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BATCH:C

CEL 51, DCCN, Monsoon 2020

Lab 4: Prototyping a Network

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### Objective:

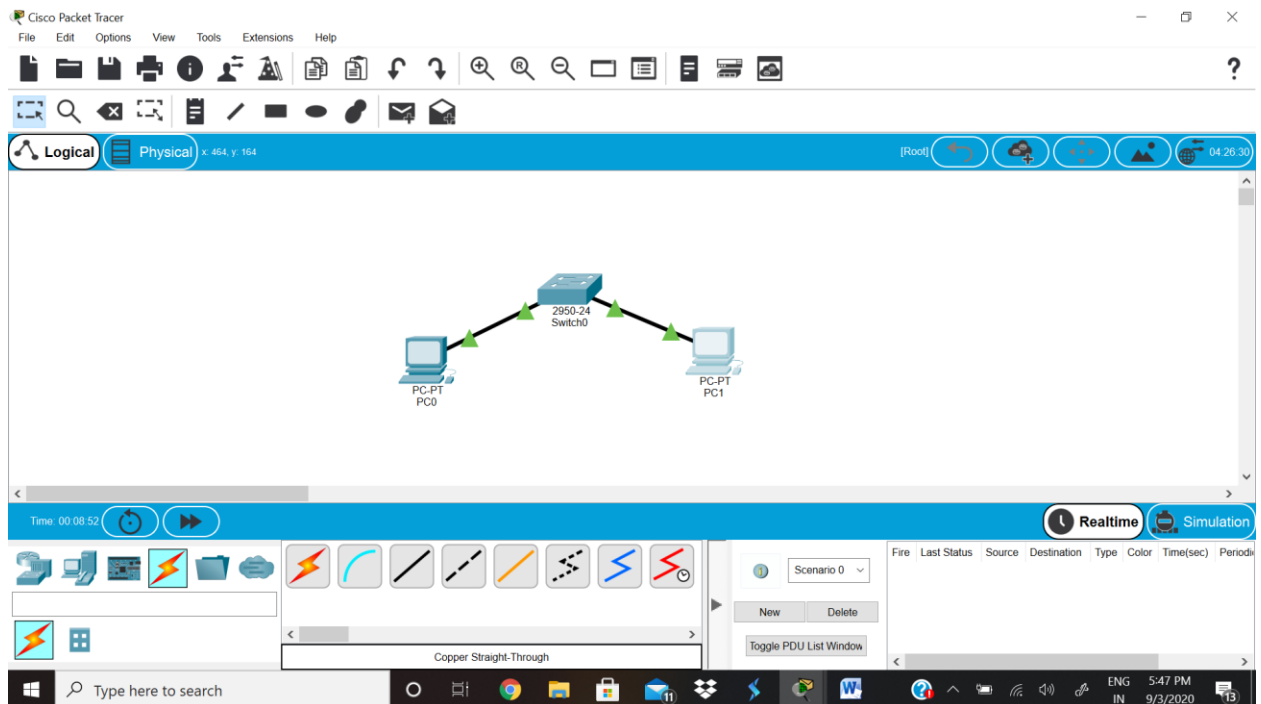
Prototype a network using Packet Tracer

### Background

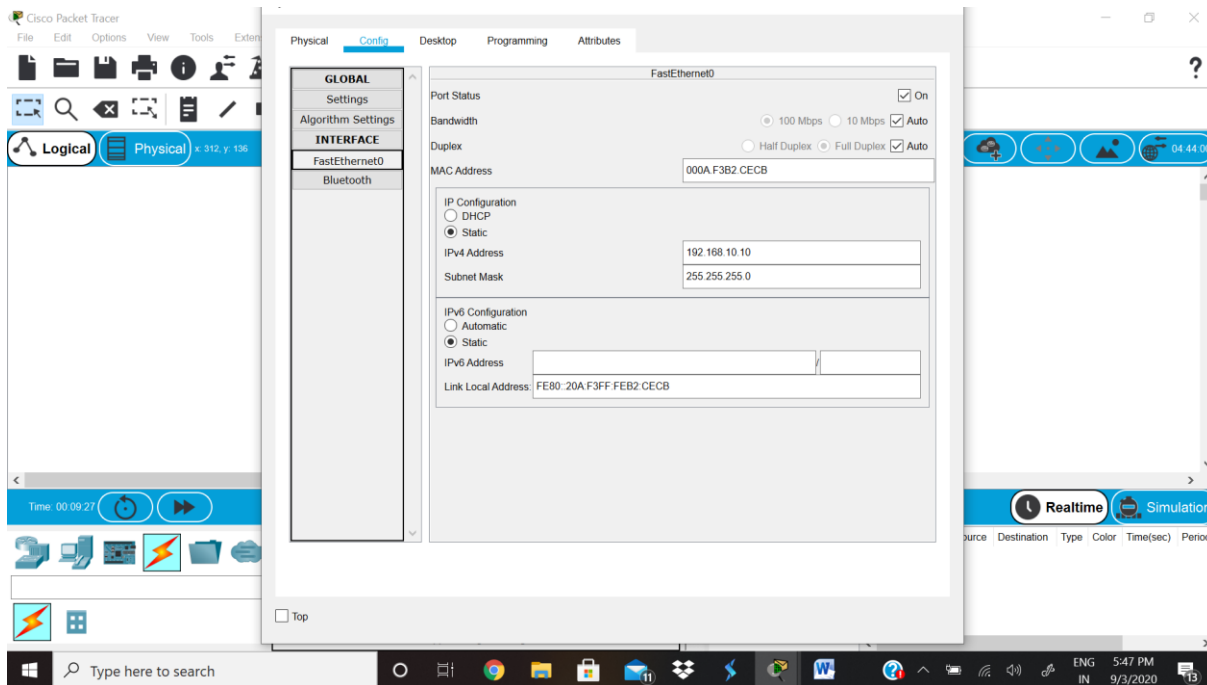
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

### Step 1: Set up the network topology

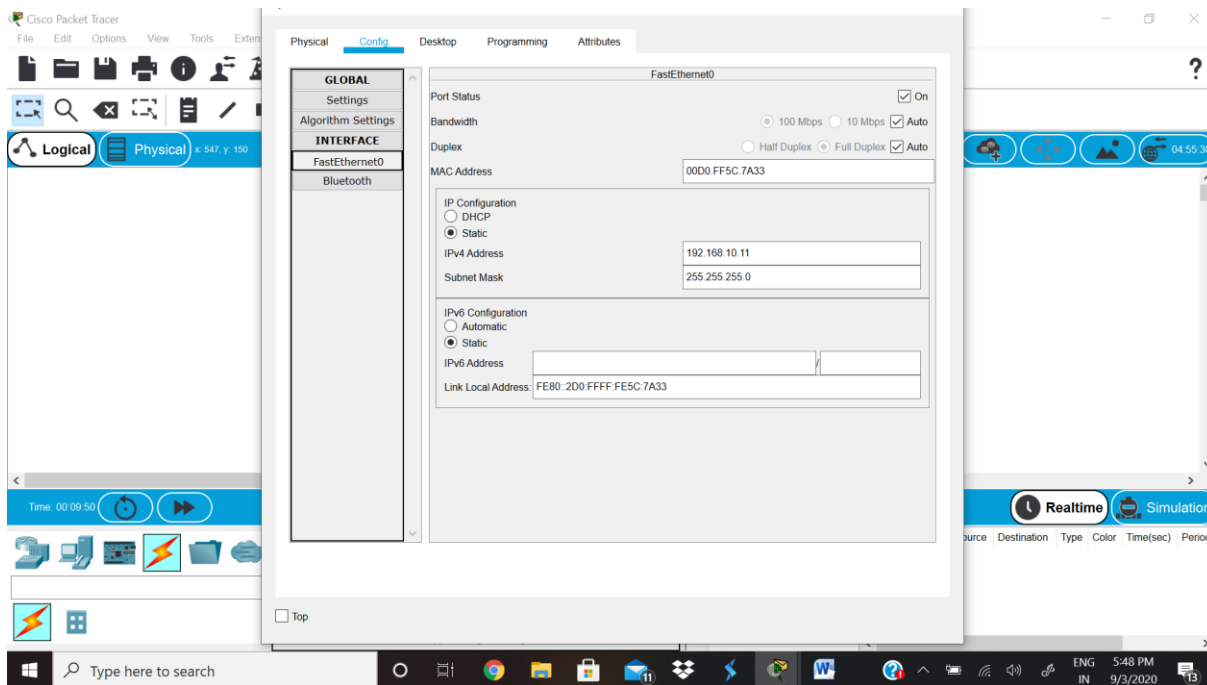
- a) Add two PCs and a Cisco 2950T switch
- b) Using straight-through cables, connect **PC0** to interface **Fa0/1** on **Switch0** and **PC1** to interface **Fa0/2** on **Switch0**.

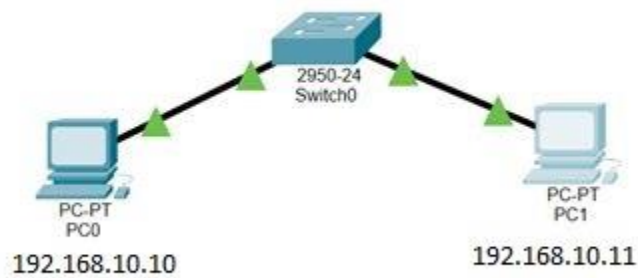


- c) Configure PC0 using the **Config** tab in the PC0 configuration window:
  - a. IP address: 192.168.10.10
  - b. Subnet Mask 255.255.255.0



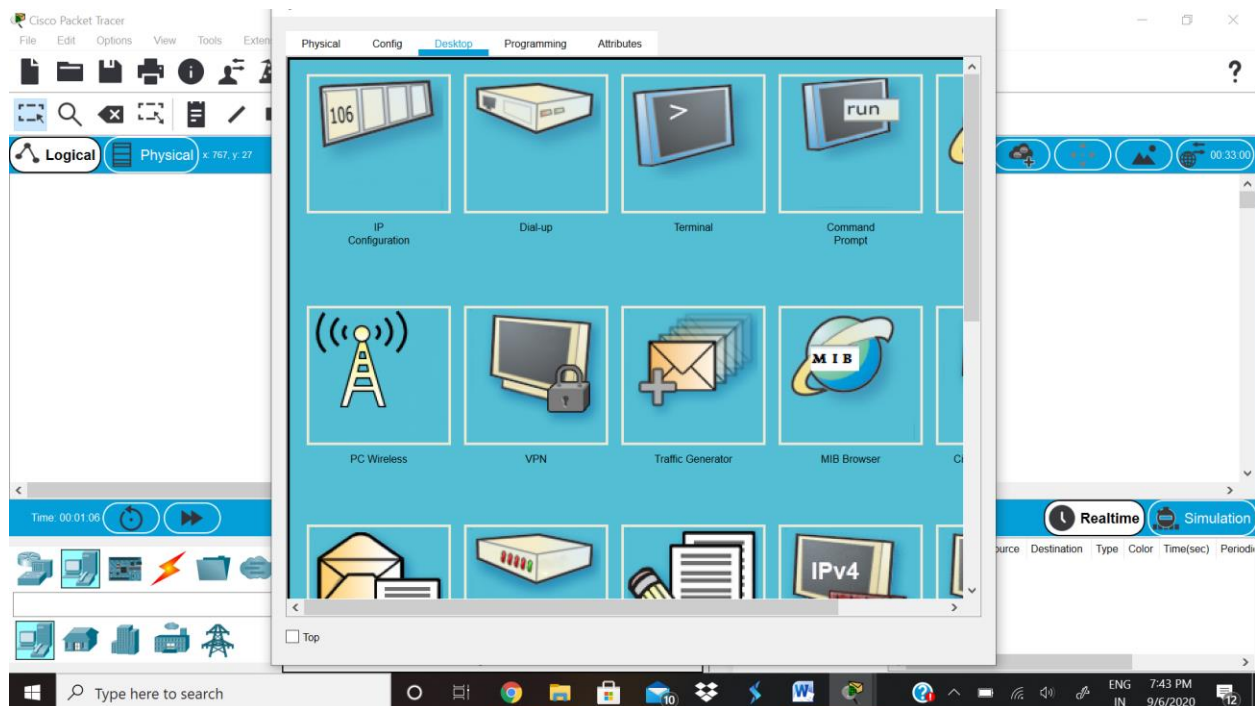
- d) Configure PC1 using the **Config** tab in the PC1 configuration window
- IP address: 192.168.10.11
  - Subnet Mask 255.255.255.0





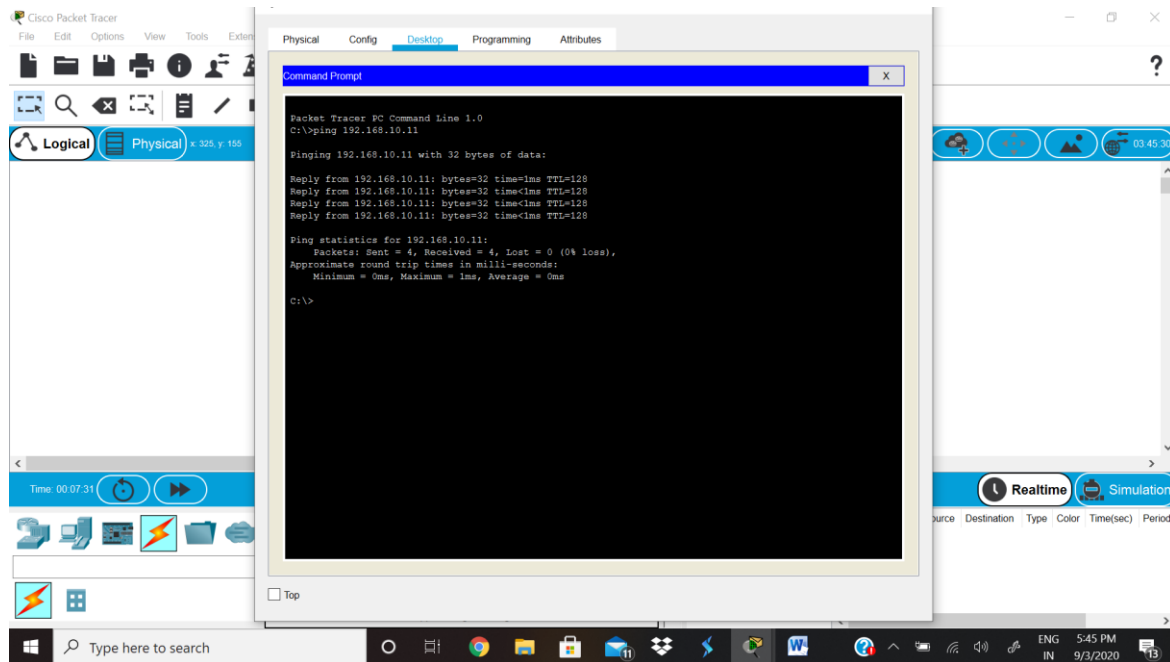
## Step 2: Test connectivity from PC0 to PC1

- a) Use the **ping** command to test connectivity.
  - a. Click PC0.
  - b. Choose the **Desktop** tab.

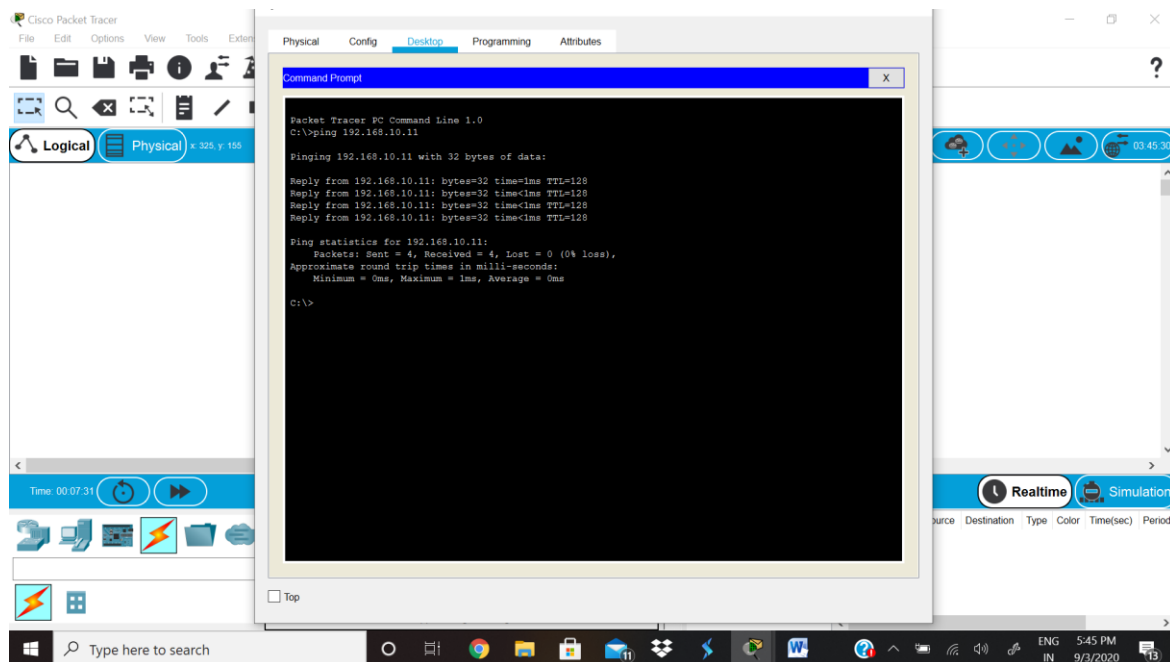


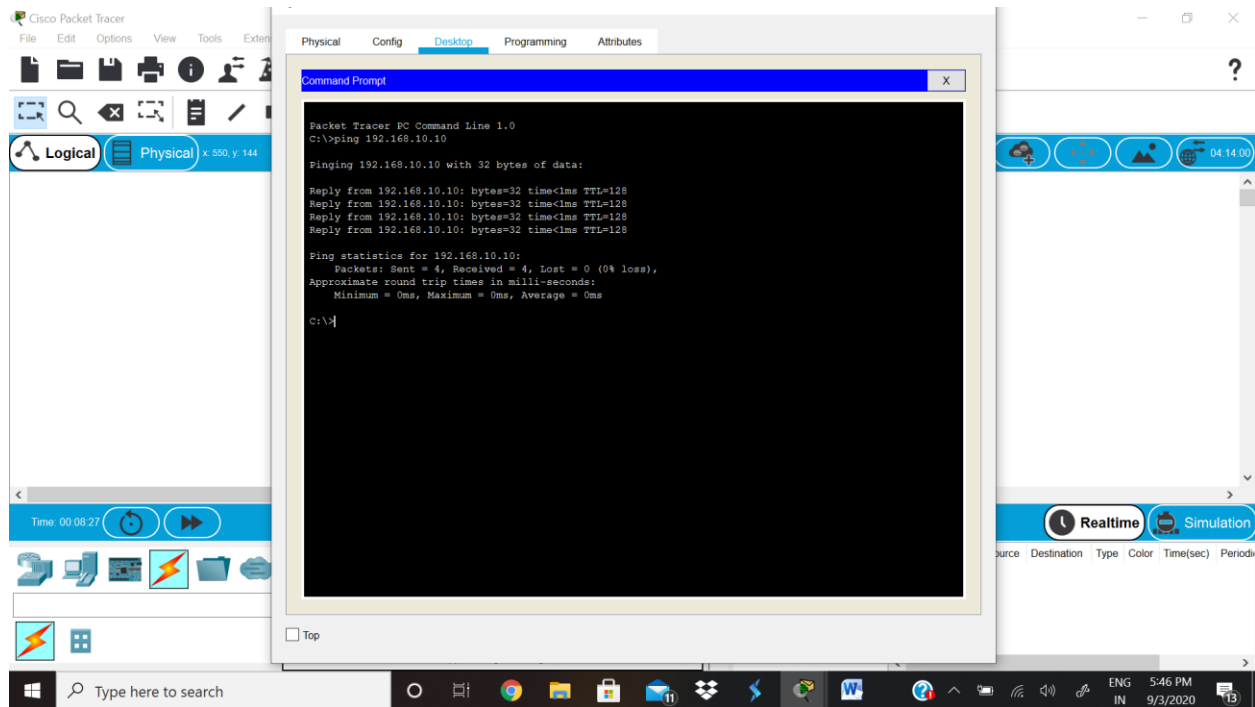
**Fig 4.4 Shows the Desktop tab of PC-0**

- c. Choose **Command Prompt**.
- d. Type: **ping 192.168.10.11** and press **enter**.

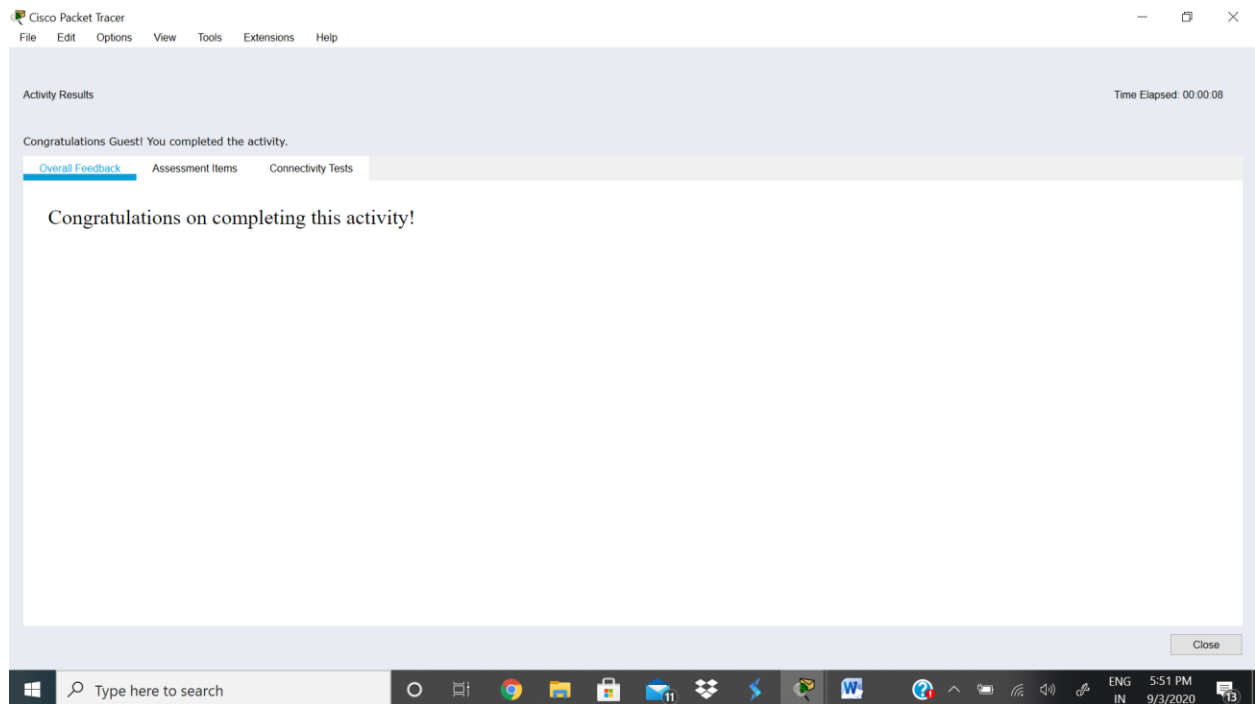


- b) A successful **ping** indicates the network was configured correctly and the prototype validates the hardware and software configurations. A successful ping should resemble the below output:





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

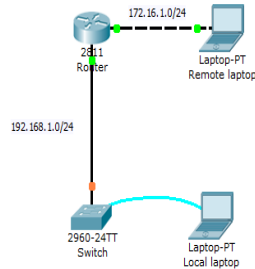


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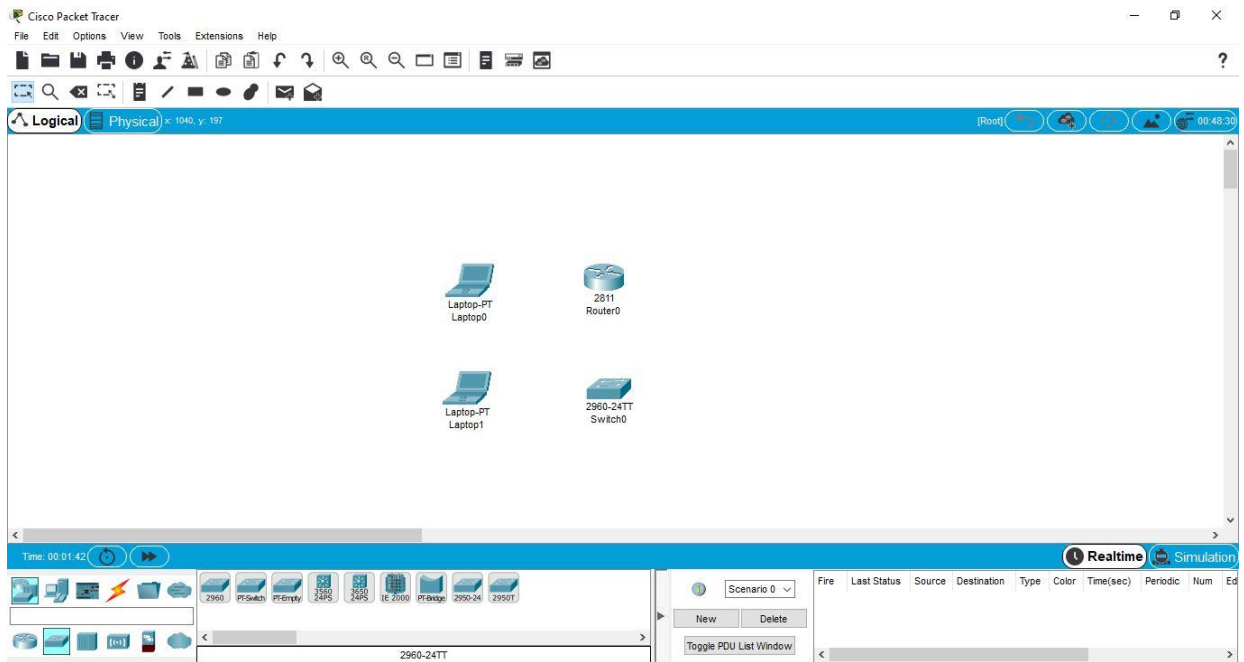
## Lab 4.1: Basic configuration - hostname, motd banner, passwd etc

### 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.



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



Rename Laptop 0 → Local Laptop

Rename Laptop 1 → Remote Laptop

RemoteLaptop

PhysicalConfigDesktopProgrammingAttributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

Global Settings

Display NameRemoteLaptop

InterfacesFastEthernet0

Gateway/DNS IPv4

DHCP

Static

Default Gateway

DNS Server

Gateway/DNS IPv6

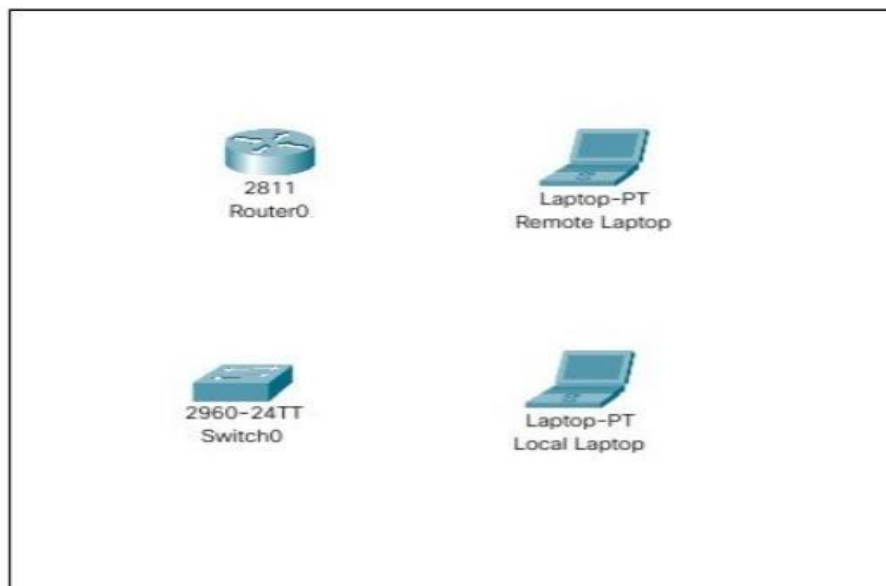
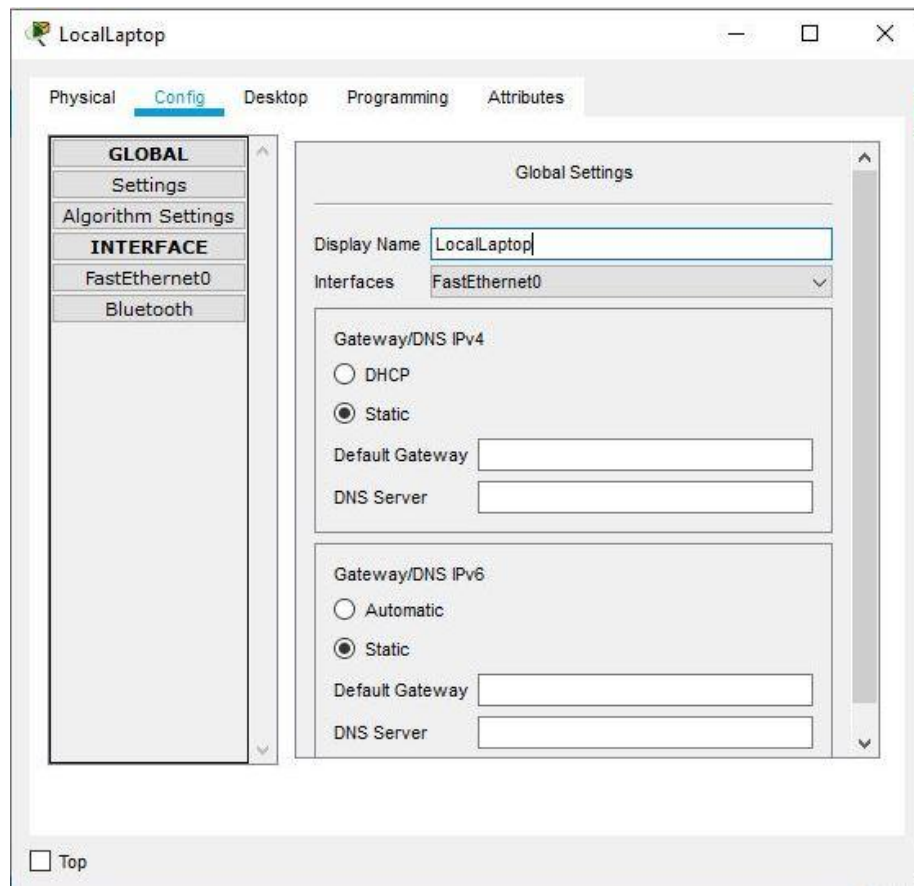
Automatic

Static

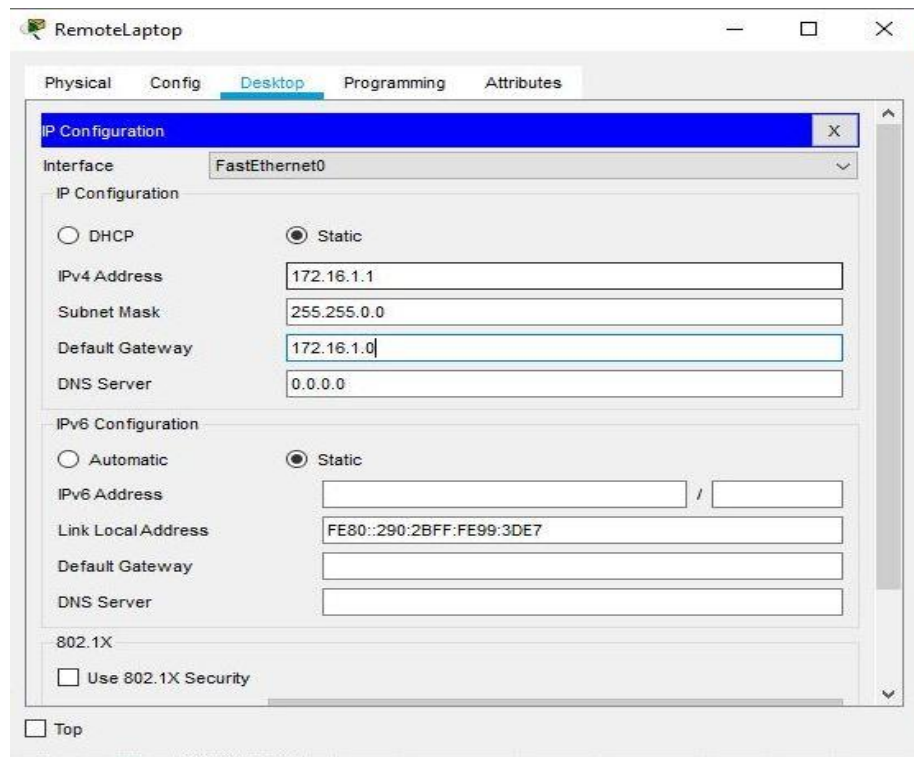
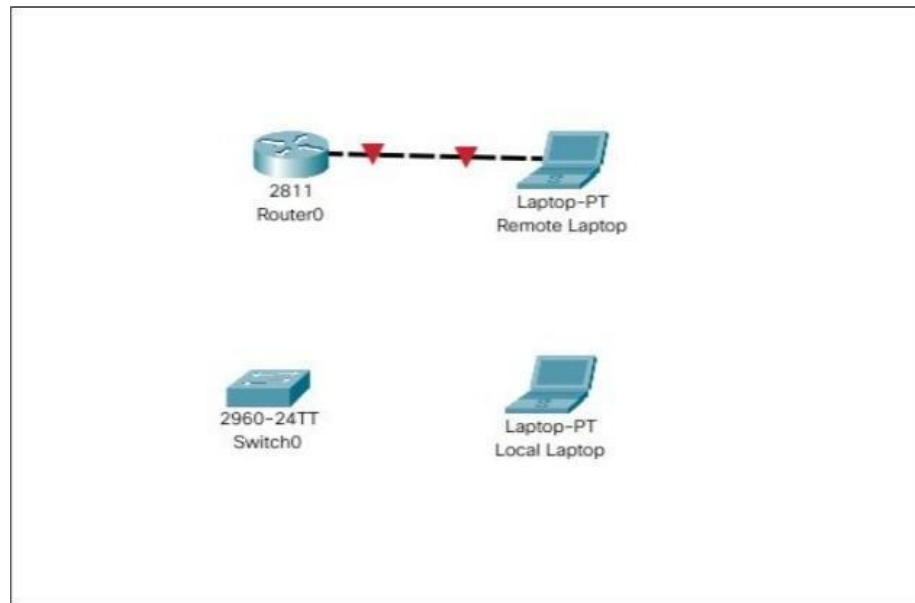
Default Gateway

DNS Server

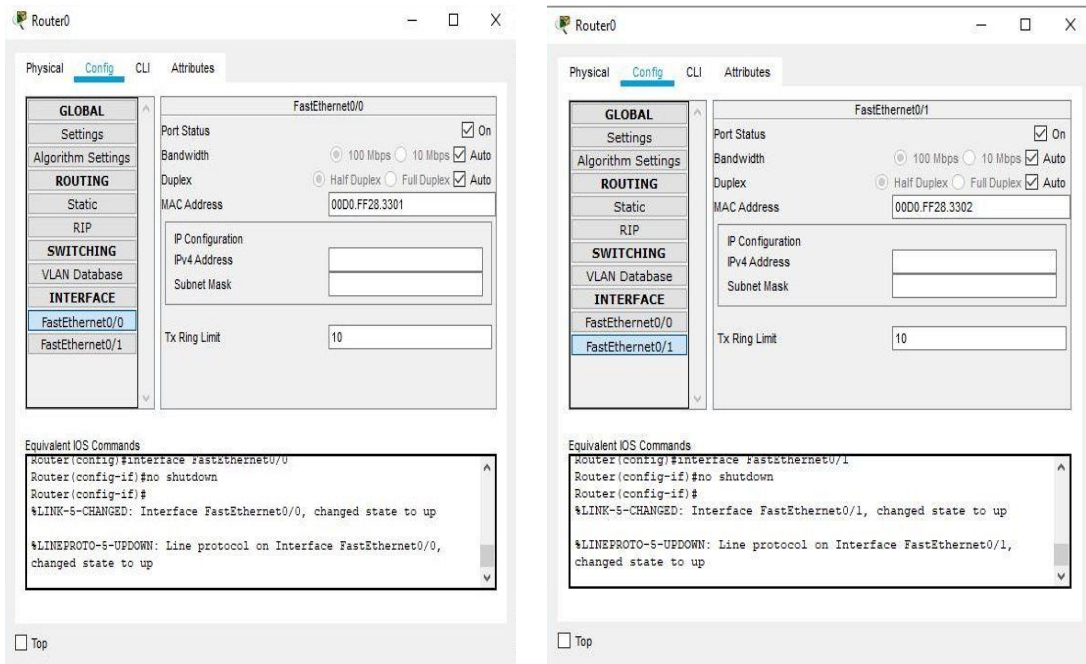
Top



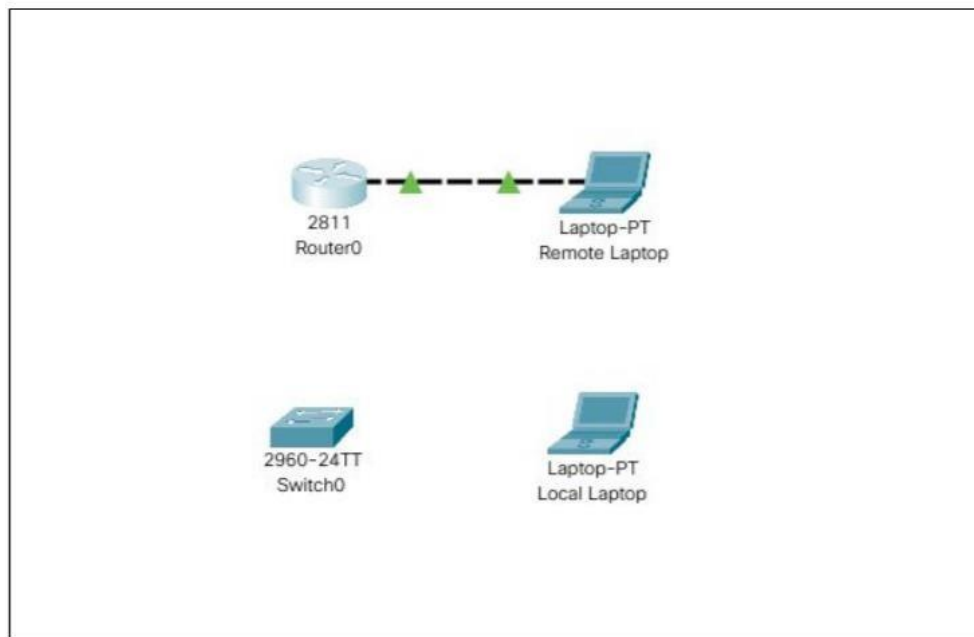


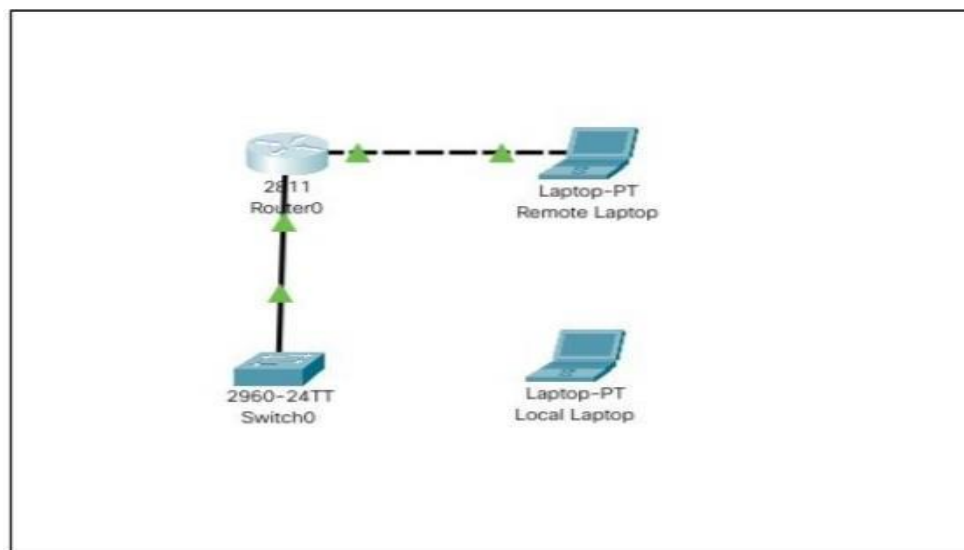
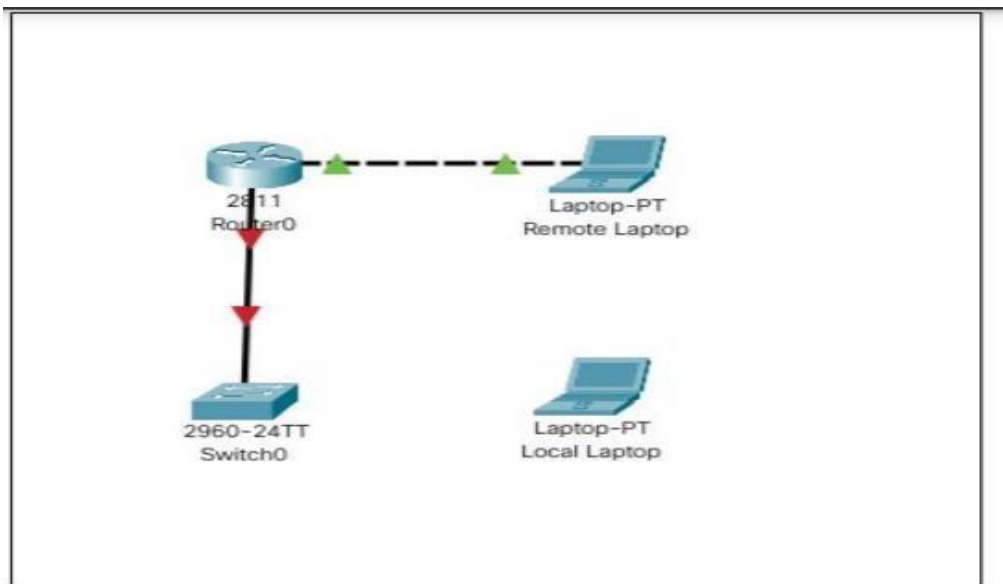


Shows the IP configuration of remote laptop where IP address is 172.16.1.2 and Default Gateway is 172.16.1.1

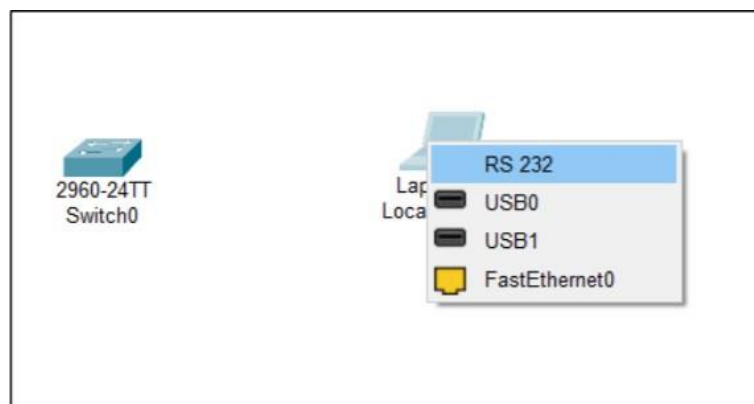


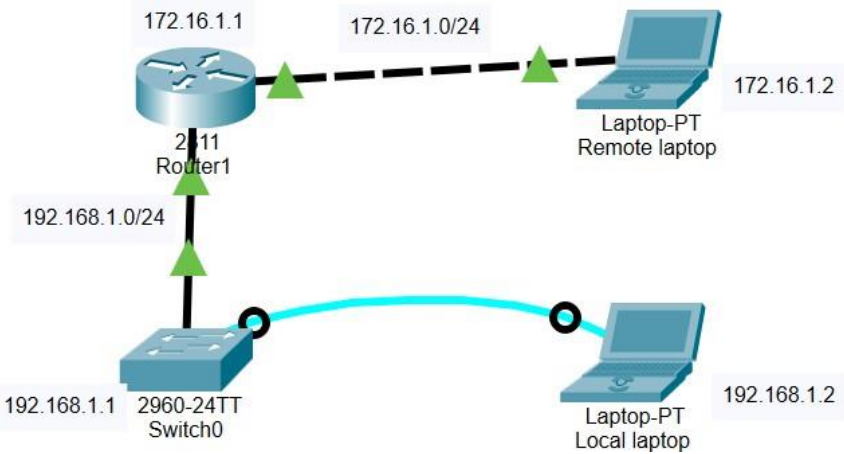
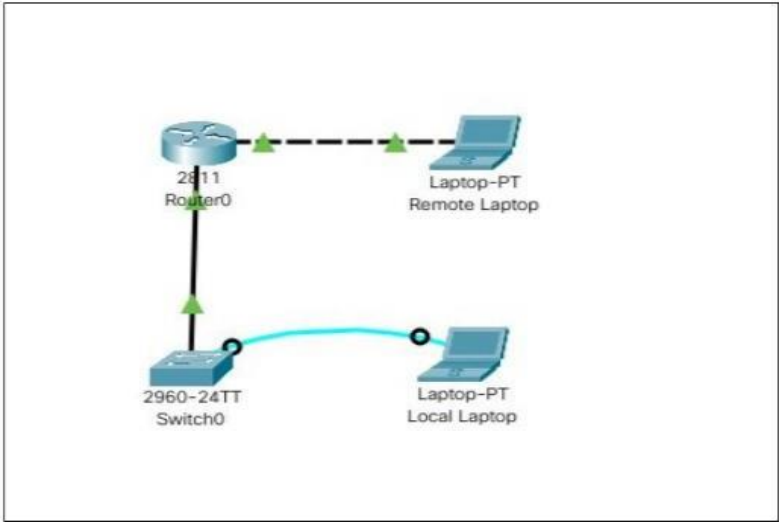
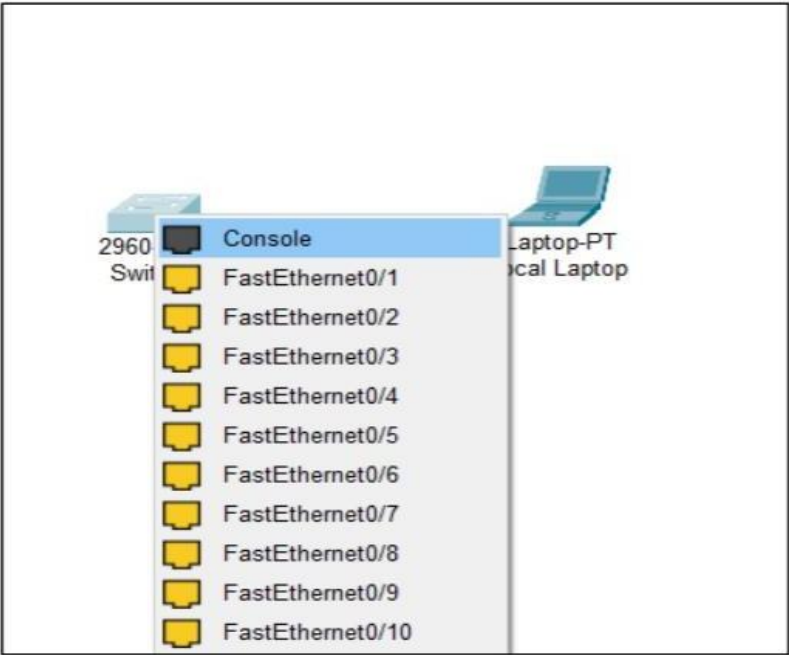
Shows the Fast ethernet Settings of Router connecting the switch where we turn the Port Status to ON





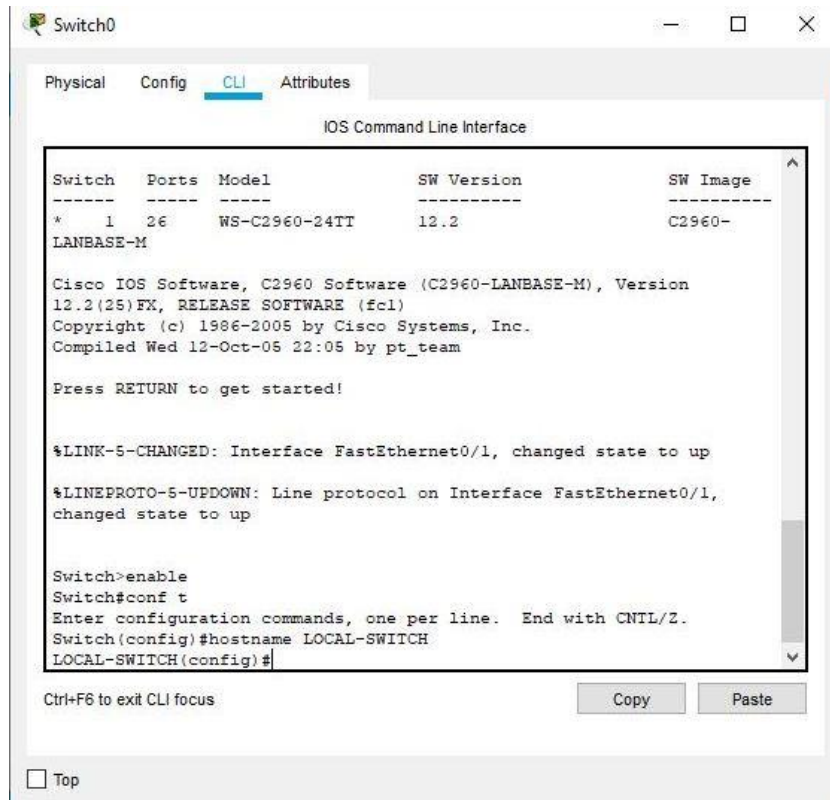
Connect console connection to RS232 port of Local Laptop and Console port of Switch





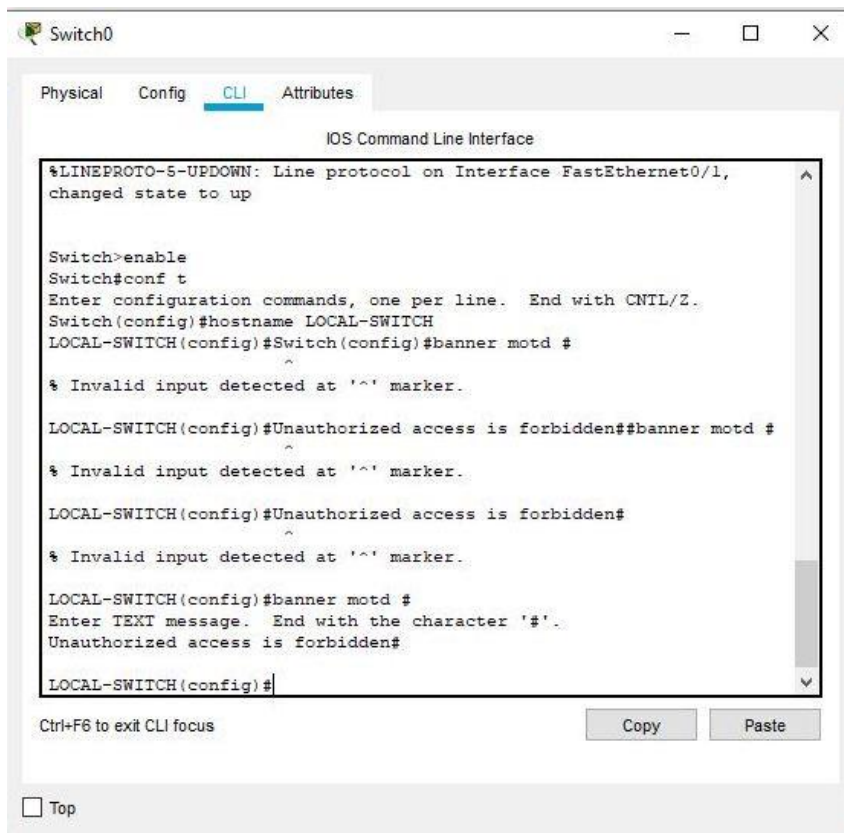
Shows 2 Laptops ,Remote Laptop connected to router via copper cross-over wire,Local Laptop connected to Switch via console and router is connected to switch via copper straight wire.

## 2. Configure Switch hostname as LOCAL-SWITCH



CLI of switch where we configure switch hostname as LOCAL- SWITCH

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



```
Switch0
Physical Config CLI Attributes
IOS Command Line Interface

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

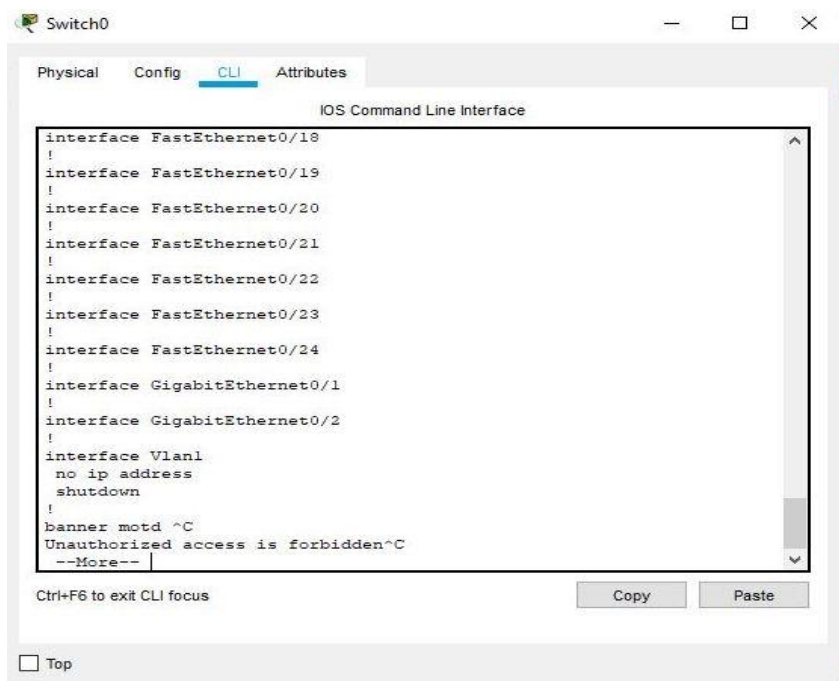
Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname LOCAL-SWITCH
LOCAL-SWITCH(config)#Switch(config)#banner motd #
^
% Invalid input detected at '^' marker.
LOCAL-SWITCH(config)#Unauthorized access is forbidden##banner motd #
^
% Invalid input detected at '^' marker.
LOCAL-SWITCH(config)#Unauthorized access is forbidden#
^
% Invalid input detected at '^' marker.
LOCAL-SWITCH(config)#banner motd #
Enter TEXT message. End with the character '#'.
Unauthorized access is forbidden#
LOCAL-SWITCH(config)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

CLI of switch to configure the message of the day as Unauthorized access is forbidden



```
Switch0
Physical Config CLI Attributes
IOS Command Line Interface

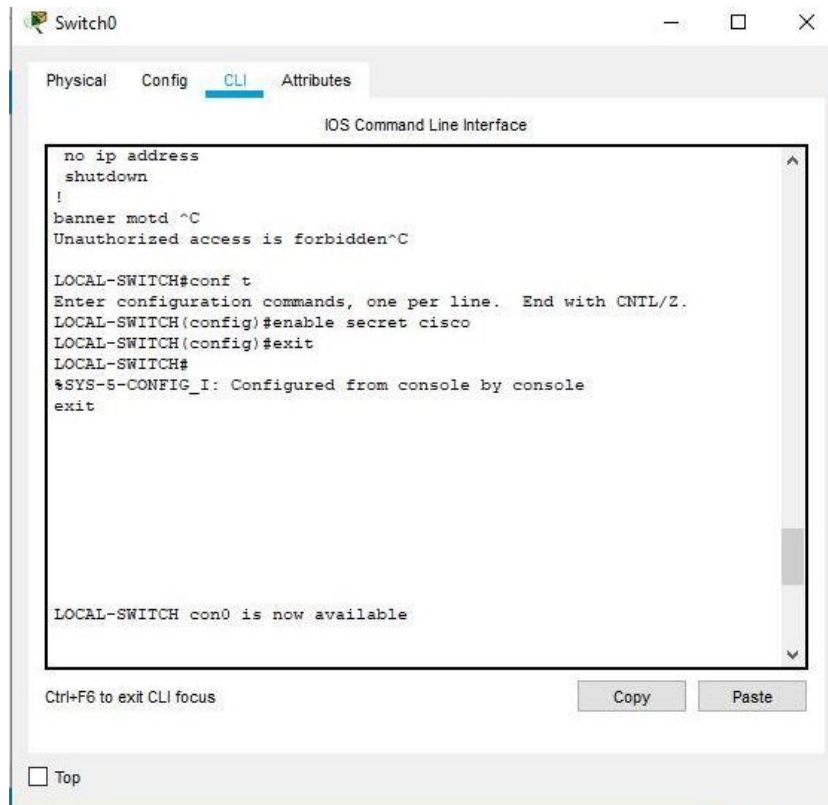
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
banner motd ^C
Unauthorized access is forbidden^C
--More--
```

Ctrl+F6 to exit CLI focus

Copy Paste

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



CLI to configure the password for privileged mode access as cisco

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

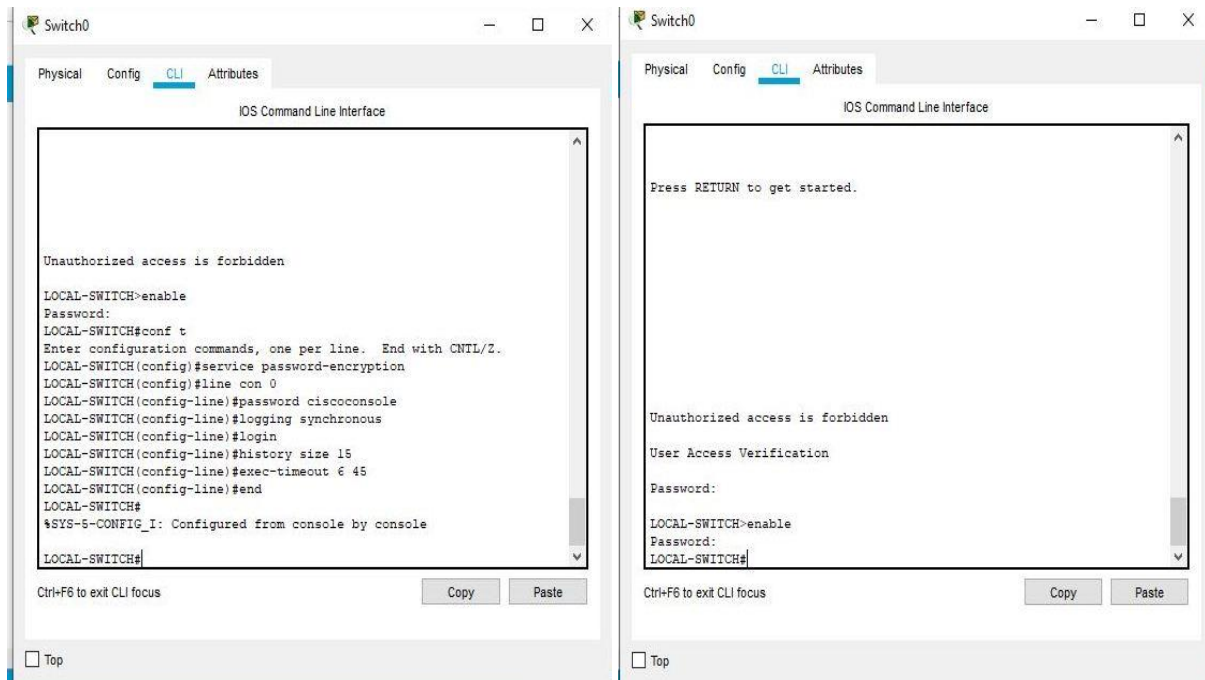


The CLI to configure password encryption on the switch

6. Configure CONSOLE access with the following settings :

- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 6'45"
- Synchronous logging

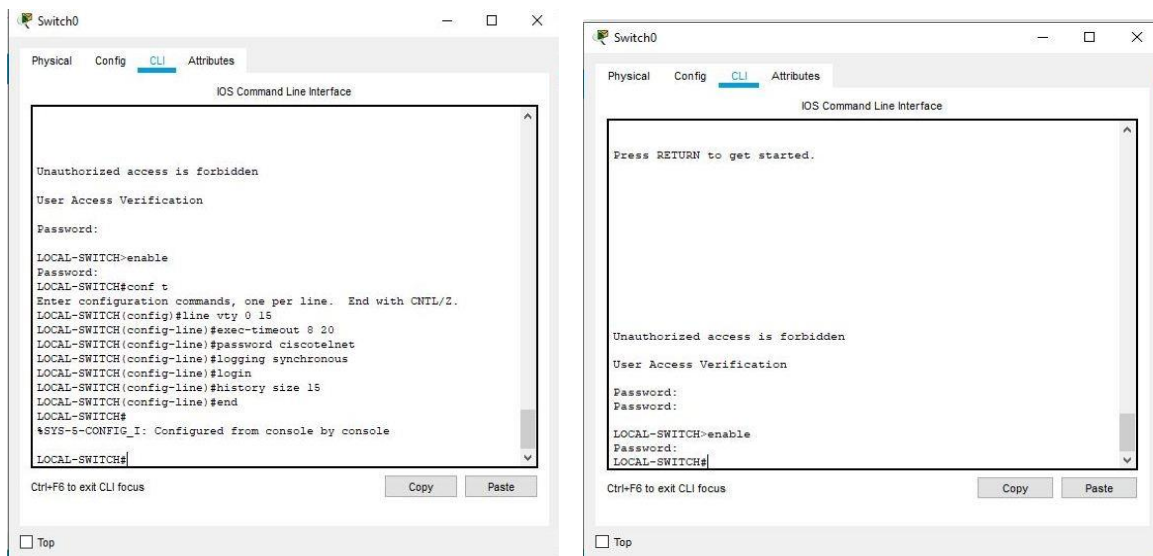




To configure console access with following settings- Login enabled, Password : whatever you like, History size : 15 commands, Timeout : 6'45", Synchronous logging and the CLI asks for password before it goes to console

6. Configure TELNET access with the following settings :

- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 8'20"
- Synchronous logging



Configure Telnet access with following settings- Login enabled, Password: whatever you like, History size : 15 commands, Timeout : 8'20", Synchronous logging

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



The screenshot shows a window titled 'Switch0' with tabs for 'Physical', 'Config', 'CLI', and 'Attributes'. The 'CLI' tab is active, displaying the 'IOS Command Line Interface'. The terminal output shows the following sequence of commands and responses:

```
Unauthorized access is forbidden

User Access Verification

Password:
Password:

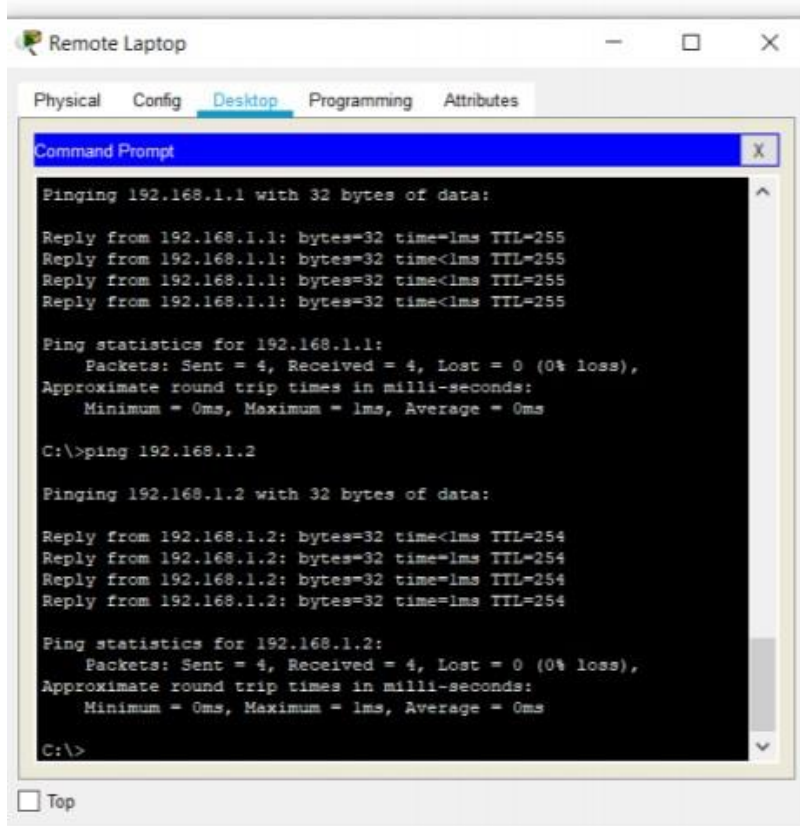
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#conf t
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#interface Vlan1
LOCAL-SWITCH(config-if)#ip address 192.168.1.2 255.255.255.0
LOCAL-SWITCH(config-if)#ip default-gateway 192.168.1.1
LOCAL-SWITCH(config)#interface Vlan1
LOCAL-SWITCH(config-if)#no shutdown

LOCAL-SWITCH(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
LOCAL-SWITCH(config-if)#
```

At the bottom of the window, there is a 'Top' button and a status bar indicating 'Ctrl+F6 to exit CLI focus'.

The CLI to configure the IP address of the switch as 192.168.1.2/24 and its default gateway IP (192.168.1.1).

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



Remote Laptop

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms 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 = 1ms, Average = 0ms

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

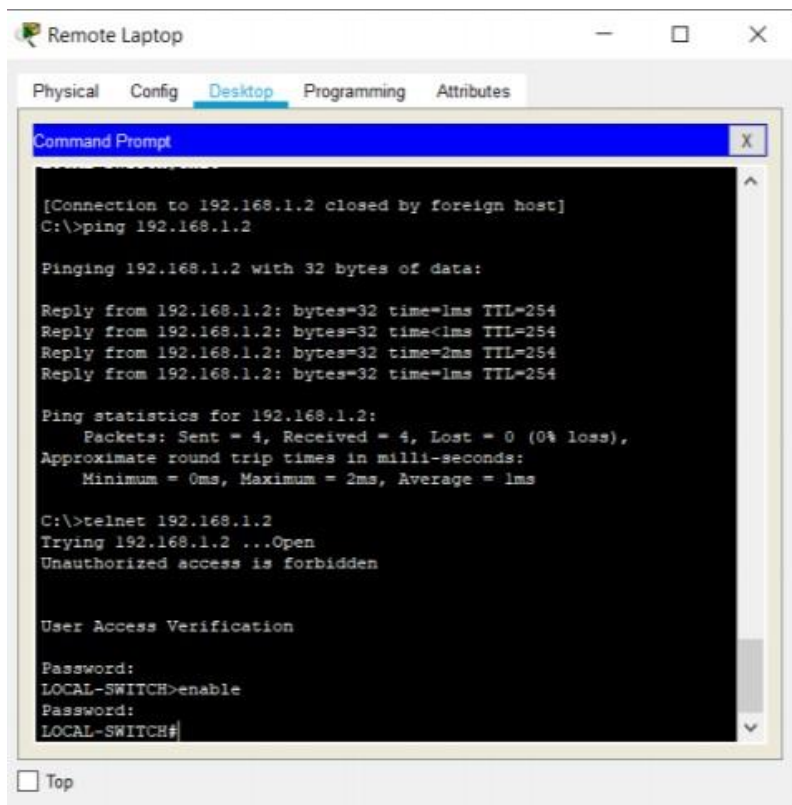
Reply from 192.168.1.2: bytes=32 time<1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254

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 = 1ms, Average = 0ms

C:\>
```

☐ Top

Pinging Switch from Remote Laptop



Remote Laptop

Physical Config **Desktop** Programming Attributes

Command Prompt

```
[Connection to 192.168.1.2 closed by foreign host]
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=254
Reply from 192.168.1.2: bytes=32 time<1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=2ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254

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 = 2ms, Average = 1ms

C:\>telnet 192.168.1.2
Trying 192.168.1.2 ...Open
Unauthorized access is forbidden

User Access Verification

Password:
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#
```

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Telnet Switch from Remote Laptop after entering the password for telnet and enabling switch from Remote Laptop