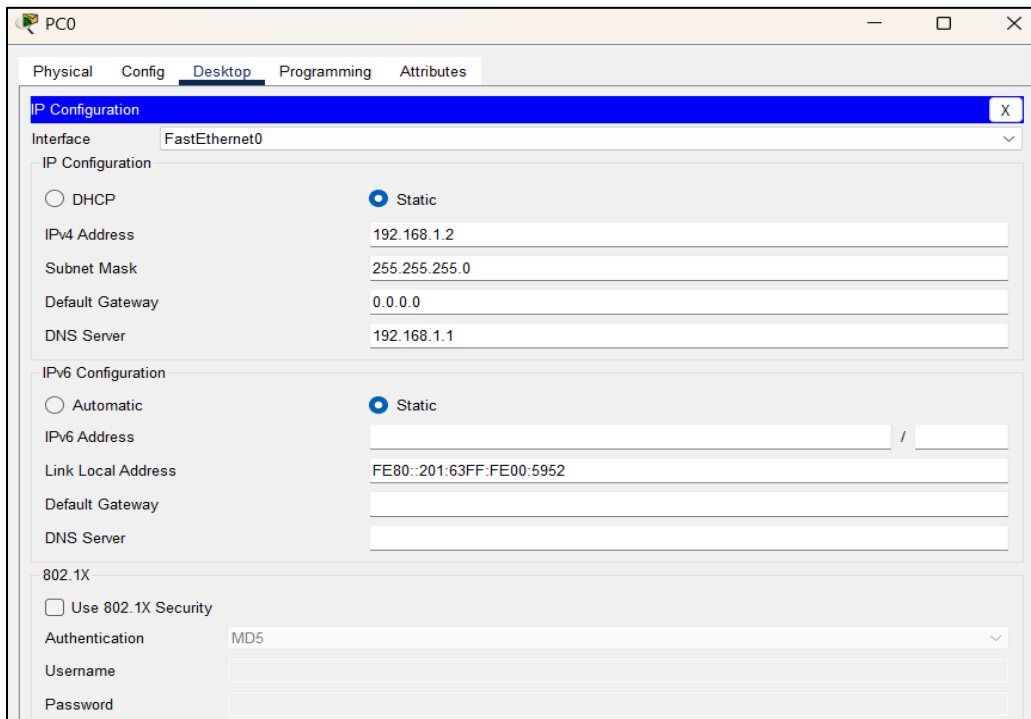
**Step 4:** Edit the Html file to desired format and save the document.



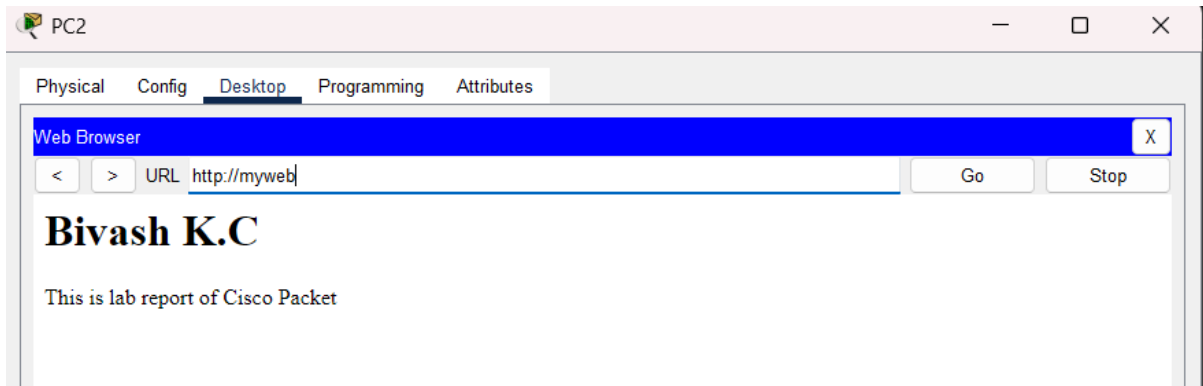
**Step 5:** From Services menu click on DNS. Turn on the DNS Services and add the name of website and assign an IP address to the website in address box and click in add.



**Step 6:** Assign IP addresses to both PCs by clicking a computer, then clicking on Desktop, and finally selecting IP Configuration. Enter the IP address and DNS address in the appropriate field.



**Step 7:** From PC0 open web browser from desktop menu and enter your website name.

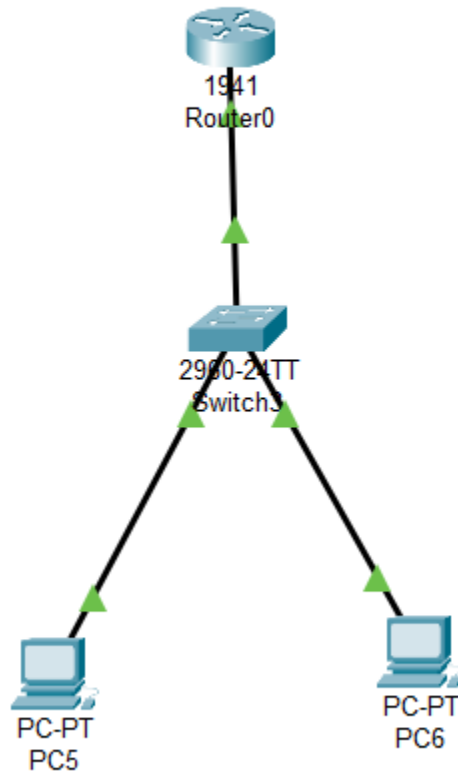


Therefore, you can access your website from any computer as long it is connected with switch and has properly assigned IP address and DNS address no matter how many computers are connected in the switch.

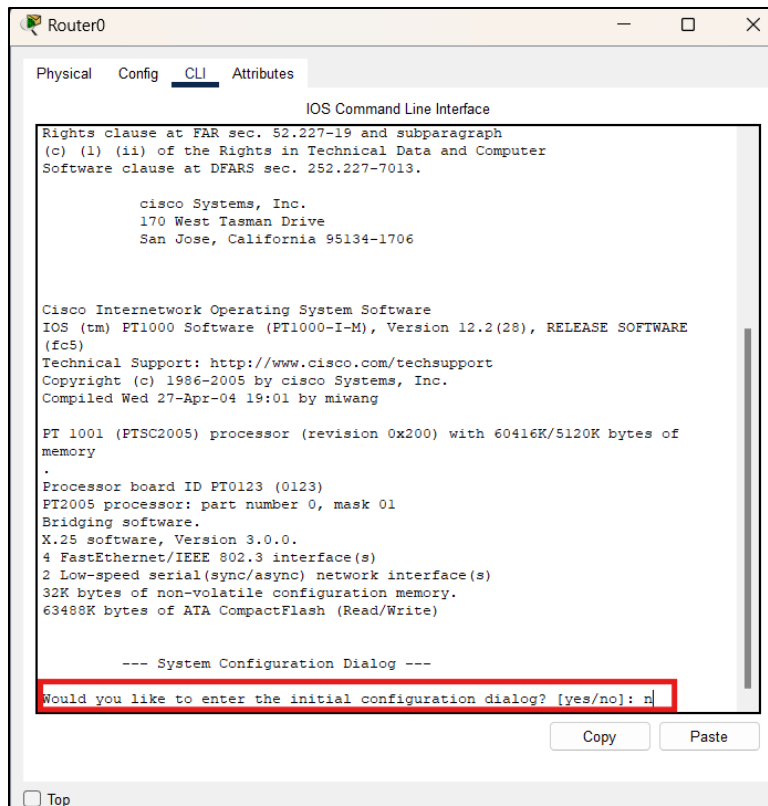
## Lab 8. Configure routers using command line interface.

**Step 1:** Select and drag a router (preferred Router-PT), switch (preferred Switch-PT), two or more pcs and create connection between them using connection cable.

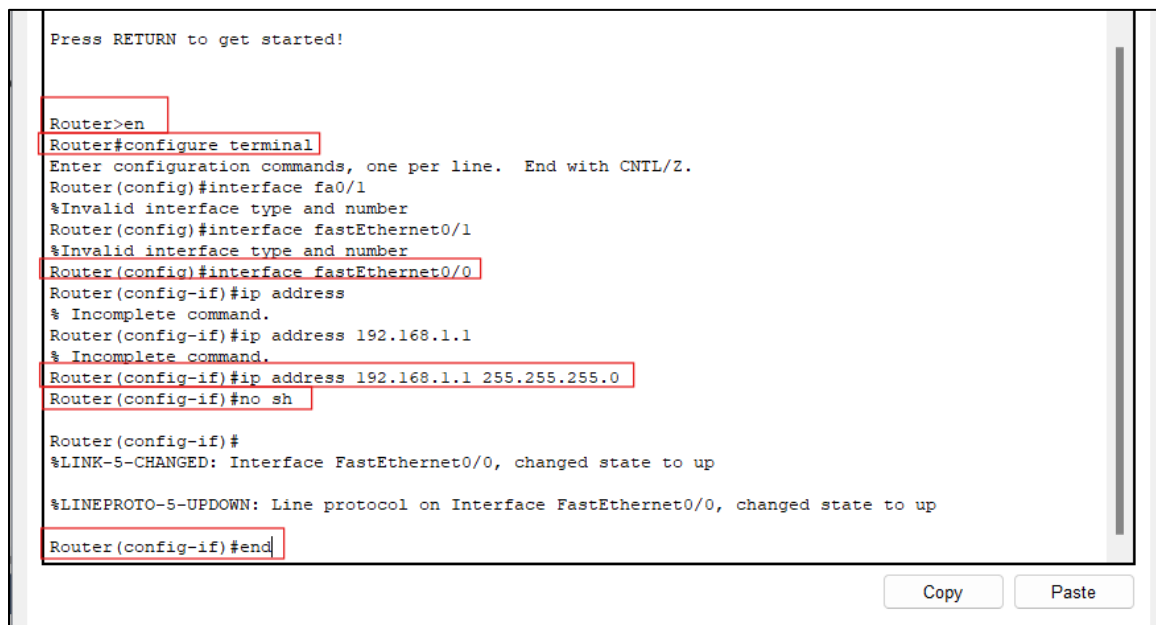
lab 8: Configure routers using CLI



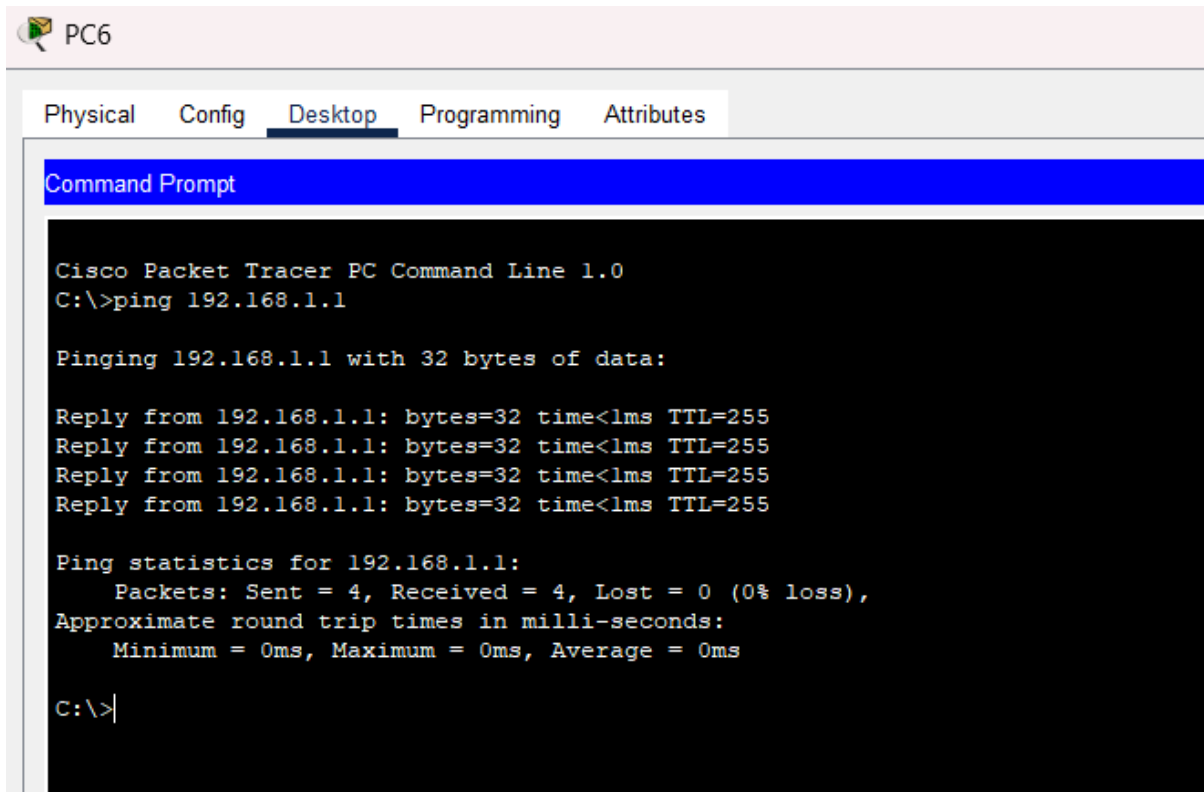
**Step 2:** To configure router, click on router and open CLI (Command Line Interface) menu and enter n.



**Step 3:** Press enter to enter command and type the command as given below:



**Step 4:** To check the connectivity among PCs, assign IP address and ping each other's IP address. We ping PC6 from PC5.



The screenshot shows the 'Desktop' tab of PC6 in Cisco Packet Tracer. A Command Prompt window is open, displaying the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<lms TTL=255
Reply from 192.168.1.1: bytes=32 time<lms TTL=255
Reply from 192.168.1.1: bytes=32 time<lms TTL=255
Reply from 192.168.1.1: bytes=32 time<lms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

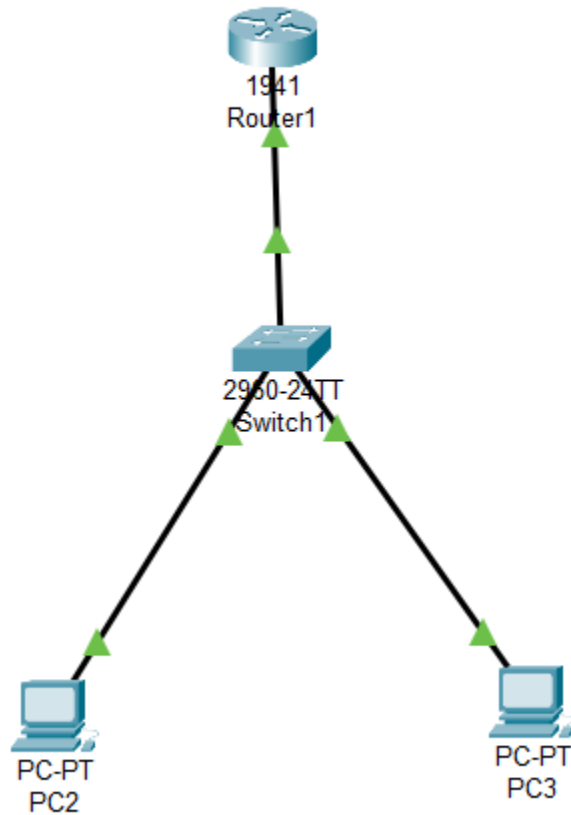
C:\>
```

Therefore, this proves the connectivity between computers connected to router through router exists.

## Lab 9: Configure Telnet on Cisco Packet Tracer

**Step 1:** Select and drag a router (preferred Router-PT), switch (preferred Switch-PT), two or more pcs and create connection between them using connection cable.

Lab 9: COnfigure Telnet on cisco Packet router



**Step 2:** To configure router, click on router and open CLI (Command Line Interface) menu and enter n. Type the following commands.

```
Press RETURN to get started!

Router>en
Router#configt
Translating "configt"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R
R(config)#int int fastEthernet0/0
      ^
% Invalid input detected at '^' marker.

R(config)#int fastEthernet0/0
R(config-if)#ip address 192.168.1.1 255.255.255.0
R(config-if)#no sh

R(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R(config-if)#end
R#
%SYS-5-CONFIG_I: Configured from console by console

R#wr
Building configuration...
[OK]
R#cinfig t
      ^
% Invalid input detected at '^' marker.

R#config t
Enter configuration commands, one per line. End with CNTL/Z.
R(config)#enable secret password
R(config)#end
R#
%SYS-5-CONFIG_I: Configured from console by console

R#exit
```

### Step 3: After exiting press enter to type other commands

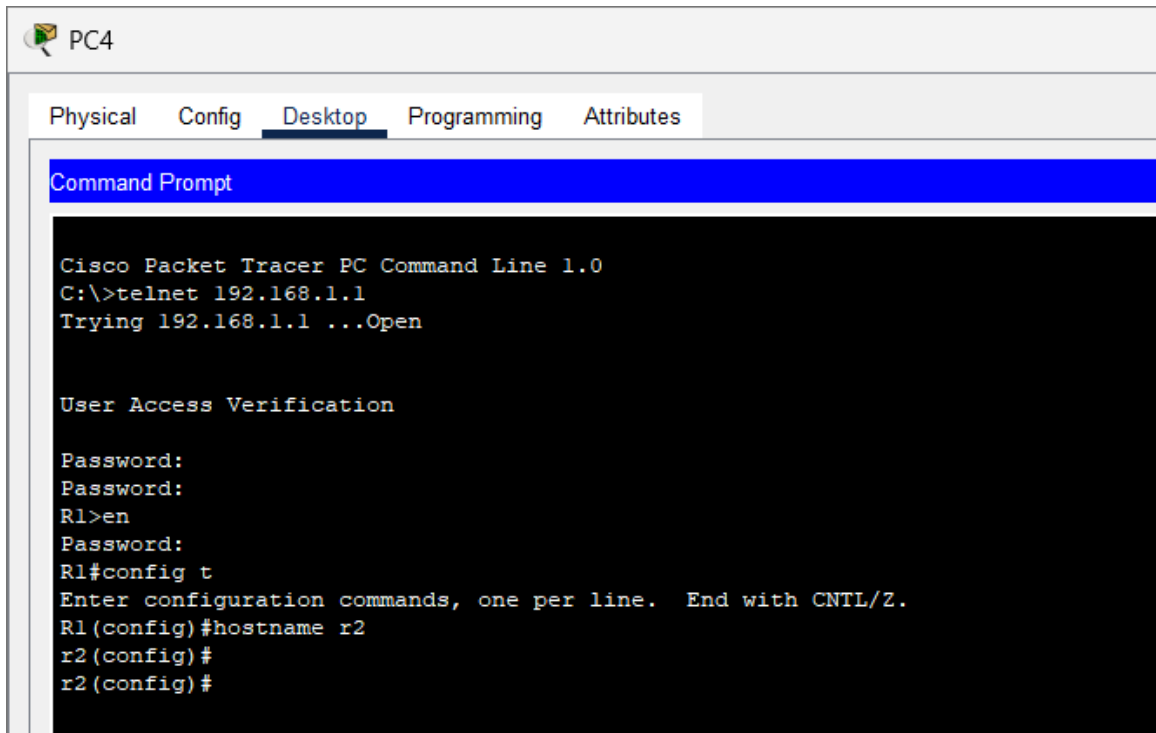
```
R>en
Password:
R#config t
Enter configuration commands, one per line. End with CNTL/Z.
R(config)#live vty 0 5
      ^
% Invalid input detected at '^' marker.

R(config)#line vty 0 5
R(config-line)#login
% Login disabled on line 132, until 'password' is set
% Login disabled on line 133, until 'password' is set
% Login disabled on line 134, until 'password' is set
% Login disabled on line 135, until 'password' is set
% Login disabled on line 136, until 'password' is set
% Login disabled on line 137, until 'password' is set
R(config-line)#password 1234
R(config-line)#end
R#
%SYS-5-CONFIG_I: Configured from console by console
end
Translating "end"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

R#end
Translating "end"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

R#exit
```

**Step 4:** From PC1 we open command prompt and access telnet and change the hostname



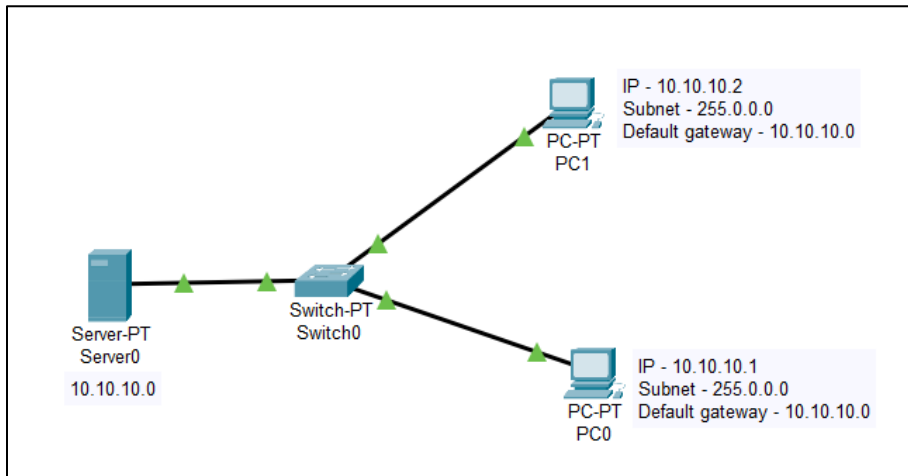
```
PC4
Physical  Config  Desktop  Programming  Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>telnet 192.168.1.1
Trying 192.168.1.1 ...Open

User Access Verification

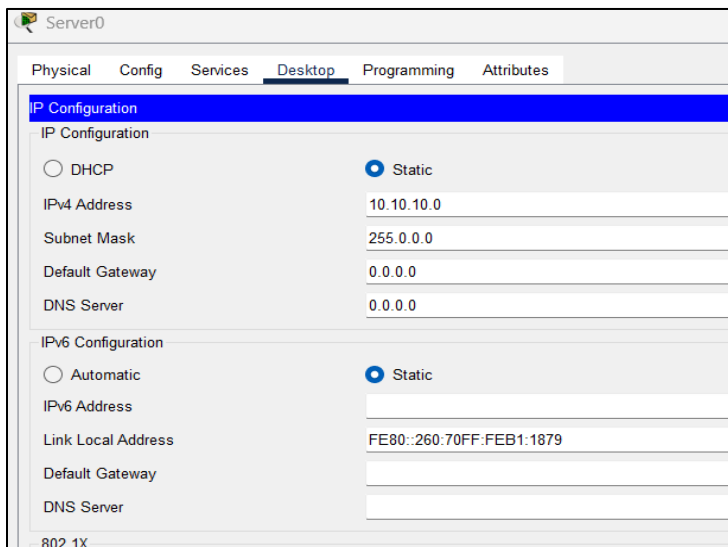
Password:
Password:
R1>en
Password:
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#hostname r2
r2(config)#
r2(config)#
```

## Lab 10. Configure FTP server in cisco Packet Tracer

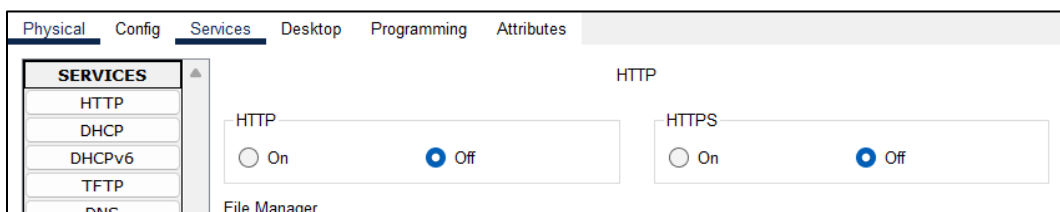
**Step 1:** Select and drag a server (preferred Server-PT), switch (preferred Switch-PT), two or more pcs and create connection between them using connection cable.



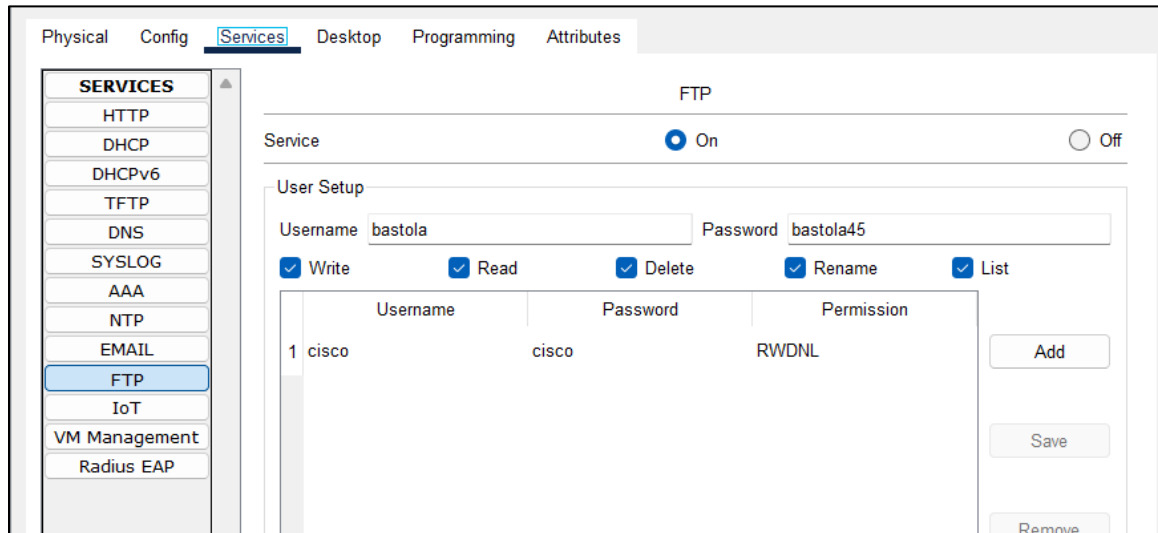
**Step 2:** To configure server, click on server > Desktop > IP Configuration then set IP address and Subnet mask.



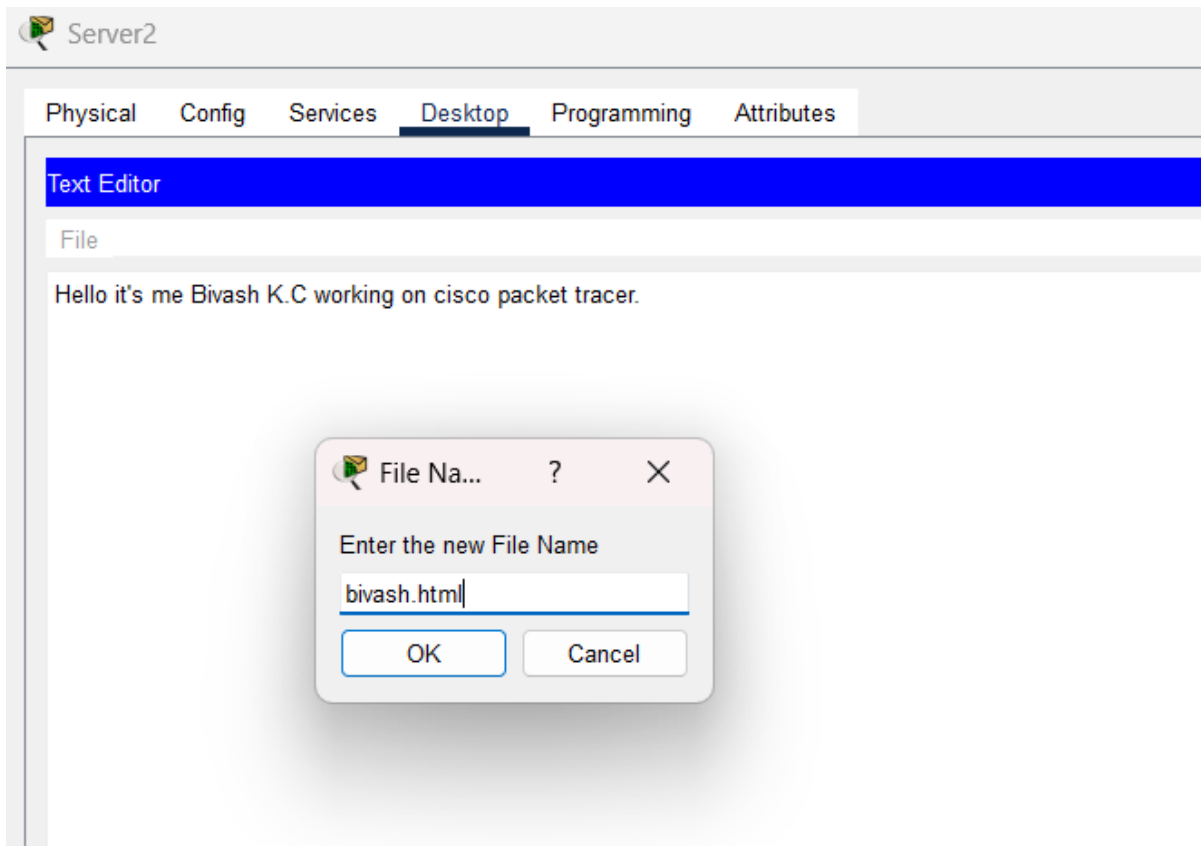
**Step 3:** From services menu turn off all services.



**Step 4:** In the services menu, from services tab select FTP and turn it on incase it is off and from User Setup add new Username and Password and provide all permissions.



**Step 5:** From Desktop menu select text editor and create a file with some text. To save file use shortcut key (Ctrl + s).



**Step 6:** Open Command Prompt from Desktop menu and use following commands.

Replace nepal.html with your file name. Enter previously created username and password when asked.

## Command Prompt

```
C:\>ftp 10.10.10.0
Trying to connect...10.10.10.0
Connected to 10.10.10.0
220- Welcome to PT Ftp server
Username:prashanta
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>dir

Listing /ftp directory from 10.10.10.0:
0   : asa842-k8.bin                5571584
1   : asa923-k8.bin                30468096
2   : c1841-advipservicesk9-mz.124-15.T1.bin  33591768
3   : c1841-ipbase-mz.123-14.T7.bin  13832032
4   : c1841-ipbasek9-mz.124-12.bin  16599160
5   : c1900-universalk9-mz.SPA.155-3.M4a.bin  33591768
6   : c2600-advipservicesk9-mz.124-15.T1.bin  33591768
7   : c2600-i-mz.122-28.bin        5571584
8   : c2600-ipbasek9-mz.124-8.bin   13169700
9   : c2800nm-advipservicesk9-mz.124-15.T1.bin  50938004
10  : c2800nm-advipservicesk9-mz.151-4.M4.bin  33591768
11  : c2800nm-ipbase-mz.123-14.T7.bin  5571584
12  : c2800nm-ipbasek9-mz.124-8.bin  15522644
13  : c2900-universalk9-mz.SPA.155-3.M4a.bin  33591768
14  : c2950-i6q412-mz.121-22.EA4.bin  3058048
15  : c2950-i6q412-mz.121-22.EA8.bin  3117390
16  : c2960-lanbase-mz.122-25.FX.bin  4414921
17  : c2960-lanbase-mz.122-25.SEE1.bin  4670455
18  : c2960-lanbasek9-mz.150-2.SE4.bin  4670455
19  : c3560-advipservicesk9-mz.122-37.SE1.bin  8662192
20  : c3560-advipservicesk9-mz.122-46.SE.bin  10713279
21  : c800-universalk9-mz.SPA.152-4.M4.bin  33591768
22  : c800-universalk9-mz.SPA.154-3.M6a.bin  83029236
23  : cat3k_caa-universalk9.16.03.02.SPA.bin  505532849
24  : cgr1000-universalk9-mz.SPA.154-2.CG  159487552
25  : cgr1000-universalk9-mz.SPA.156-3.CG  184530138
26  : ir800-universalk9-bundle.SPA.156-3.M.bin  160968869
27  : ir800-universalk9-mz.SPA.155-3.M    61750062
28  : ir800-universalk9-mz.SPA.156-3.M    63753767
29  : ir800_yocto-1.7.2.tar            2877440
30  : ir800_yocto-1.7.2_python-2.7.3.tar  6912000
31  : pt1000-i-mz.122-28.bin          5571584
32  : pt3000-i6q412-mz.121-22.EA4.bin    3117390
ftp>put prashanta.html

Writing file prashanta.html to 10.10.10.0:
File transfer in progress...

[Transfer complete - 89 bytes]
```

```
[Transfer complete - 89 bytes]
```

```
89 bytes copied in 0.077 secs (1155 bytes/sec)
```

```
ftp>dir
```

```
Listing /ftp directory from 10.10.10.0:
```

```
0 : asa842-k8.bin 5571584
1 : asa923-k8.bin 30468096
2 : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
3 : c1841-ipbase-mz.123-14.T7.bin 13832032
4 : c1841-ipbasek9-mz.124-12.bin 16599160
5 : c1900-universalk9-mz.SPA.155-3.M4a.bin 33591768
6 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
7 : c2600-i-mz.122-28.bin 5571584
8 : c2600-ipbasek9-mz.124-8.bin 13169700
9 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
10 : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
11 : c2800nm-ipbase-mz.123-14.T7.bin 5571584
12 : c2800nm-ipbasek9-mz.124-8.bin 15522644
13 : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
14 : c2950-i6q412-mz.121-22.EA4.bin 3058048
15 : c2950-i6q412-mz.121-22.EA8.bin 3117390
16 : c2960-lanbase-mz.122-25.FX.bin 4414921
17 : c2960-lanbase-mz.122-25.SEE1.bin 4670455
18 : c2960-lanbasek9-mz.150-2.SE4.bin 4670455
19 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
20 : c3560-advipservicesk9-mz.122-46.SE.bin 10713279
21 : c800-universalk9-mz.SPA.152-4.M4.bin 33591768
22 : c800-universalk9-mz.SPA.154-3.M6a.bin 83029236
23 : cat3k_caa-universalk9.16.03.02.SPA.bin 505532849
24 : cgr1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cgr1000-universalk9-mz.SPA.156-3.CG 184530138
26 : ir800-universalk9-bundle.SPA.156-3.M.bin 160968869
27 : ir800-universalk9-mz.SPA.155-3.M 61750062
28 : ir800-universalk9-mz.SPA.156-3.M 63753767
29 : ir800_yocto-1.7.2.tar 2877440
30 : ir800_yocto-1.7.2_python-2.7.3.tar 6912000
31 : prashanta.html 89
32 : pt1000-i-mz.122-28.bin 5571584
33 : pt3000-i6q412-mz.121-22.EA4.bin 3117390
ftp>
```

**Step 7:** To check if the FTP connection works, open any PC: PC0 or PC1 and open Command Prompt and use the same command as previously used.

PC6

Physical Config **Desktop** Programming Attributes

Command Prompt

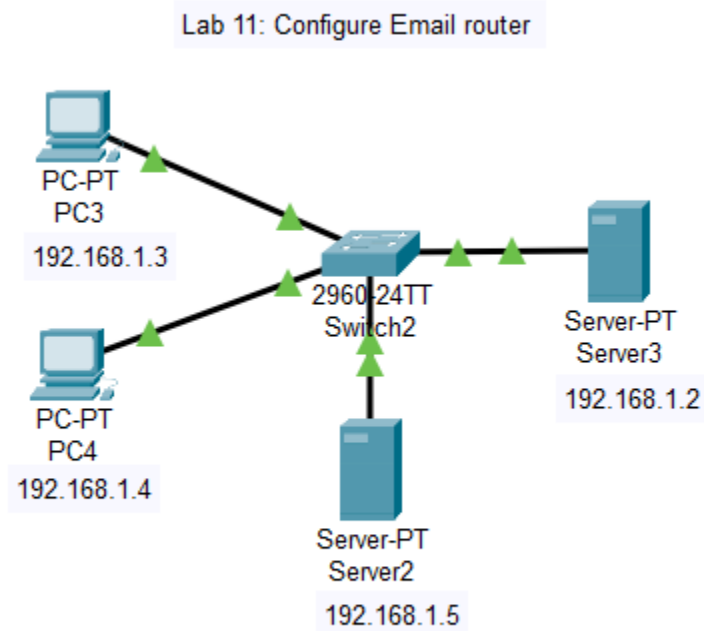
```
ftp 10.10.10.0
Trying to connect...10.10.10.0
Connected to 10.10.10.0
220- Welcome to FT Ftp server
Username:prashanta
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>dir

Listing /ftp directory from 10.10.10.0:
0 : asa842-k8.bin 5571584
1 : asa923-k8.bin 30468096
2 : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
3 : c1841-ipbase-mz.123-14.T7.bin 13832032
4 : c1841-ipbasek9-mz.124-12.bin 16599160
5 : c1900-universalk9-mz.SPA.155-3.M4a.bin 33591768
6 : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
7 : c2600-i-mz.122-28.bin 5571584
8 : c2600-ipbasek9-mz.124-8.bin 13169700
9 : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
10 : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
11 : c2800nm-ipbase-mz.123-14.T7.bin 5571584
12 : c2800nm-ipbasek9-mz.124-8.bin 15522644
13 : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
14 : c2950-i6q412-mz.121-22.EA4.bin 3058048
15 : c2950-i6q412-mz.121-22.EA8.bin 3117390
16 : c2960-lanbase-mz.122-25.FX.bin 4414921
17 : c2960-lanbase-mz.122-25.SEE1.bin 4670455
18 : c2960-lanbasek9-mz.150-2.SE4.bin 4670455
19 : c3560-advipservicesk9-mz.122-37.SE1.bin 8662192
20 : c3560-advipservicesk9-mz.122-46.SE.bin 10713279
21 : c800-universalk9-mz.SPA.152-4.M4.bin 33591768
22 : c800-universalk9-mz.SPA.154-3.M6a.bin 83029236
23 : cat3k_caa-universalk9.16.03.02.SPA.bin 505532849
24 : cgr1000-universalk9-mz.SPA.154-2.CG 159487552
25 : cgr1000-universalk9-mz.SPA.156-3.CG 184530138
26 : ir800-universalk9-bundle.SPA.156-3.M.bin 160968869
27 : ir800-universalk9-mz.SPA.155-3.M 61750062
28 : ir800-universalk9-mz.SPA.156-3.M 63753767
29 : ir800_yocto-1.7.2.tar 2877440
30 : ir800_yocto-1.7.2_python-2.7.3.tar 6912000
31 : prashanta.html 89
32 : pt1000-i-mz.122-28.bin 5571584
33 : pt3000-i6q412-mz.121-22.EA4.bin 3117390
ftp>
```

Even though accessing FTP file from PC0 we can find file created in server to all connected devices.

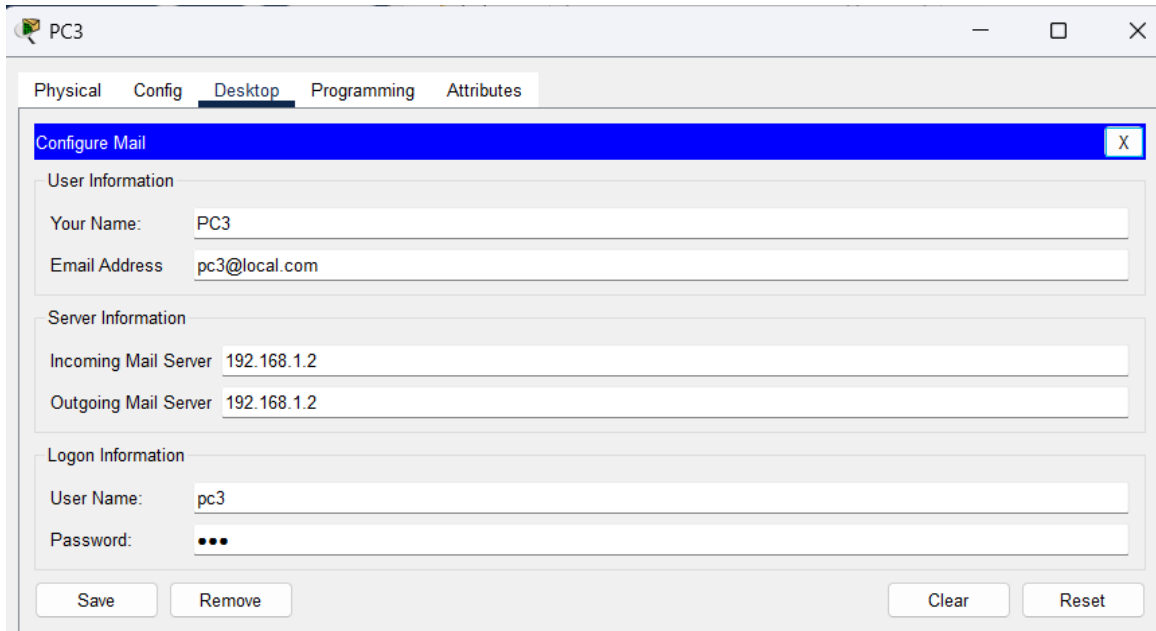
## Lab 11. Configure Email router in Cisco Packet Tracer

**Step 1:** Select and drag a server (preferred Server-PT), switch (preferred Switch-PT), two or more pcs, create connection between them using connection cable and configure them accordingly.



**Step 2:** To configure mail clients on the PCs and mail service on the generic server click on PC0 and open Email from Desktop tab.

### PC3:



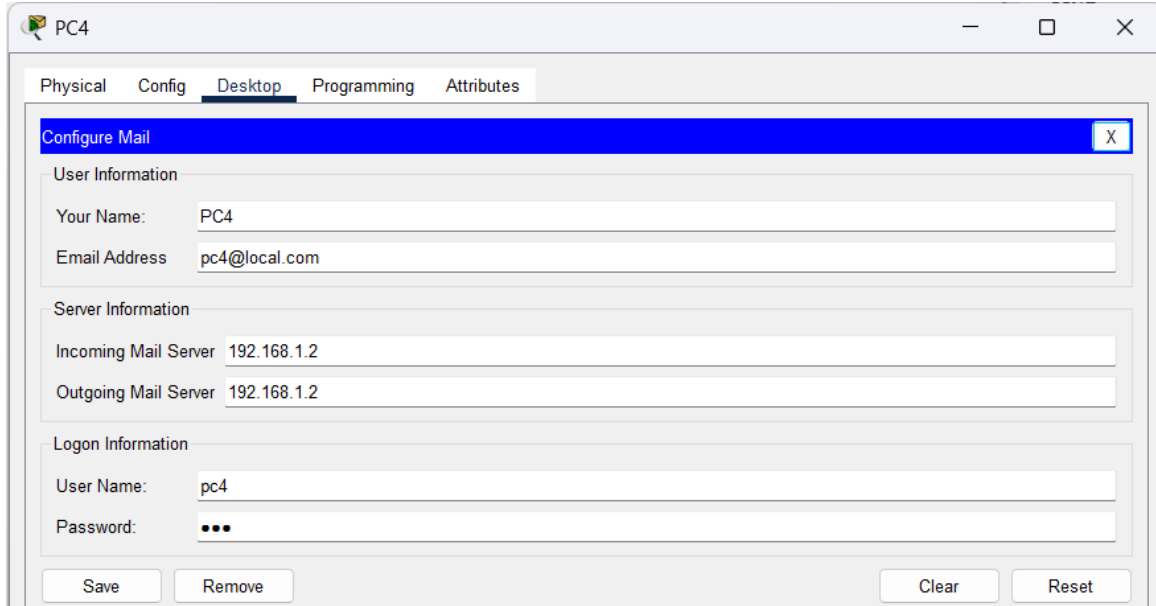
The screenshot shows a configuration window for PC3 with the 'Desktop' tab selected. The 'Configure Mail' dialog is open, displaying the following fields:

- User Information:**
  - Your Name: PC3
  - Email Address: pc3@local.com
- Server Information:**
  - Incoming Mail Server: 192.168.1.2
  - Outgoing Mail Server: 192.168.1.2
- Logon Information:**
  - User Name: pc3
  - Password: [masked]

Buttons at the bottom include 'Save', 'Remove', 'Clear', and 'Reset'.

Configure PC1 similarly.

### PC4:

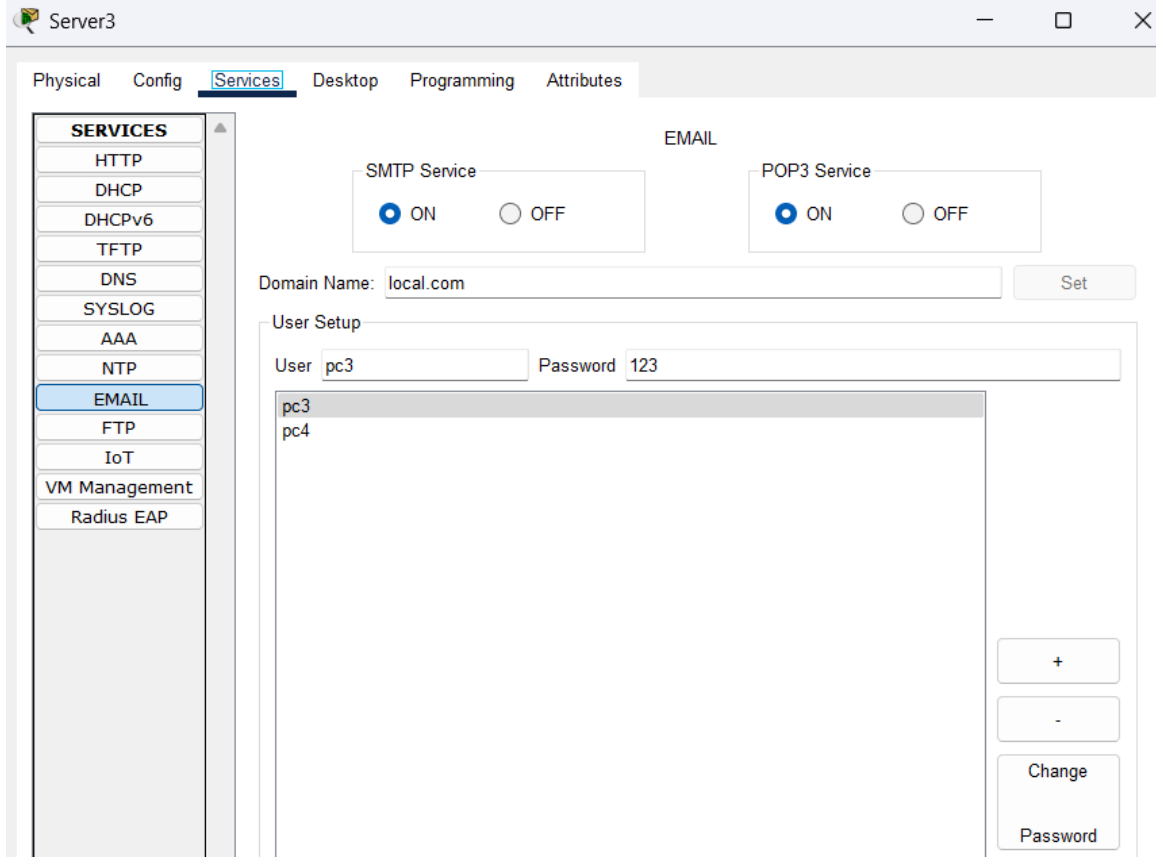


The screenshot shows a configuration window for PC4 with the 'Desktop' tab selected. The 'Configure Mail' dialog is open, displaying the following fields:

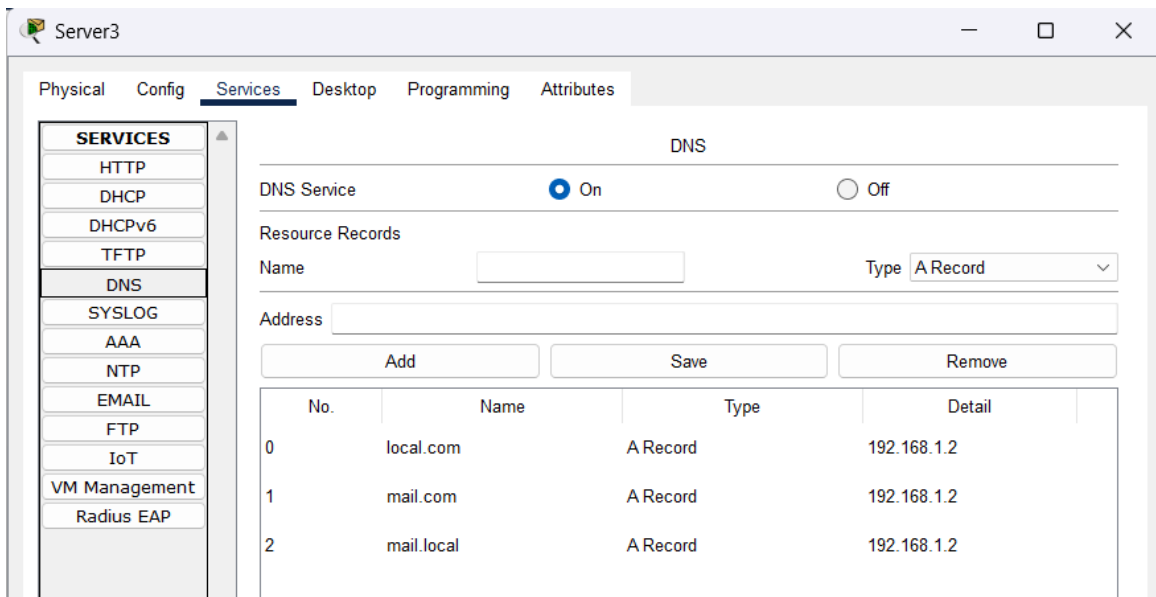
- User Information:**
  - Your Name: PC4
  - Email Address: pc4@local.com
- Server Information:**
  - Incoming Mail Server: 192.168.1.2
  - Outgoing Mail Server: 192.168.1.2
- Logon Information:**
  - User Name: pc4
  - Password: [masked]

Buttons at the bottom include 'Save', 'Remove', 'Clear', and 'Reset'.

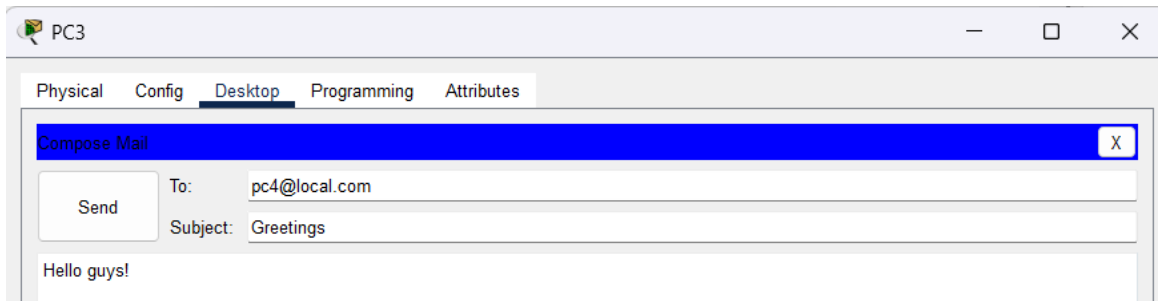
**Step 3:** To configure **mail server**, click on server > services. From services tab select email and add user accordingly. Use '+' to add user and '-' to remove user.



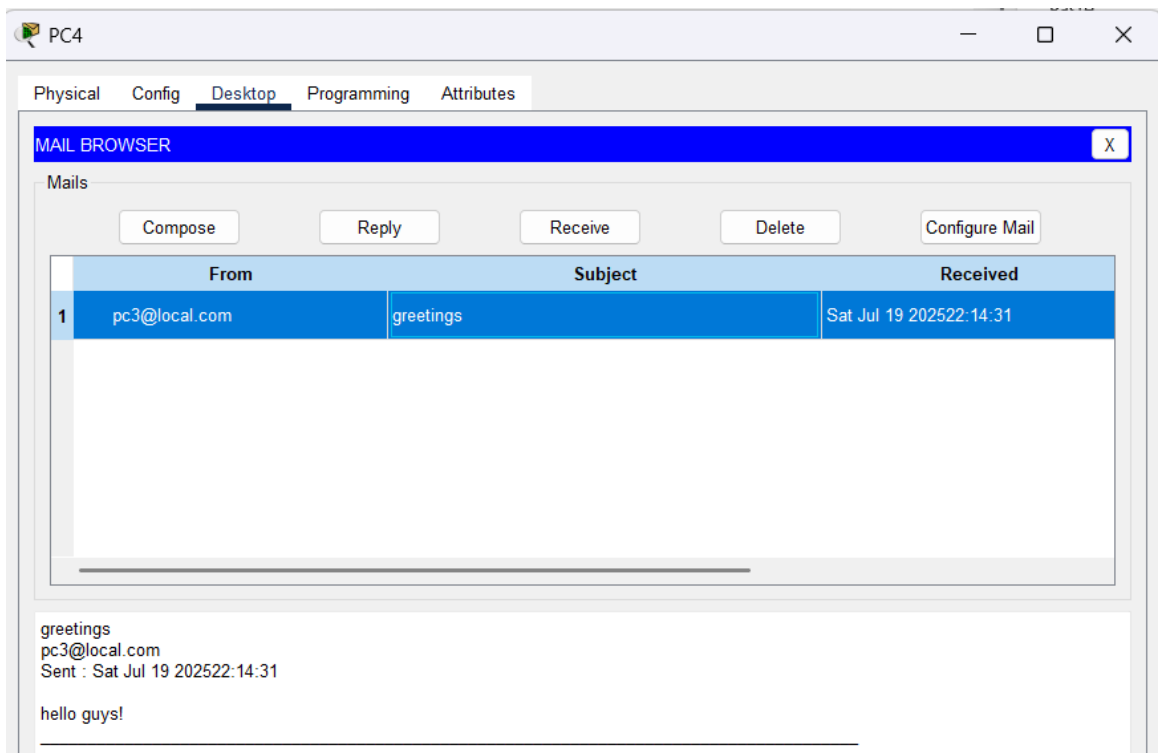
**Step 4:** Now, to configure **DNS server**, click on server > services. From services tab select DNS and name and address (IP address of mail server).



**Step 5:** Lastly to test the email service, go to PC0 email client, compose an email and send its to PC1 email address ([client2@mail.com](mailto:client2@mail.com)).



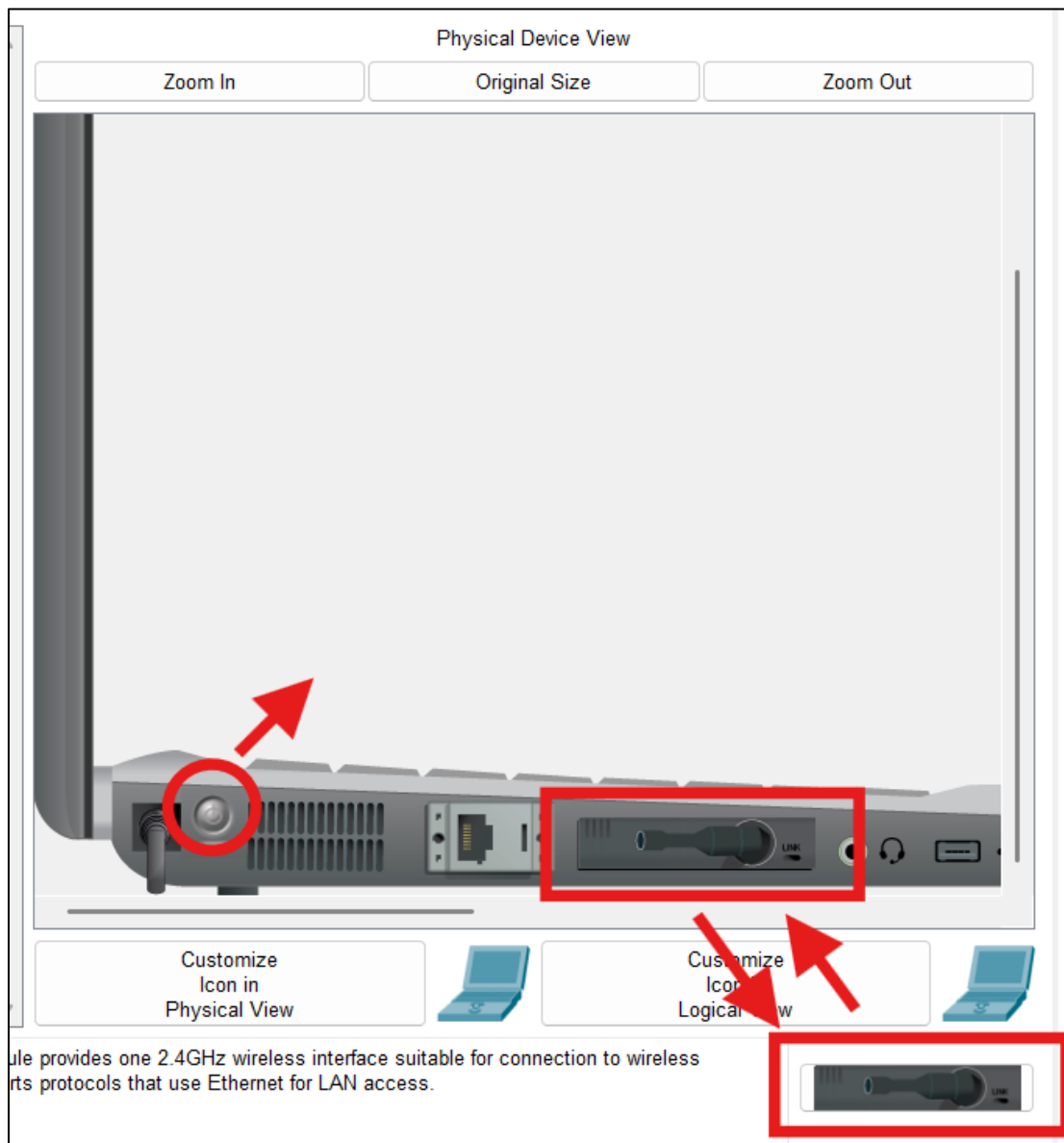
**Step 6:** After sending mail successfully from PC1, open email service from PC0 and check on receive.



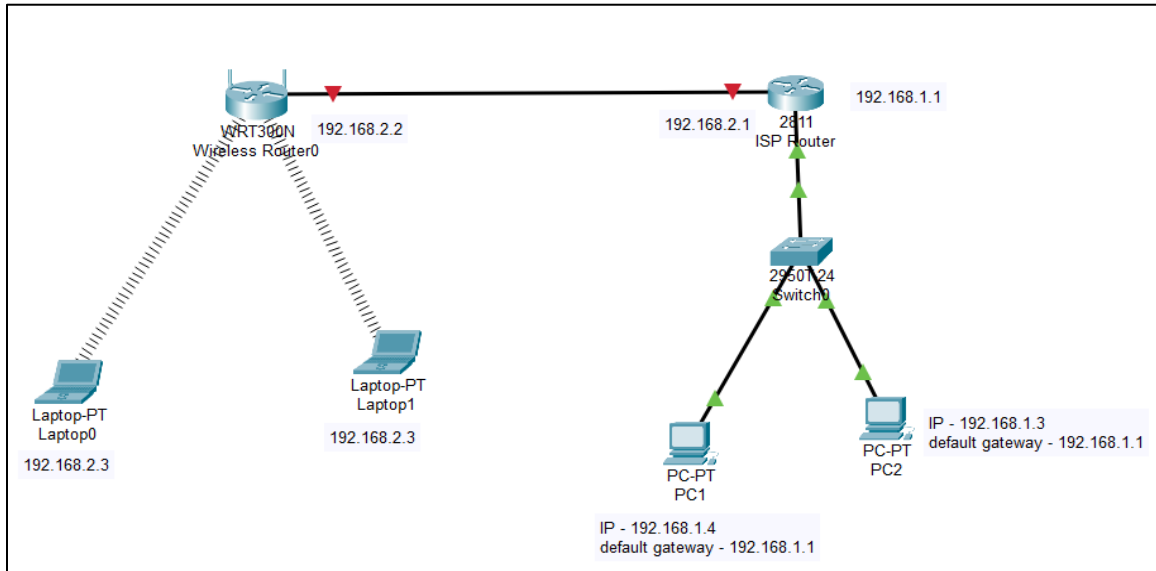
## Lab 12. Wireless router configuration using Cisco Packet Tracer.

**Step 1:** Select and drag a wireless router (WRT 300N), a normal router (preferred 200 series), switch (preferred Switch-PT), two or more pcs, two or more laptops and create connection between them using connection cable.

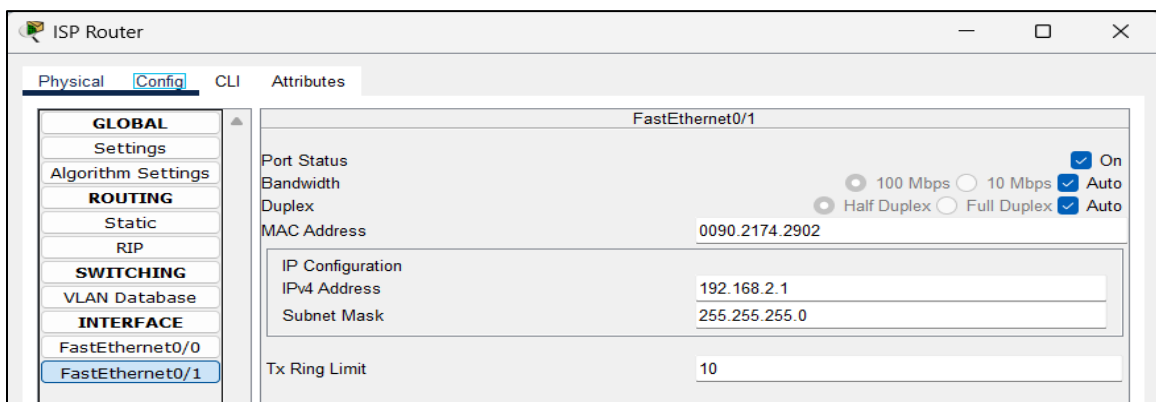
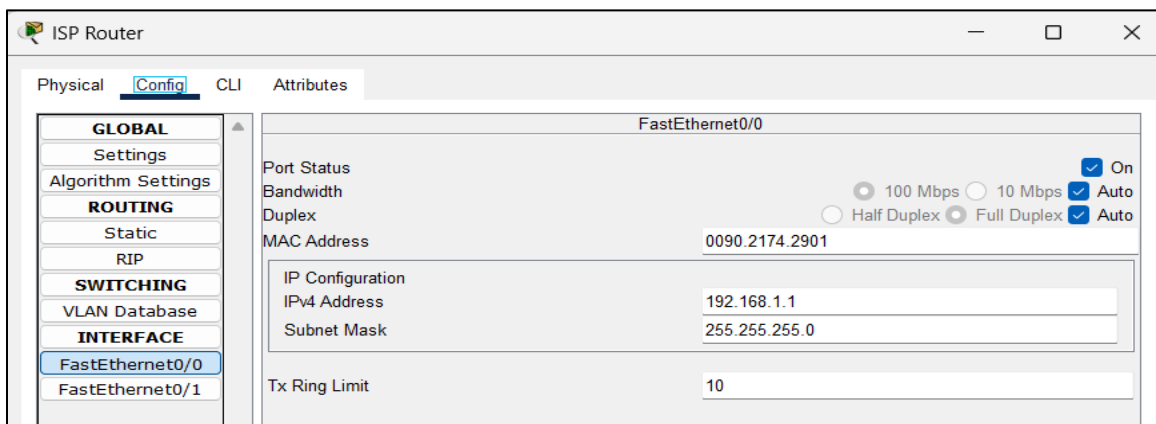
Replace the module from laptop by clicking on laptop and zooming in to preferred size. Firstly, turn off laptop by pressing power button off and replace module.



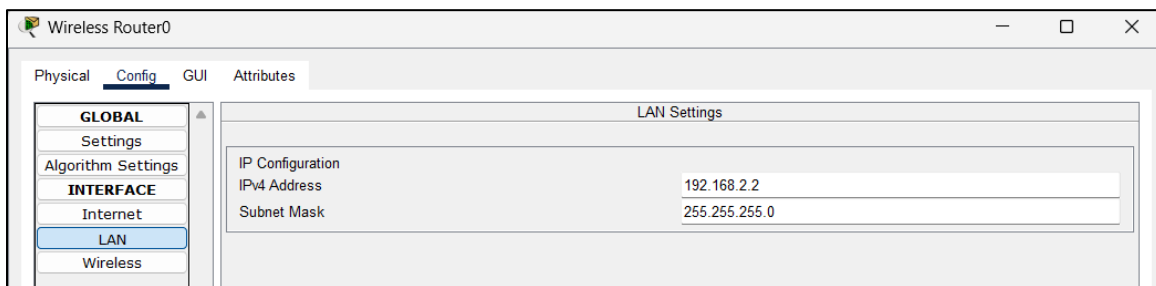
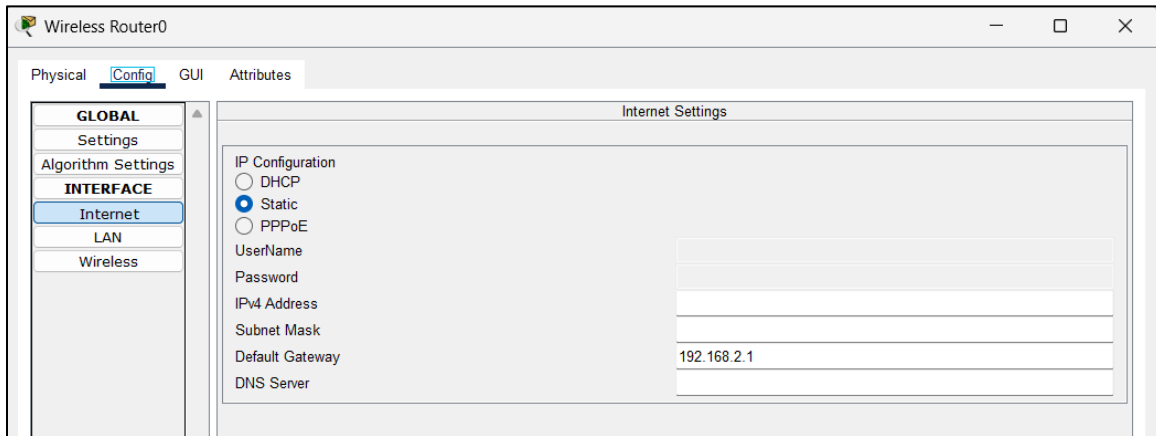
**Step 2:** Configure devices accordingly.



**Step 3:** To configure ISP router, click on router. Select FastEthernet0/0 and FastEthernet0/1 and turn it on and add IP address.



**Step 4:** Now click on wireless router to configure and select Internet, change IP configuration to Static and add Default Gateway and LAN.



**Step 5:** After all connection is complete ping Laptop1 from PC1 to check connectivity.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.4

Pinging 192.168.2.4 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.4: bytes=32 time=15ms TTL=127
Reply from 192.168.2.4: bytes=32 time=4ms TTL=127
Reply from 192.168.2.4: bytes=32 time=14ms TTL=127

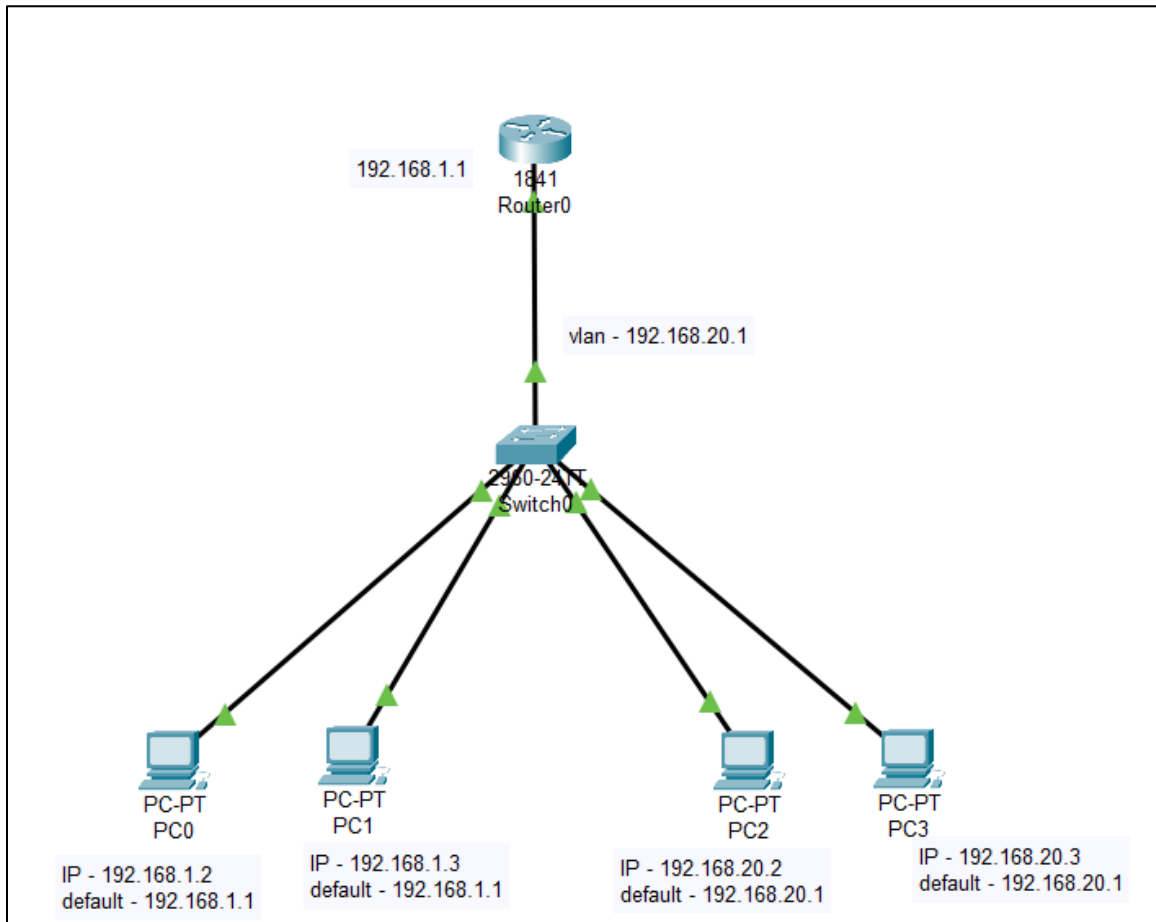
Ping statistics for 192.168.2.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 15ms, Average = 11ms

C:\>
```

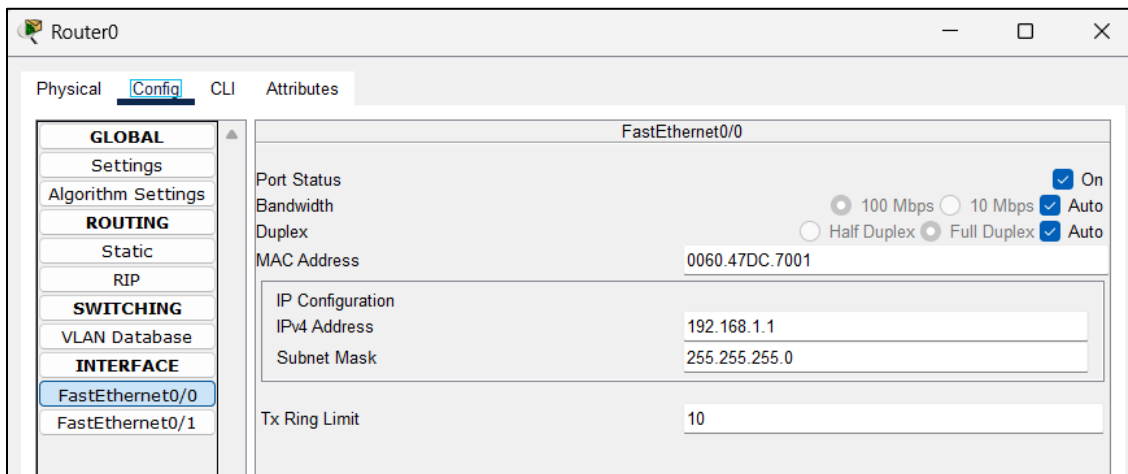
This shows connection exists between Laptops and PCs.

## Lab 13. Simple VLAN configuration using Cisco Packet Tracer

**Step 1:** Select and drag router, switch (preferred Switch-PT), three or more pcs, create connection between them using connection cable and configure them accordingly.

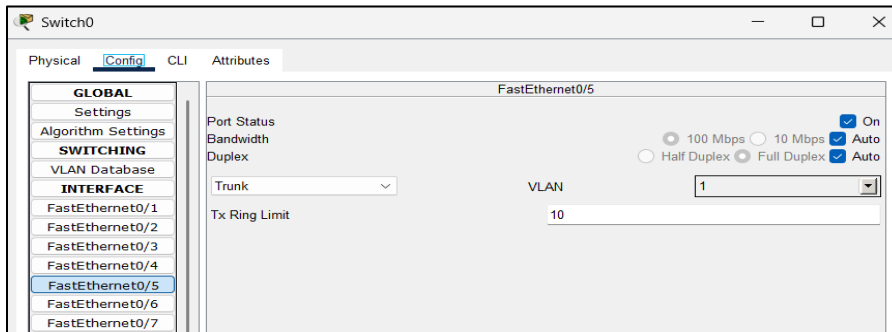
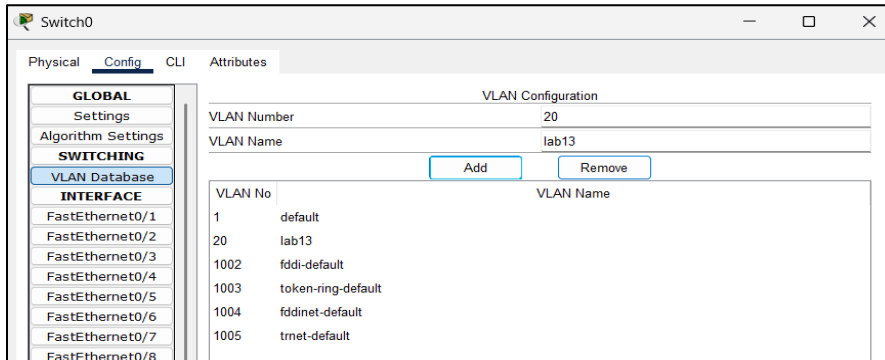


**Step 2:** Click on router, click FastEthernet0/0. Turn it on and set IP address

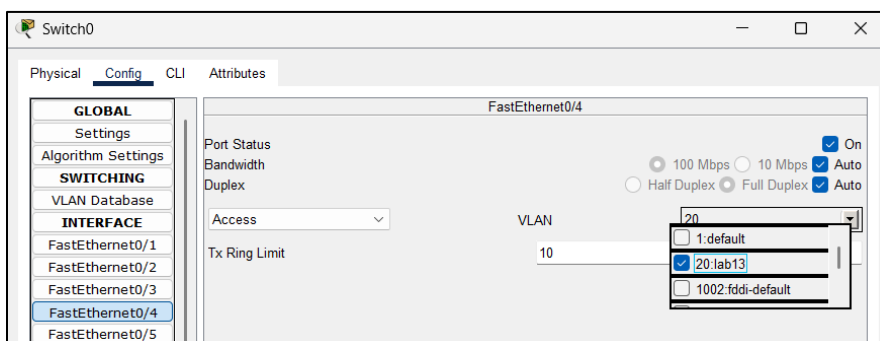
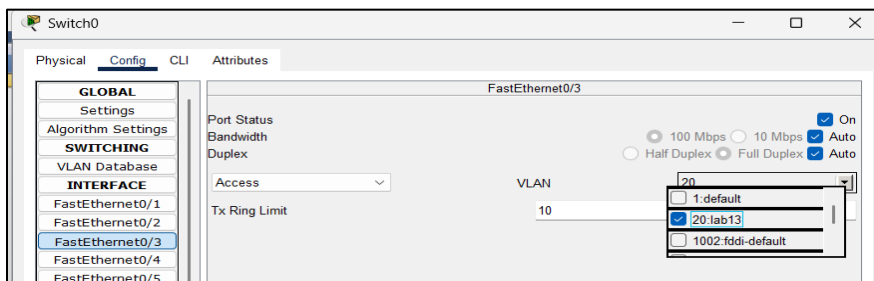


**Step 3:** Click on switch to configure. Click on VLAN Database and configure VLAN.

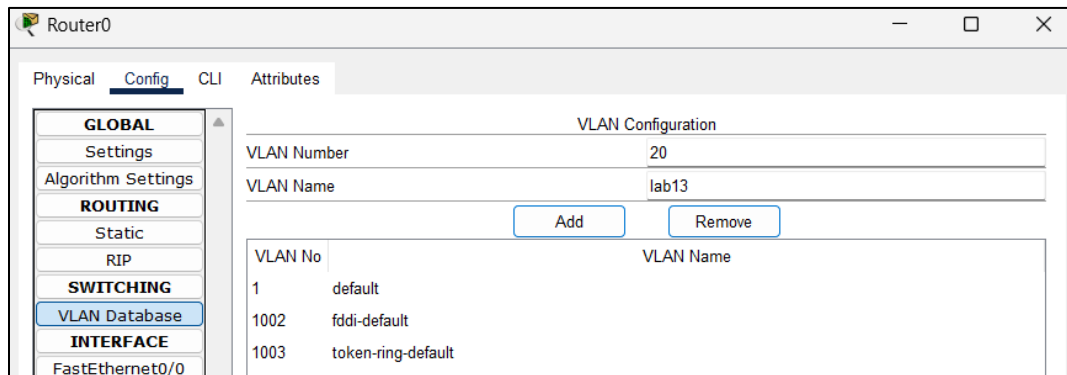
Click on FastEthernet0/5 and configure it accordingly.



**Step 3:** Since PC2 and PC3 are connected to FastEthernet0/3 and FastEthernet0/4 respectively click on them to configure it accordingly.



**Step 4:** Click on router to configure it. Click on VLAN Databases and configure it accordingly and open CLI and input these commands.



```
Router>enable
Router#
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)#vlan 20 name lab13
VLAN 20 modified:
  Name: lab13
Router(vlan)#
Router(vlan)#
Router(vlan)#
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int f 0/0
^
% Invalid input detected at '^' marker.

Router(config)#int f 0/0.1
^
% Invalid input detected at '^' marker.

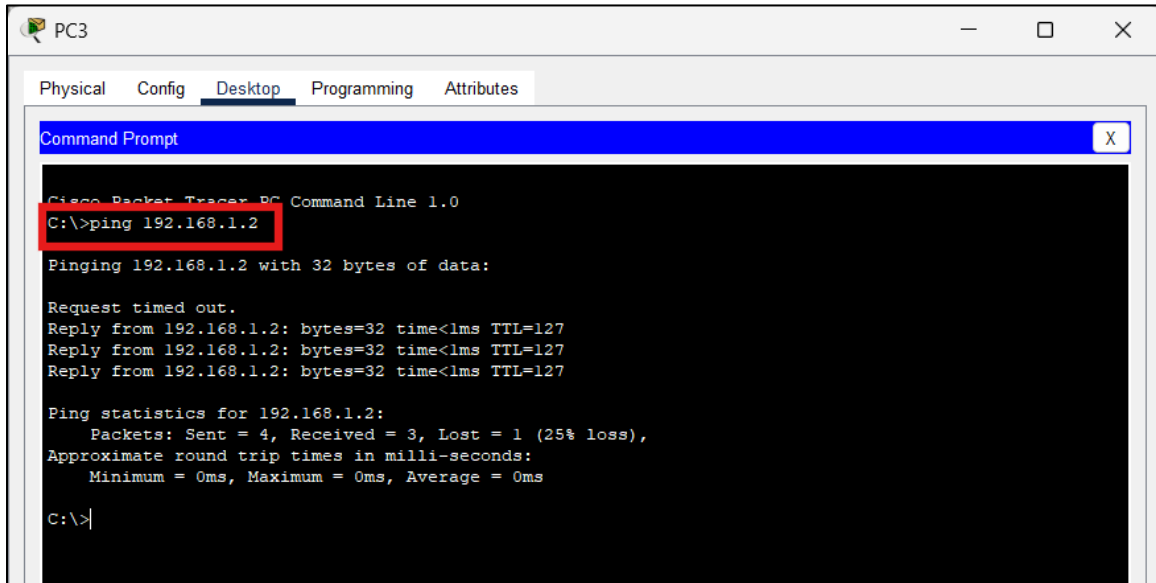
Router(config)#int f 0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state to up

Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

**Step 5:** Now to check connectivity from normal PC and VLAN PC we ping using their IP address.

From PC3 to PC0



```
PC3
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2
Pinging 192.168.1.2 with 32 bytes of data:
Request timed out.
Reply from 192.168.1.2: bytes=32 time<lms TTL=127
Reply from 192.168.1.2: bytes=32 time<lms TTL=127
Reply from 192.168.1.2: bytes=32 time<lms TTL=127
Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

Therefore, there is connection.