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TE COMPS

UID: 2019230067

## CEL 51, DCCN, Monsoon 2020

### Lab 4: Prototyping a Network

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#### **Objective:**

Prototype a network using Packet Tracer

#### **Background**

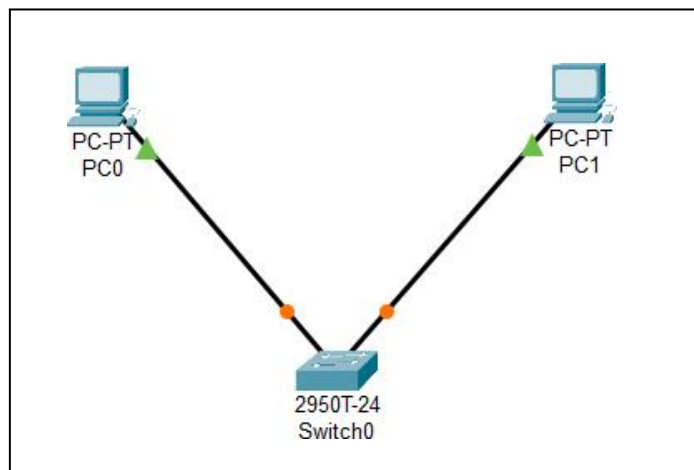
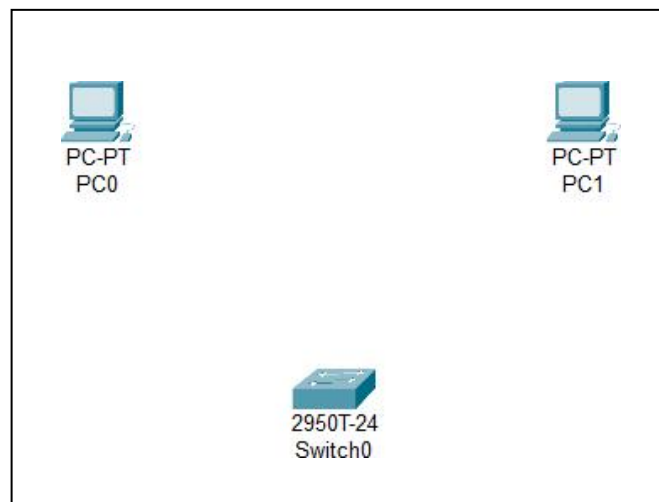
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

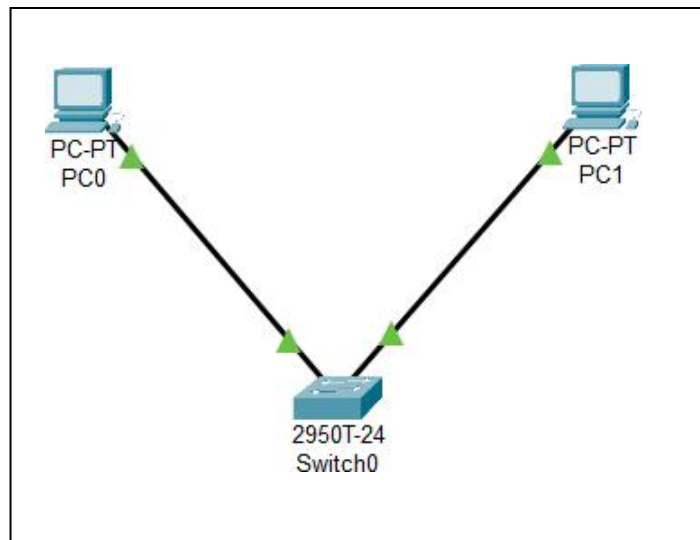
**Switches** facilitate the sharing of resources by connecting together all the devices, including computers, printers, and servers, in a small business network. It connects devices on a computer network by using packet switching to receive and forward data to the destination device. A network switch 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**.

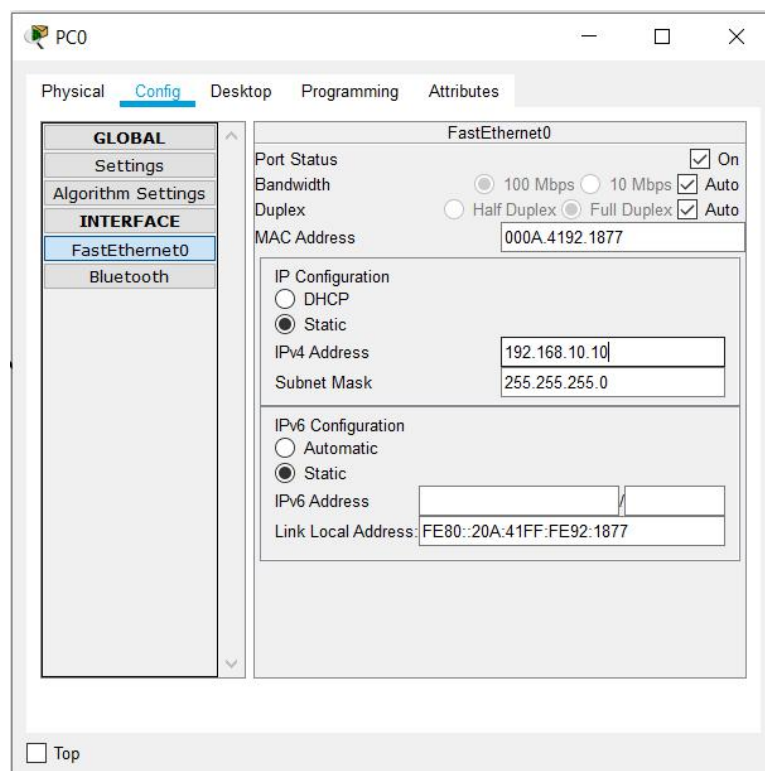




c) Configure PC0 using the **Config** tab in the PC0 configuration window:

a. IP address: 192.168.10.10

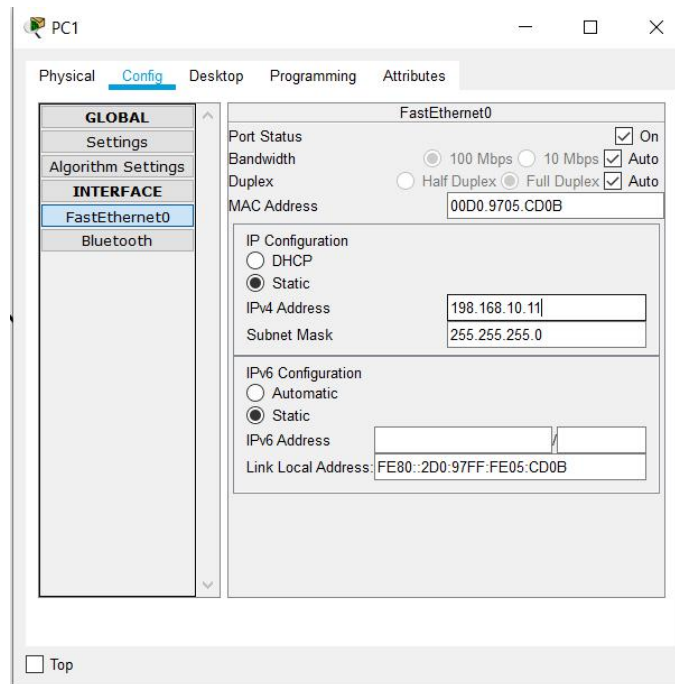
b. Subnet Mask 255.255.255.0



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

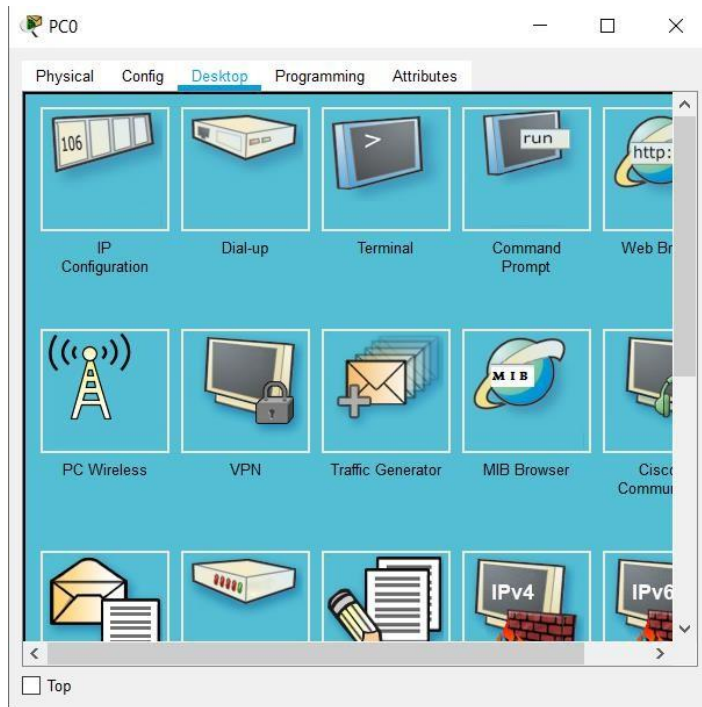


## Step 2: Test connectivity from PC0 to PC1

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

a. Click PC0.

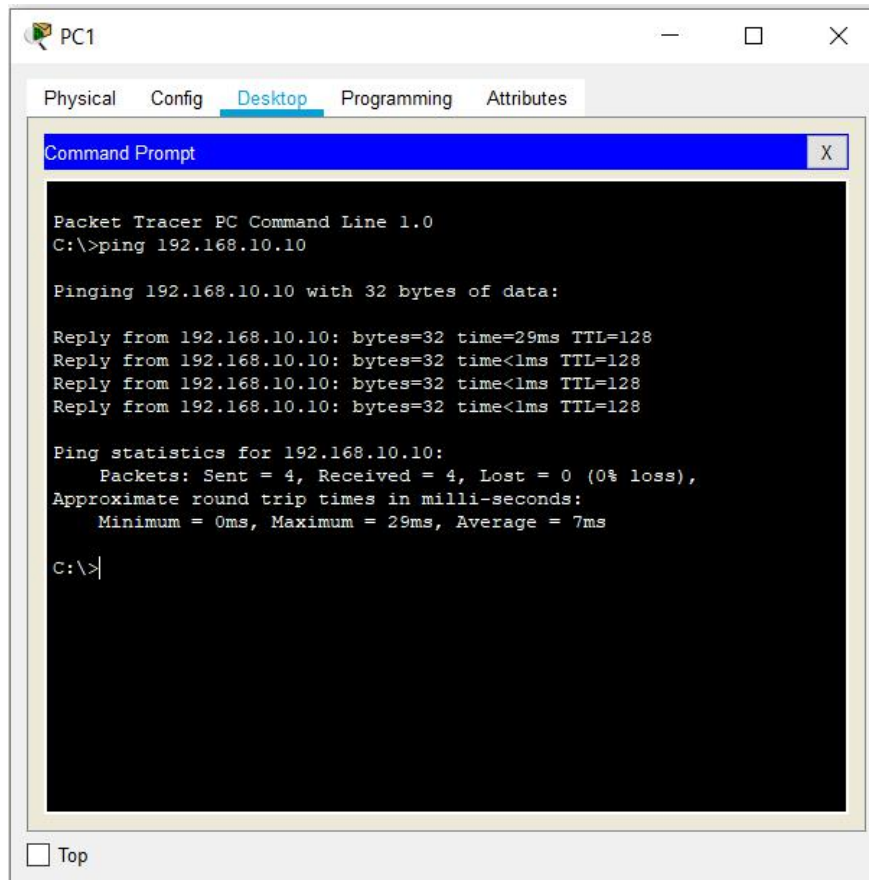
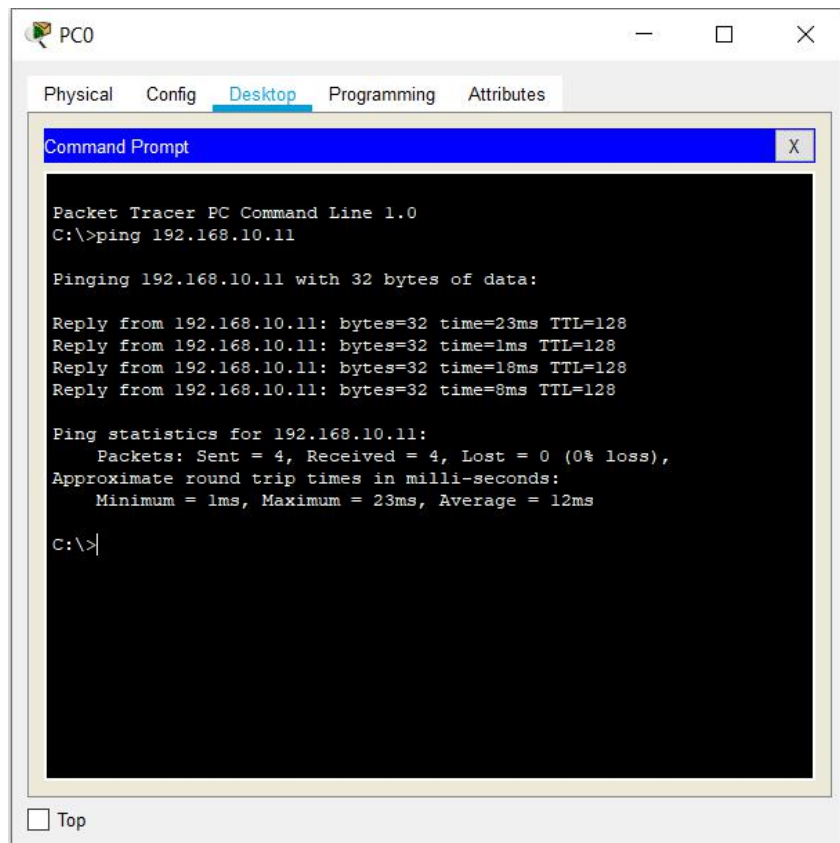
b. Choose the **Desktop** tab.



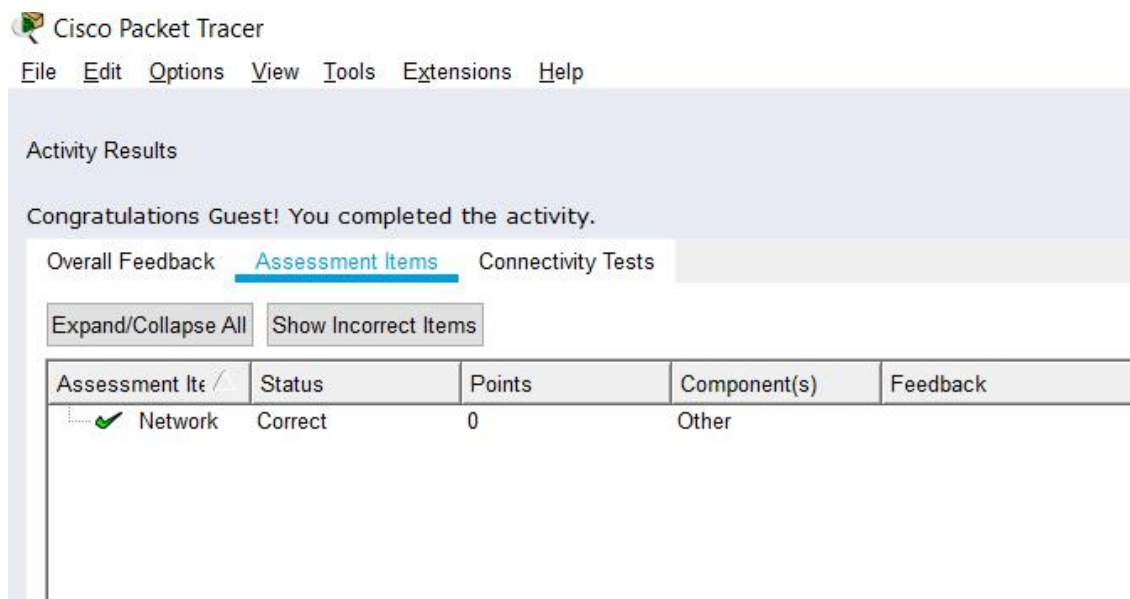
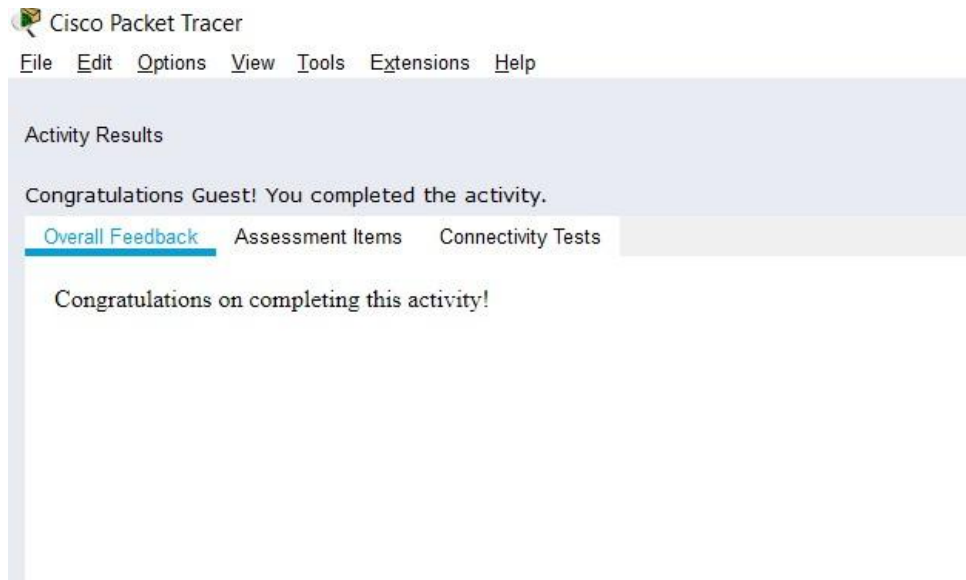
c. Choose **Command Prompt**.

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:



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



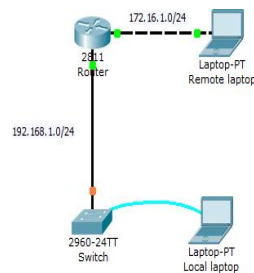
## CEL51, DCCN, Monsoon 2020

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

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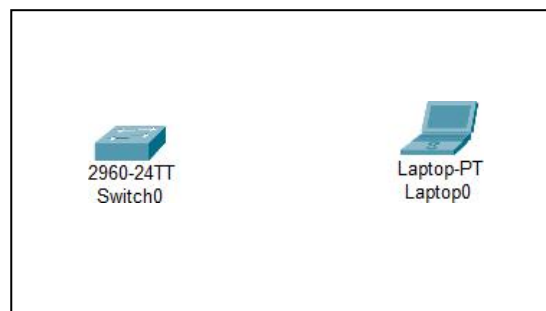
#### Objective:

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.

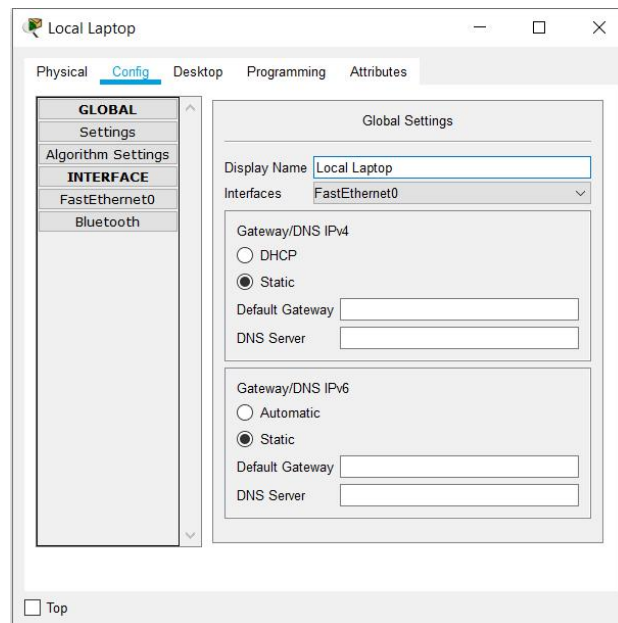


1. Use the local laptop connect to the switch console.

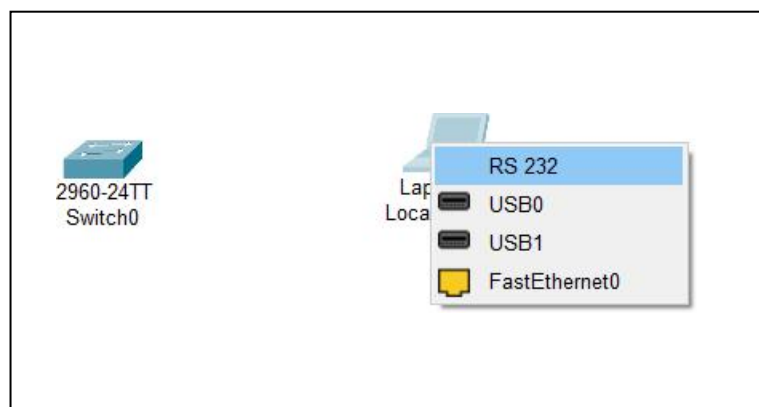
Rename Laptop0 → Local Laptop

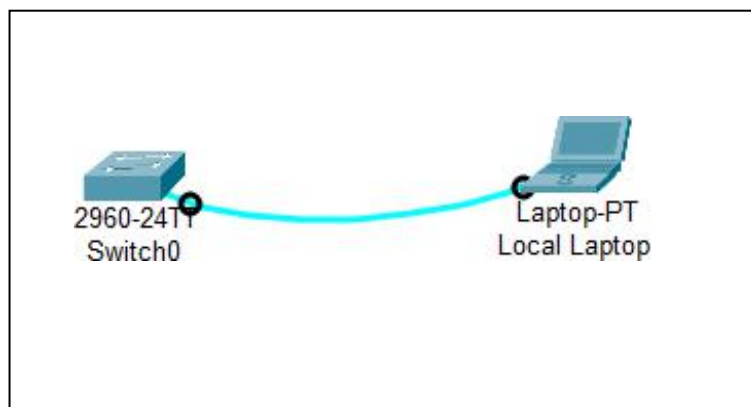
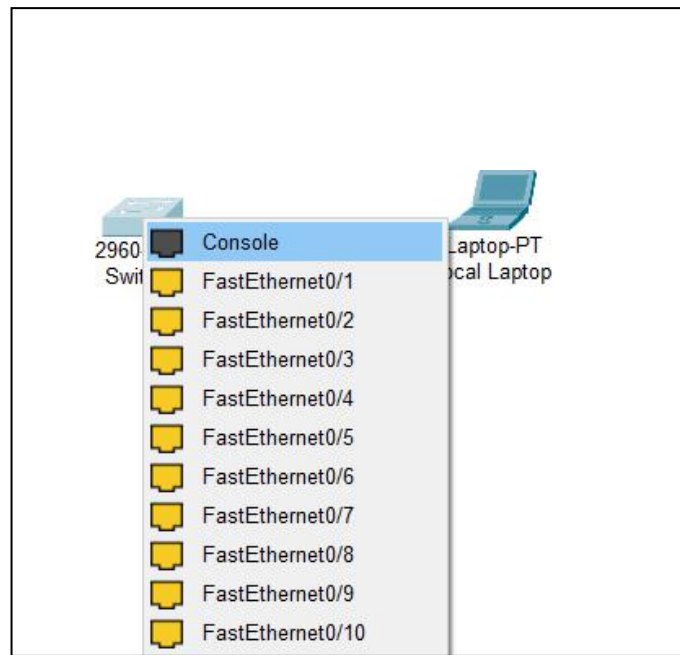




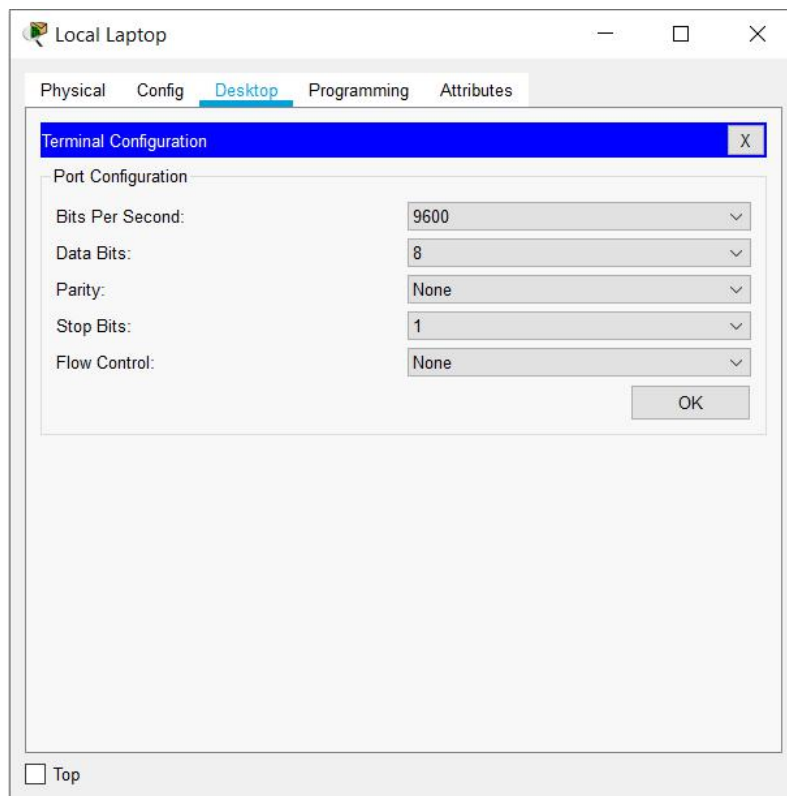
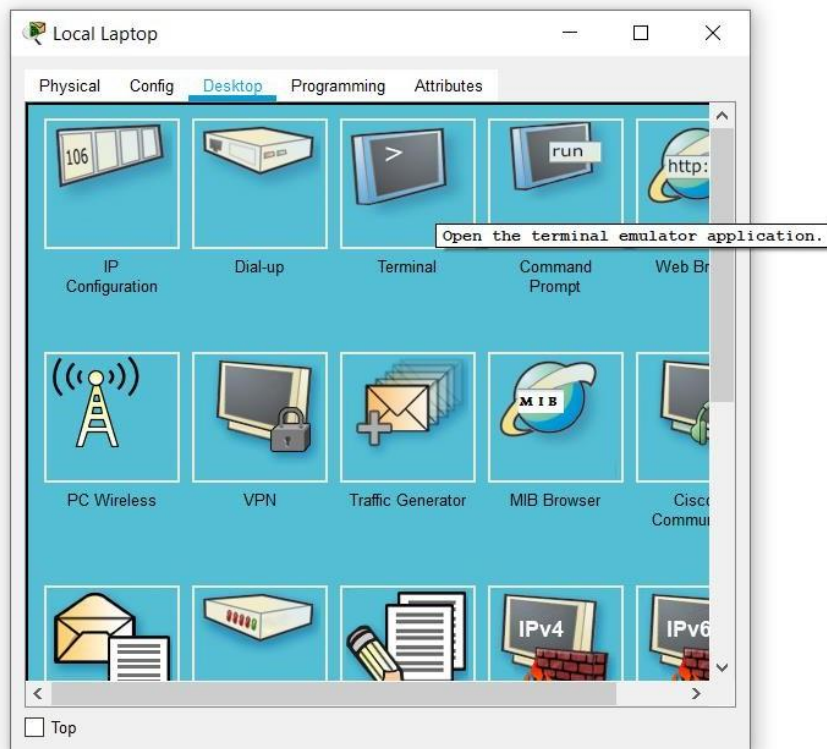


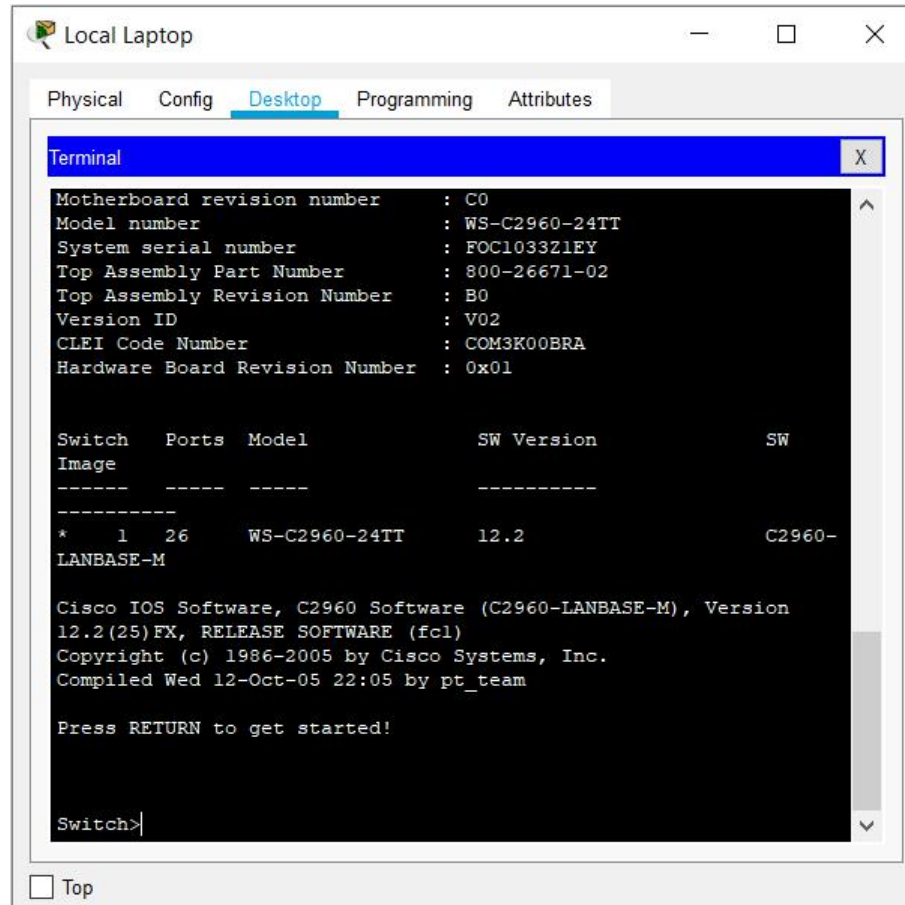
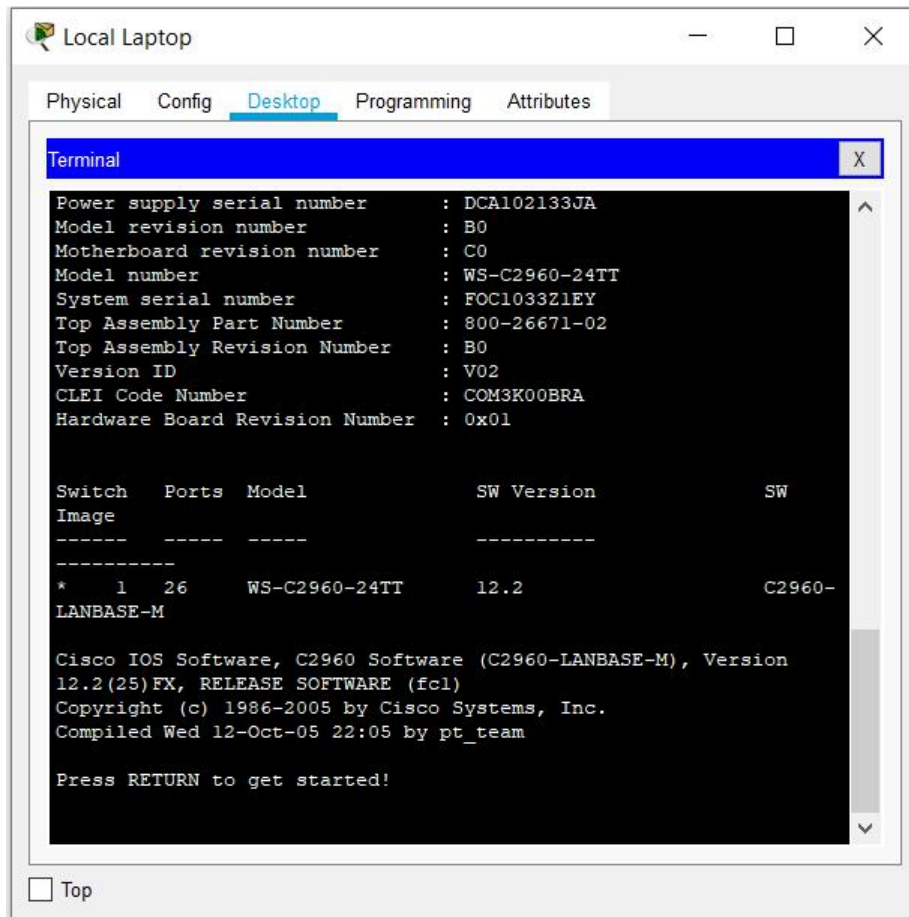
Connect console connection to RS232 port of Local Laptop and Console port of Switch



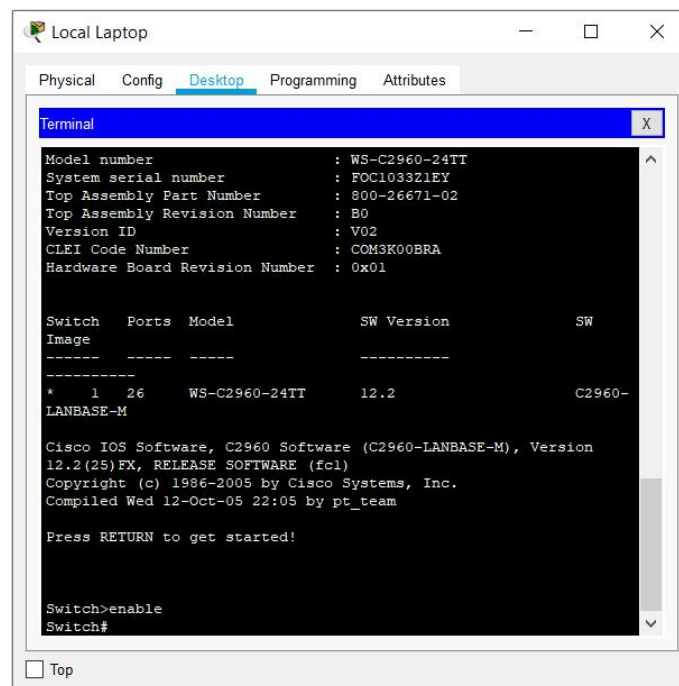


Open terminal of local laptop





Enable command - To enter in privilege exec mode



```
Local Laptop
Physical Config Desktop Programming Attributes
Terminal
Model number          : WS-C2960-24TT
System serial number   : FOC103321EY
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

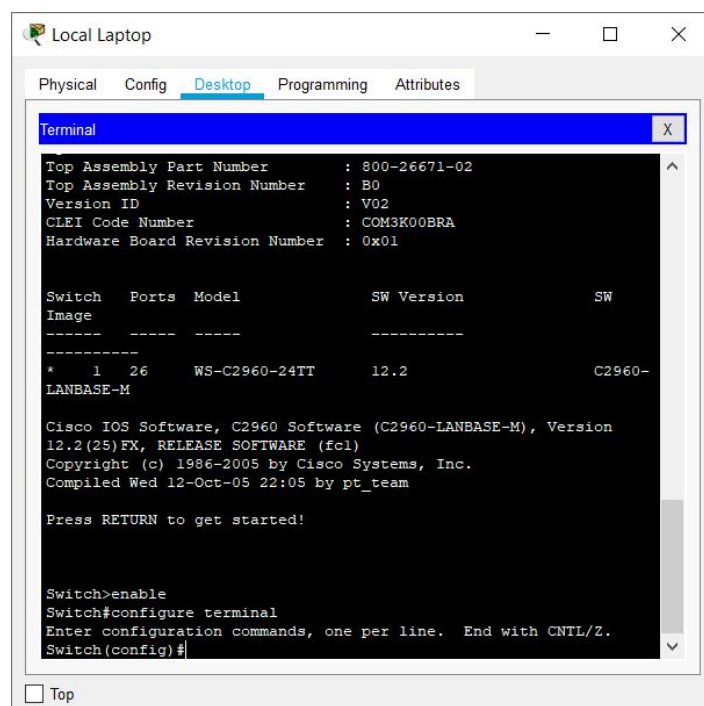
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version
12.2(25)FX, RELEASE SOFTWARE (fcl)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

Press RETURN to get started!

Switch>enable
Switch#
```

2. Configure Switch hostname as LOCAL-SWITCH Enter configuration mode

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



```
Local Laptop
Physical Config Desktop Programming Attributes
Terminal
Top Assembly Part Number : 800-26671-02
Top Assembly Revision Number : B0
Version ID               : V02
CLEI Code Number         : COM3K00BRA
Hardware Board Revision Number : 0x01

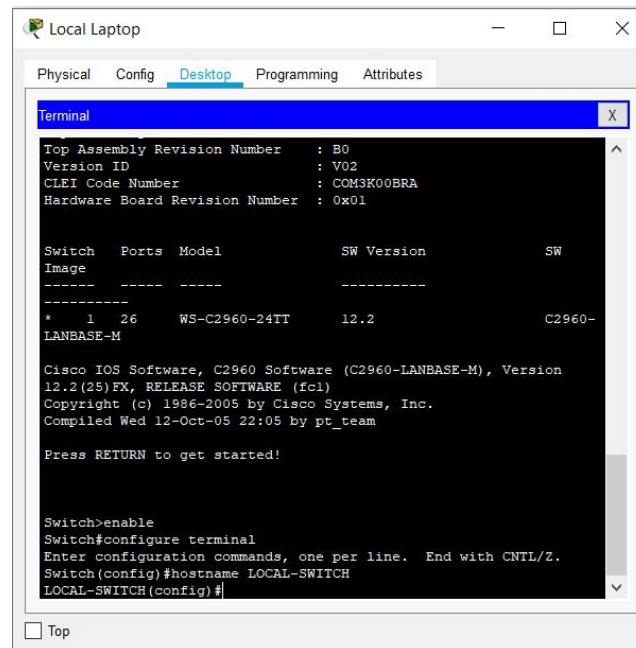
Switch  Ports  Model          SW Version      SW
Image   -----
-----
* 1 26  WS-C2960-24TT  12.2            C2960-
LANBASE-M

Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version
12.2(25)FX, RELEASE SOFTWARE (fcl)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

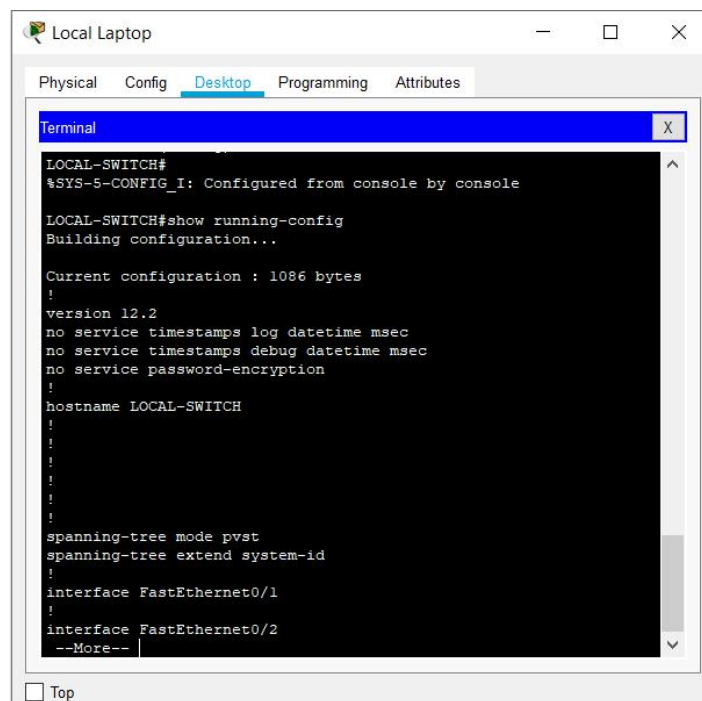
Press RETURN to get started!

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
```

Set hostname as LOCAL-SWITCH using  
**hostname LOCAL-SWITCH** command

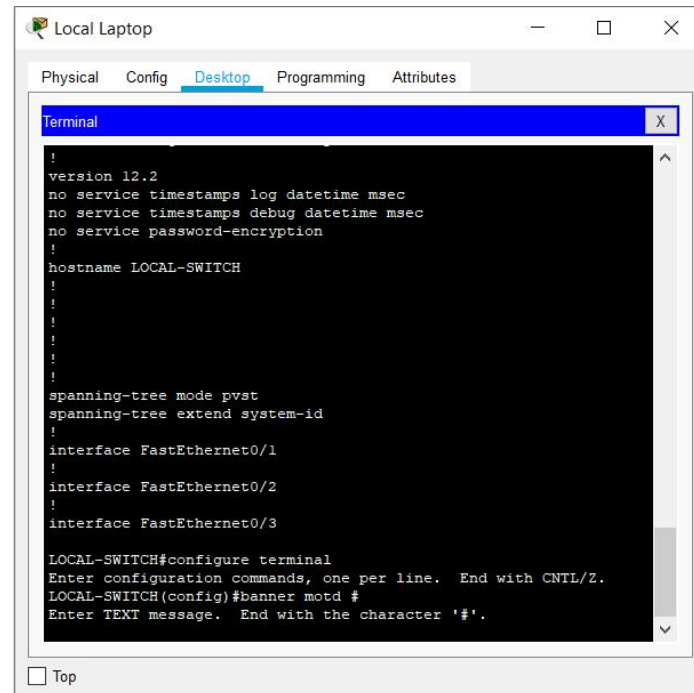


Run **show running-config** command to check the hostname.



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

Use command **banner motd #**

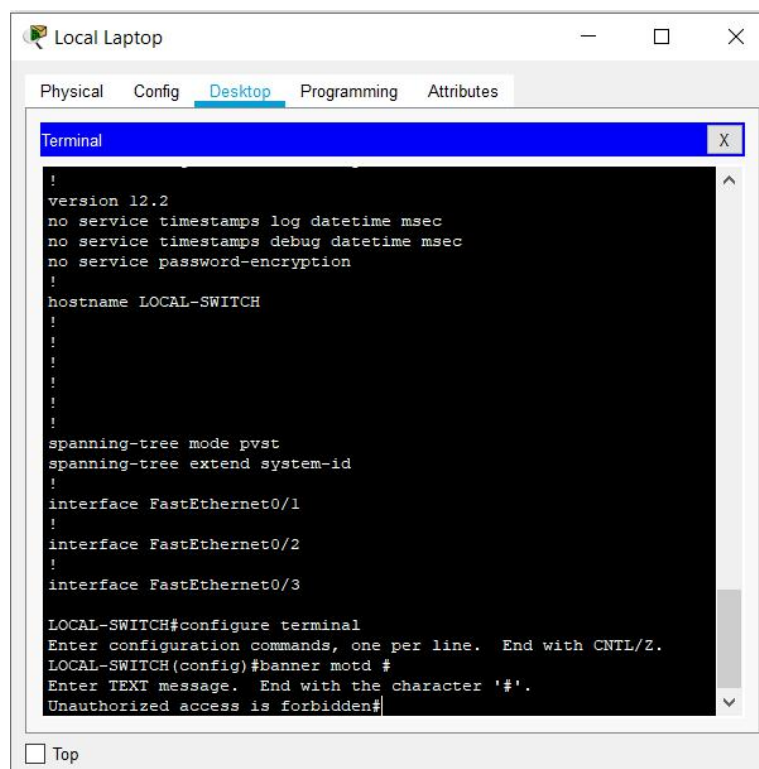


```
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname LOCAL-SWITCH
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3

LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#banner motd #
Enter TEXT message. End with the character '#'.

```

Type the message and add # at the end.

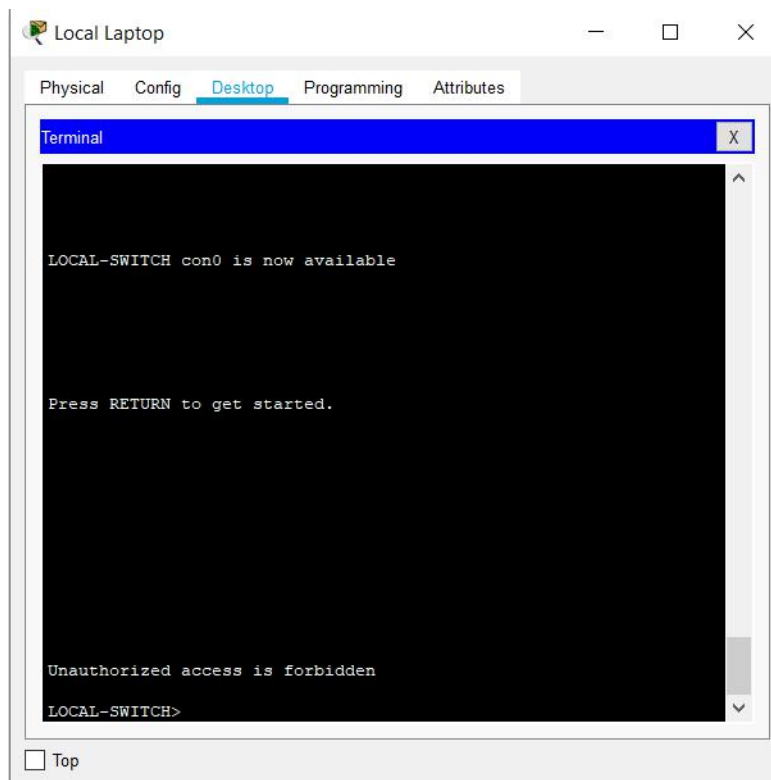


```
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname LOCAL-SWITCH
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3

LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#banner motd #
Enter TEXT message. End with the character '#'.
Unauthorized access is forbidden#

```

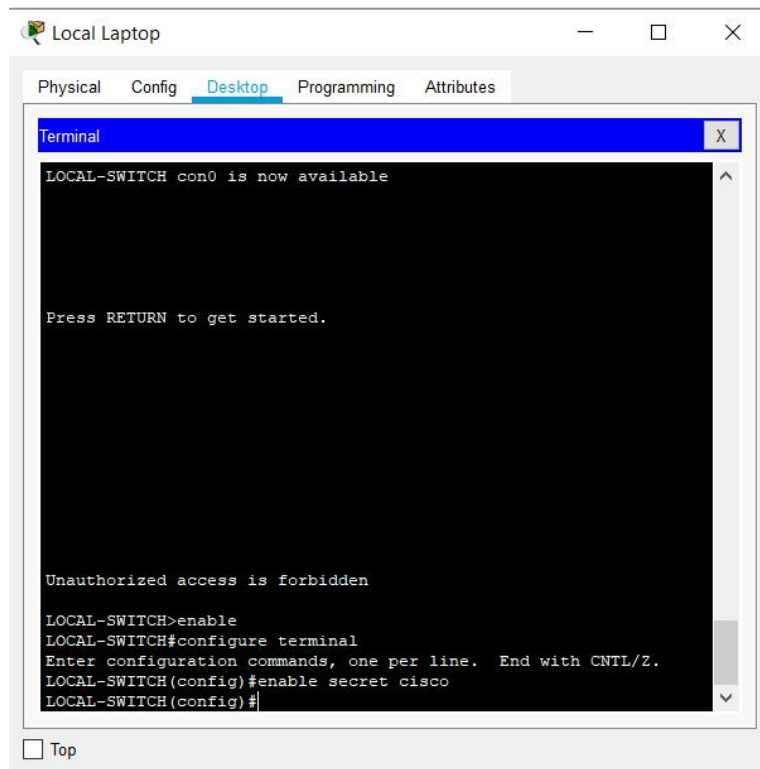
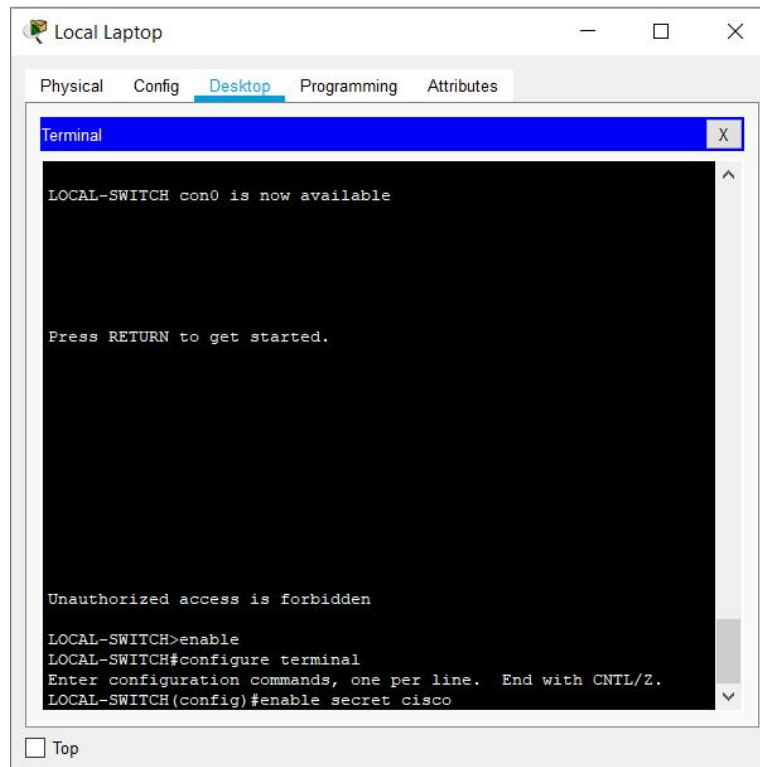
You can check the message of the day when you open the terminal for accessing switch again.



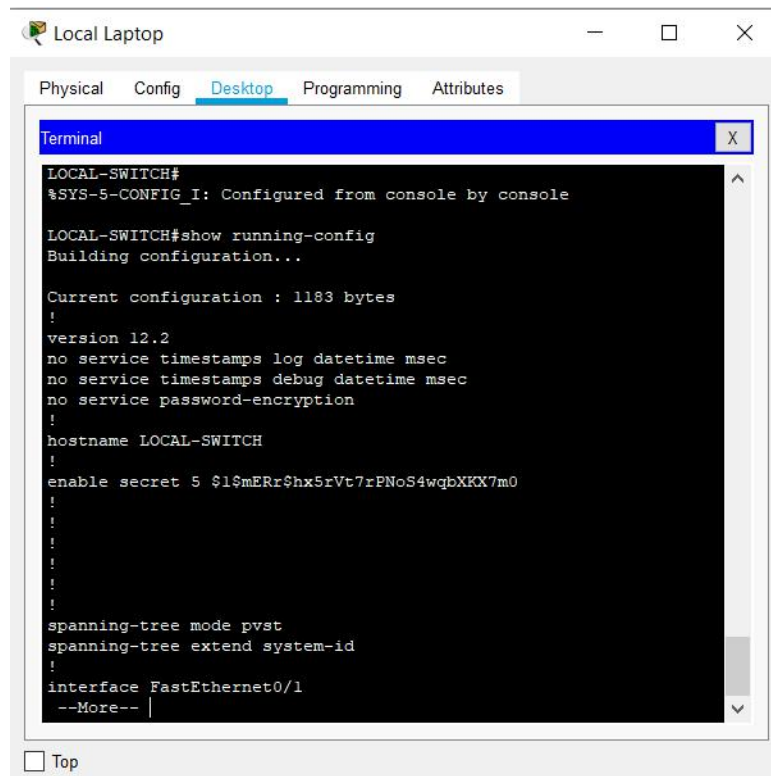
4. Configure the password for privileged mode access as "cisco". The password must be md5 encrypted

Use command **enable secret cisco**





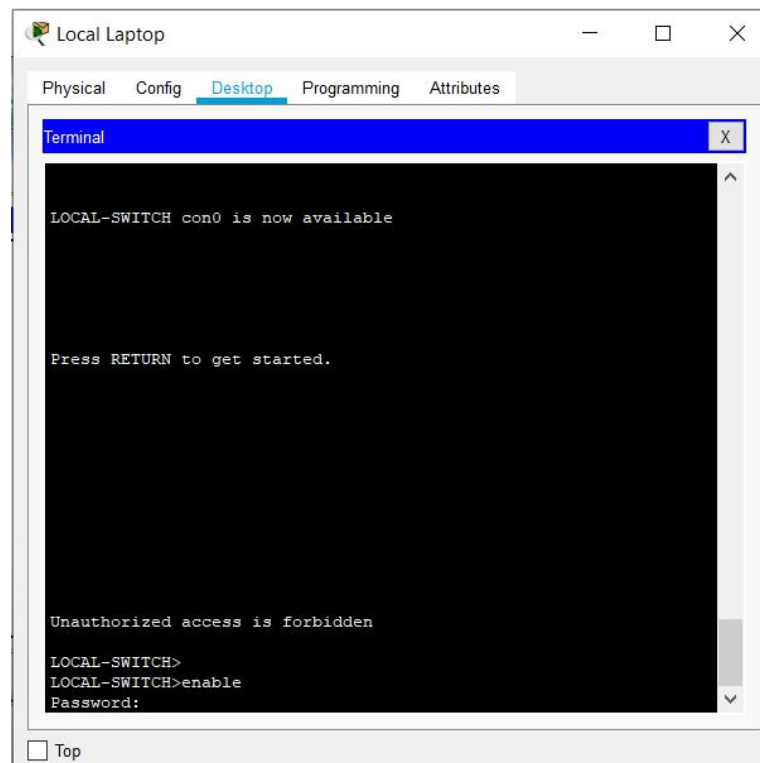
In running-config it displays as enable secret.



The screenshot shows a terminal window titled 'Local Laptop' with tabs for Physical, Config, Desktop, Programming, and Attributes. The 'Terminal' tab is active, displaying the output of the 'show running-config' command on a LOCAL-SWITCH. The output shows the current configuration, including the 'enable secret' command.

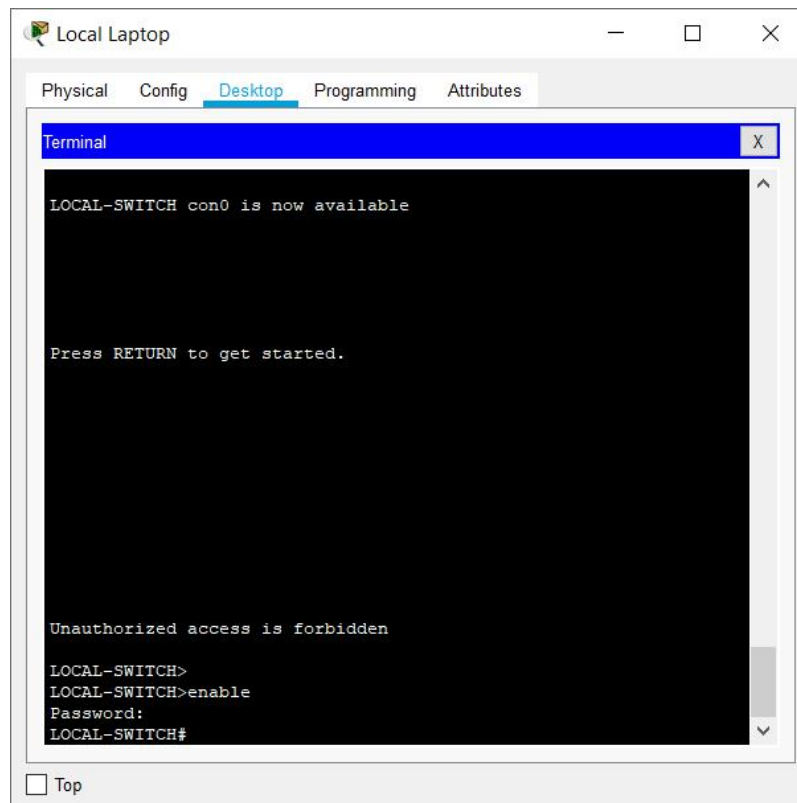
```
LOCAL-SWITCH#  
%SYS-5-CONFIG_I: Configured from console by console  
  
LOCAL-SWITCH#show running-config  
Building configuration..  
  
Current configuration : 1183 bytes  
!  
version 12.2  
no service timestamps log datetime msec  
no service timestamps debug datetime msec  
no service password-encryption  
!  
hostname LOCAL-SWITCH  
!  
enable secret 5 $1$mERr$hx5rVt7rFNoS4wqbXKX7m0  
!  
!  
!  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
--More-- |
```

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

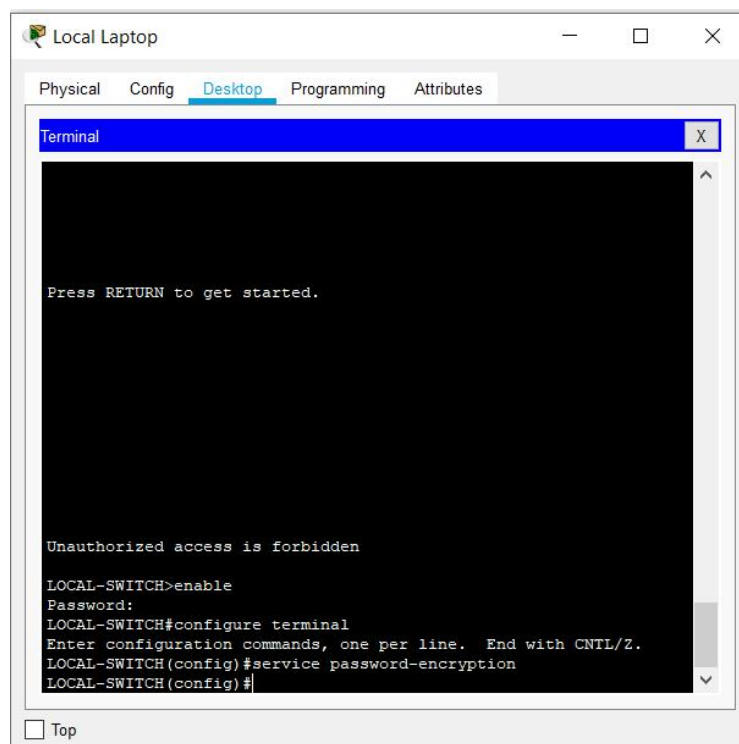


The screenshot shows a terminal window titled 'Local Laptop' with tabs for Physical, Config, Desktop, Programming, and Attributes. The 'Terminal' tab is active, displaying the output of the 'enable' command on a LOCAL-SWITCH. The output shows the switch is now available and prompts the user to press RETURN to get started. The user then enters 'enable' and is prompted for a password.

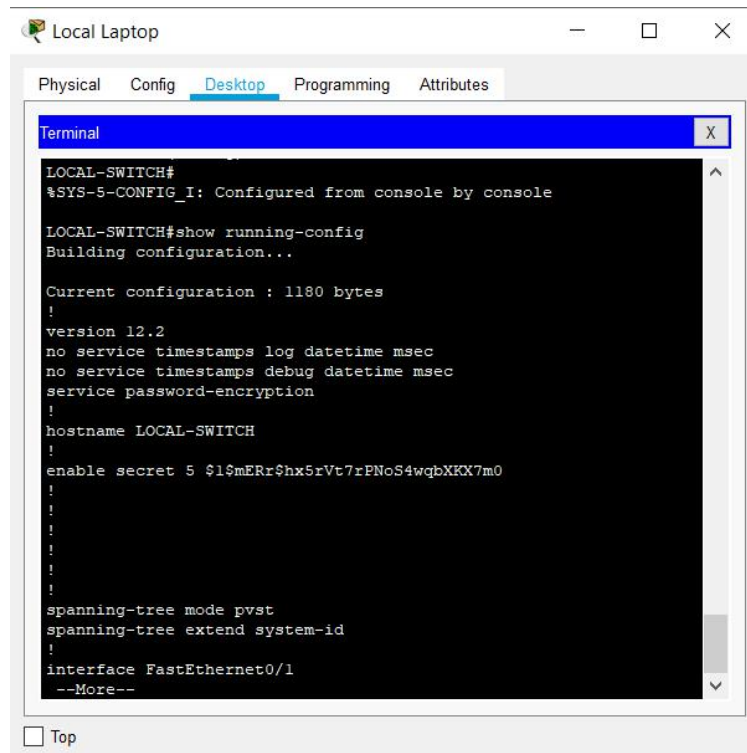
```
LOCAL-SWITCH con0 is now available  
  
Press RETURN to get started.  
  
Unauthorized access is forbidden  
  
LOCAL-SWITCH>  
LOCAL-SWITCH>enable  
Password:
```



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



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



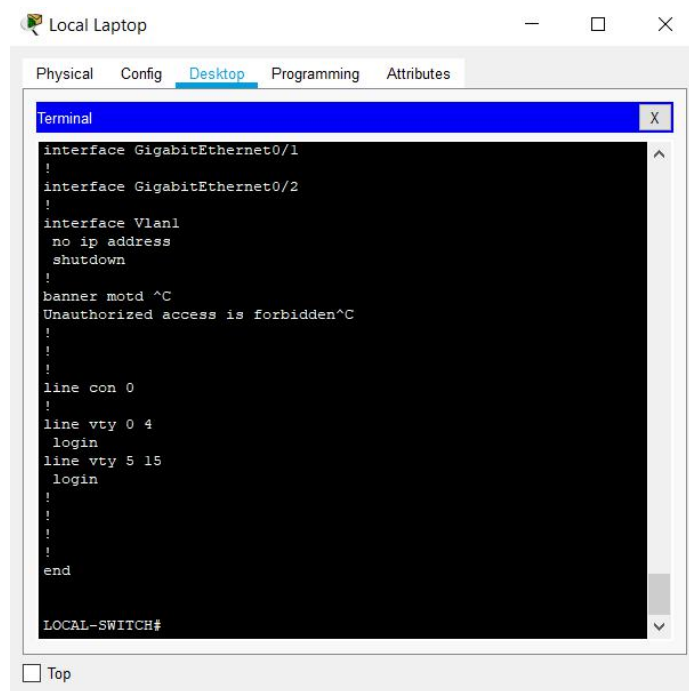
The screenshot shows a terminal window titled "Local Laptop" with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a terminal session. The terminal output shows the command `show running-config` being executed on a device named LOCAL-SWITCH. The output displays the current configuration, including the `service password-encryption` command, which is highlighted in the image. The configuration also includes version 12.2, hostname LOCAL-SWITCH, and interface FastEthernet0/1.

```
LOCAL-SWITCH#  
%SYS-5-CONFIG_I: Configured from console by console  
  
LOCAL-SWITCH#show running-config  
Building configuration..  
  
Current configuration : 1180 bytes  
!  
version 12.2  
no service timestamps log datetime msec  
no service timestamps debug datetime msec  
service password-encryption  
!  
hostname LOCAL-SWITCH  
!  
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0  
!  
!  
!  
!  
!  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
--More--
```

6. Configure CONSOLE access with the following settings:

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

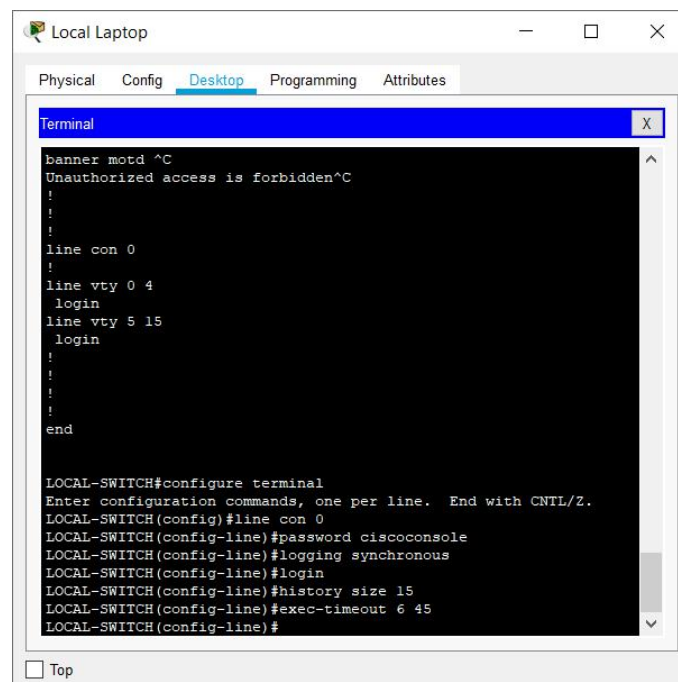
The con 0 configuration is empty in the beginning



A screenshot of a Cisco Packet Tracer terminal window titled "Local Laptop". The window has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes", with "Desktop" selected. The terminal displays the following configuration:

```
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
 no ip address
 shutdown
!
banner motd ^C
Unauthorized access is forbidden^C
!
!
!
line con 0
!
line vty 0 4
 login
line vty 5 15
 login
!
!
!
end
LOCAL-SWITCH#
```

At the bottom of the window, there is a "Top" button.



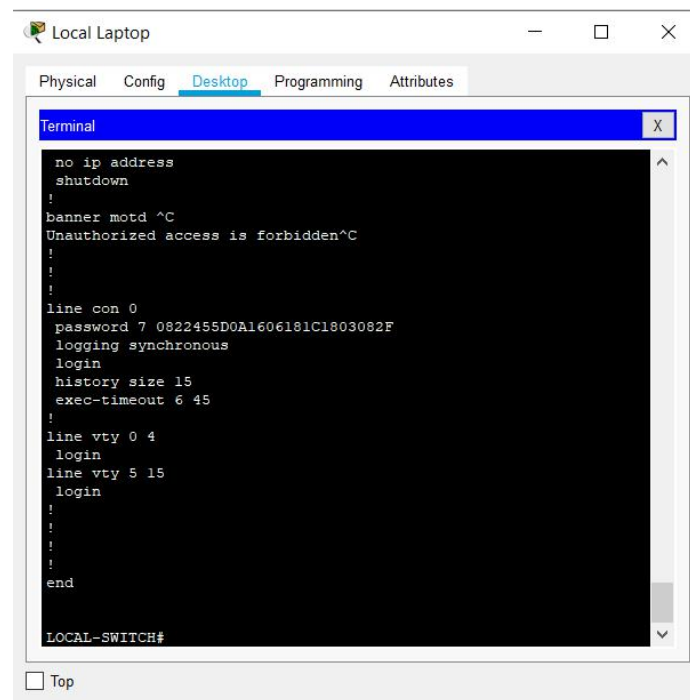
A screenshot of a Cisco Packet Tracer terminal window titled "Local Laptop". The window has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes", with "Desktop" selected. The terminal displays the following configuration:

```
banner motd ^C
Unauthorized access is forbidden^C
!
!
!
line con 0
!
line vty 0 4
 login
line vty 5 15
 login
!
!
!
end

LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#line con 0
LOCAL-SWITCH(config-line)#password ciscoconsole
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
LOCAL-SWITCH(config-line)#
```

At the bottom of the window, there is a "Top" button.

Line con 0 now shows the console configuration.

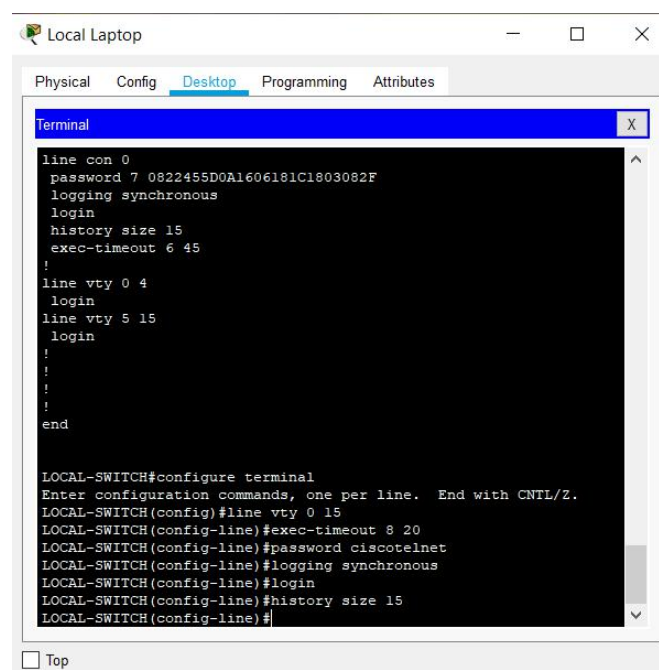


The screenshot shows a terminal window titled "Local Laptop" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Config" tab is active, and the terminal displays the following configuration:

```
no ip address
shutdown
!
banner motd ^C
Unauthorized access is forbidden^C
!
!
!
line con 0
password 7 0822455D0A1606181C1803082F
logging synchronous
login
history size 15
exec-timeout 6 45
!
line vty 0 4
login
line vty 5 15
login
!
!
!
!
end
LOCAL-SWITCH#
```

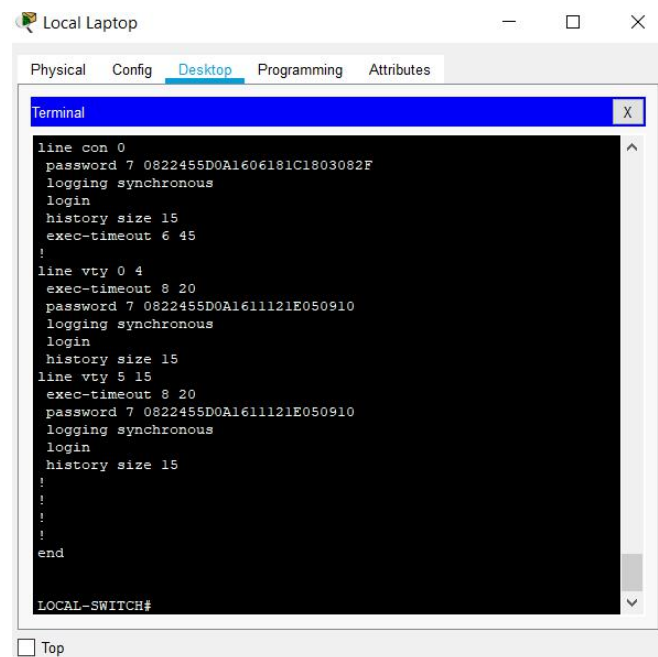
6. Configure TELNET access with the following settings:

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



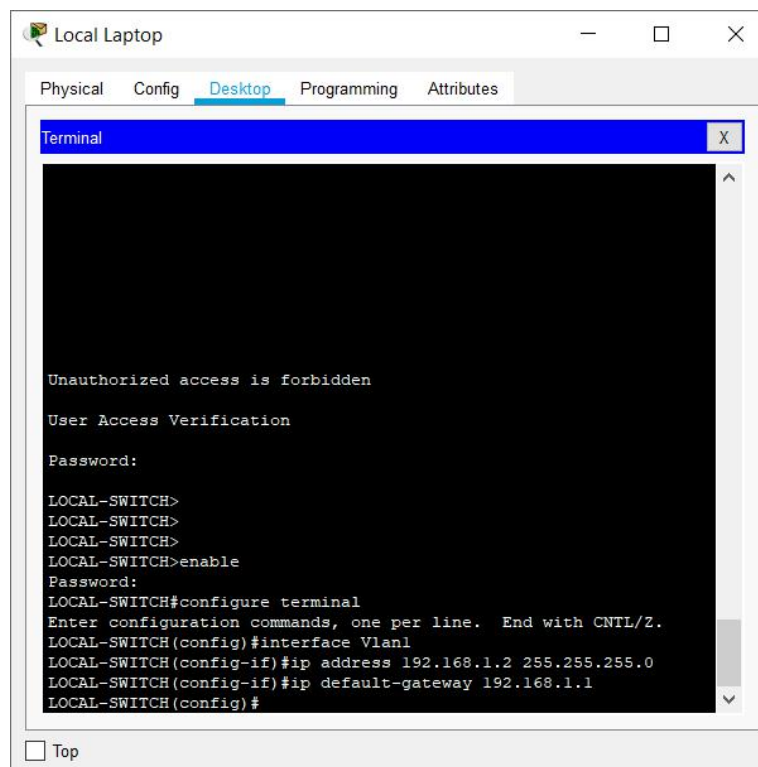
The screenshot shows a terminal window titled "Local Laptop" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Config" tab is active, and the terminal displays the following configuration:

```
line con 0
password 7 0822455D0A1606181C1803082F
logging synchronous
login
history size 15
exec-timeout 6 45
!
line vty 0 4
login
line vty 5 15
login
!
!
!
!
end
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTRL/Z.
LOCAL-SWITCH(config)#line vty 0 15
LOCAL-SWITCH(config-line)#exec-timeout 8 20
LOCAL-SWITCH(config-line)#password ciscotelnet
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#
```



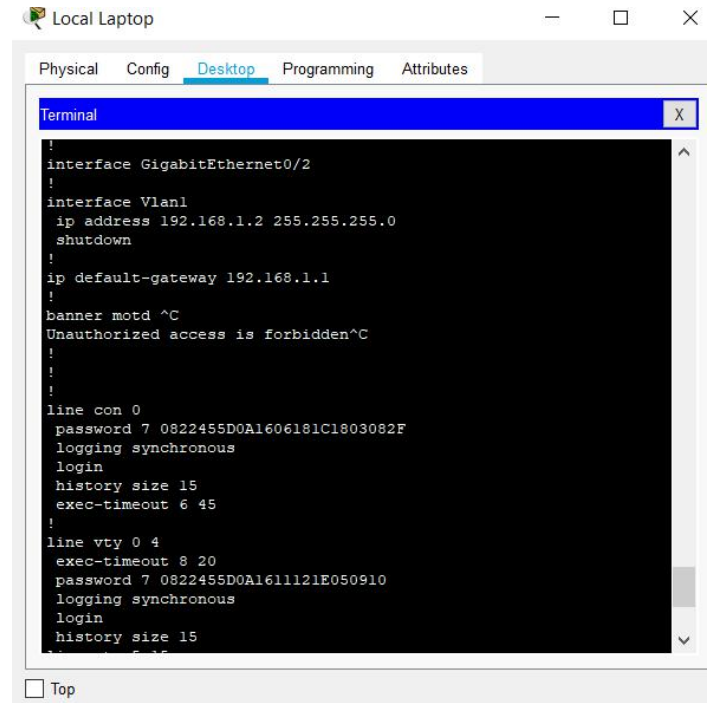
```
line con 0
 password 7 0822455D0A1606181C1803082F
 logging synchronous
 login
 history size 15
 exec-timeout 6 45
!
line vty 0 4
 exec-timeout 8 20
 password 7 0822455D0A1611121E050910
 logging synchronous
 login
 history size 15
line vty 5 15
 exec-timeout 8 20
 password 7 0822455D0A1611121E050910
 logging synchronous
 login
 history size 15
!
!
!
!
end
LOCAL-SWITCH#
```

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



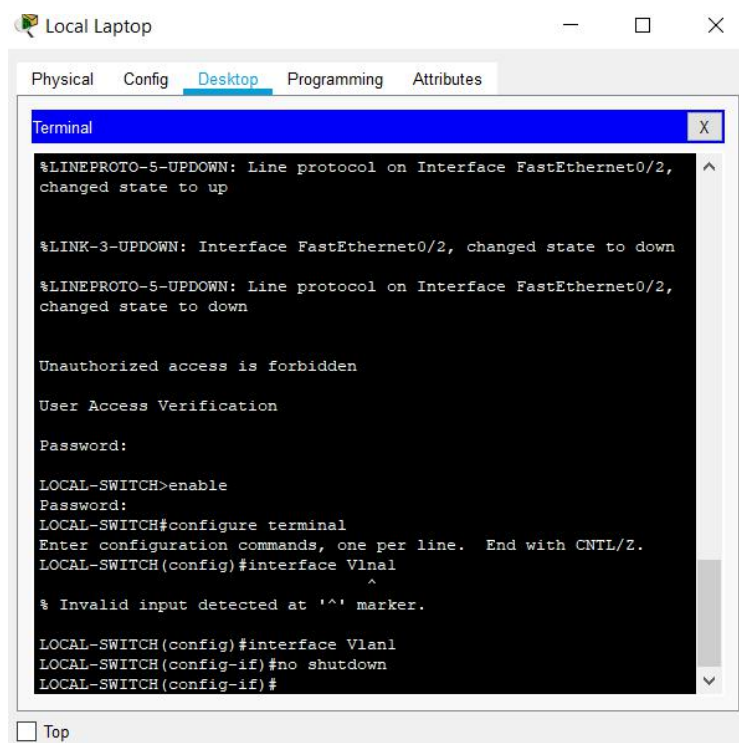
```
Unauthorized access is forbidden
User Access Verification
Password:
LOCAL-SWITCH>
LOCAL-SWITCH>
LOCAL-SWITCH>
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#interface Vlan1
LOCAL-SWITCH(config-if)#ip address 192.168.1.2 255.255.255.0
LOCAL-SWITCH(config-if)#ip default-gateway 192.168.1.1
LOCAL-SWITCH(config)#
```

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



A screenshot of a 'Local Laptop' window with a 'Terminal' tab active. The terminal displays a series of configuration commands for a network device. The commands configure GigabitEthernet0/2, create and configure Vlan1 with IP address 192.168.1.2 and shutdown, set the default gateway to 192.168.1.1, set a MOTD banner, and configure console and vty lines with passwords and login settings.

```
!
interface GigabitEthernet0/2
!
interface Vlan1
 ip address 192.168.1.2 255.255.255.0
 shutdown
!
 ip default-gateway 192.168.1.1
!
 banner motd ^C
 Unauthorized access is forbidden^C
!
!
!
line con 0
 password 7 0822455D0A1606181C1803082F
 logging synchronous
 login
 history size 15
 exec-timeout 6 45
!
line vty 0 4
 exec-timeout 8 20
 password 7 0822455D0A1611121E050910
 logging synchronous
 login
 history size 15
!
```



A screenshot of a 'Local Laptop' window with a 'Terminal' tab active. The terminal shows system messages indicating that the line protocol and link state for FastEthernet0/2 have changed to up and down respectively. It also shows an unauthorized access attempt, a password prompt, and the user enabling the terminal. The user then enters configuration commands to set the interface Vlan1 to no shutdown.

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

%LINK-3-UPDOWN: Interface FastEthernet0/2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

Unauthorized access is forbidden

User Access Verification

Password:

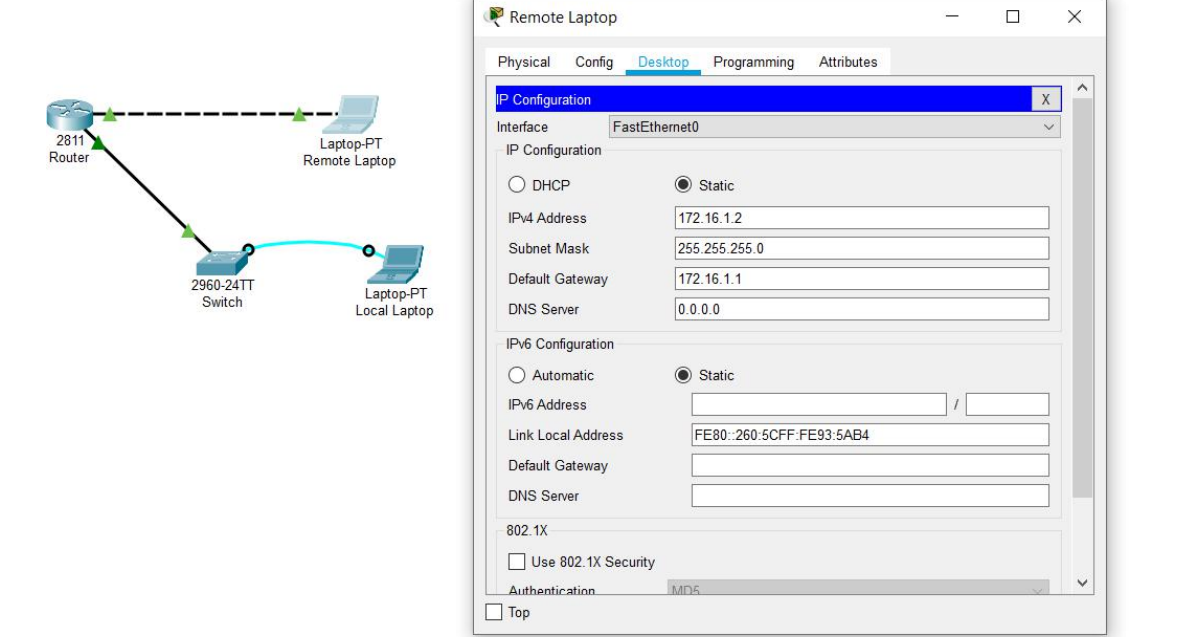
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
LOCAL-SWITCH(config)#interface Vlan1
^
% Invalid input detected at '^' marker.

LOCAL-SWITCH(config)#interface Vlan1
LOCAL-SWITCH(config-if)#no shutdown
LOCAL-SWITCH(config-if)#
```



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

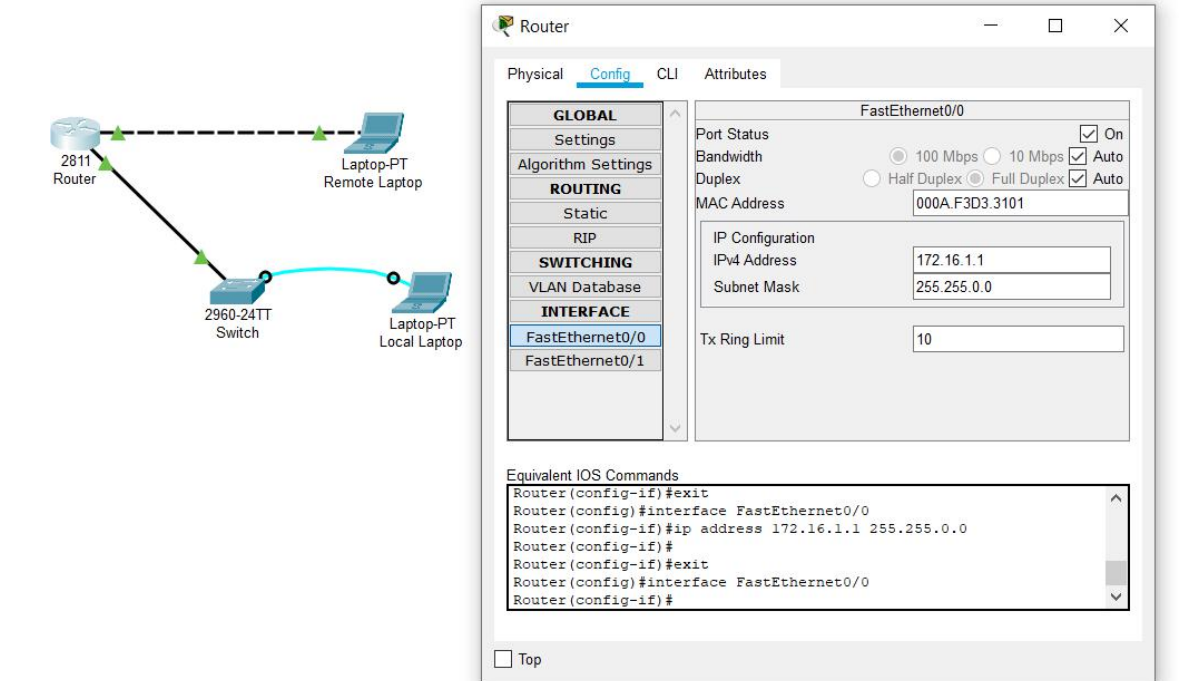
### Configuration of Remote laptop



The network diagram shows a 2811 Router connected to a 2960-24TT Switch. The Remote Laptop is connected to the Router, and the Local Laptop is connected to the Switch. The Remote Laptop configuration window is shown with the following settings:

Section	Option	Value
IP Configuration	Interface	FastEthernet0
	IP Configuration	Static
	IPv4 Address	172.16.1.2
	Subnet Mask	255.255.255.0
	Default Gateway	172.16.1.1
DNS Server	0.0.0.0	
IPv6 Configuration	IPv6 Configuration	Static
	IPv6 Address	
	Link Local Address	FE80::260:5CFF:FE93:5AB4
	Default Gateway	
	DNS Server	
802.1X	Use 802.1X Security	<input type="checkbox"/>
Authentication	MD5	

### Configuration of Router



The network diagram is the same as in the previous section. The Router configuration window is shown with the following settings:

Section	Option	Value	
FastEthernet0/0	Port Status	<input checked="" type="checkbox"/> On	
	Bandwidth	100 Mbps	
	Duplex	Full Duplex	
	MAC Address	000A.F3D3.3101	
	IP Configuration	Static	
	IPv4 Address	172.16.1.1	
	Subnet Mask	255.255.0.0	
	Tx Ring Limit	10	
	Equivalent IOS Commands	<pre>Router(config-if)#exit Router(config)#interface FastEthernet0/0 Router(config-if)#ip address 172.16.1.1 255.255.0.0 Router(config-if)# Router(config)#exit Router(config)#interface FastEthernet0/0 Router(config-if)#</pre>	
	Top	<input type="checkbox"/>	

2811 Router

2960-24TT Switch

Laptop-PT Remote Laptop

Laptop-PT Local Laptop

Router

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

FastEthernet0/1

Port Status

Bandwidth

Duplex

MAC Address

IP Configuration

IPv4 Address

Subnet Mask

Tx Ring Limit

Equivalent IOS Commands

Router(config-if)#

Router(config-if)#exit

Router(config)#interface FastEthernet0/0

Router(config-if)#

Router(config-if)#exit

Router(config)#interface FastEthernet0/1

Router(config-if)#

Top

Configuration of Switch

2811 Router

2960-24TT Switch

Laptop-PT Remote Laptop

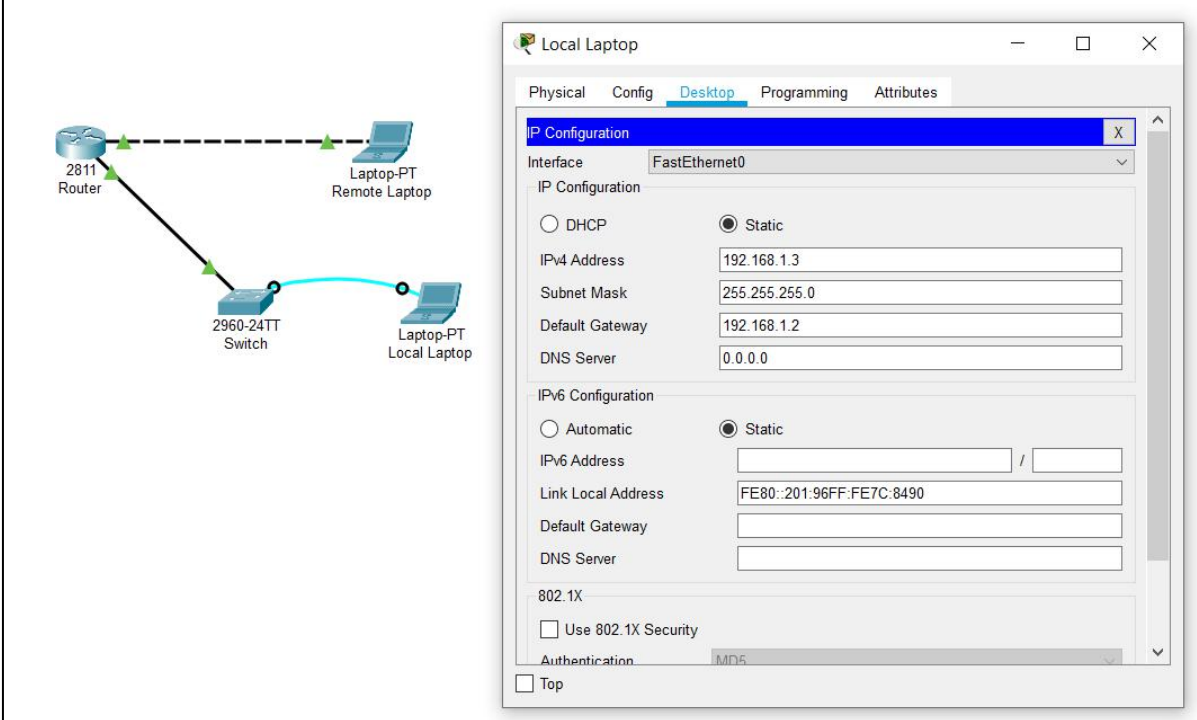
Laptop-PT Local Laptop

Port	Link	VLAN	IP Address	MAC Address
FastEthernet0/1	Up	1	--	0002.4A47.7401
FastEthernet0/2	Down	1	--	0002.4A47.7402
FastEthernet0/3	Down	1	--	0002.4A47.7403
FastEthernet0/4	Down	1	--	0002.4A47.7404
FastEthernet0/5	Down	1	--	0002.4A47.7405
FastEthernet0/6	Down	1	--	0002.4A47.7406
FastEthernet0/7	Down	1	--	0002.4A47.7407
FastEthernet0/8	Down	1	--	0002.4A47.7408
FastEthernet0/9	Down	1	--	0002.4A47.7409
FastEthernet0/10	Down	1	--	0002.4A47.740A
FastEthernet0/11	Down	1	--	0002.4A47.740B
FastEthernet0/12	Down	1	--	0002.4A47.740C
FastEthernet0/13	Down	1	--	0002.4A47.740D
FastEthernet0/14	Down	1	--	0002.4A47.740E
FastEthernet0/15	Down	1	--	0002.4A47.740F
FastEthernet0/16	Down	1	--	0002.4A47.7410
FastEthernet0/17	Down	1	--	0002.4A47.7411
FastEthernet0/18	Down	1	--	0002.4A47.7412
FastEthernet0/19	Down	1	--	0002.4A47.7413
FastEthernet0/20	Down	1	--	0002.4A47.7414
FastEthernet0/21	Down	1	--	0002.4A47.7415
FastEthernet0/22	Down	1	--	0002.4A47.7416
FastEthernet0/23	Down	1	--	0002.4A47.7417
FastEthernet0/24	Down	1	--	0002.4A47.7418
GigabitEthernet0/1	Down	1	--	0002.4A47.7419
GigabitEthernet0/2	Down	1	--	0002.4A47.741A
Vlan1	Up	1	192.168.1.2/24	0002.1741.2E98

Hostname: LOCAL-SWITCH

Physical Location: Intercity, Home City, Corporate Office, Main Wiring Closet

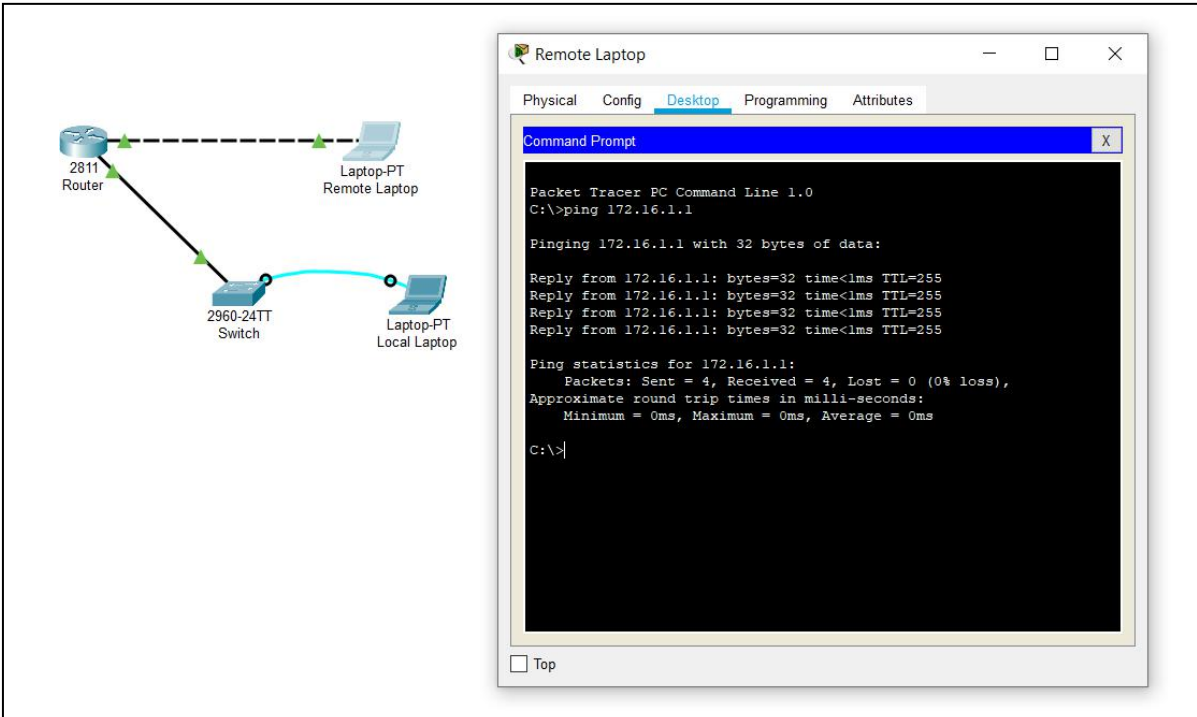
## Configuration of Remote Laptop



The network diagram shows a 2811 Router connected to a 2960-24TT Switch. The Switch is connected to two Laptops: a Remote Laptop and a Local Laptop. The Remote Laptop is connected to the Router via a dashed line, and the Local Laptop is connected to the Switch via a solid line.

The IP Configuration window for the Remote Laptop is shown. The interface is FastEthernet0. The IP Configuration is set to Static. The IPv4 Address is 192.168.1.3, the Subnet Mask is 255.255.255.0, the Default Gateway is 192.168.1.2, and the DNS Server is 0.0.0.0. The IPv6 Configuration is set to Static. The IPv6 Address is empty, the Link Local Address is FE80::201:96FF:FE7C:8490, the Default Gateway is empty, and the DNS Server is empty. The 802.1X section is unchecked, and the Authentication is set to MD5.

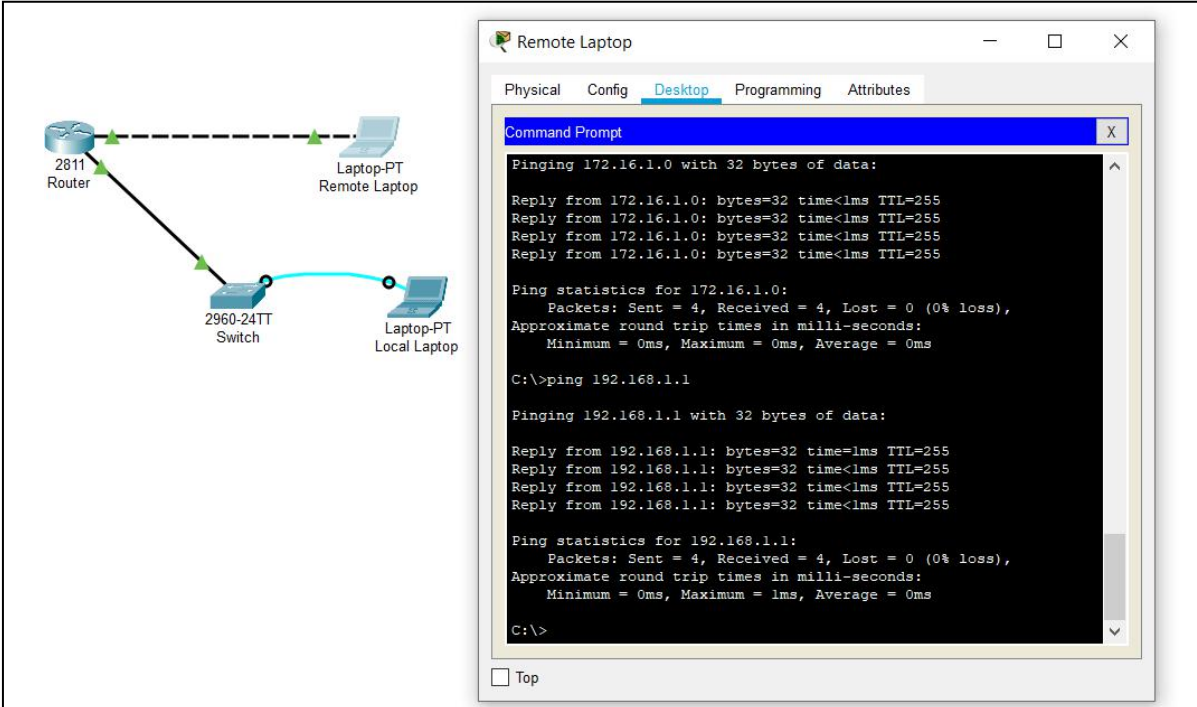
## Pinging Router from Remote Laptop



The network diagram is the same as in the previous section, showing the 2811 Router, 2960-24TT Switch, and two Laptops (Remote and Local).

The Command Prompt window for the Remote Laptop is shown. The command entered is `C:\>ping 172.16.1.1`. The output shows four successful replies from 172.16.1.1 with 32 bytes of data, each taking less than 1ms and having a TTL of 255. The ping statistics for 172.16.1.1 are: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms.

## Pinging another Ethernet port of Router from Remote Laptop



The network diagram shows a 2811 Router connected to a 2960-24TT Switch. The Router is also connected to a Laptop-PT Remote Laptop. The Switch is connected to a Laptop-PT Local Laptop. The Remote Laptop's Command Prompt shows the following output:

```
Remote Laptop
Physical Config Desktop Programming Attributes
Command Prompt
Pinging 172.16.1.0 with 32 bytes of data:

Reply from 172.16.1.0: bytes=32 time<1ms TTL=255
Reply from 172.16.1.0: bytes=32 time<1ms TTL=255
Reply from 172.16.1.0: bytes=32 time<1ms TTL=255
Reply from 172.16.1.0: bytes=32 time<1ms TTL=255

Ping statistics for 172.16.1.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.1

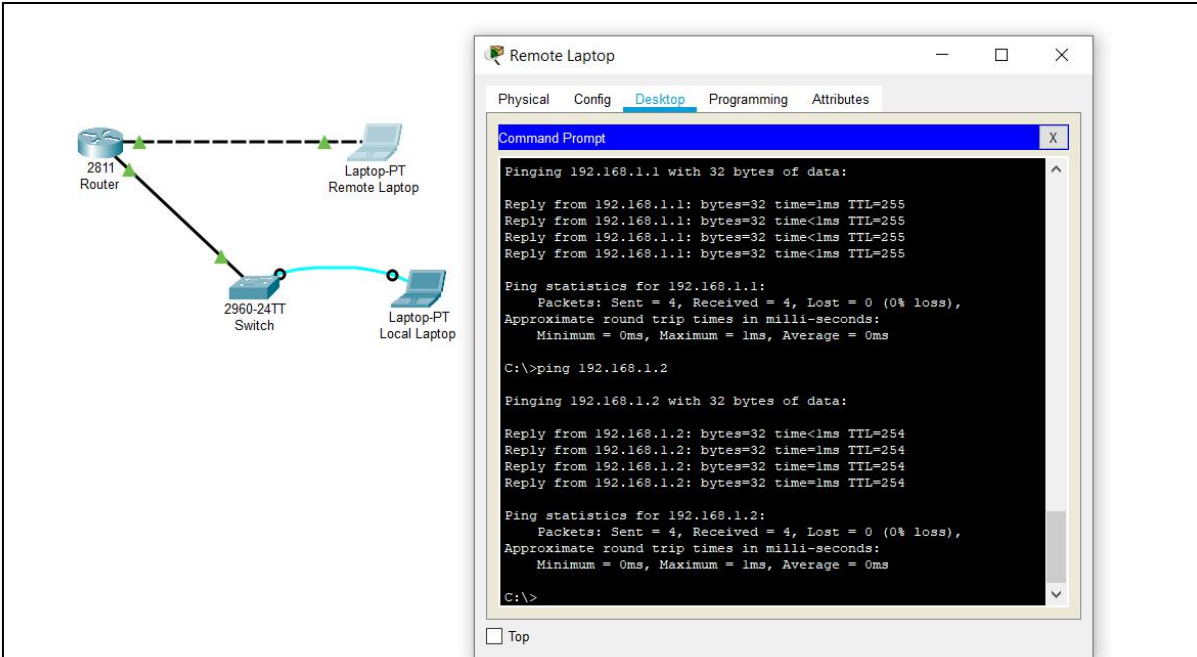
Pinging 192.168.1.1 with 32 bytes of data:

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:\>
```

## Pinging Switch from Remote Laptop



The network diagram is identical to the previous one. The Remote Laptop's Command Prompt shows the following output:

```
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

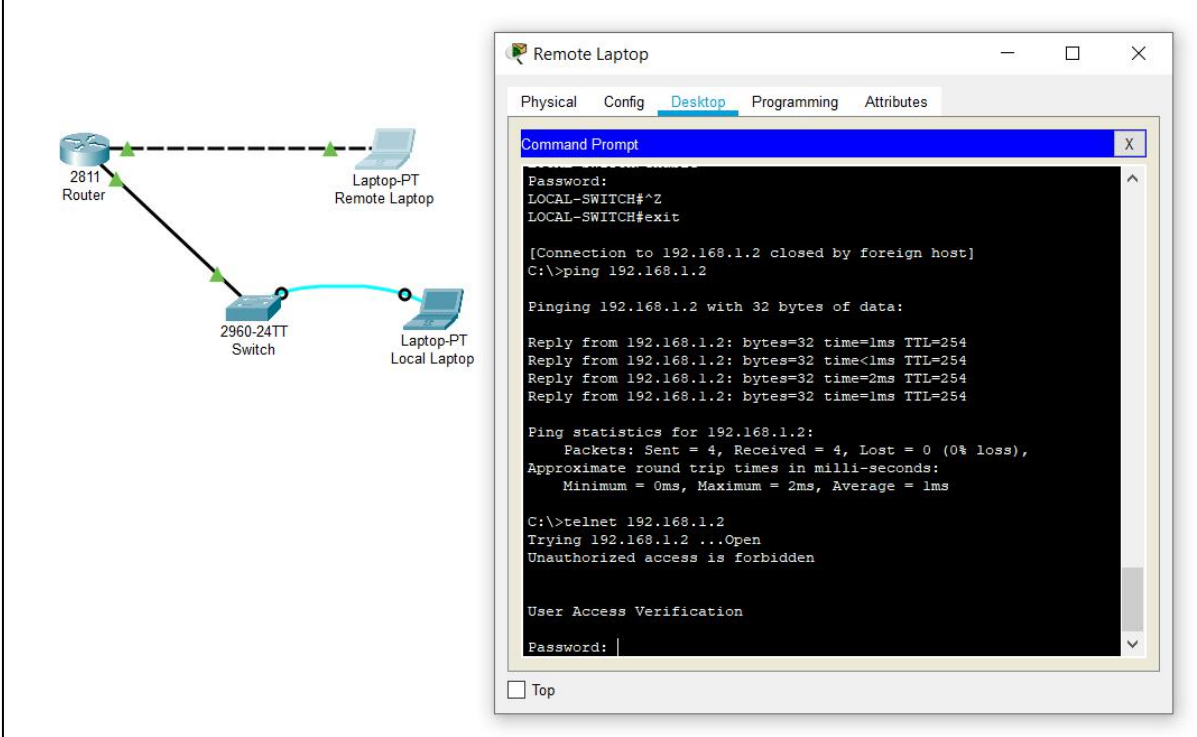
Pinging 192.168.1.2 with 32 bytes of data:

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:\>
```

## Telnet Switch from Remote Laptop



The network diagram shows a 2811 Router connected to a 2960-24TT Switch. The Router is also connected to a Laptop-PT Remote Laptop. The Switch is connected to a Laptop-PT Local Laptop. The Remote Laptop terminal window shows the following commands and output:

```
Command Prompt
Password:
LOCAL-SWITCH#^Z
LOCAL-SWITCH#exit

[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:

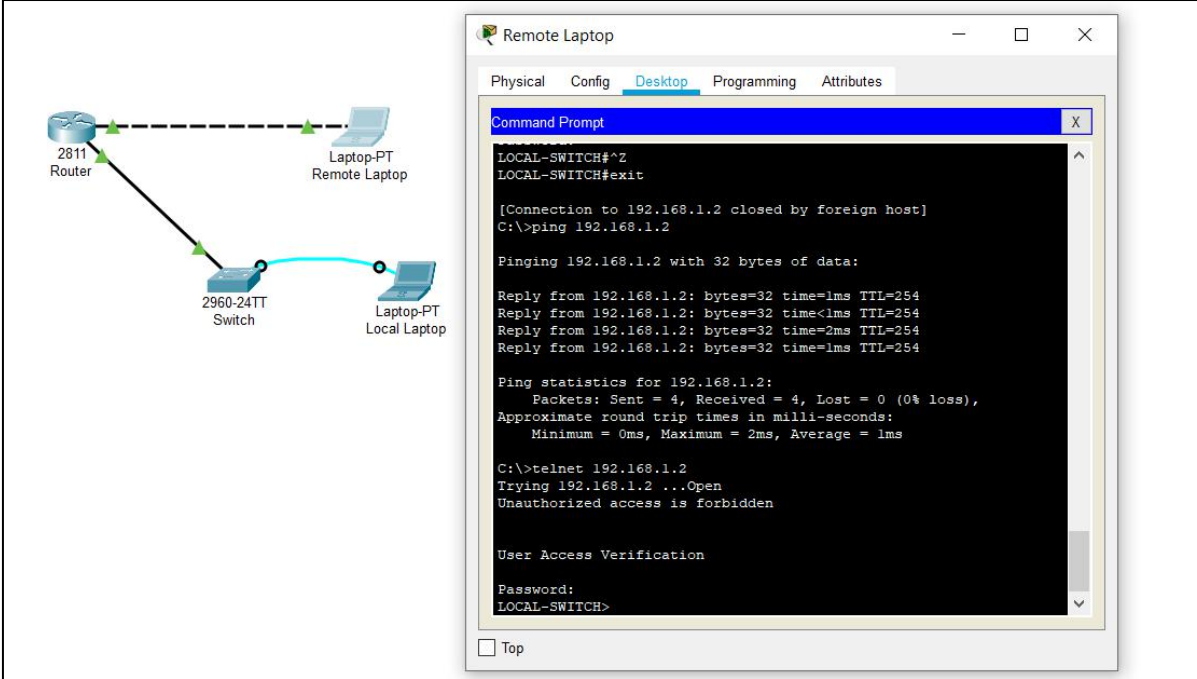
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time<1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=2ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254

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: |
```

## After entering password for telnet



The network diagram is identical to the previous one. The Remote Laptop terminal window shows the following commands and output:

```
Command Prompt
LOCAL-SWITCH#^Z
LOCAL-SWITCH#exit

[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:

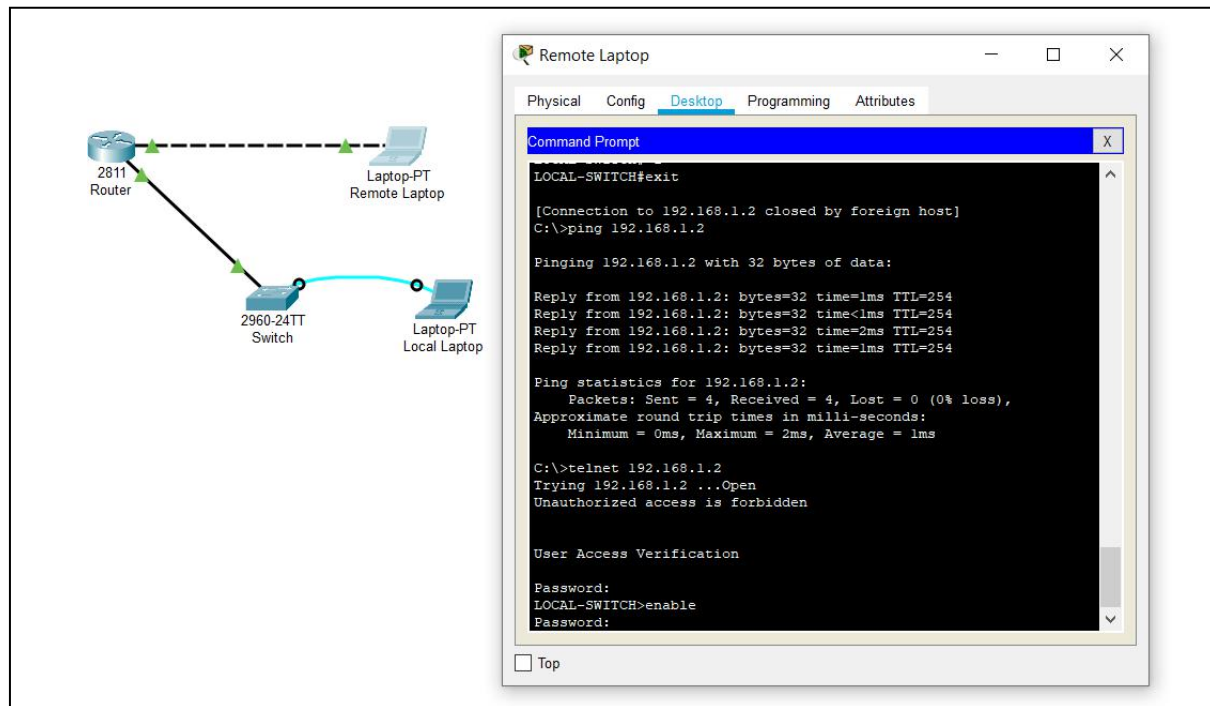
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time<1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=2ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254

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>
```

## Enabling switch from Remote Laptop



The network diagram shows a 2811 Router connected to a 2960-24TT Switch. The Router is also connected to a Laptop-PT Remote Laptop. The Switch is connected to a Laptop-PT Local Laptop. The Remote Laptop window shows the following command prompt output:

```
Remote Laptop
Physical Config Desktop Programming Attributes
Command Prompt
LOCAL-SWITCH#exit
[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:

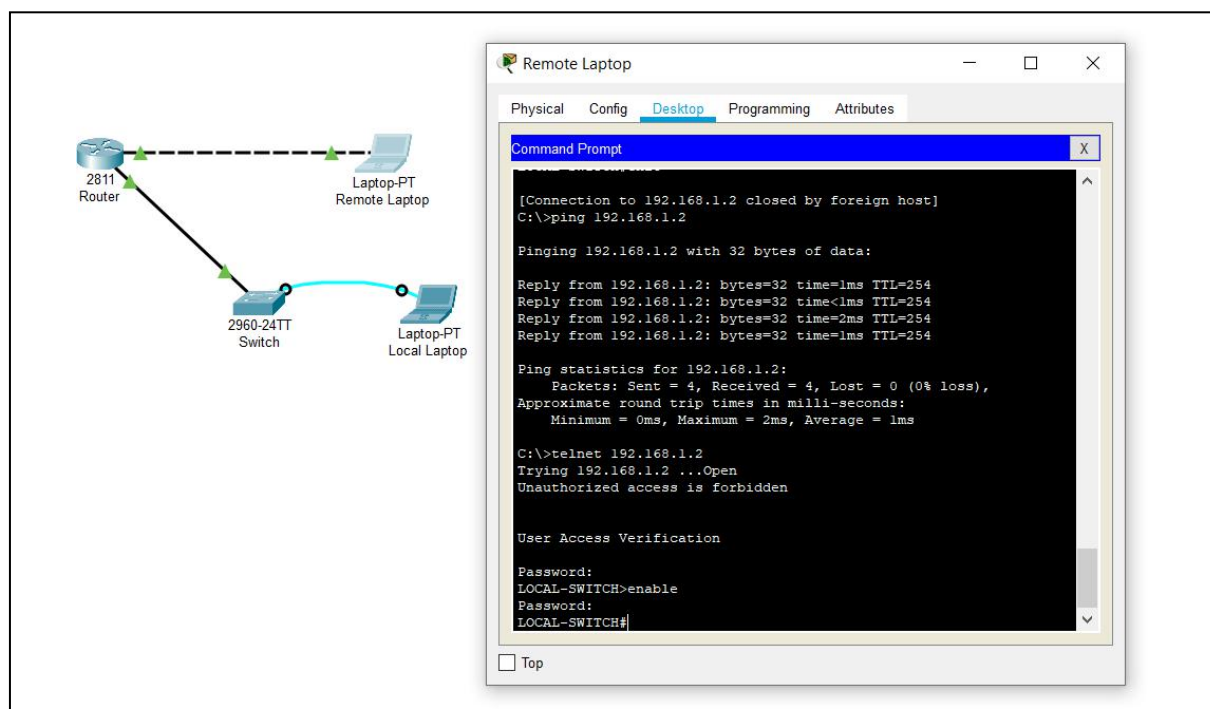
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254
Reply from 192.168.1.2: bytes=32 time<1ms TTL=254
Reply from 192.168.1.2: bytes=32 time=2ms TTL=254
Reply from 192.168.1.2: bytes=32 time=1ms TTL=254

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:
```



The network diagram shows a 2811 Router connected to a 2960-24TT Switch. The Router is also connected to a Laptop-PT Remote Laptop. The Switch is connected to a Laptop-PT Local Laptop. The Remote Laptop window shows the following command prompt output:

```
Remote Laptop
Physical Config Desktop Programming Attributes
Command Prompt
LOCAL-SWITCH#exit
[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#
```

**Conclusion:**

1. In this experiment, I learned about setting up network with Router and Switch.
2. I configured telnet for switch and checked its connectivity from remote laptop.