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TE COMPS

Batch A

UID: 2018130004

Date: 31/08/2020

CEL 51, DCCN, Monsoon 2020

Lab 4: Prototyping a Network

Objective:

Prototype a network using Packet Tracer

Background

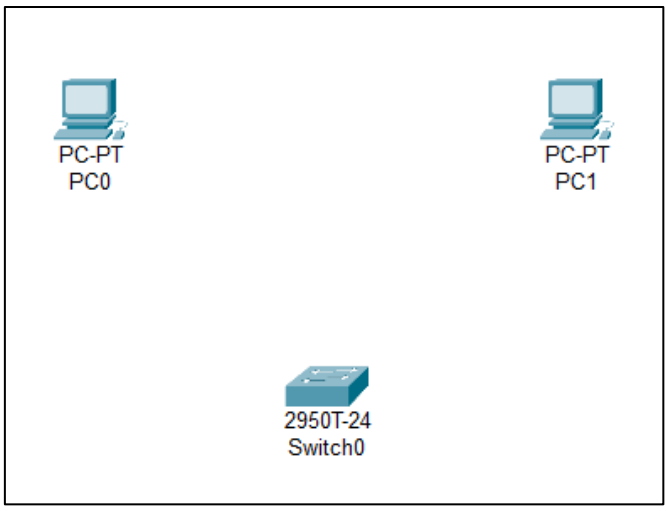
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

Switches facilitate the sharing of resources by connecting together all the devices, including computers, printers, and servers, in a small business network. It connects devices on a computer network by using packet switching to receive and forward data to the destination device. A network switch is a multiport network bridge that uses MAC addresses to forward data at the data link layer of the OSI model.

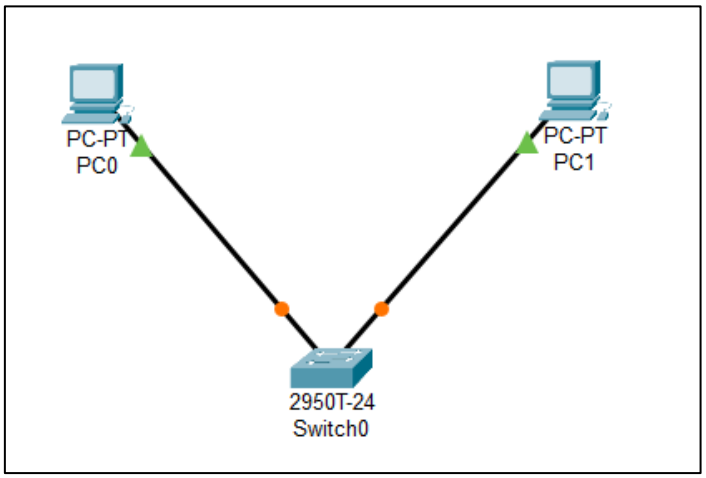
Router connects multiple switches, and their respective networks, to form an even larger network. It works as a dispatcher, directing traffic and choosing the most efficient route for information, in the form of data packets, to travel across a network.

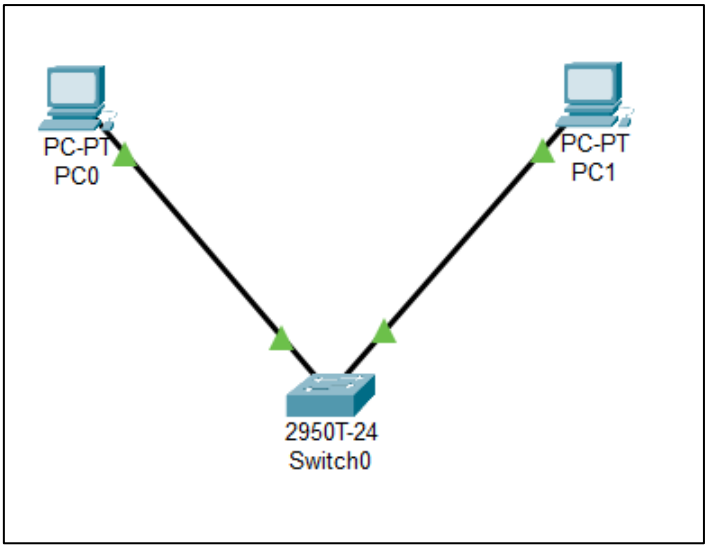
Step 1: Set up the network topology

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**.

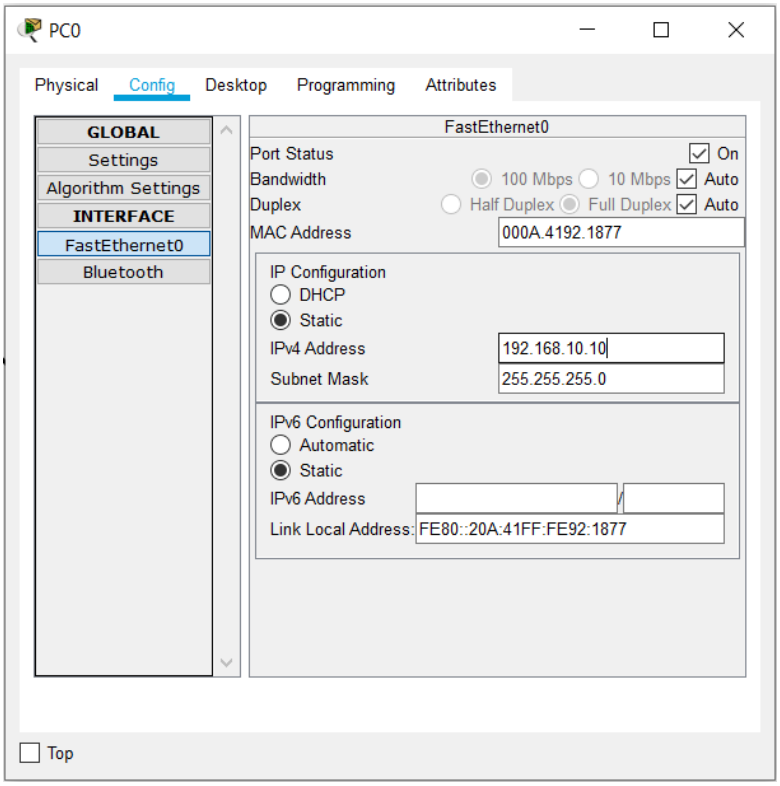




c) Configure PC0 using the **Config** tab in the PC0 configuration window:

a. IP address: 192.168.10.10

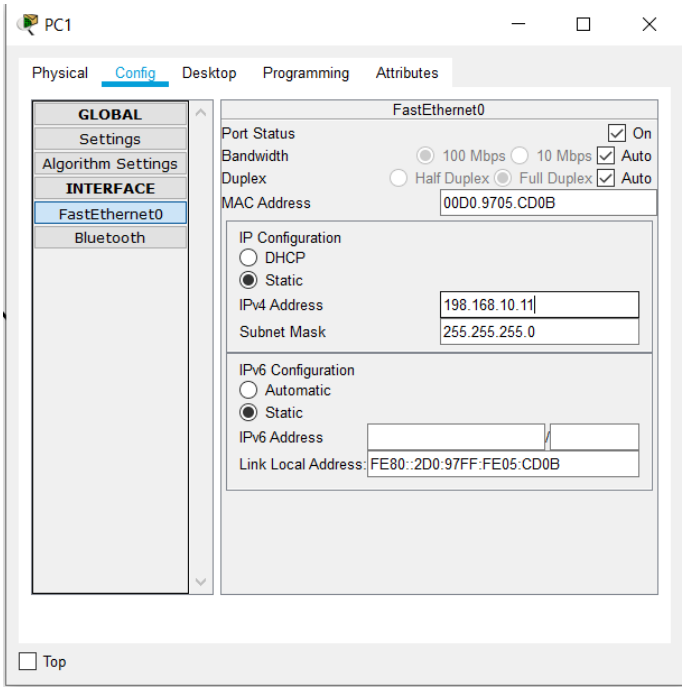
b. Subnet Mask 255.255.255.0



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

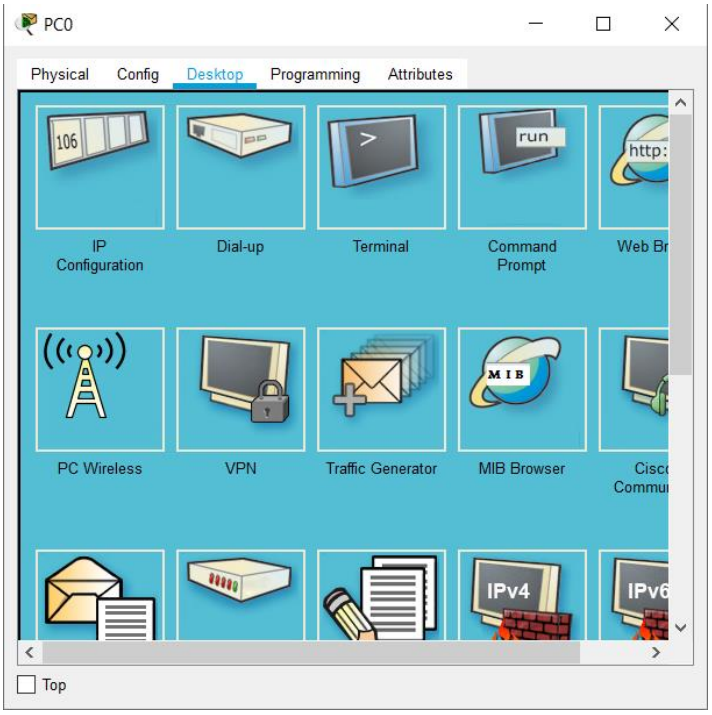


Step 2: Test connectivity from PC0 to PC1

a) Use the **ping** command to test connectivity.

a. Click PC0.

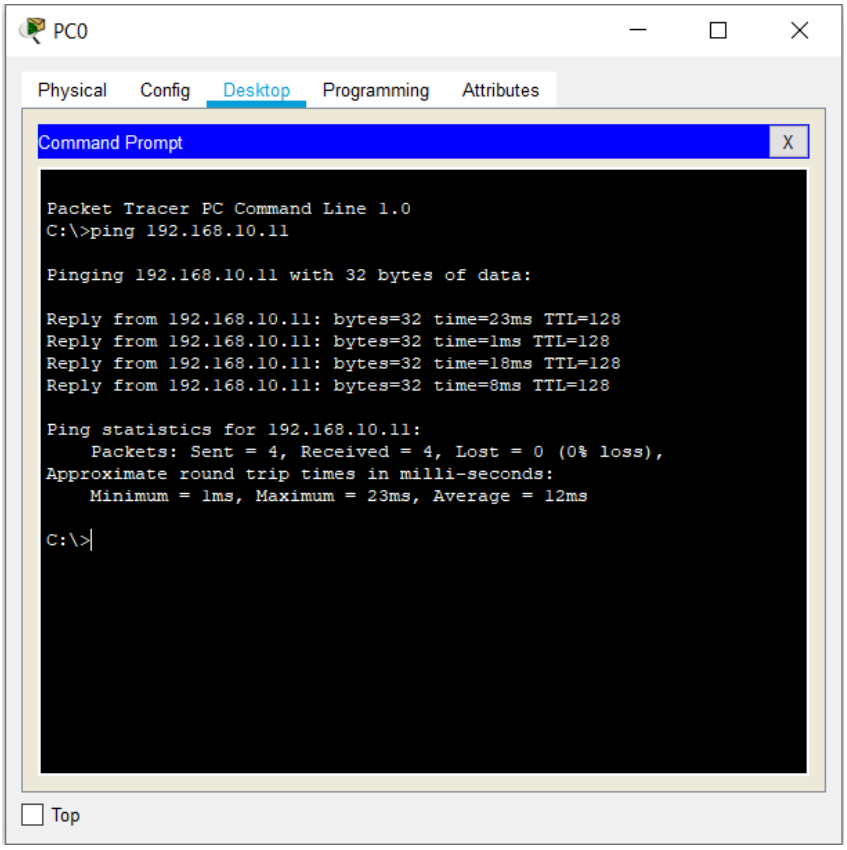
b. Choose the **Desktop** tab.

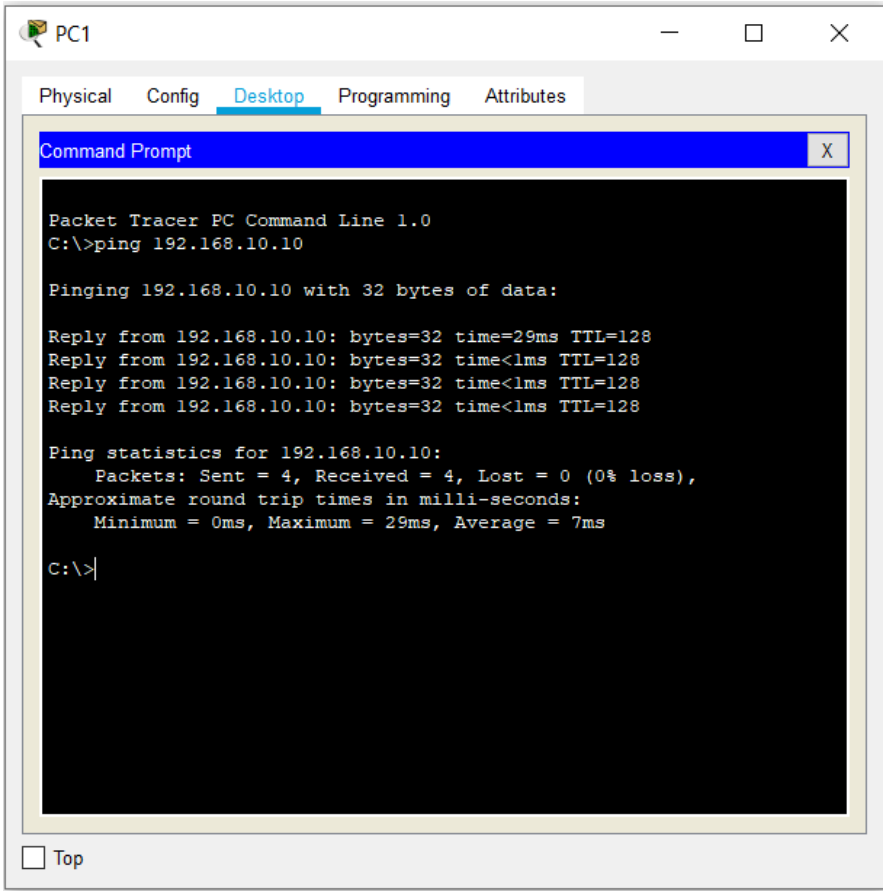


c. Choose **Command Prompt**.

d. Type: **ping 192.168.10.11** and press *enter*.

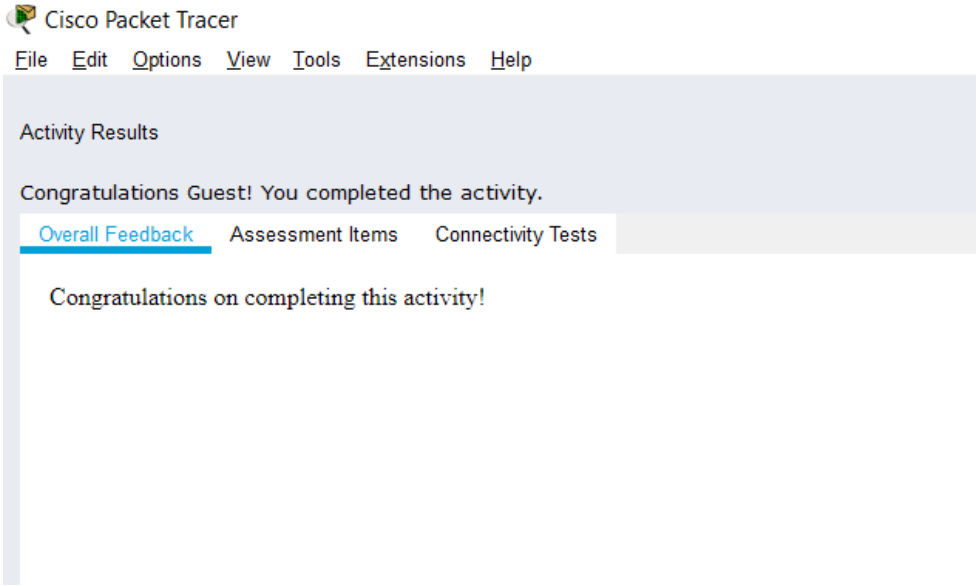
b) A successful **ping** indicates the network was configured correctly and the prototype validates the hardware and software configurations. A successful ping should resemble the below output:

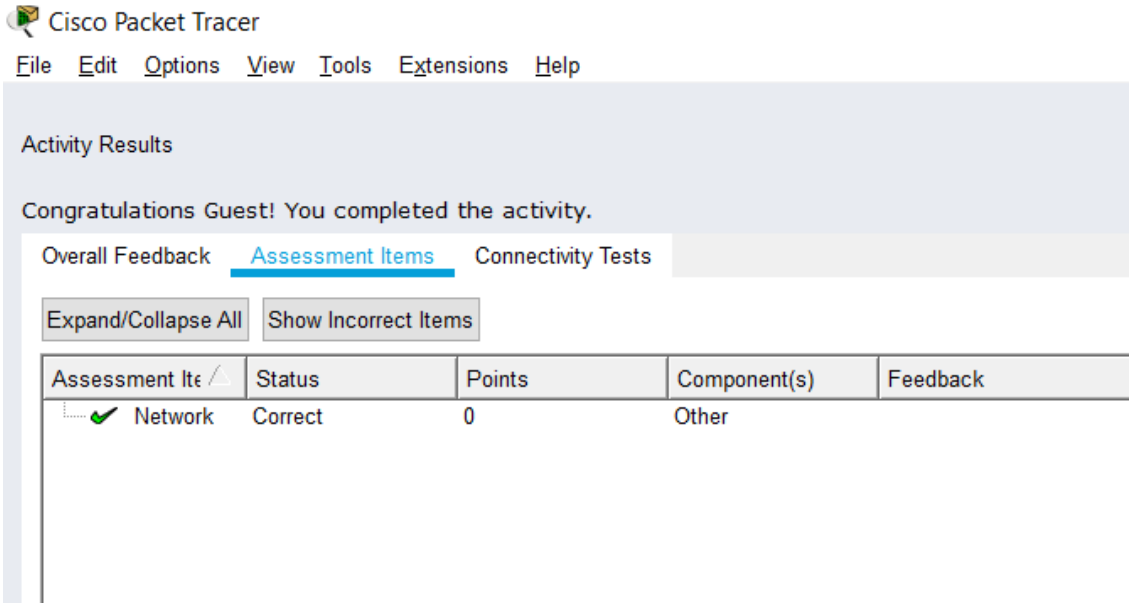

PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.11
Pinging 192.168.10.11 with 32 bytes of data:
Reply from 192.168.10.11: bytes=32 time=23ms TTL=128
Reply from 192.168.10.11: bytes=32 time=1ms TTL=128
Reply from 192.168.10.11: bytes=32 time=18ms TTL=128
Reply from 192.168.10.11: bytes=32 time=8ms TTL=128
Ping statistics for 192.168.10.11:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 23ms, Average = 12ms
C:\>
Top


PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.10
Pinging 192.168.10.10 with 32 bytes of data:
Reply from 192.168.10.10: bytes=32 time=29ms TTL=128
Reply from 192.168.10.10: bytes=32 time<1ms TTL=128
Reply from 192.168.10.10: bytes=32 time<1ms TTL=128
Reply from 192.168.10.10: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.10.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 29ms, Average = 7ms
C:\>
Top

c) Close the configuration window.

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





CEL51, DCCN, Monsoon 2020

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

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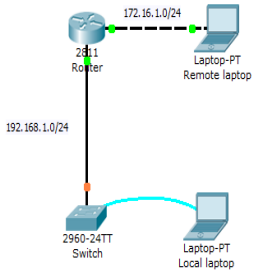
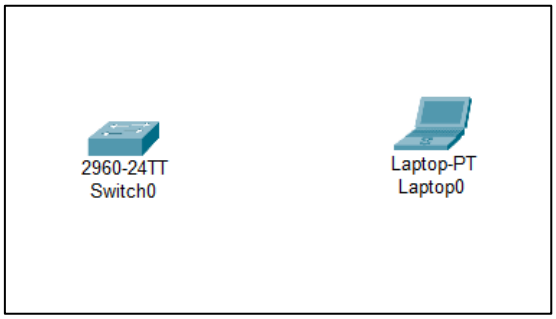
Objective:

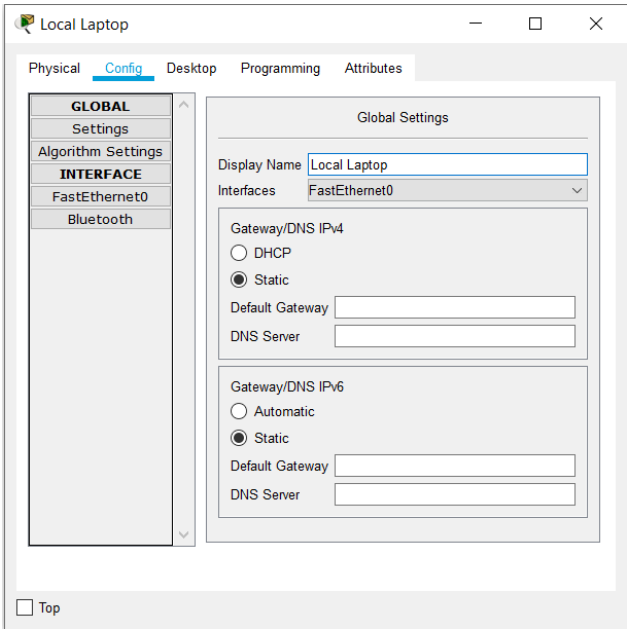
This lab will test your ability to configure basic settings such as hostname, motd banner, encrypted passwords, and terminal options on a Packet Tracer 6.2 simulated Cisco Catalyst switch.



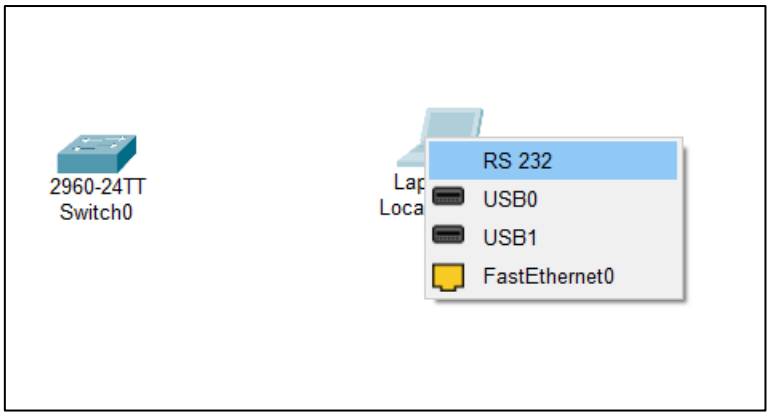
1. Use the local laptop connect to the switch console.

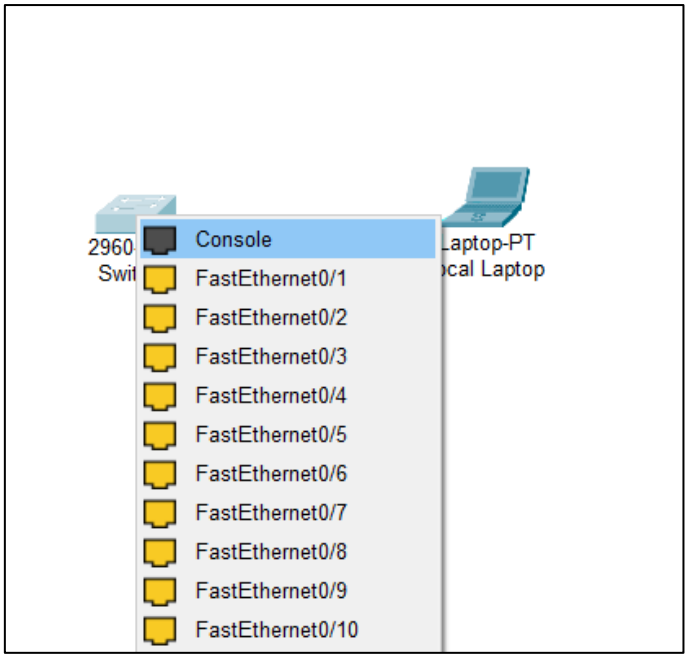


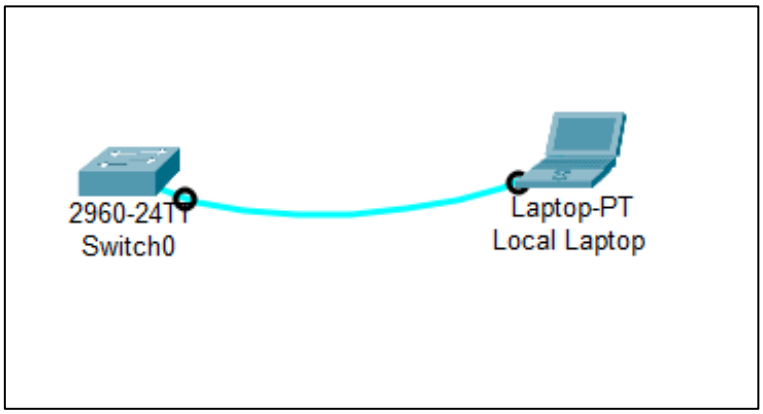
Rename Laptop0 –> Local Laptop



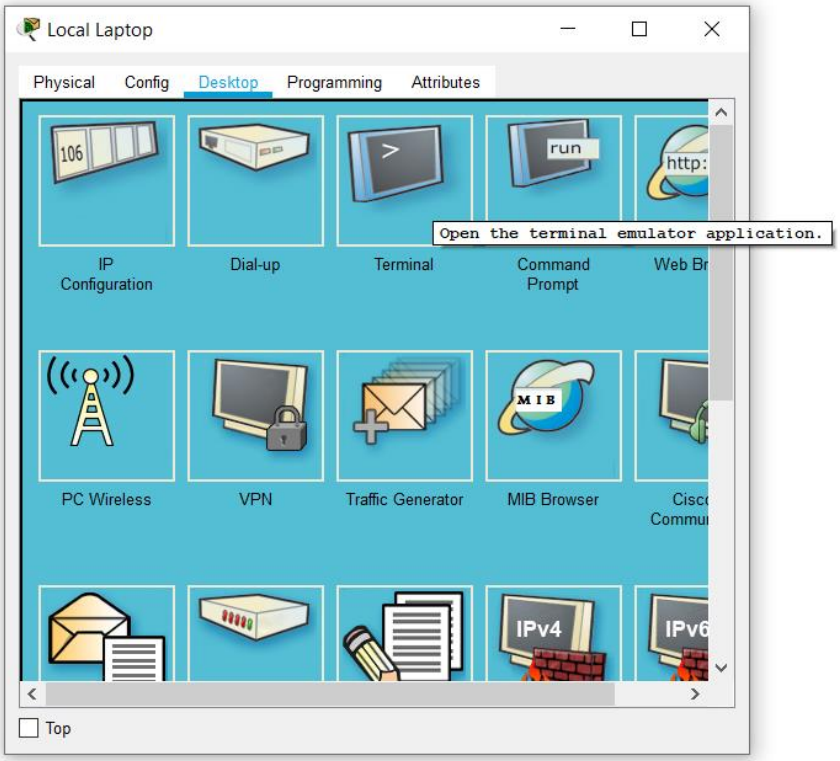
Connect console connection to RS232 port of Local Laptop and Console port of Switch

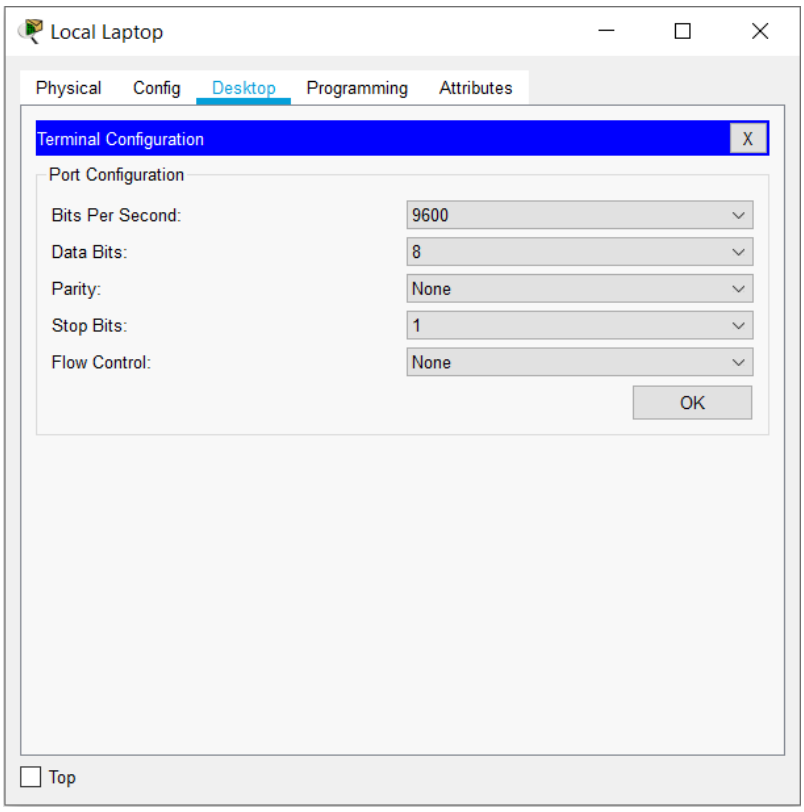


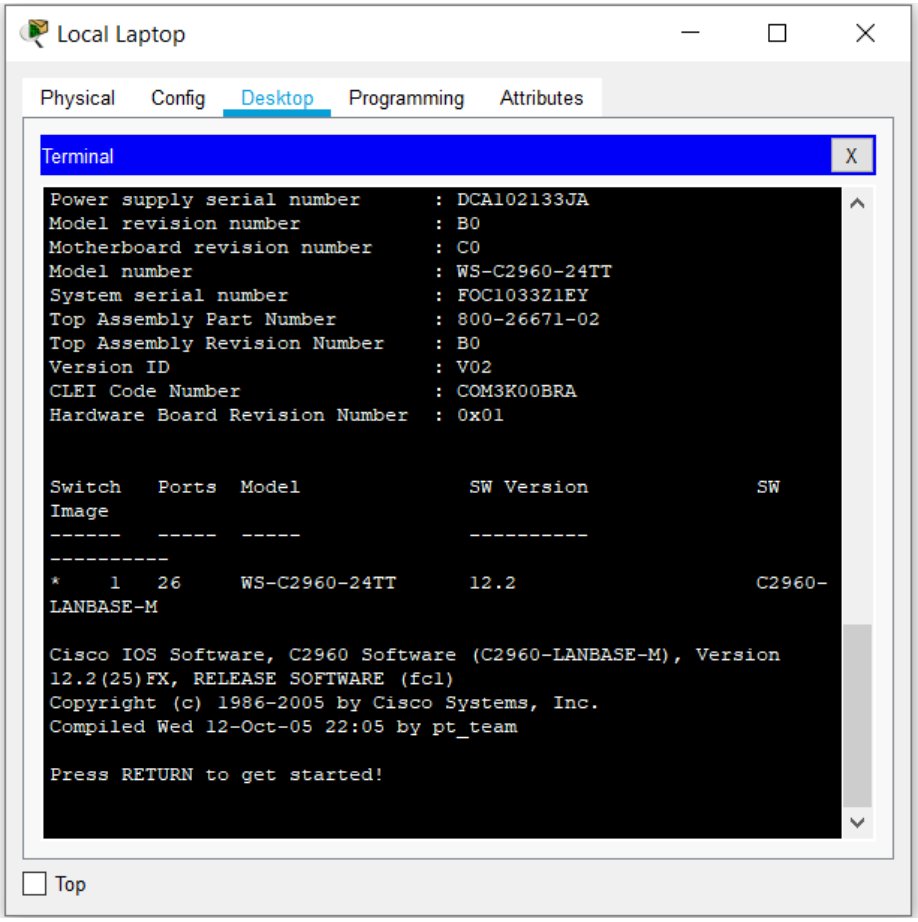

2960
Swit
Laptop-PT
ocal Laptop
Console
FastEthernet0/1
FastEthernet0/2
FastEthernet0/3
FastEthernet0/4
FastEthernet0/5
FastEthernet0/6
FastEthernet0/7
FastEthernet0/8
FastEthernet0/9
FastEthernet0/10

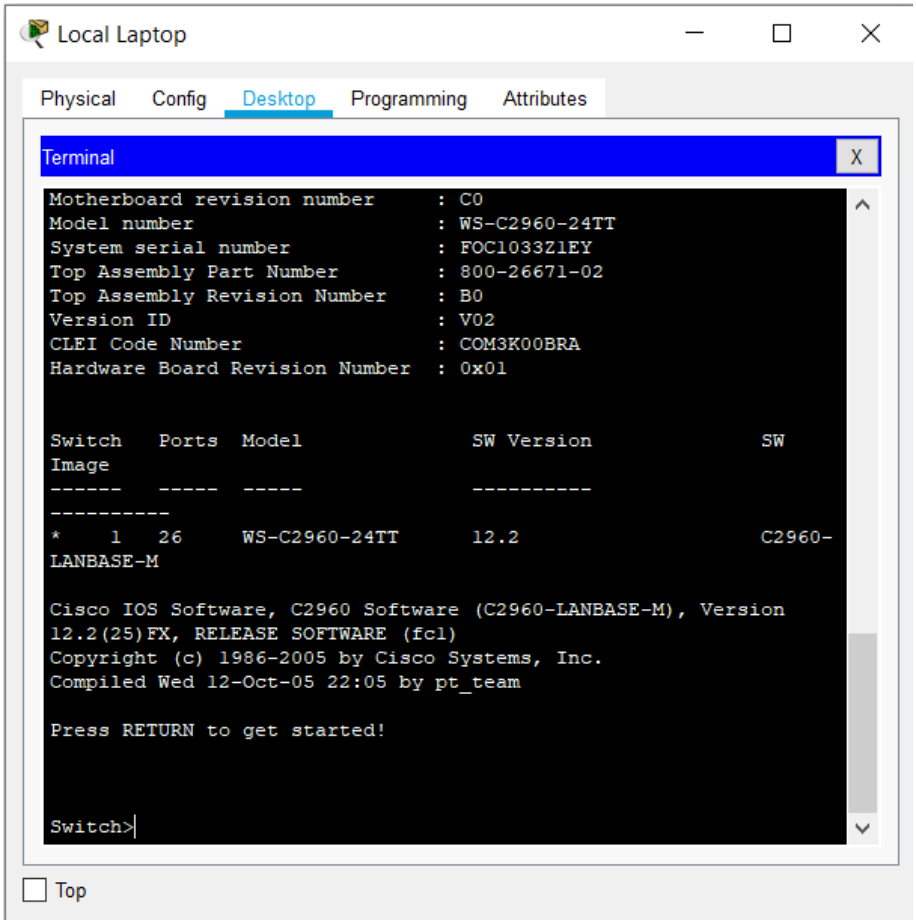

2960-24TT
Switch0
Laptop-PT
Local Laptop

Open terminal of local laptop

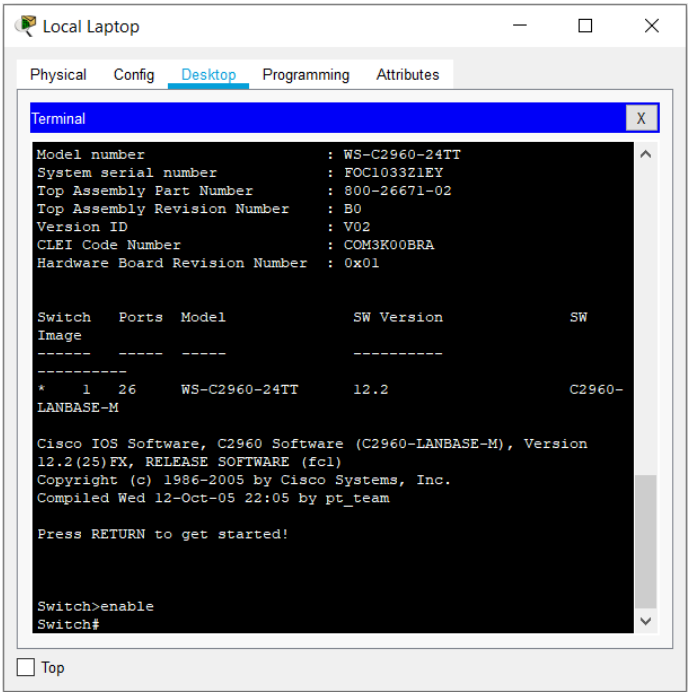





Local Laptop
Physical
Config
Desktop
Programming
Attributes
Terminal
X
Power supply serial number : DCA102133JA
Model revision number : B0
Motherboard revision number : C0
Model number : WS-C2960-24TT
System serial number : FOC1033Z1EY
Top Assembly Part Number : 800-26671-02
Top Assembly Revision Number : B0
Version ID : V02
CLEI Code Number : COM3K00BRA
Hardware Board Revision Number : 0x01
Switch Ports Model SW Version SW Image
------ ----- ----- ---------- ----------
* 1 26 WS-C2960-24TT 12.2 C2960-LANBASE-M
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team
Press RETURN to get started!
Top


Local Laptop
Physical
Config
Desktop
Programming
Attributes
Terminal
X
Motherboard revision number : C0
Model number : WS-C2960-24TT
System serial number : FOC1033Z1EY
Top Assembly Part Number : 800-26671-02
Top Assembly Revision Number : B0
Version ID : V02
CLEI Code Number : COM3K00BRA
Hardware Board Revision Number : 0x01
Switch Ports Model SW Version SW Image
------ ----- ----- ---------- ----------
* 1 26 WS-C2960-24TT 12.2 C2960-LANBASE-M
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team
Press RETURN to get started!
Switch>
Top

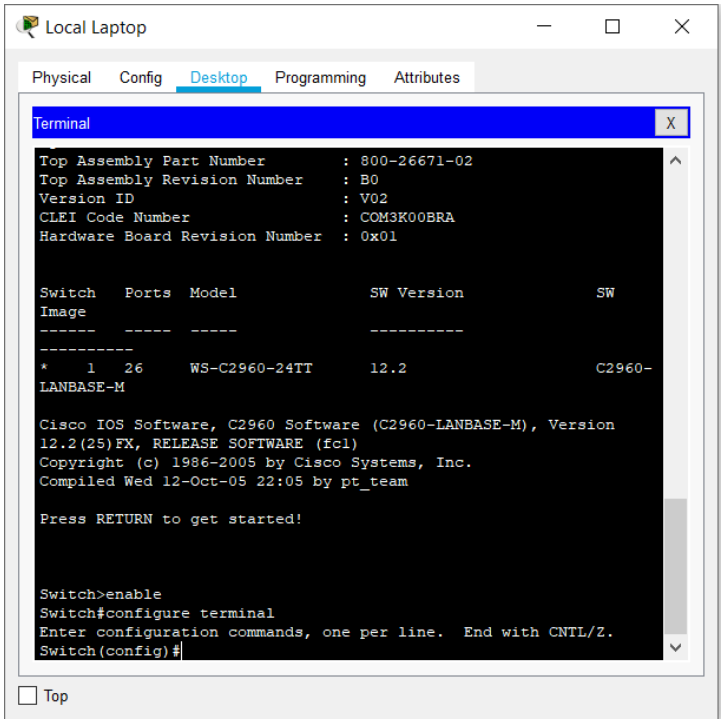
Enable command - To enter in privilege exec mode



2. Configure Switch hostname as LOCAL-SWITCH

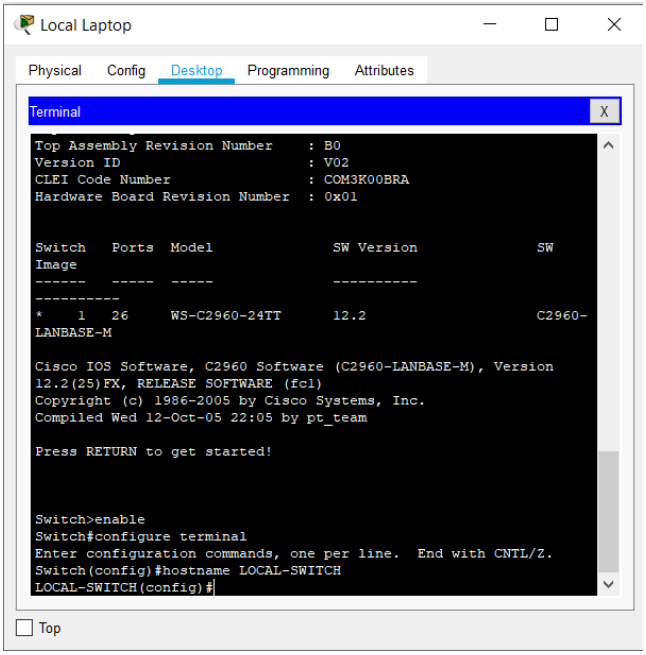
Enter configuration mode

Use the configure privileged EXEC command to enter global configuration mode.

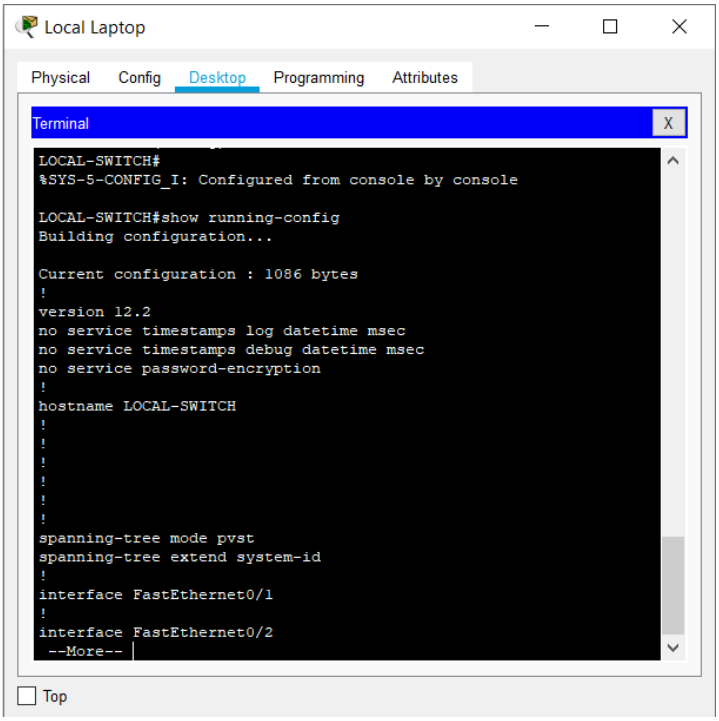


Set hostname as LOCAL-SWITCH using

hostname LOCAL-SWITCH command

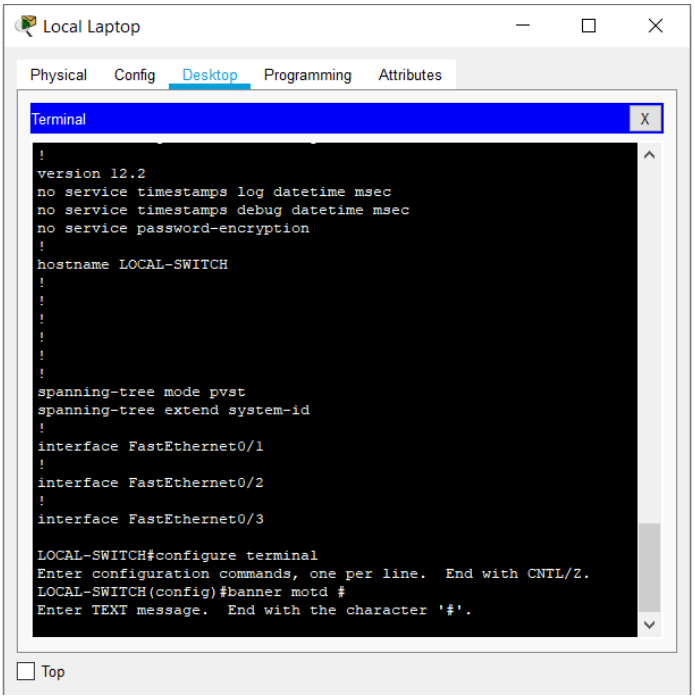


Run show running-config command to check the hostname.

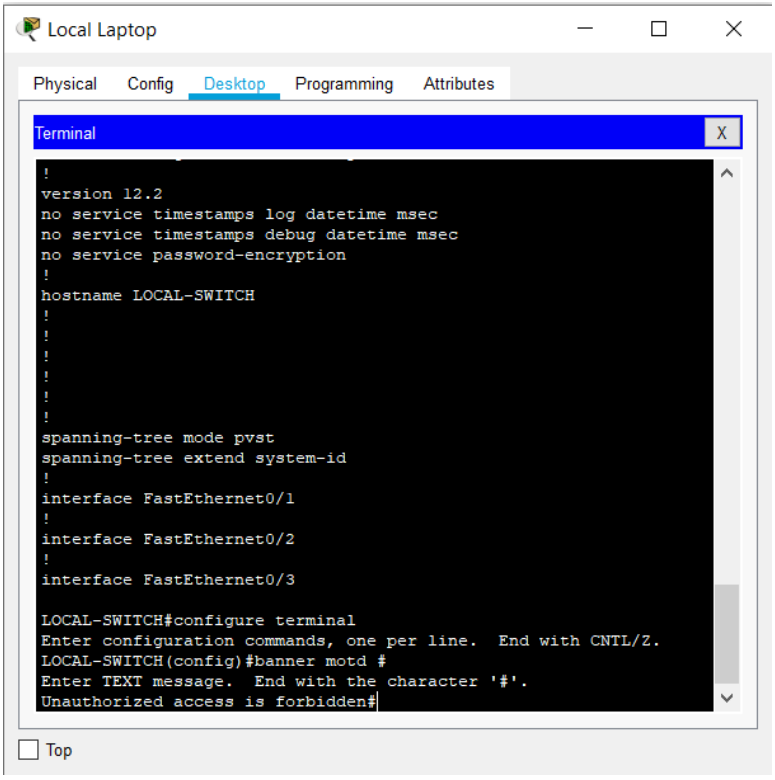


3. Configure the message of the day as "Unauthorized access is forbidden"

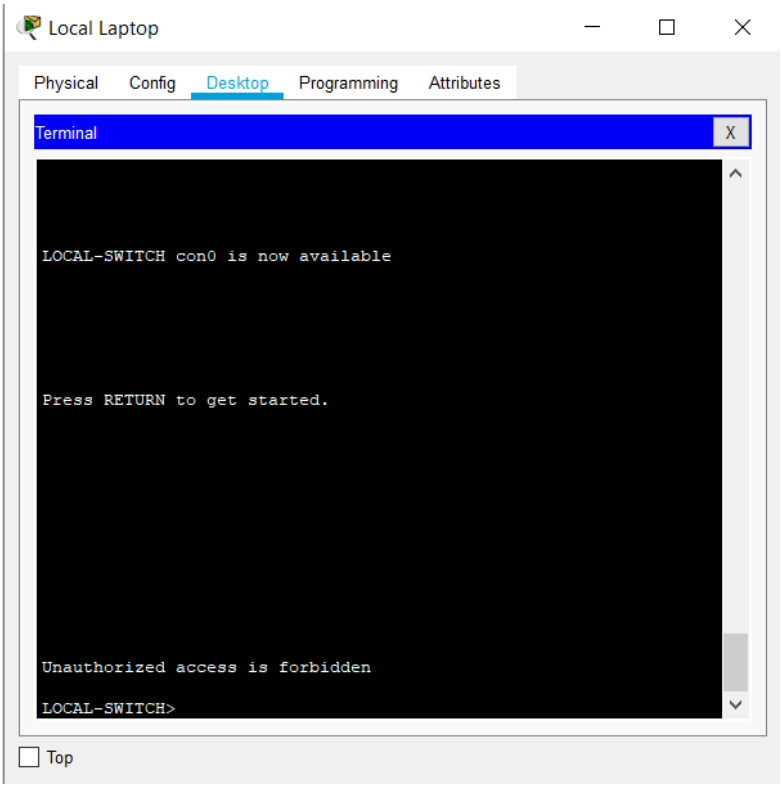
Use command banner motd #



Type the message and add # at the end.

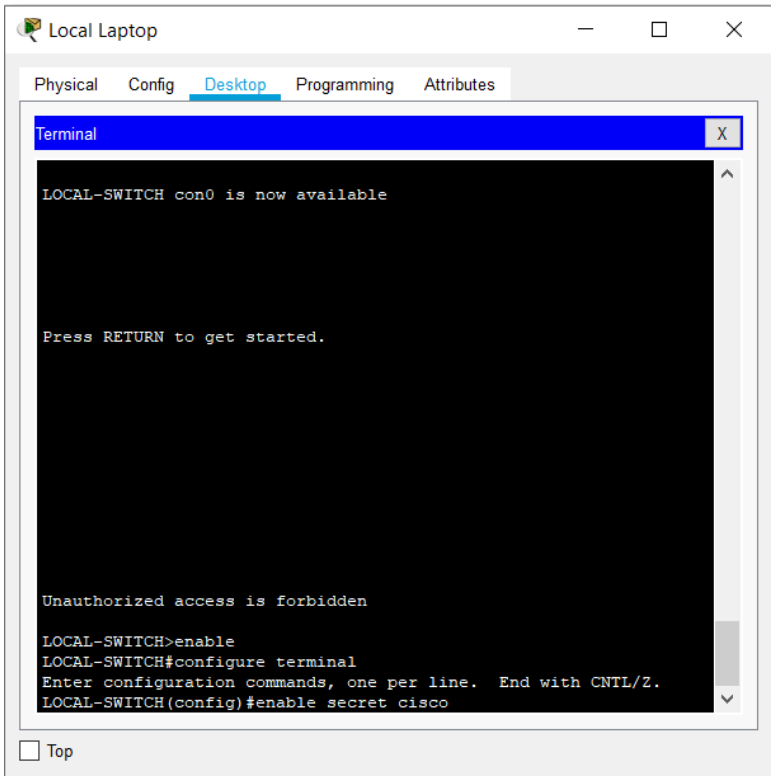


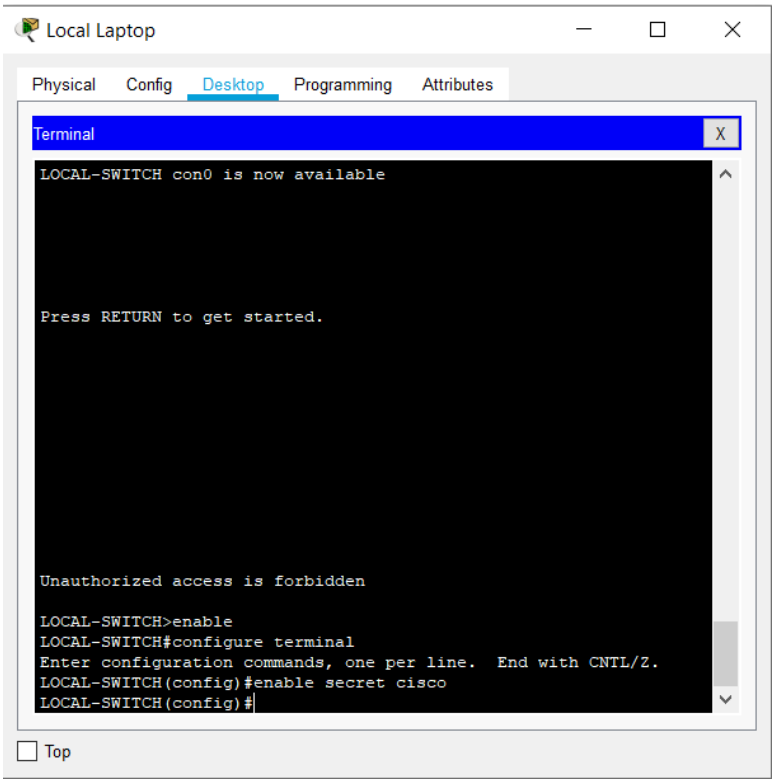
You can check the message of the day when you open the terminal for accessing switch again.



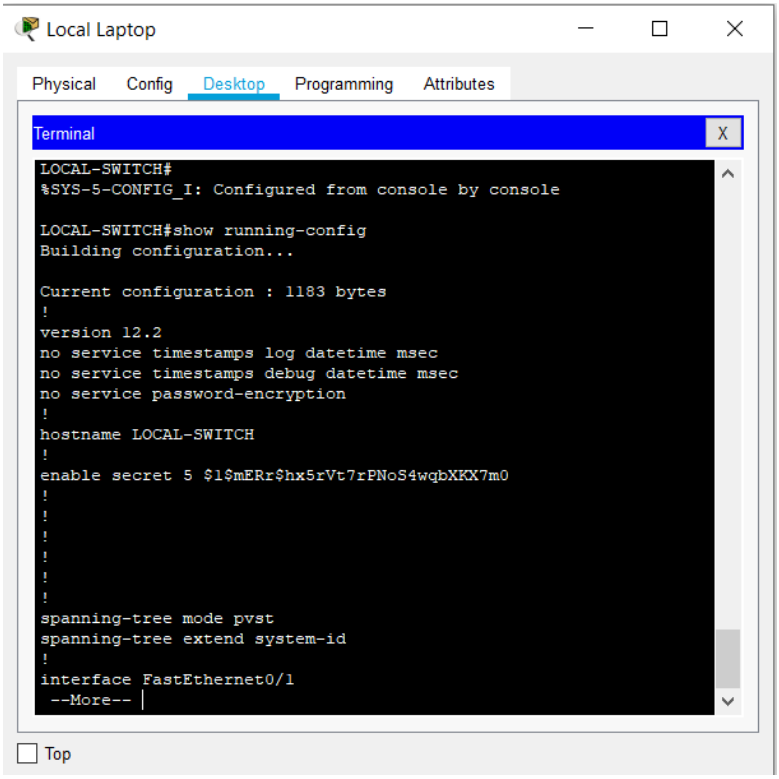
4. Configure the password for privileged mode access as "cisco". The password must be md5 encrypted

Use command enable secret cisco

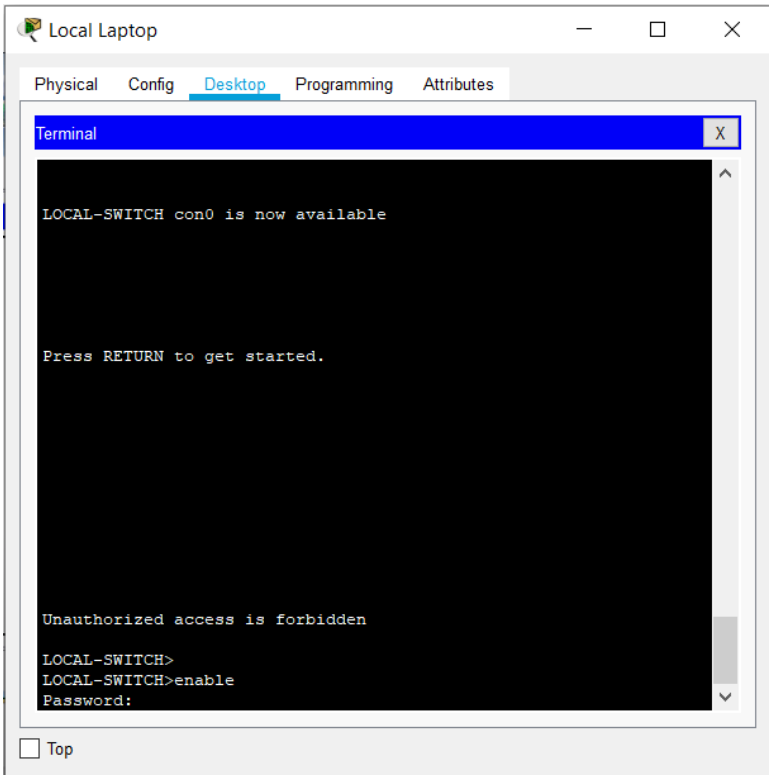

Local Laptop
Physical
Config
Desktop
Programming
Attributes
Terminal
X
LOCAL-SWITCH con0 is now available
Press RETURN to get started.
Unauthorized access is forbidden
LOCAL-SWITCH>enable
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#enable secret cisco
Top

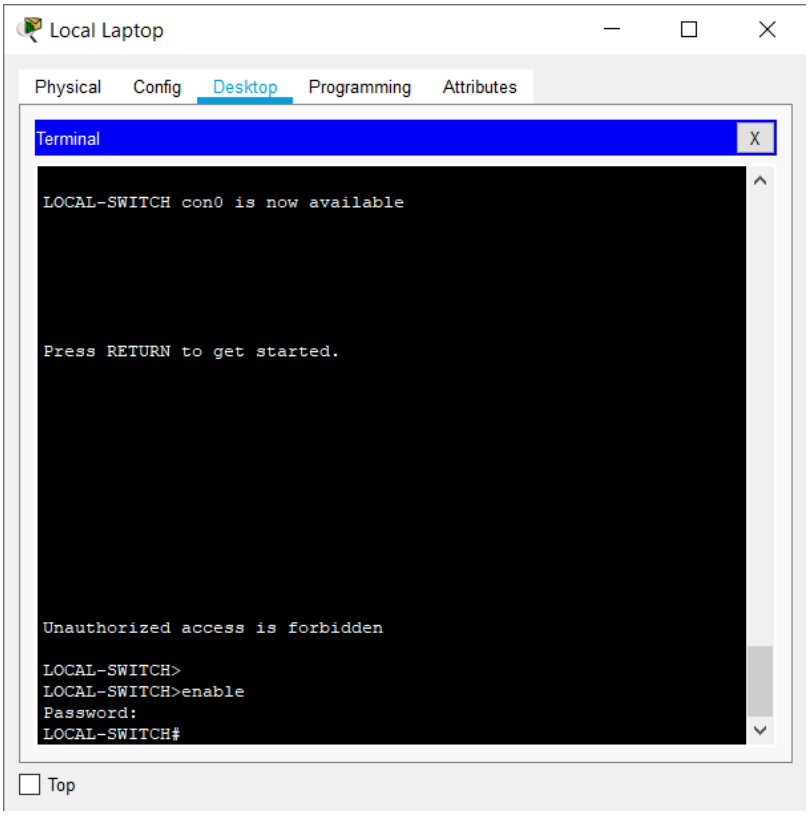

Local Laptop
Physical
Config
Desktop
Programming
Attributes
Terminal
X
LOCAL-SWITCH con0 is now available
Press RETURN to get started.
Unauthorized access is forbidden
LOCAL-SWITCH>enable
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#enable secret cisco
LOCAL-SWITCH(config)#
Top

In running-config it displays as enable secret.

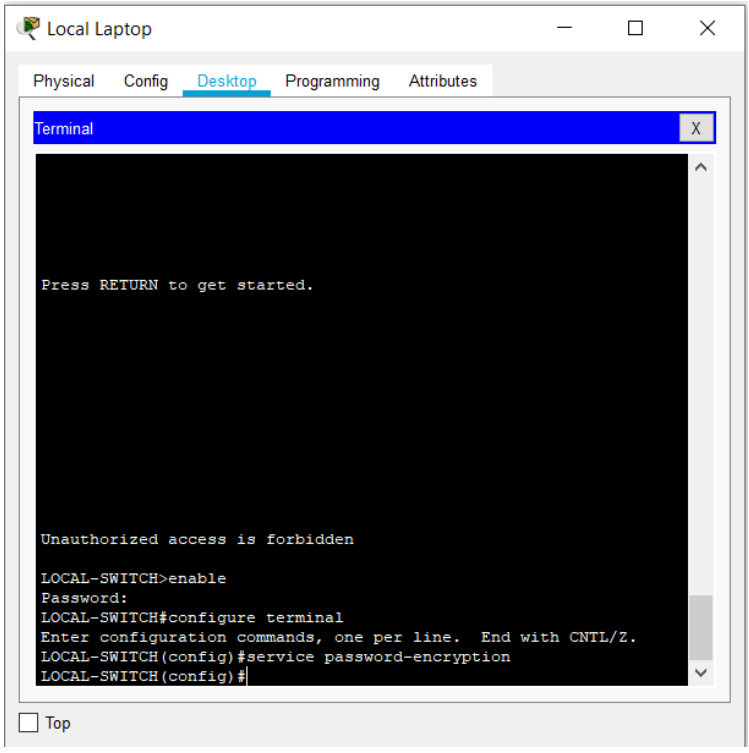


When we try to enable switch again, it will ask for password.

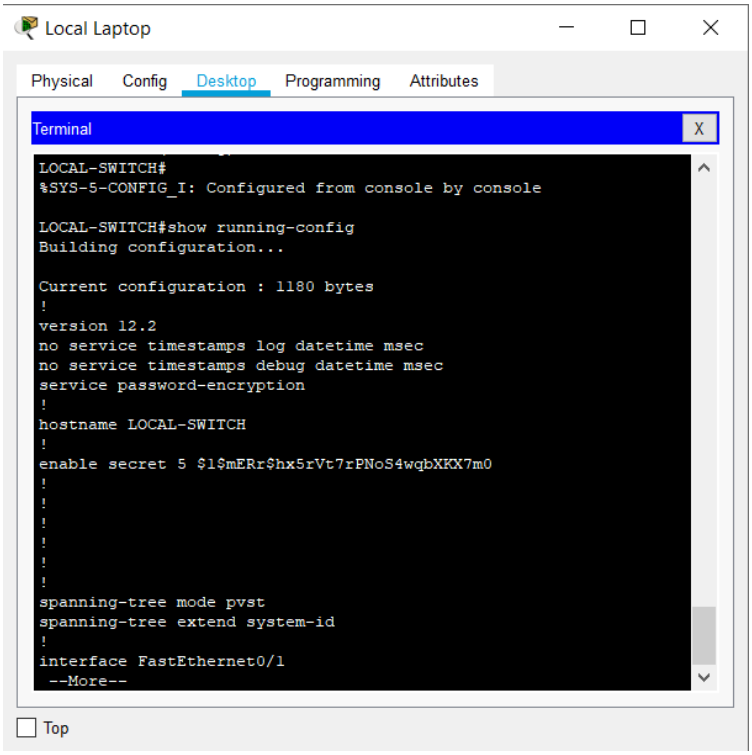




5. Configure password encryption on the switch using the global configuration command

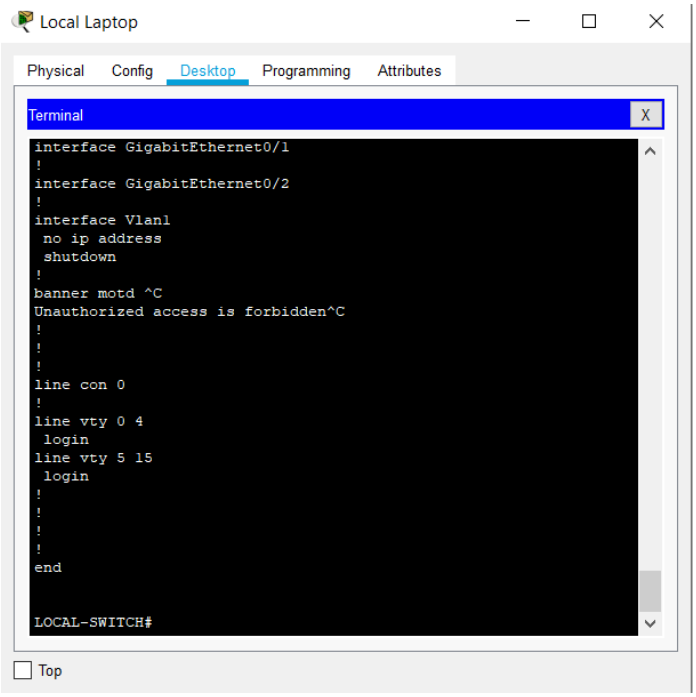


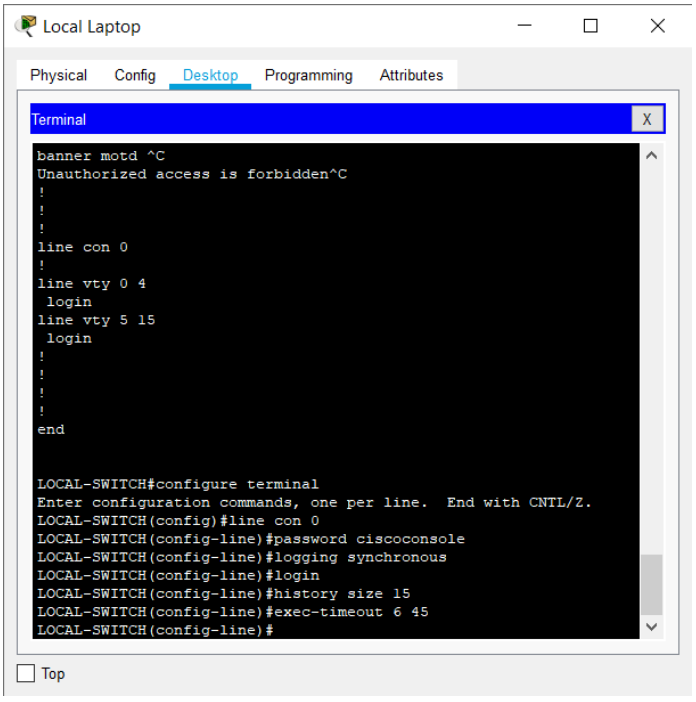
In running-config, service password-encryption is displayed.



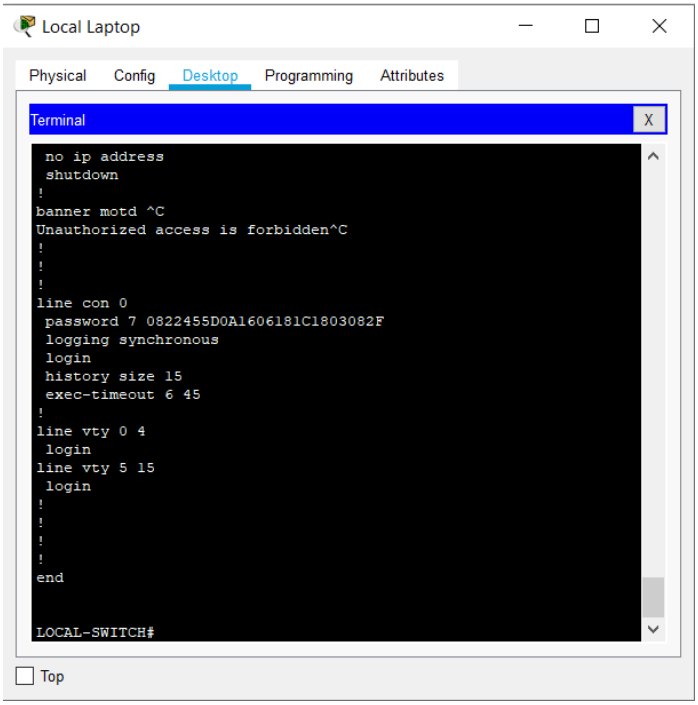
6. Configure CONSOLE access with the following settings:
- Login enabled
- Password: whatever you like
- History size: 15 commands
- Timeout: 6'45"
- Synchronous logging

The con 0 configuration is empty in the beginning

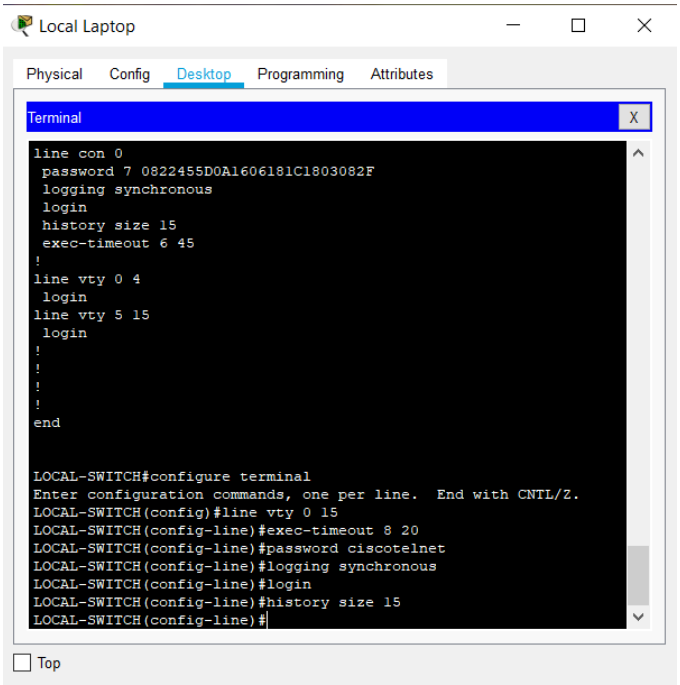


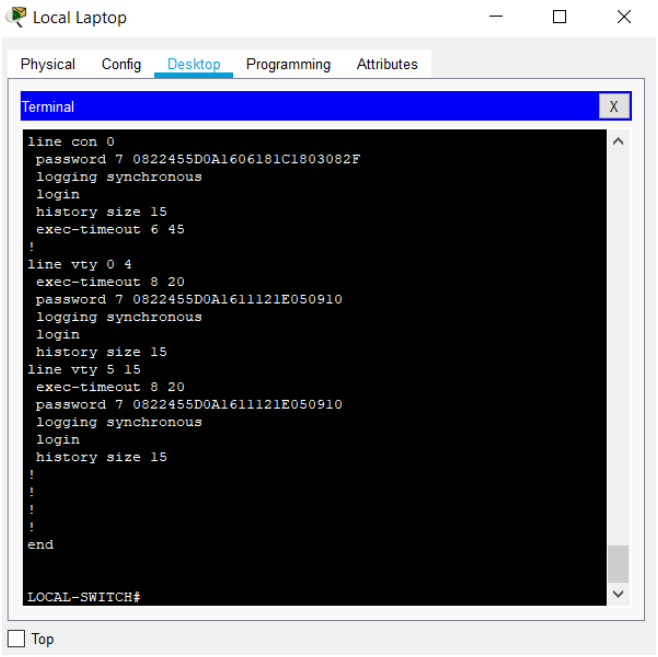


Line con 0 now shows the console configuration.

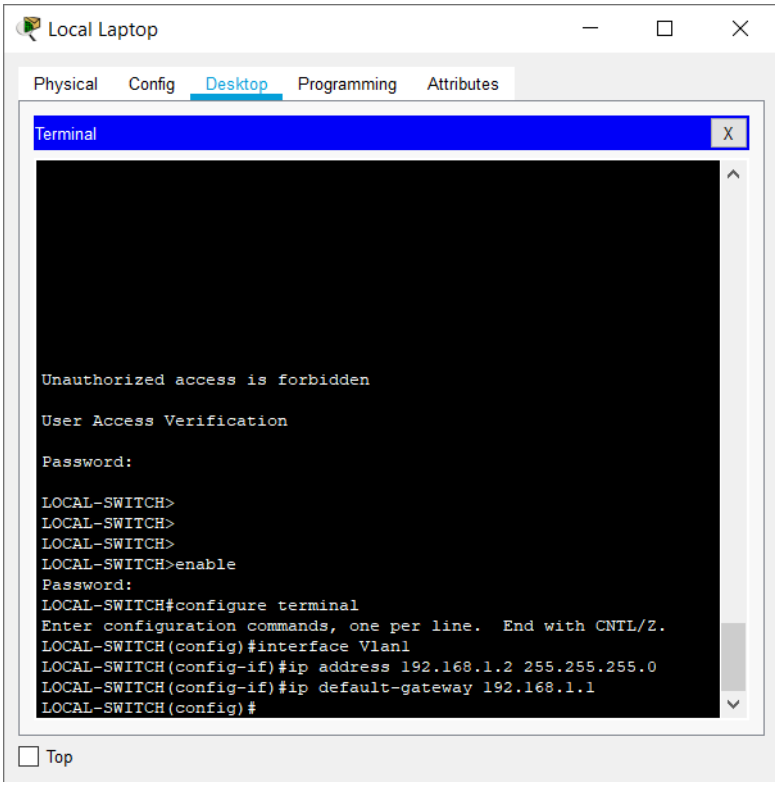


6. Configure TELNET access with the following settings:
- Login enabled
- Password: whatever you like
- History size: 15 commands
- Timeout: 8’20”
- Synchronous logging

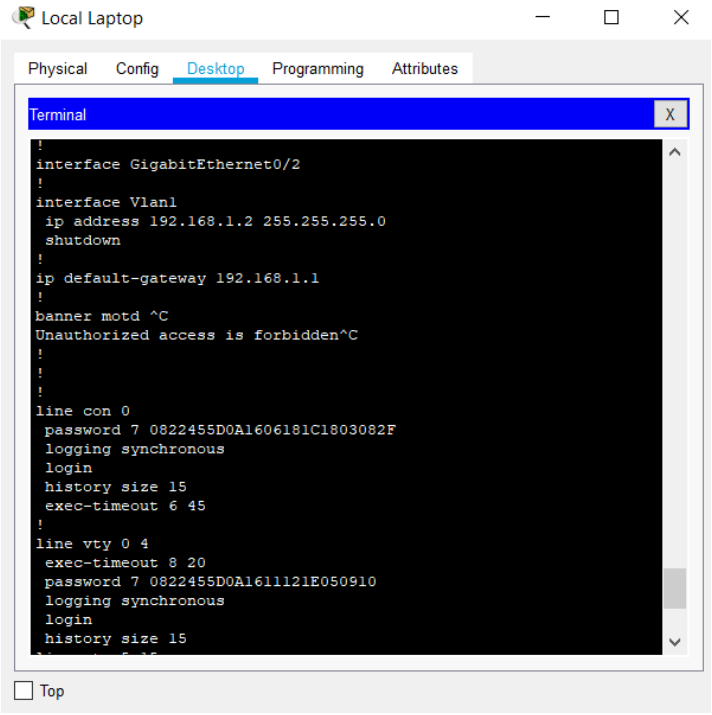


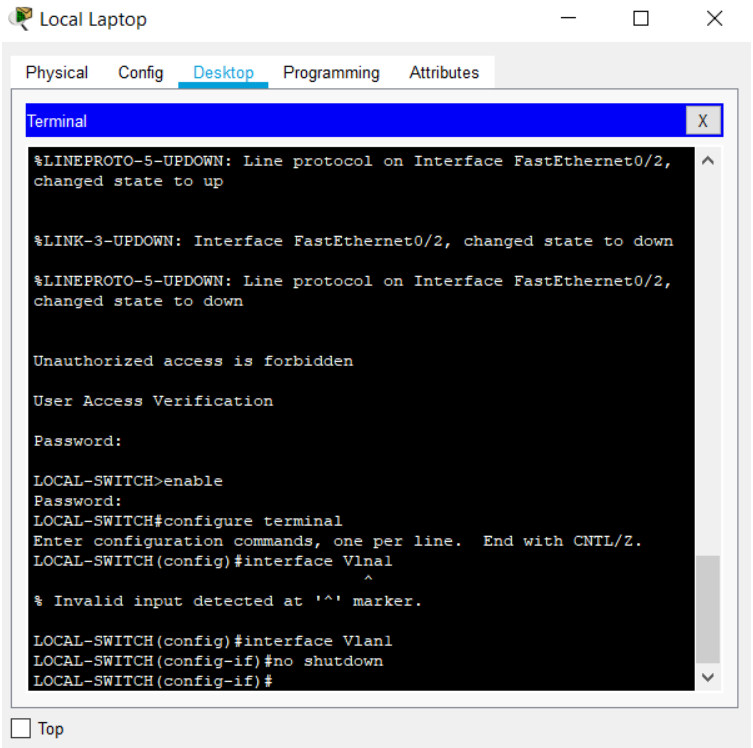


7. Configure the IP address of the switch as 192.168.1.2/24 and its default gateway IP (192.168.1.1).



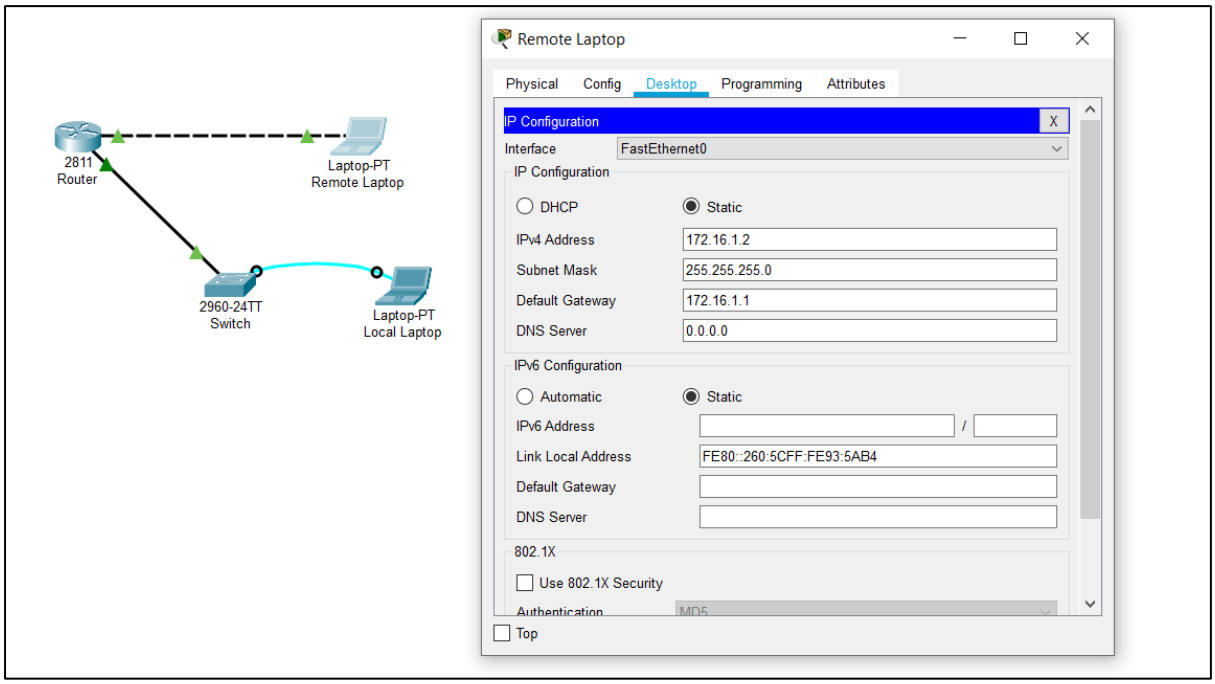
Ip address and default gateway are now displayed in interface vlan
The default gateway address is the ip address of the router.



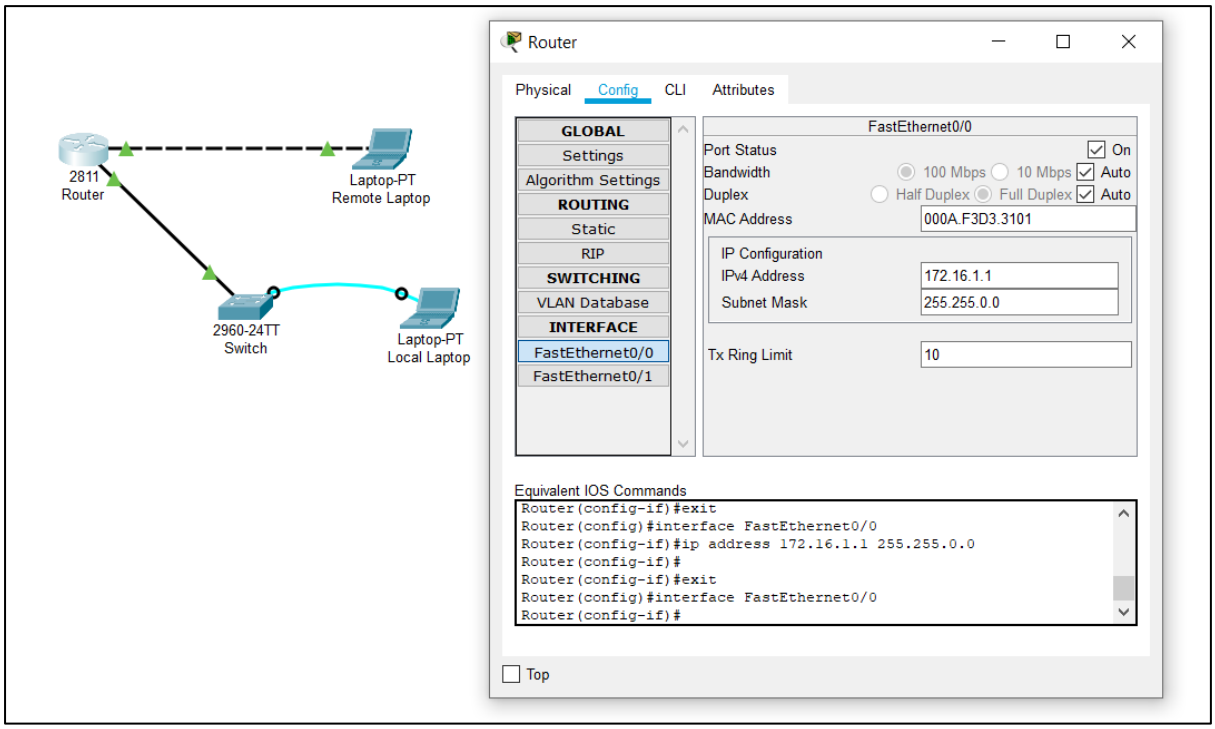


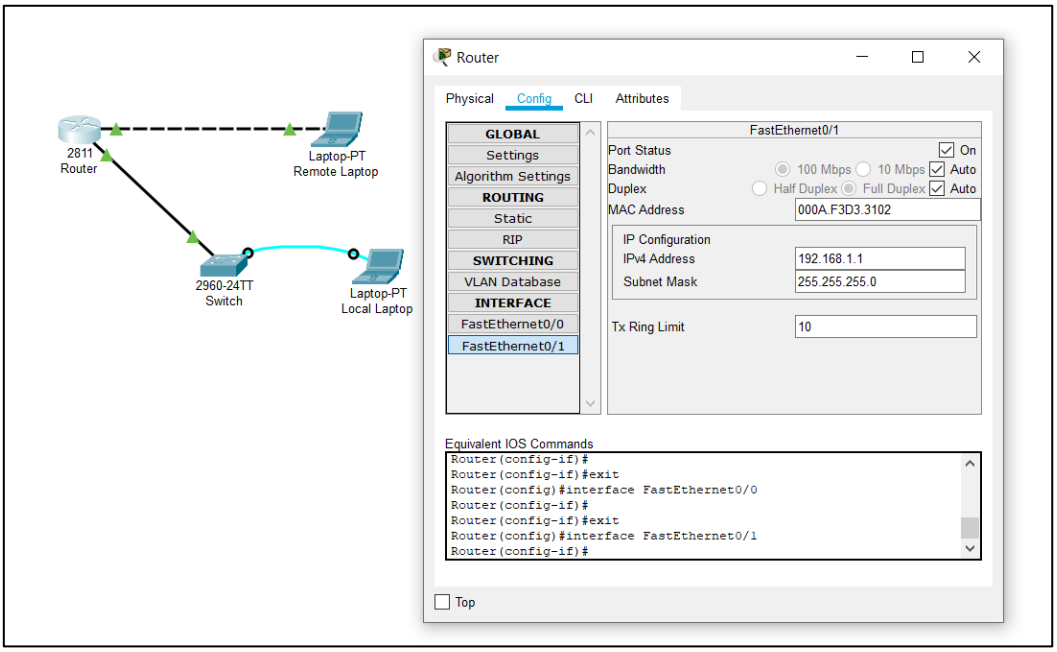
8. Test telnet connectivity from the Remote Laptop using the telnet client.

Configuration of Remote laptop

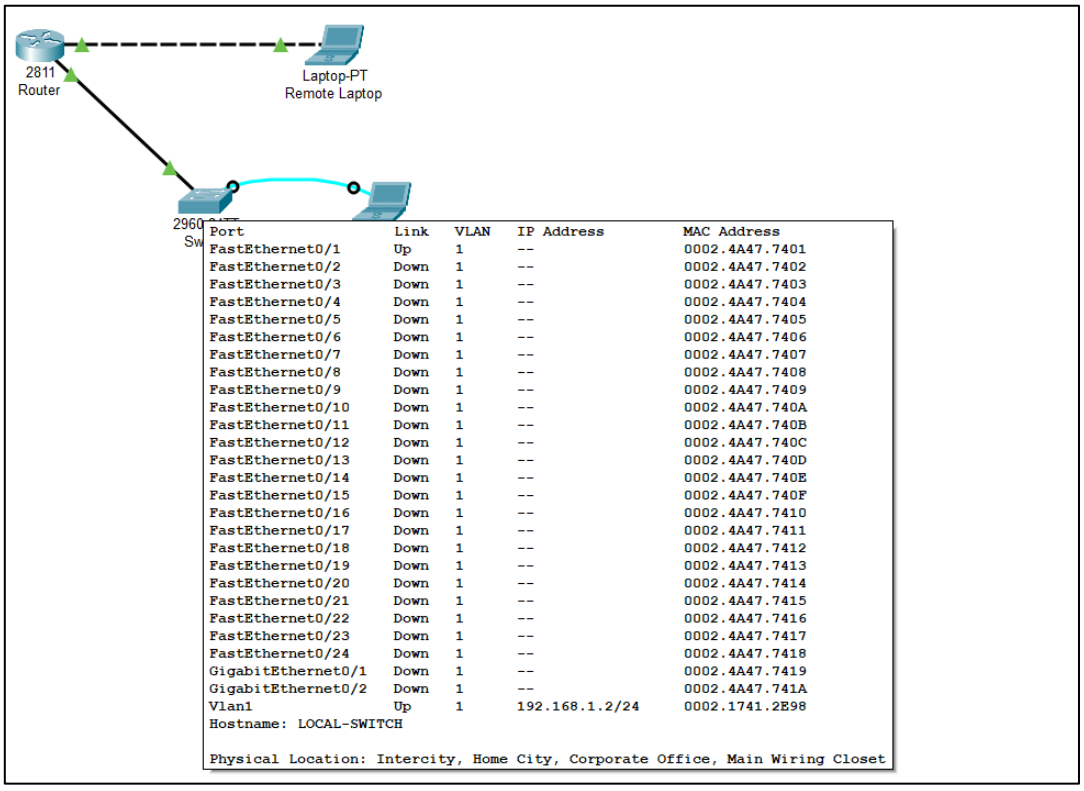


Configuration of Router

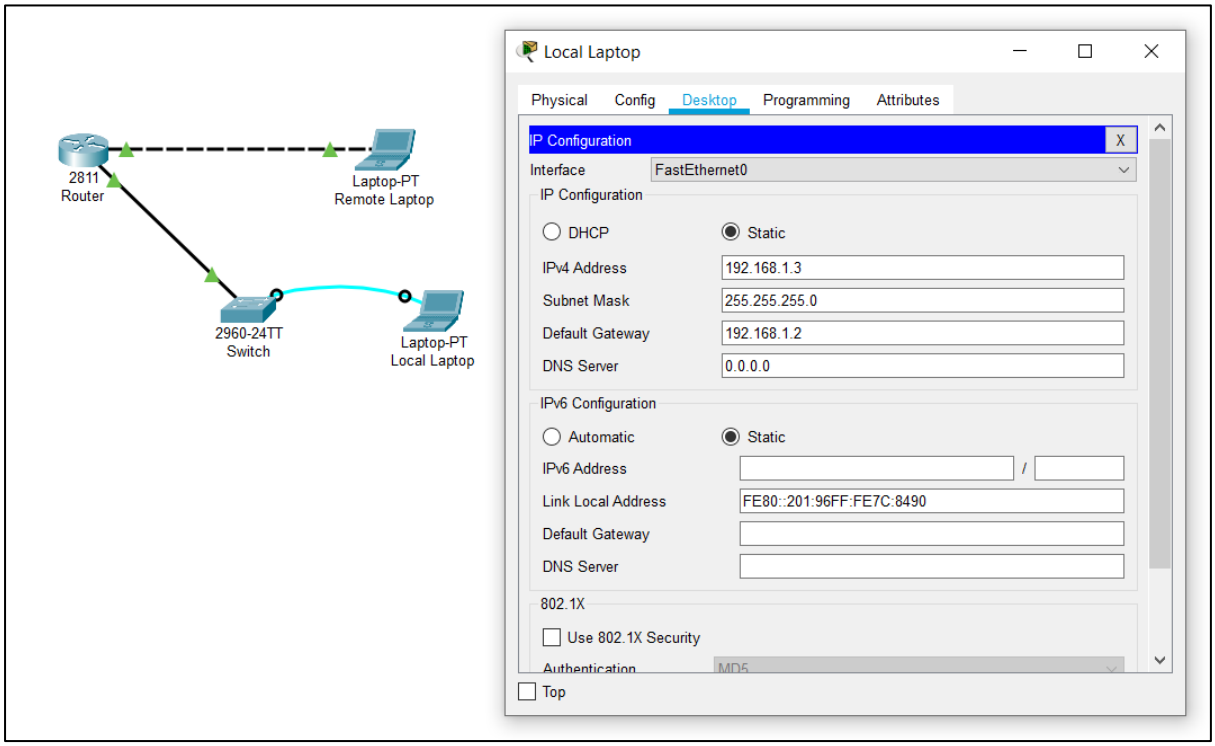




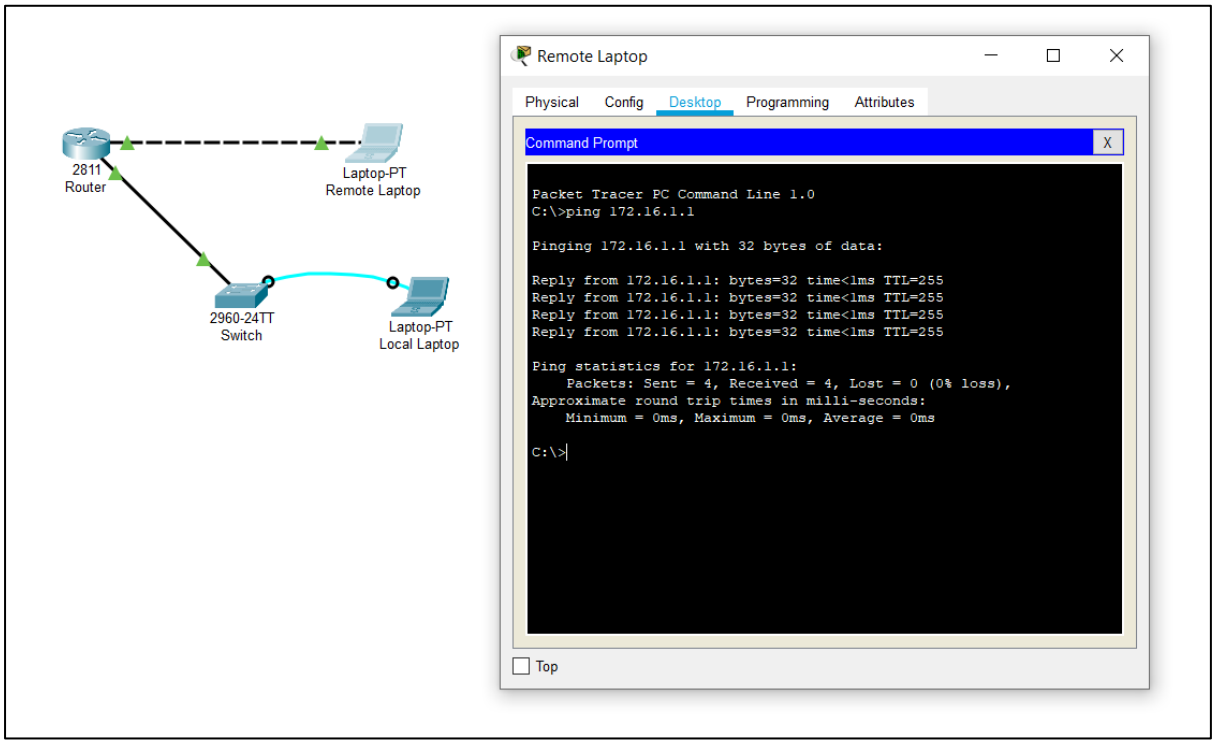
Configuration of Switch



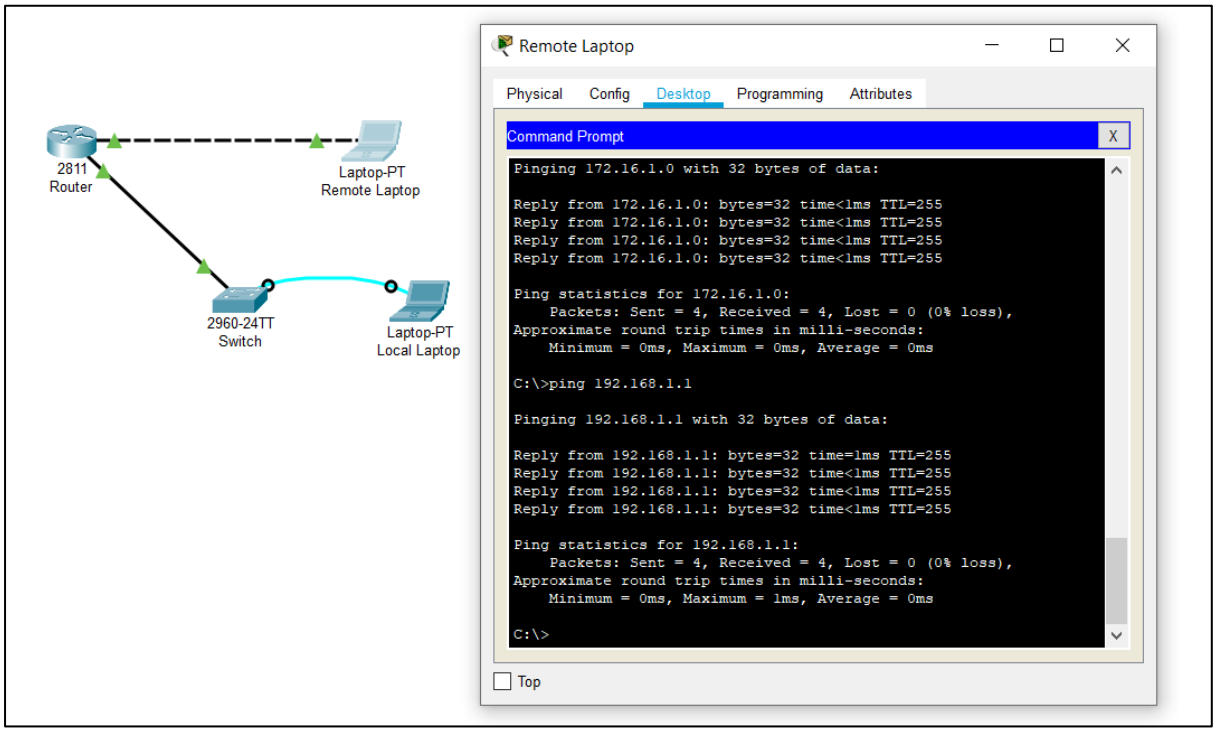
Configuration of Remote Laptop



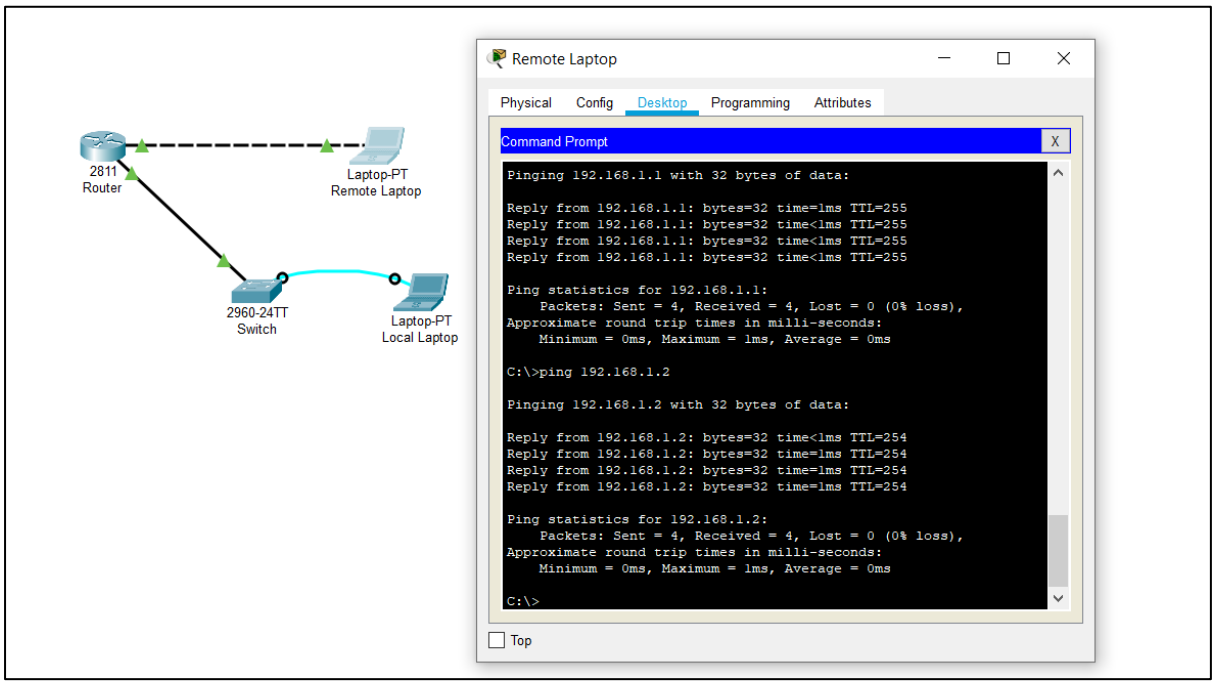
Pinging Router from Remote Laptop



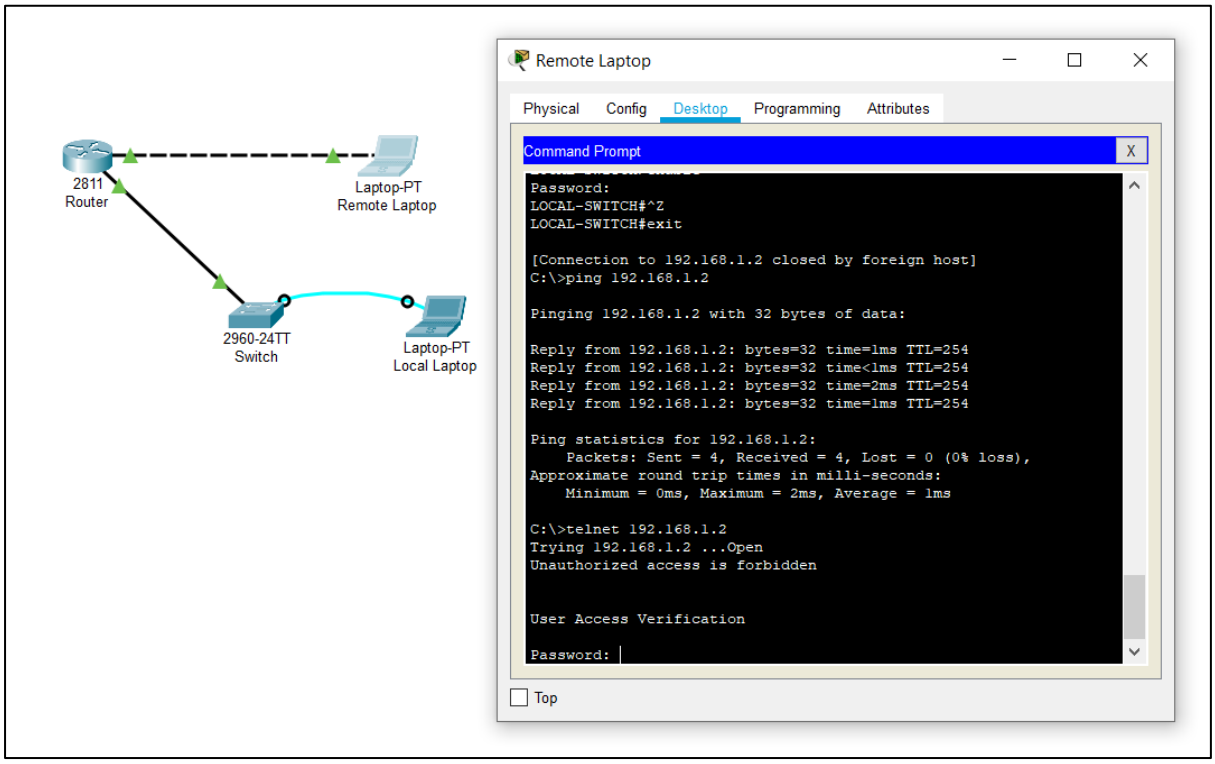
Pinging another Ethernet port of Router from Remote Laptop



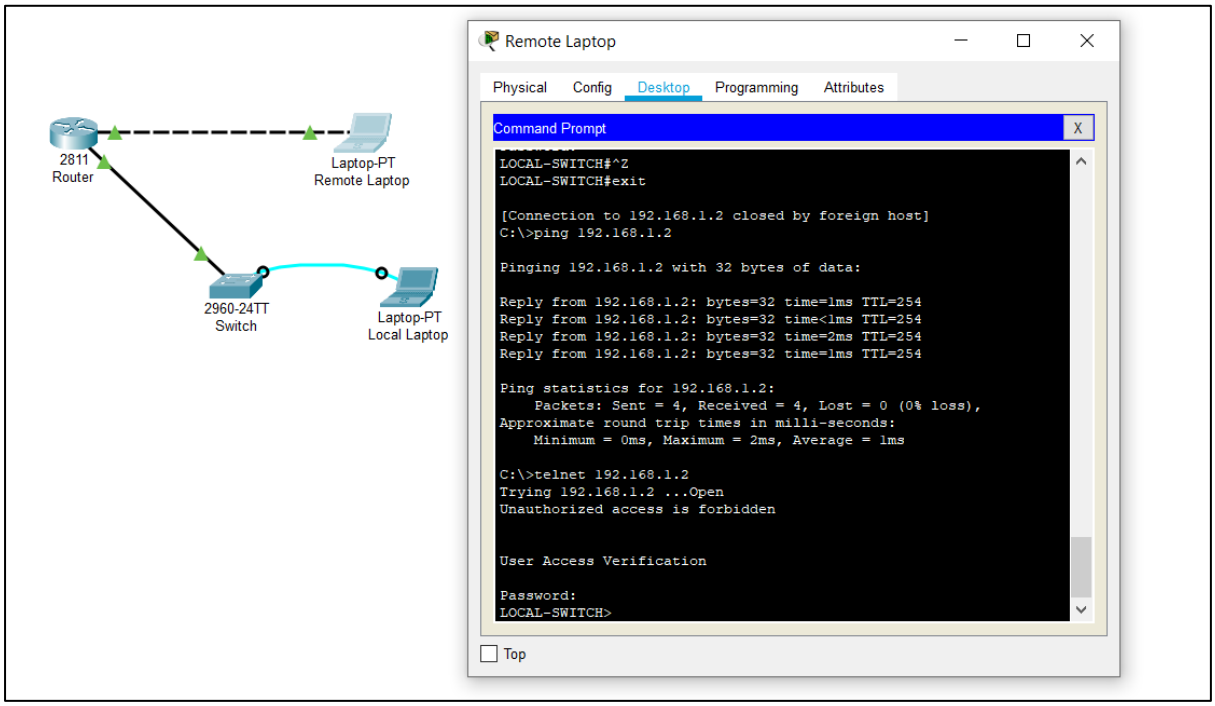
Pinging Switch from Remote Laptop



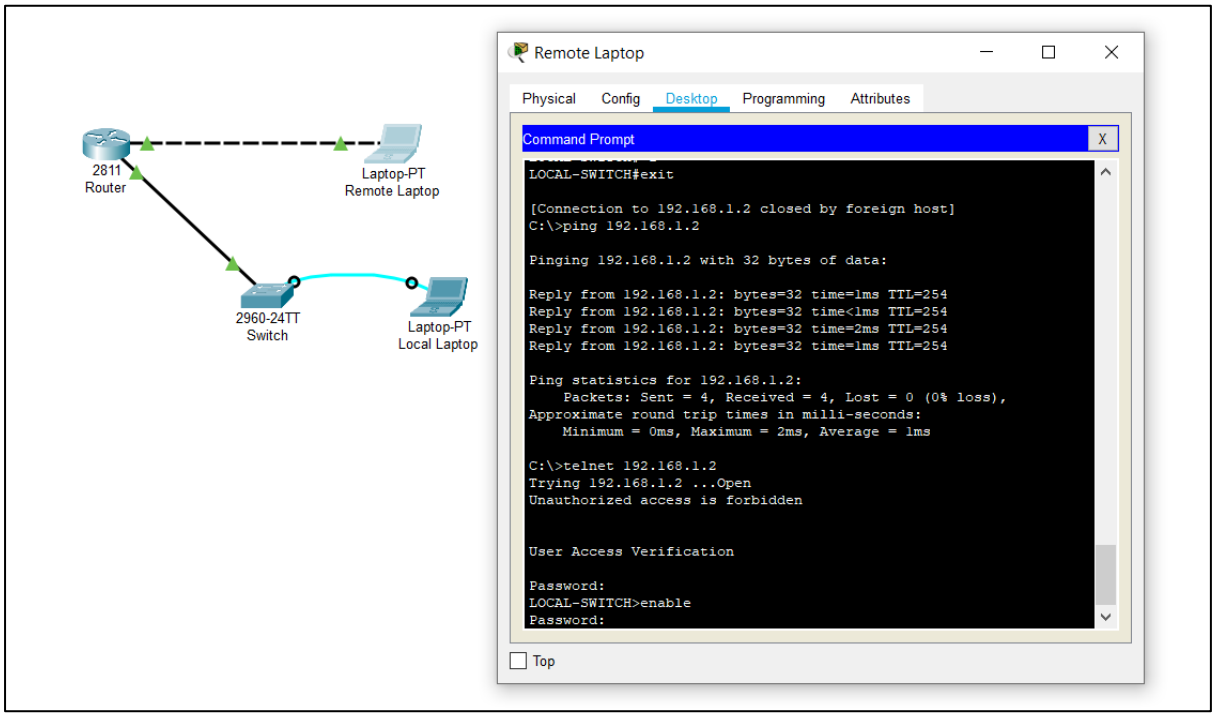
Telnet Switch from Remote Laptop

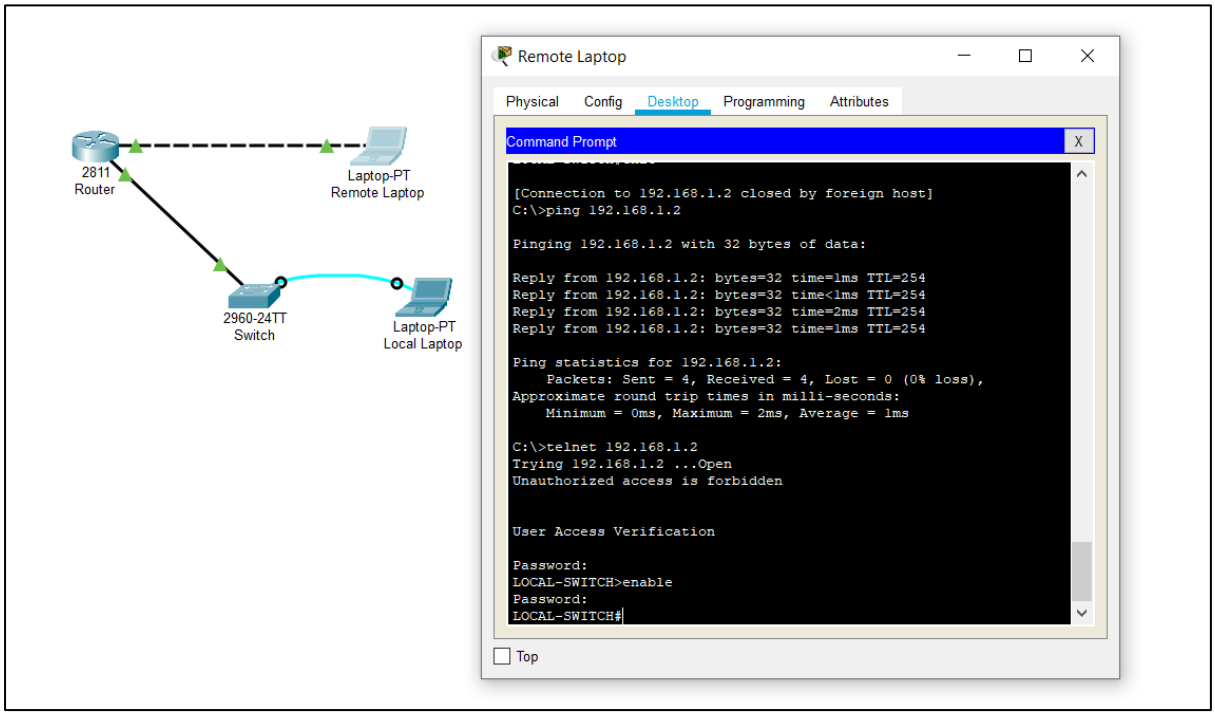


After entering password for telnet

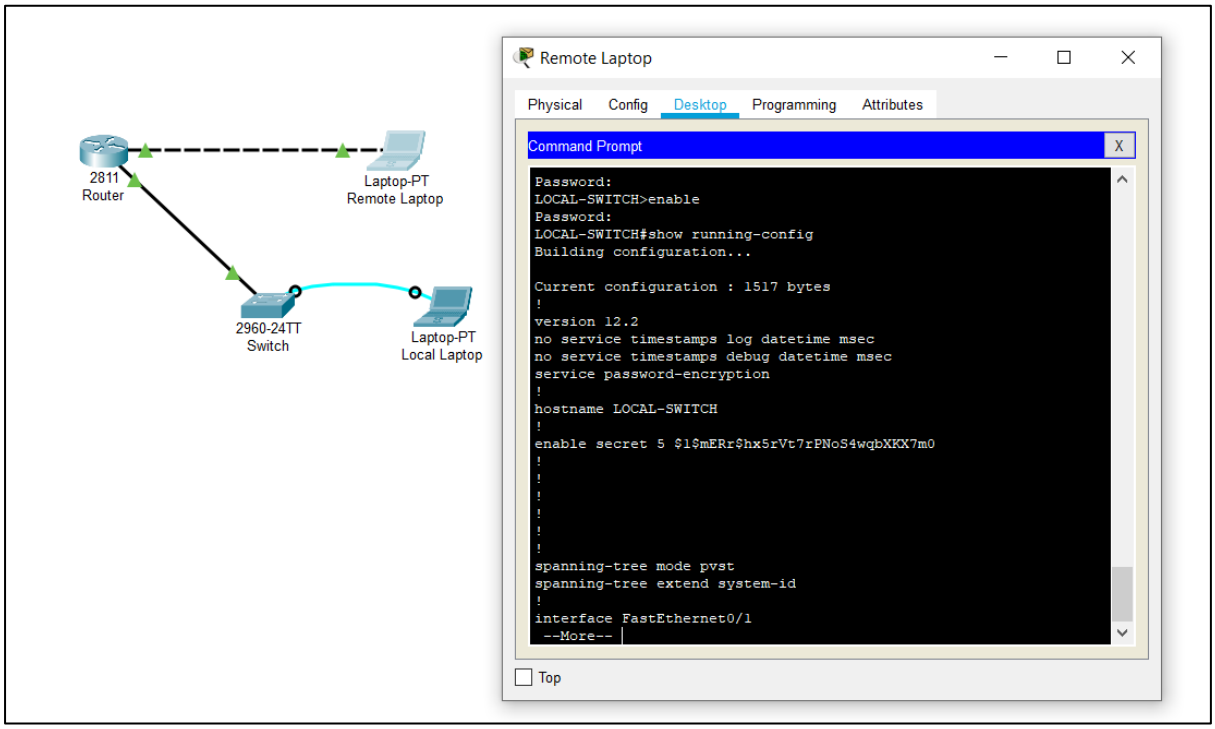


Enabling switch from Remote Laptop

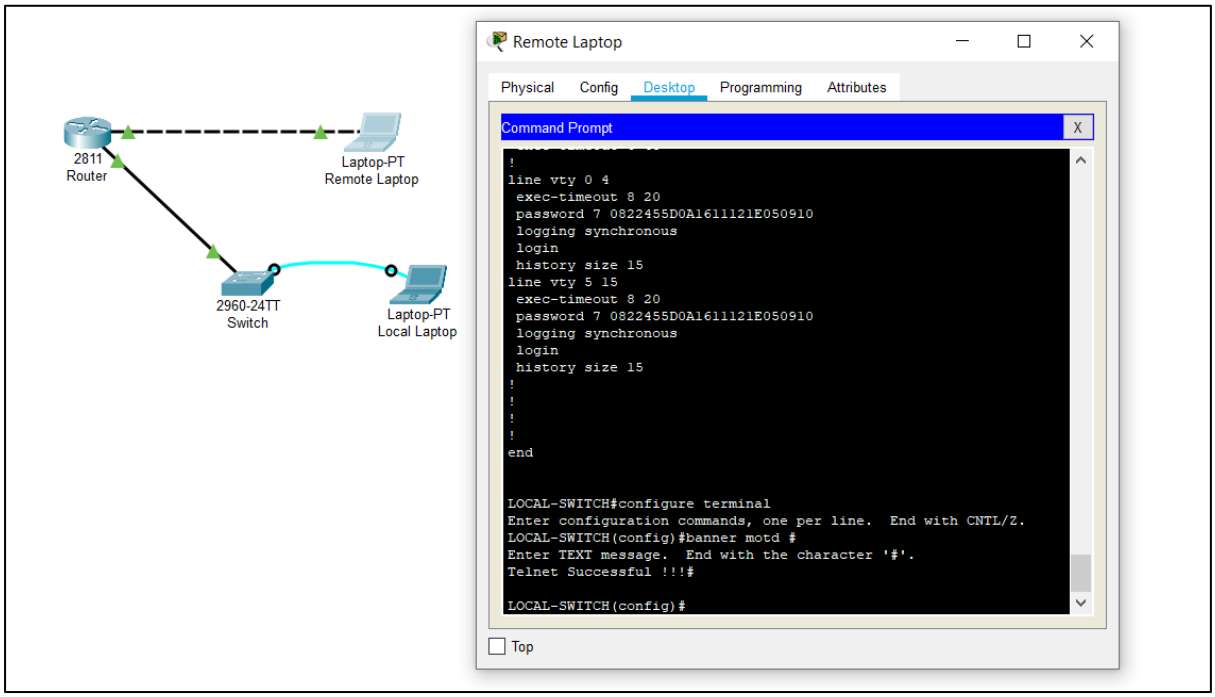




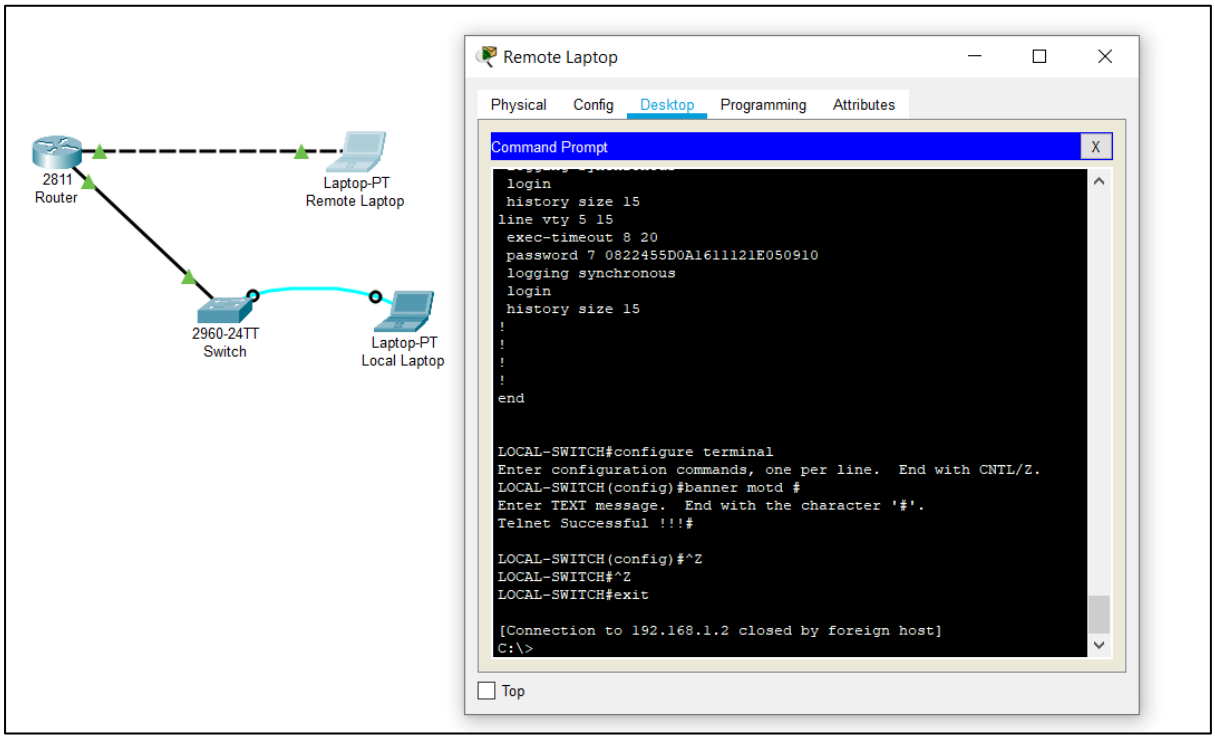
Showing running-config



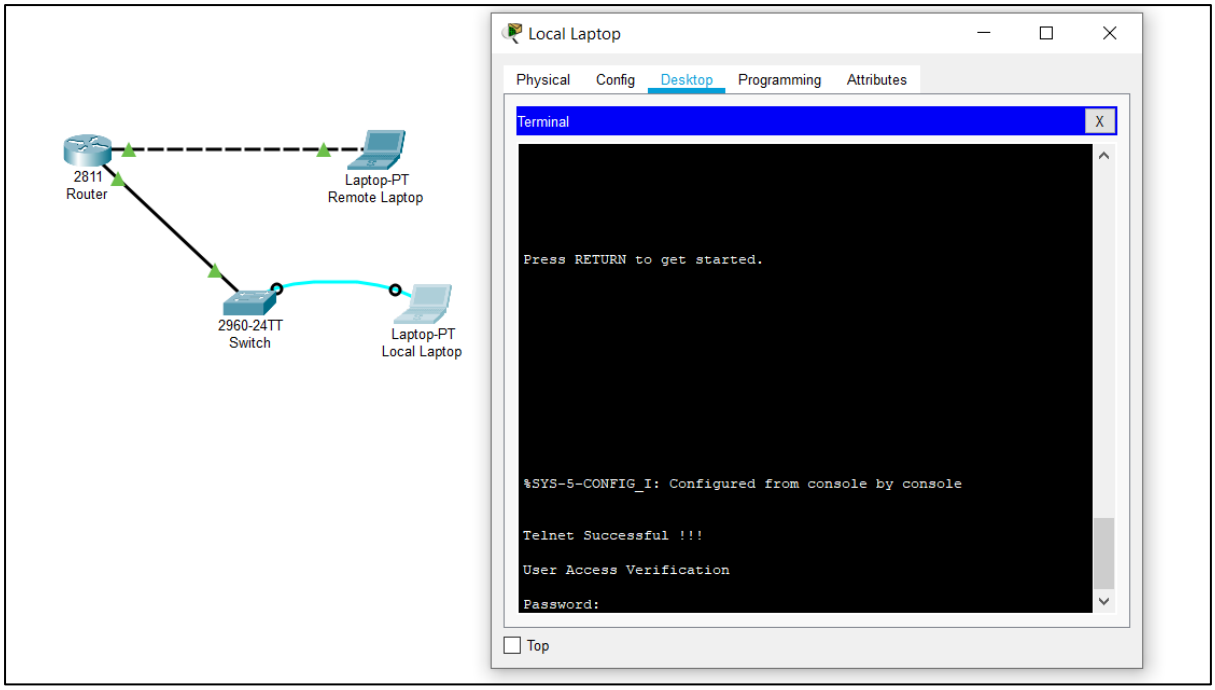
Changing message of the day from Remote Laptop



After exiting the enable mode the connection is closed.



Checking new message of the day.



Conclusion:

1. In this experiment, I learned about setting up network with Router and Switch.
2. I learned to configure Switch using console. I understood how to configure terminal.
3. I configured telnet for switch and checked its connectivity from remote laptop.