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Batch : B

CEL 51, DCCN, Monsoon 2020

Lab 4: Prototyping a Network

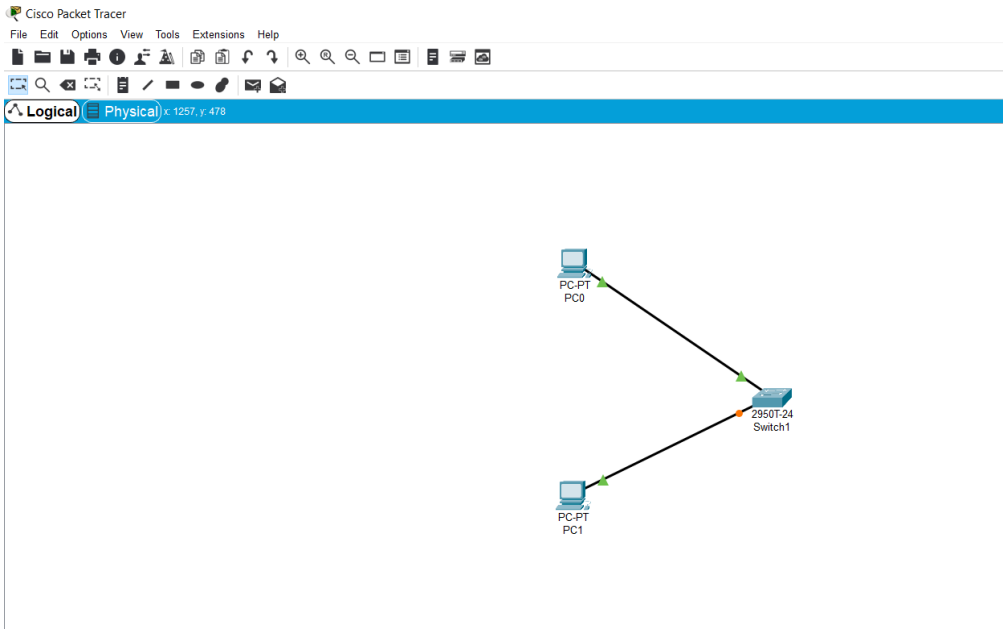
Objective:
Prototype a network using Packet Tracer

Background
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

Step 1: Set up the network topology

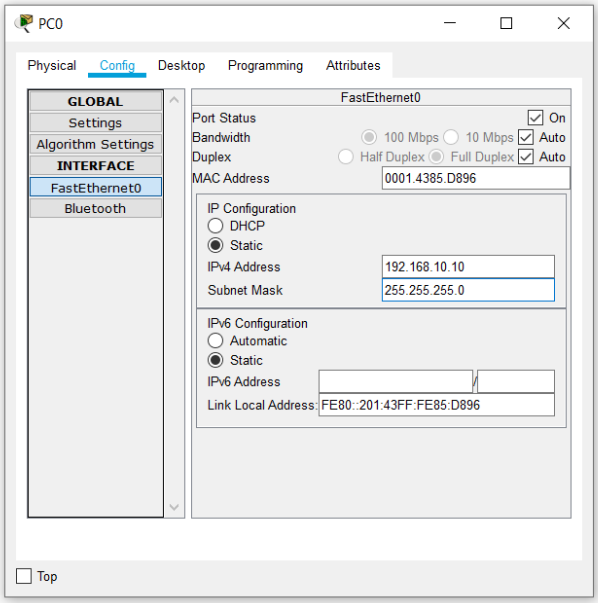
a) Add two PCs and a Cisco 2950T switch

b) Using straight-through cables, connect **PC0** to interface **Fa0/1** on **Switch0** and **PC1** to interface **Fa0/2** on **Switch0**.



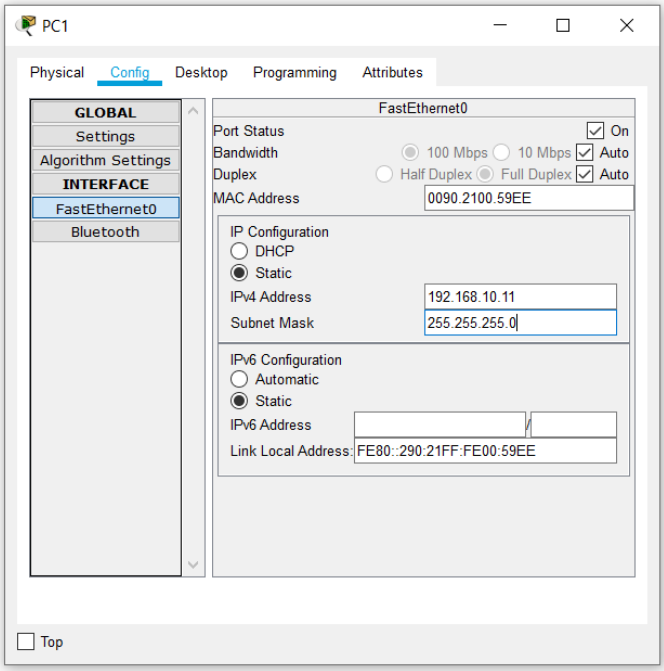
c) Configure PC0 using the **Config** tab in the PC0 configuration window:

   a. IP address: 192.168.10.10
   b. Subnet Mask 255.255.255.0



d) Configure PC1 using the **Config** tab in the PC1 configuration window

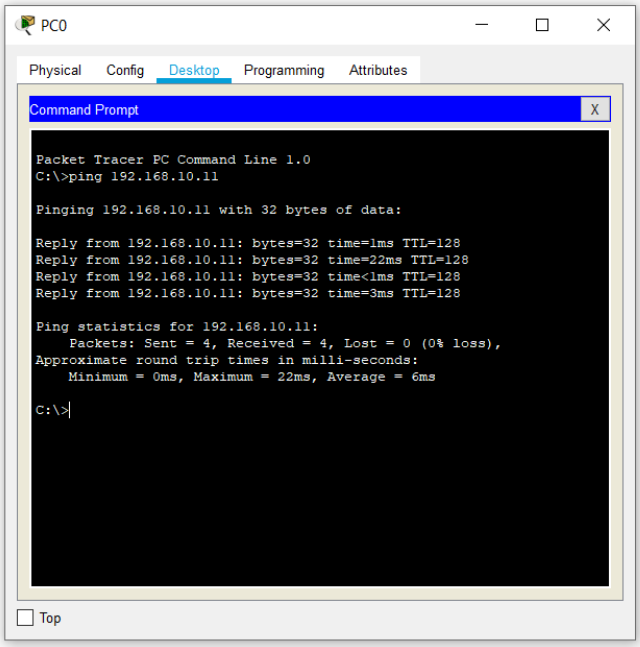
a. IP address: 192.168.10.11
b. Subnet Mask 255.255.255.0



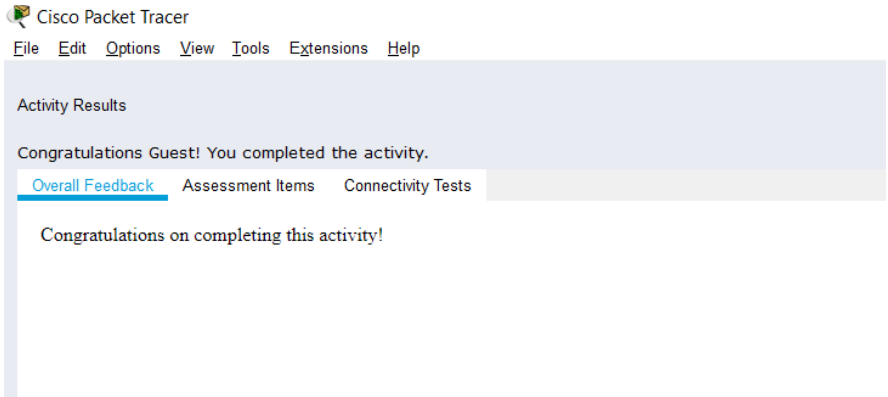
Step 2: Test connectivity from PC0 to PC1

a) Use the **ping** command to test connectivity.
   a. Click PC0.
   b. Choose the **Desktop** tab.
   c. Choose **Command Prompt**.
   d. Type: **ping 192.168.10.11** and press *enter*.

b) A successful **ping** indicates the network was configured correctly and the prototype validates the hardware and software configurations. A successful ping should resemble the below output:



c) Close the configuration window.
d) Click the **Check Results** button at the bottom of the instruction window to check your work..



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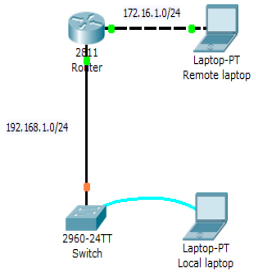
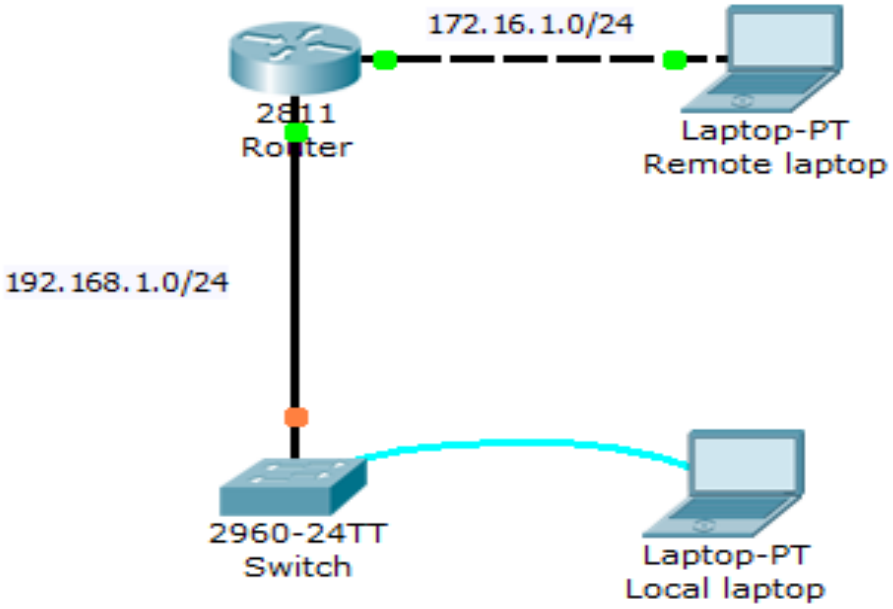
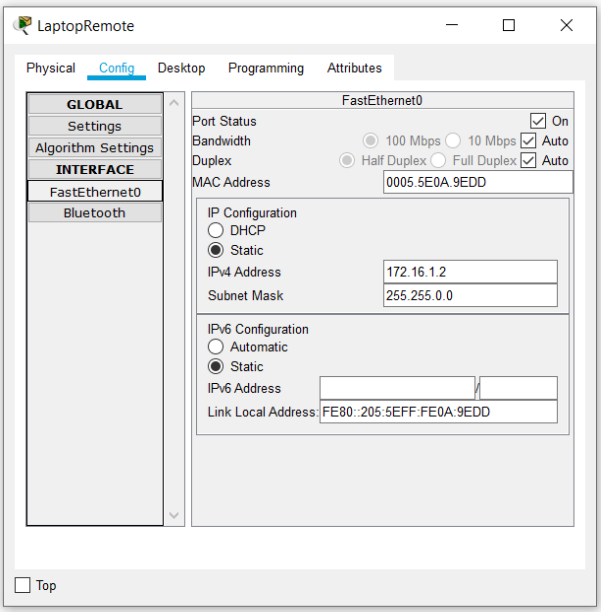
Lab 4.1: Basic configuration - hostname, motd banner, passwd etc

Objective:
This lab will test your ability to configure basic settings such as hostname, motd banner, encrypted passwords, and terminal options on a Packet Tracer 6.2 simulated Cisco Catalyst switch.

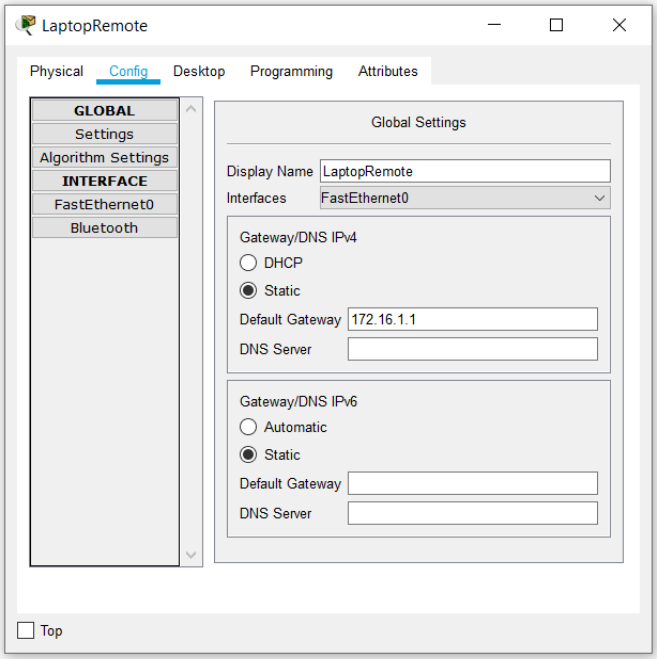




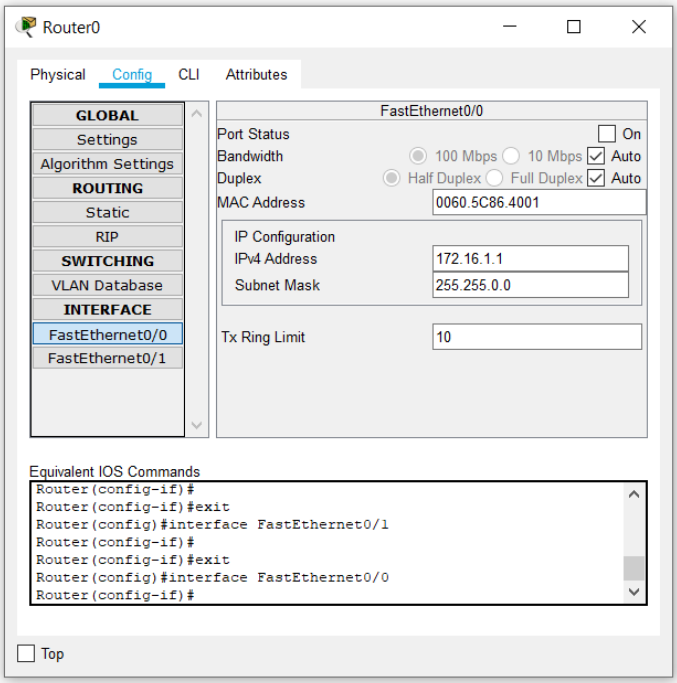
SETUP :



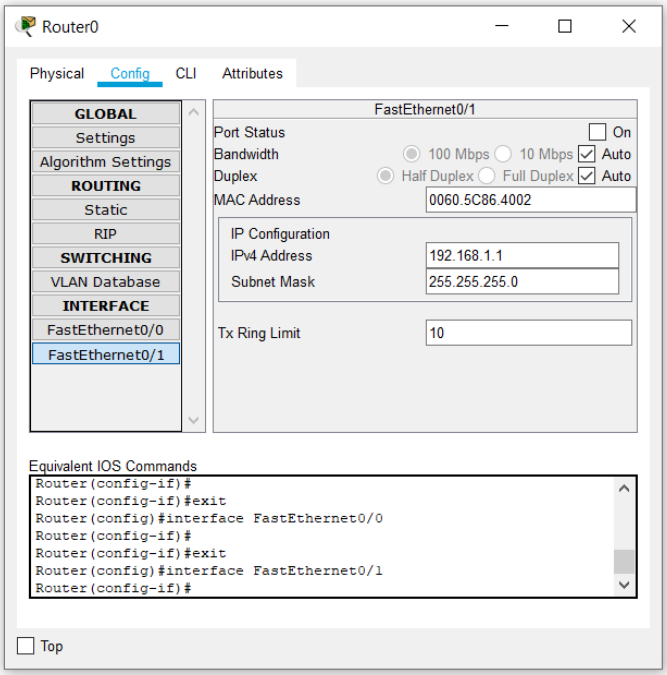
Set IP address of Remote Laptop as 172.16.1.2, belonging to the same subnet as the Router Gateway IP that it's connected to.



Set the default gateway to 172.16.1.1, this port IP has to be configured at the Router port.

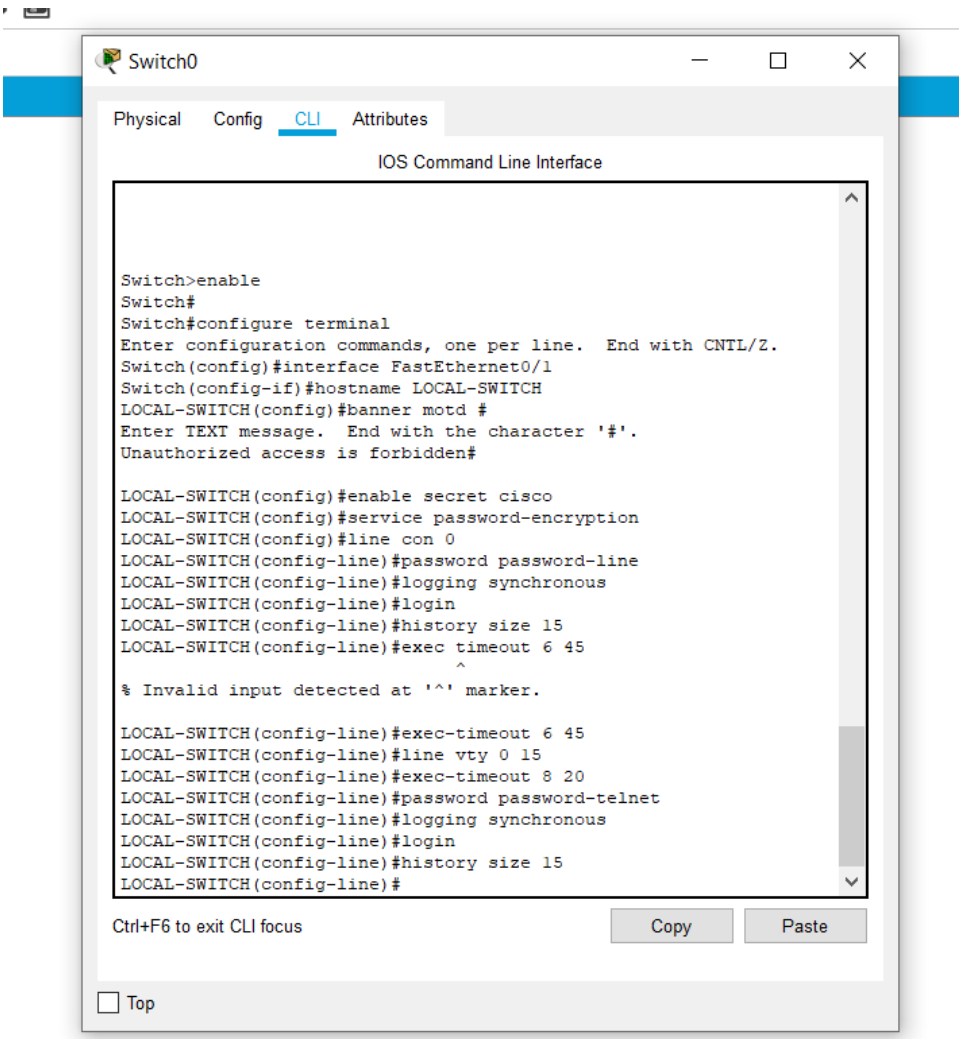


Enter the IP Gateway entered in the Remote Laptop as the FastEthernet port ID, with the same Subnet Mask as that of the Remote Laptop.



Set the IP Gateway to be entered into the Router, as the port IP at the FastEthernet1 of the Router

1. Use the local laptop connect to the switch console.



All of the configuration to the Switch to set encryption, make logging in synchronous, adding MOTD, and switching encryption on, etc are all done in the above lines.

2. Configure Switch hostname as LOCAL-SWITCH

```
Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#hostname LOCAL-SWITCH
LOCAL-SWITCH(config)#banner motd #
```

3. Configure the message of the day as "Unauthorized access is forbidden"

```
Switch>enable
Switch#
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#hostname LOCAL-SWITCH
LOCAL-SWITCH(config)#banner motd #
Enter TEXT message.  End with the character '#'.
Unauthorized access is forbidden#
```

As we can see that with the banner motd command, we can configure a message.

4. Configure the password for privileged mode access as "cisco". The password must be md5 encrypted

5. Configure password encryption on the switch using the global configuration command

6. Configure CONSOLE access with the following settings :
- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 6'45"
- Synchronous logging

```
LOCAL-SWITCH(config)#enable secret cisco
LOCAL-SWITCH(config)#service password-encryption
LOCAL-SWITCH(config)#line con 0
LOCAL-SWITCH(config-line)#password password-line
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#exec timeout 6 45
                           ^
% Invalid input detected at '^' marker.

LOCAL-SWITCH(config-line)#exec-timeout 6 45
LOCAL-SWITCH(config-line)#line vty 0 15
LOCAL-SWITCH(config-line)#exec-timeout 8 20
LOCAL-SWITCH(config-line)#password password-telnet
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#
```

6. Configure TELNET access with the following settings :
- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 8'20"

-Synchronous logging

```
LOCAL-SWITCH(config)#enable secret cisco
LOCAL-SWITCH(config)#service password-encryption
LOCAL-SWITCH(config)#line con 0
LOCAL-SWITCH(config-line)#password password-line
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#exec timeout 6 45
                           ^
% Invalid input detected at '^' marker.

LOCAL-SWITCH(config-line)#exec-timeout 6 45
LOCAL-SWITCH(config-line)#line vty 0 15
LOCAL-SWITCH(config-line)#exec-timeout 8 20
LOCAL-SWITCH(config-line)#password password-telnet
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#
```

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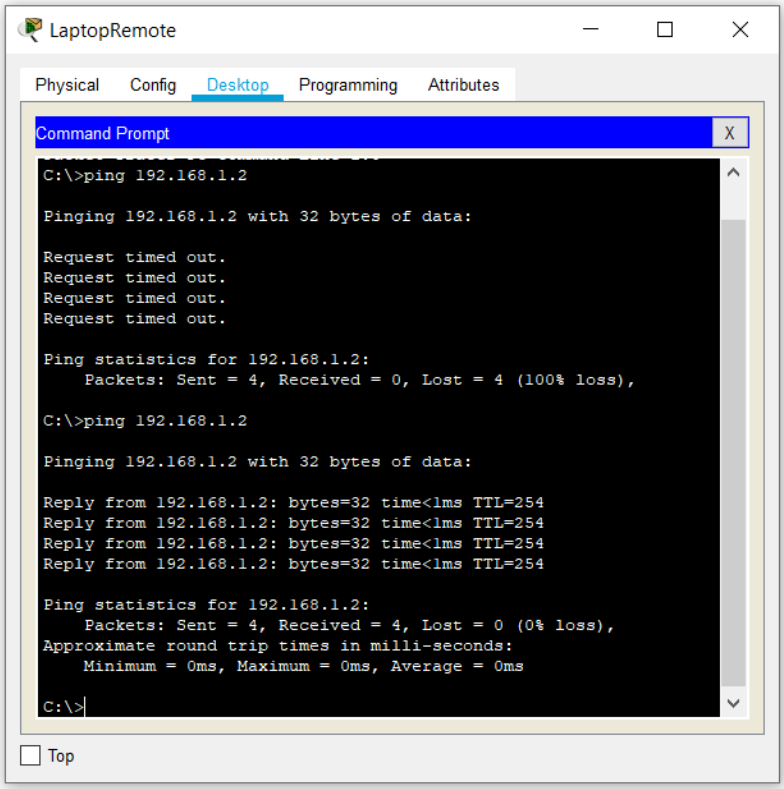
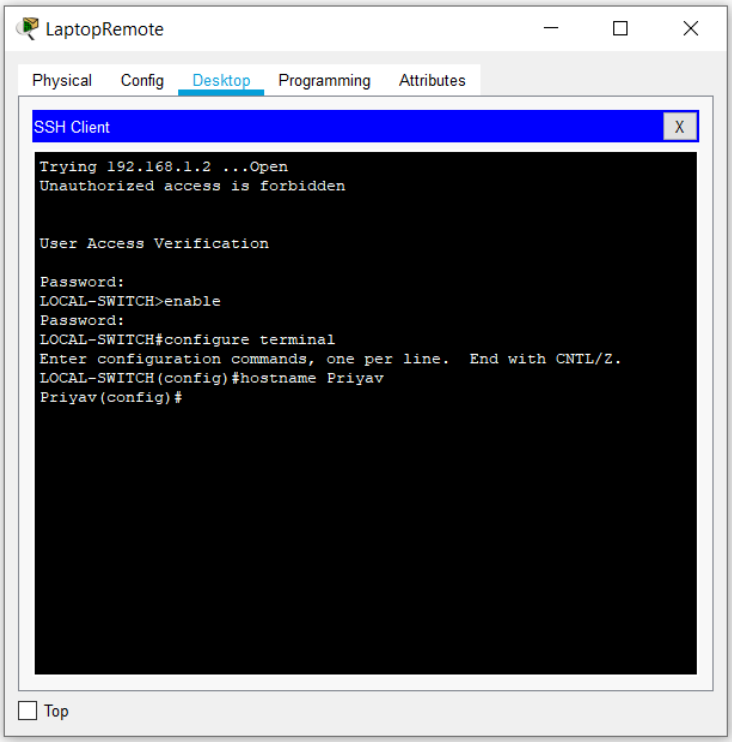
7. Configure the IP address of the switch as 192.168.1.2/24 and it's default gateway IP (192.168.1.1).

```
LOCAL-SWITCH(config-line)#interface Vlan1
LOCAL-SWITCH(config-if)#ip address 192.168.1.2 255.255.255.0
LOCAL-SWITCH(config-if)#ip default-gateway 192.168.1.1
LOCAL-SWITCH(config)#
```

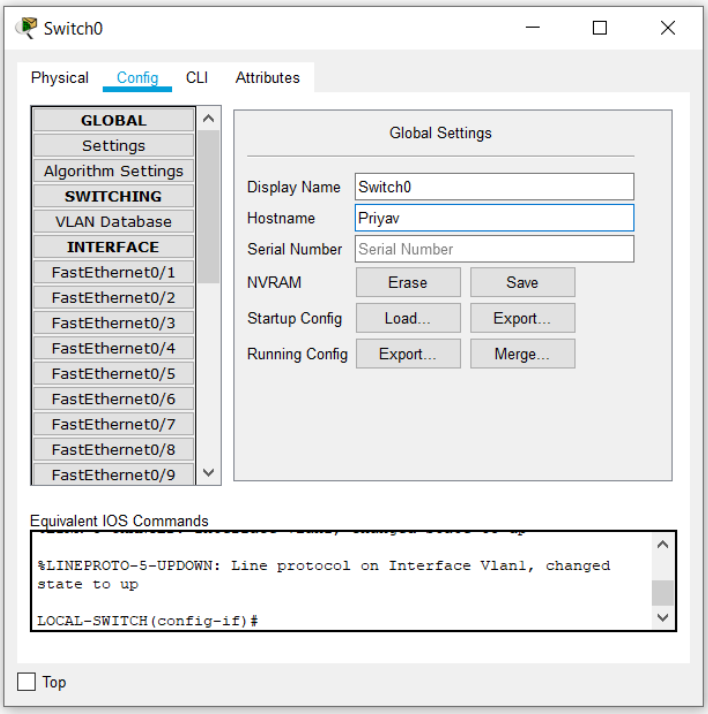
8. Test telnet connectivity from the Remote Laptop using the telnet client.



Successfully pinged 192.168.1.2, i.e the Switch. Next we check the telnet client.



Used Telnet to rename the switch from Remote Laptop, using the CLI of Switch.



Hostname changed to Priyav.