

NAME: SAKSHI CHHEDA
ROLL NO: 7
UID: 2018130005
BATCH: A
CLASS: T.E. COMPS

CEL 51, DCCN, Monsoon 2020

Lab 4: Prototyping a Network

Objective:

Prototype a network using Packet Tracer

Background

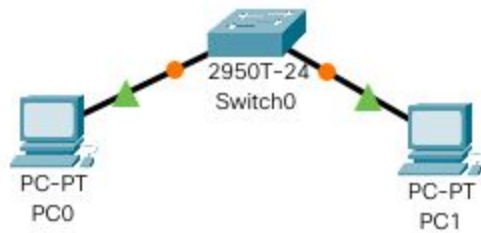
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

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:

- IP address: 192.168.10.10
- Subnet Mask 255.255.255.0

The screenshot shows the PC0 configuration window with the 'Config' tab selected. The left sidebar shows the 'INTERFACE' section with 'FastEthernet0' selected. The main area displays the configuration for 'FastEthernet0'.

FastEthernet0

Port Status: ☒ On

Bandwidth: ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0030.A3A1.1C55

IP Configuration

☐ DHCP

☒ Static

IPv4 Address: 192.168.10.10

Subnet Mask: 255.255.255.0

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address: [] / []

Link Local Address: FE80::230:A3FF:FEA1:1C55

☐ Top

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

The screenshot shows the PC1 configuration window with the 'Config' tab selected. The left sidebar has a tree view with 'GLOBAL' and 'INTERFACE' sections. Under 'INTERFACE', 'FastEthernet0' is selected. The main area shows the configuration for 'FastEthernet0'. The 'Port Status' is 'On'. 'Bandwidth' is '100 Mbps'. 'Duplex' is 'Full Duplex'. The 'MAC Address' is '0001.43E2.622A'. Under 'IP Configuration', 'Static' is selected. The 'IPv4 Address' is '192.168.10.11' and the 'Subnet Mask' is '255.255.255.0'. Under 'IPv6 Configuration', 'Static' is selected. The 'IPv6 Address' is empty and the 'Link Local Address' is 'FE80::201:43FF:FEE2:622A'. A 'Top' button is at the bottom left.

PC1

Physical **Config** Desktop Programming Attributes

GLOBAL

- Settings
- Algorithm Settings

INTERFACE

- FastEthernet0
- Bluetooth

FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0001.43E2.622A

IP Configuration

☐ DHCP

☒ Static

IPv4 Address 192.168.10.11

Subnet Mask 255.255.255.0

IPv6 Configuration

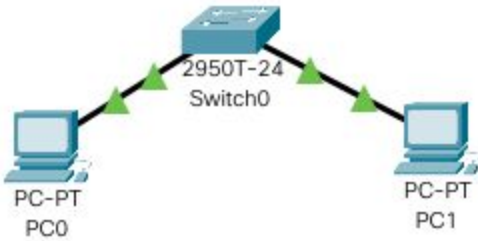
☐ Automatic

☒ Static

IPv6 Address

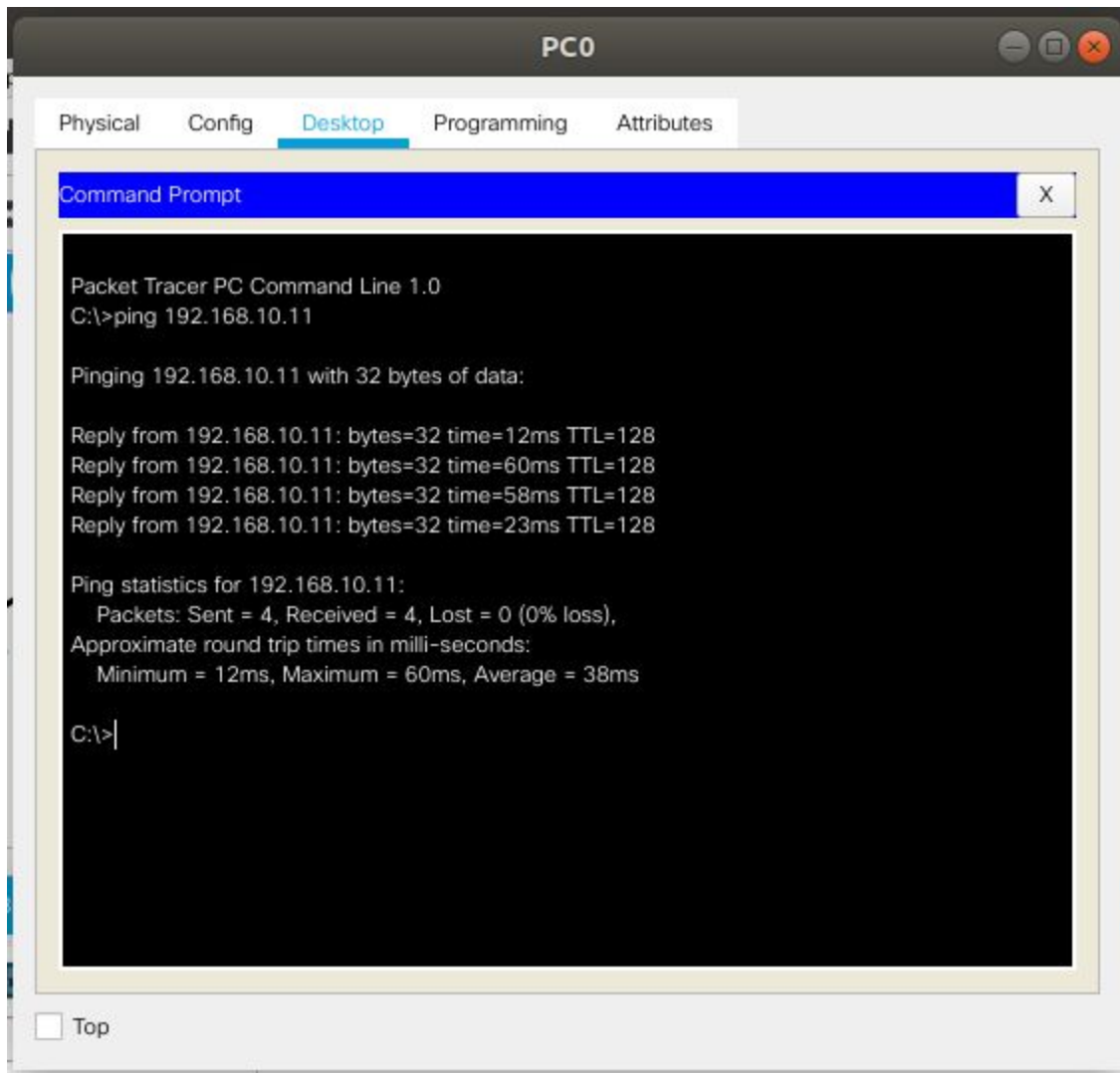
Link Local Address: FE80::201:43FF:FEE2:622A

☐ Top



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.

Congratulations Guest! You completed the activity.

[Overall Feedback](#)[Assessment Items](#)[Connectivity Tests](#)

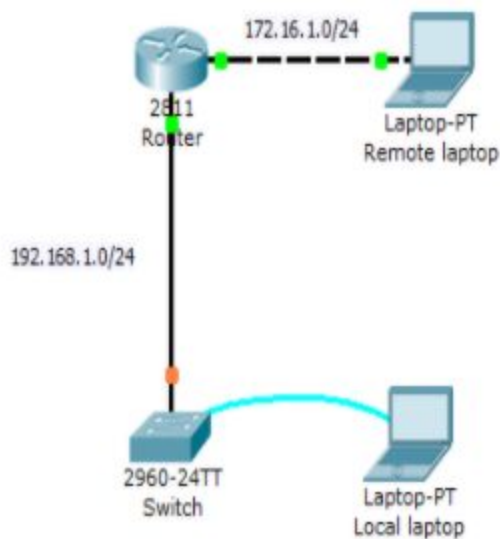
Congratulations on completing this activity!

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

Objective:

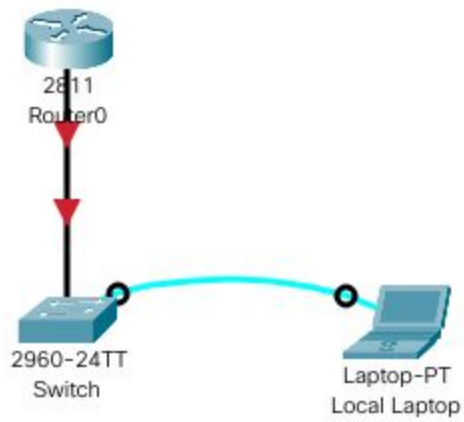
This lab will test your ability to configure basic settings such as hostname, motd banner, encrypted passwords, and terminal options on a Packet Tracer 6.2 simulated Cisco Catalyst switch.



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



Establishing connection between Switch and Router.



Router0

Physical
Config
CLI
Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

FastEthernet0/0

Port Status

☒ On

Bandwidth

☒ 100 Mbps
 ☐ 10 Mbps

☒ Auto

Duplex

☒ Half Duplex
 ☐ Full Duplex

☒ Auto

MAC Address

0060.70BA.BB01

IP Configuration

IPv4 Address

192.168.1.1

Subnet Mask

255.255.255.0

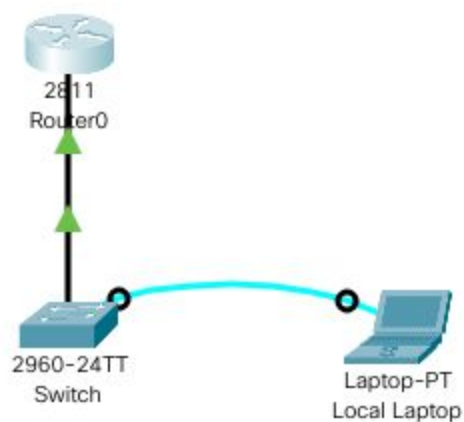
Tx Ring Limit

10

Equivalent IOS Commands

```
ip address
% Incomplete command.
Router(config-if)#no ip address
Router(config-if)#no ip address
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#
```

☐ Top



Router0

PhysicalConfigCLIAttributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

FastEthernet0/1

Port Status

☒ On

Bandwidth

☒ 100 Mbps☐ 10 Mbps

☒ Auto

Duplex

☒ Half Duplex☐ Full Duplex

☒ Auto

MAC Address

0060.70BA.BB02

IP Configuration

IPv4 Address

172.16.1.0

Subnet Mask

255.255.0.0

Tx Ring Limit

10

Equivalent IOS Commands

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

ip address 172.16.1.0 255.255.0.0

Router(config-if)#ip address 172.16.1.0 255.255.0.0

Router(config-if)#

☐ Top

Remote Laptop

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 172.16.1.1

Subnet Mask 255.255.0.0

Default Gateway 172.16.1.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

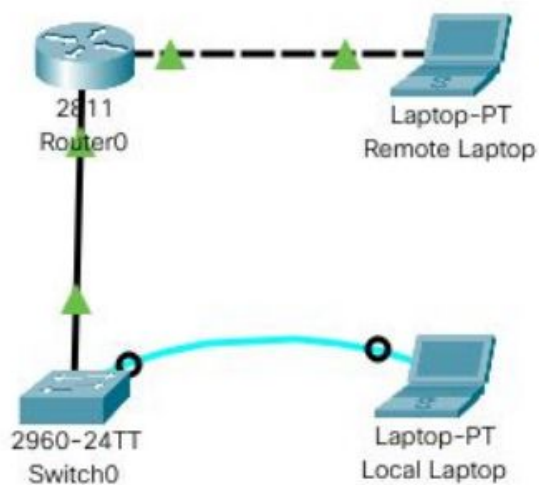
IPv6 Address /

Link Local Address FE80::2E0:8FFF:FEA3:BA3B

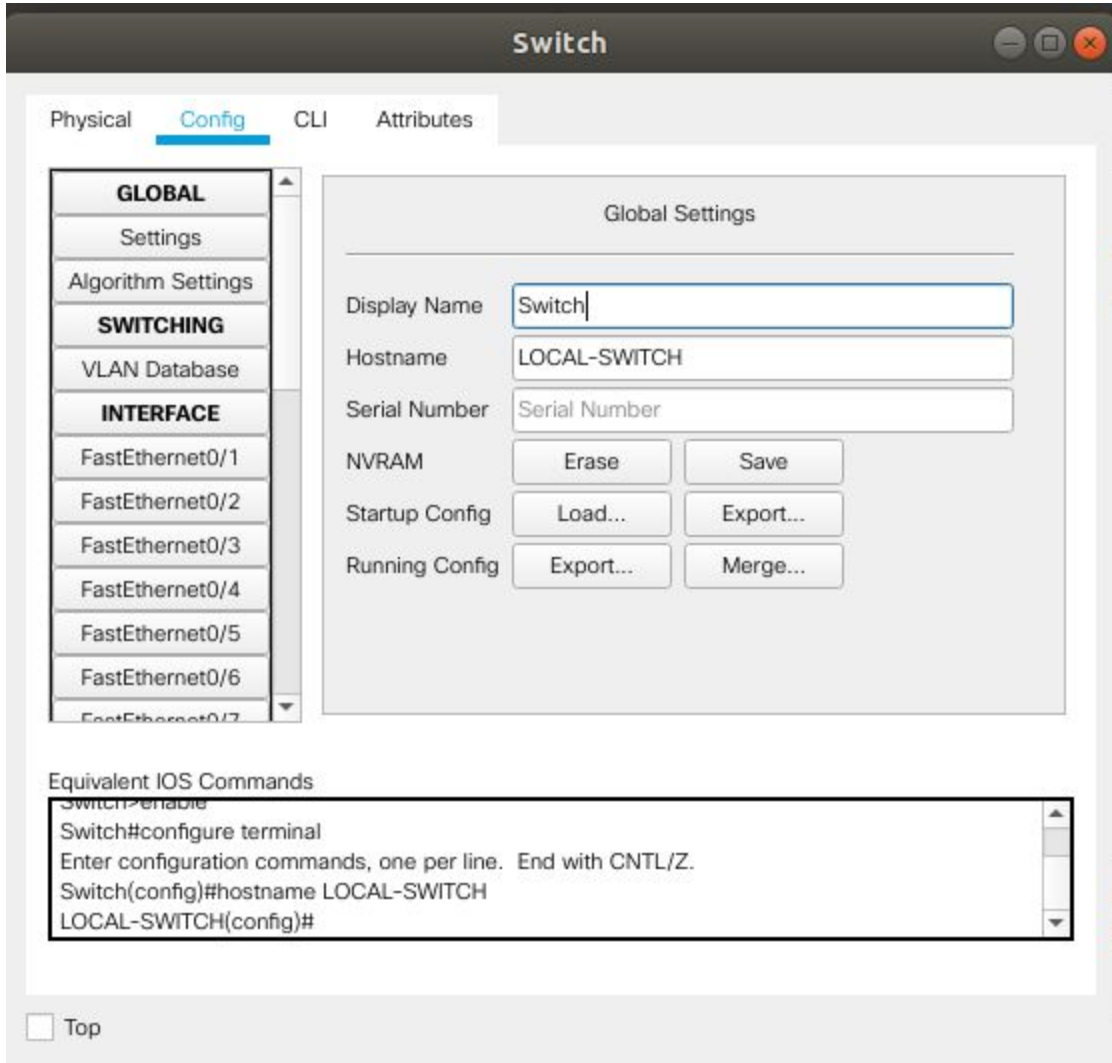
Default Gateway

DNS Server

☐ Top



2. Configure Switch hostname as LOCAL-SWITCH



Switch

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/1

FastEthernet0/2

FastEthernet0/3

FastEthernet0/4

FastEthernet0/5

FastEthernet0/6

FastEthernet0/7

Global Settings

Display Name: Switch

Hostname: LOCAL-SWITCH

Serial Number: Serial Number

NVRAM: Erase Save

Startup Config: Load... Export...

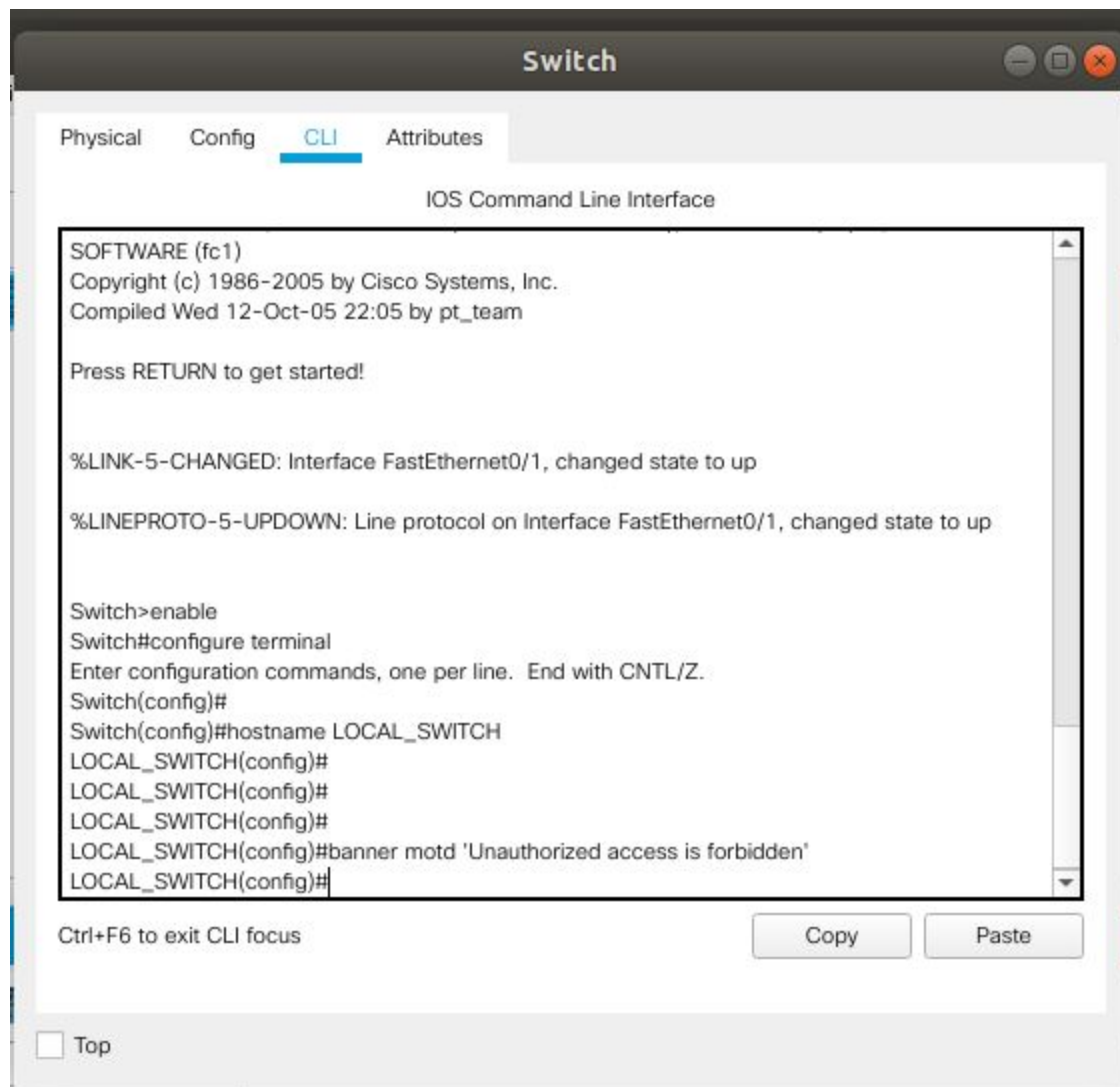
Running Config: Export... Merge...

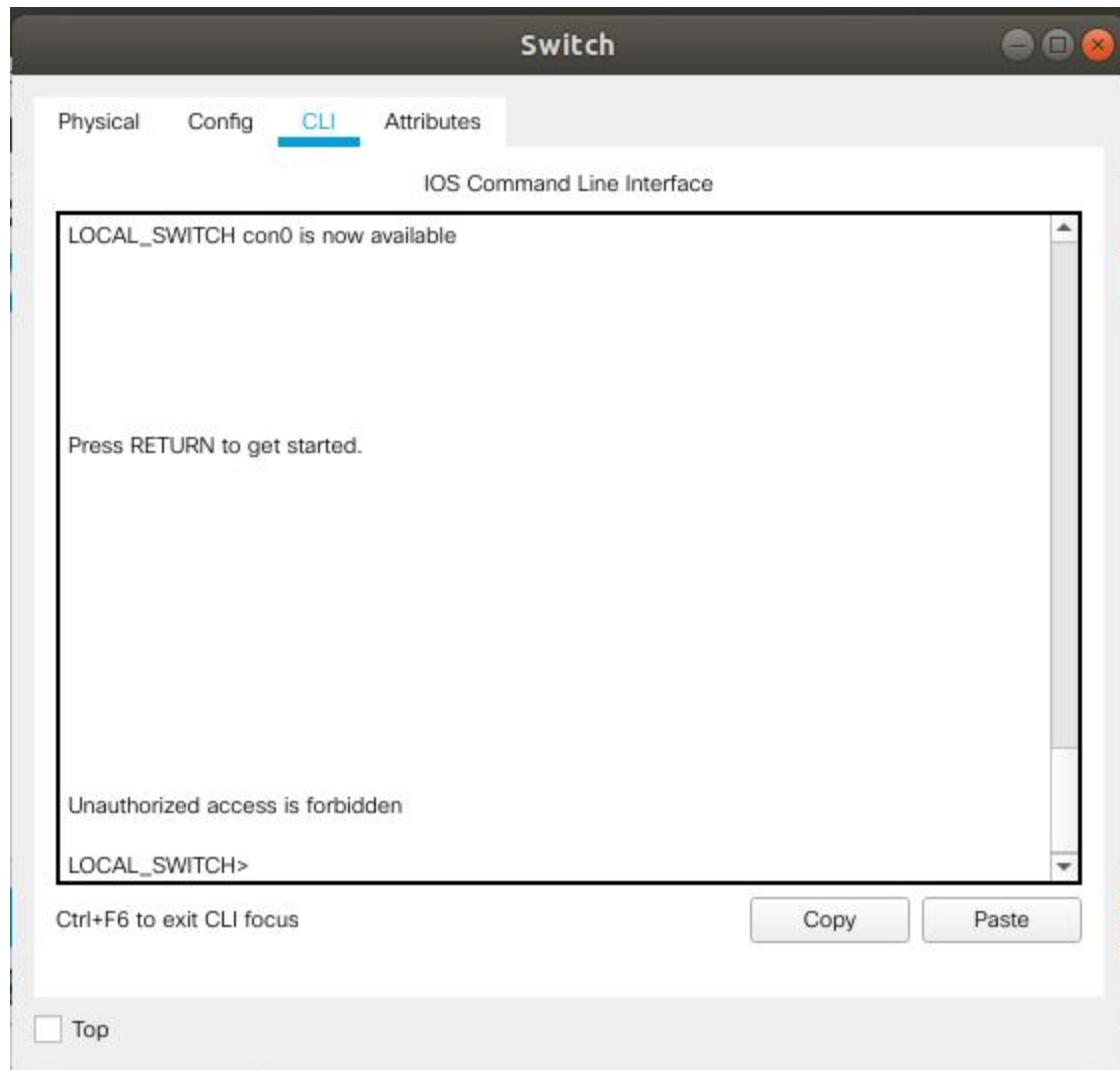
Equivalent IOS Commands

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

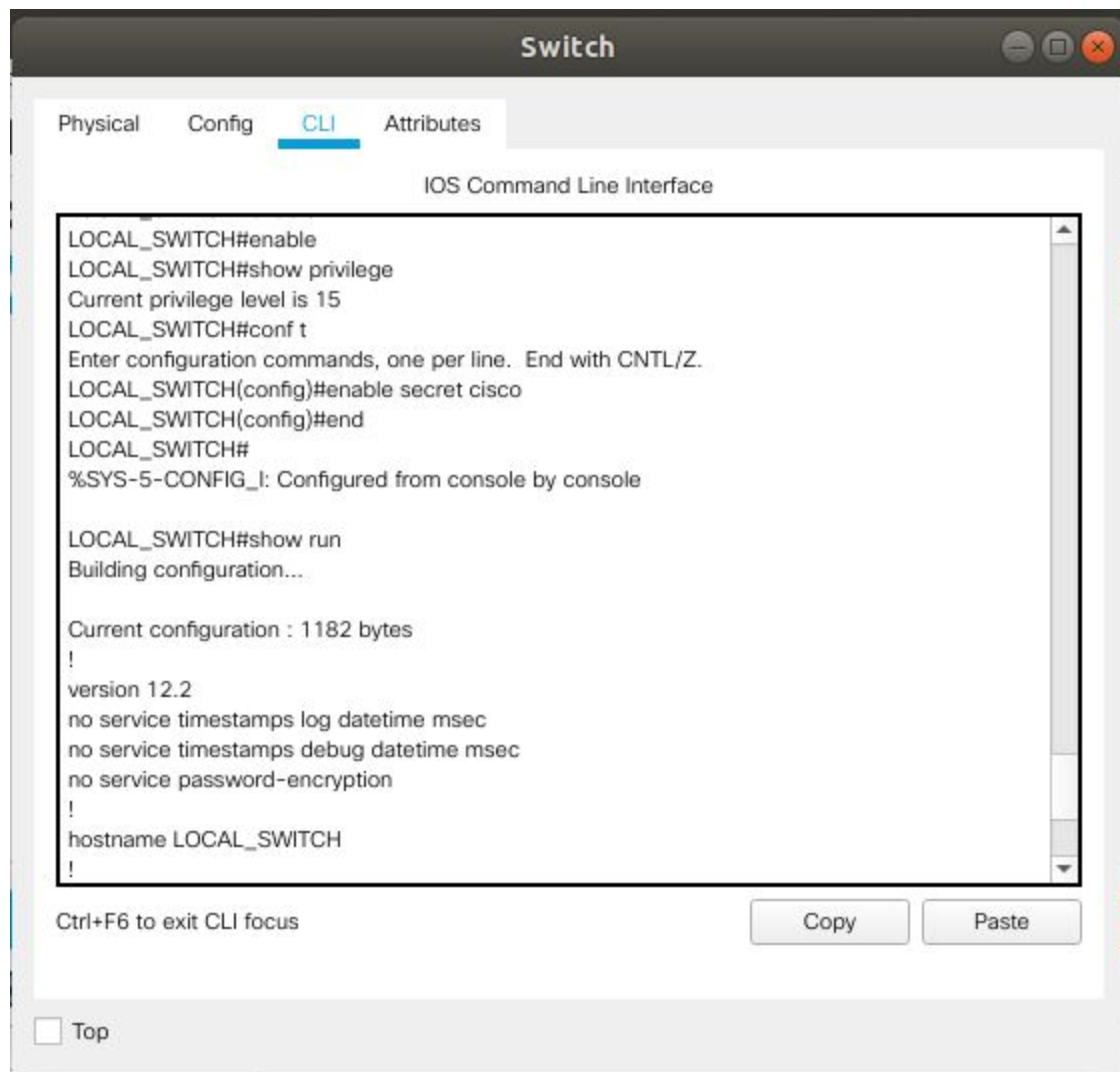
☐ Top

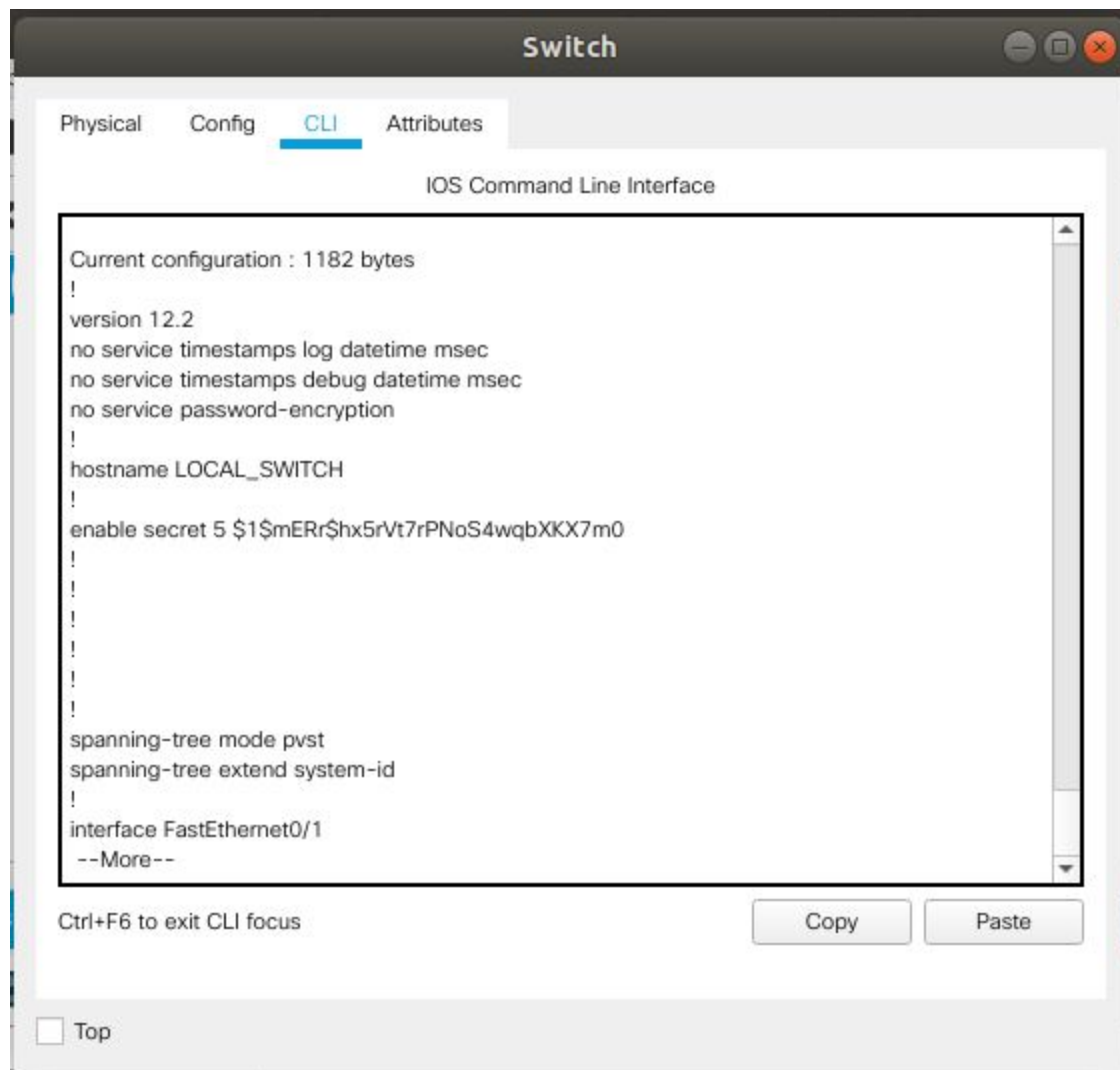
3. Configure the message of the day as "Unauthorized access is forbidden"

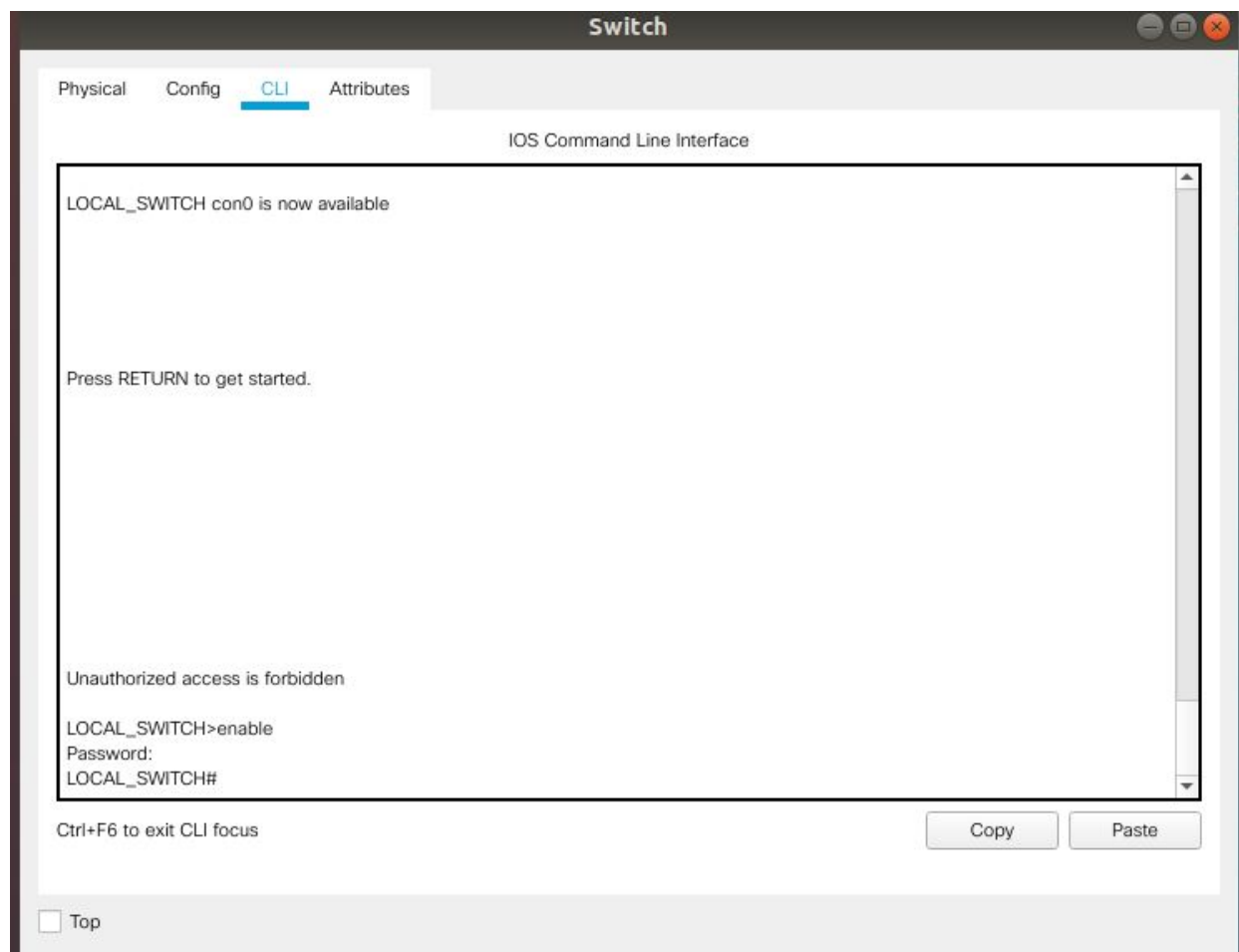




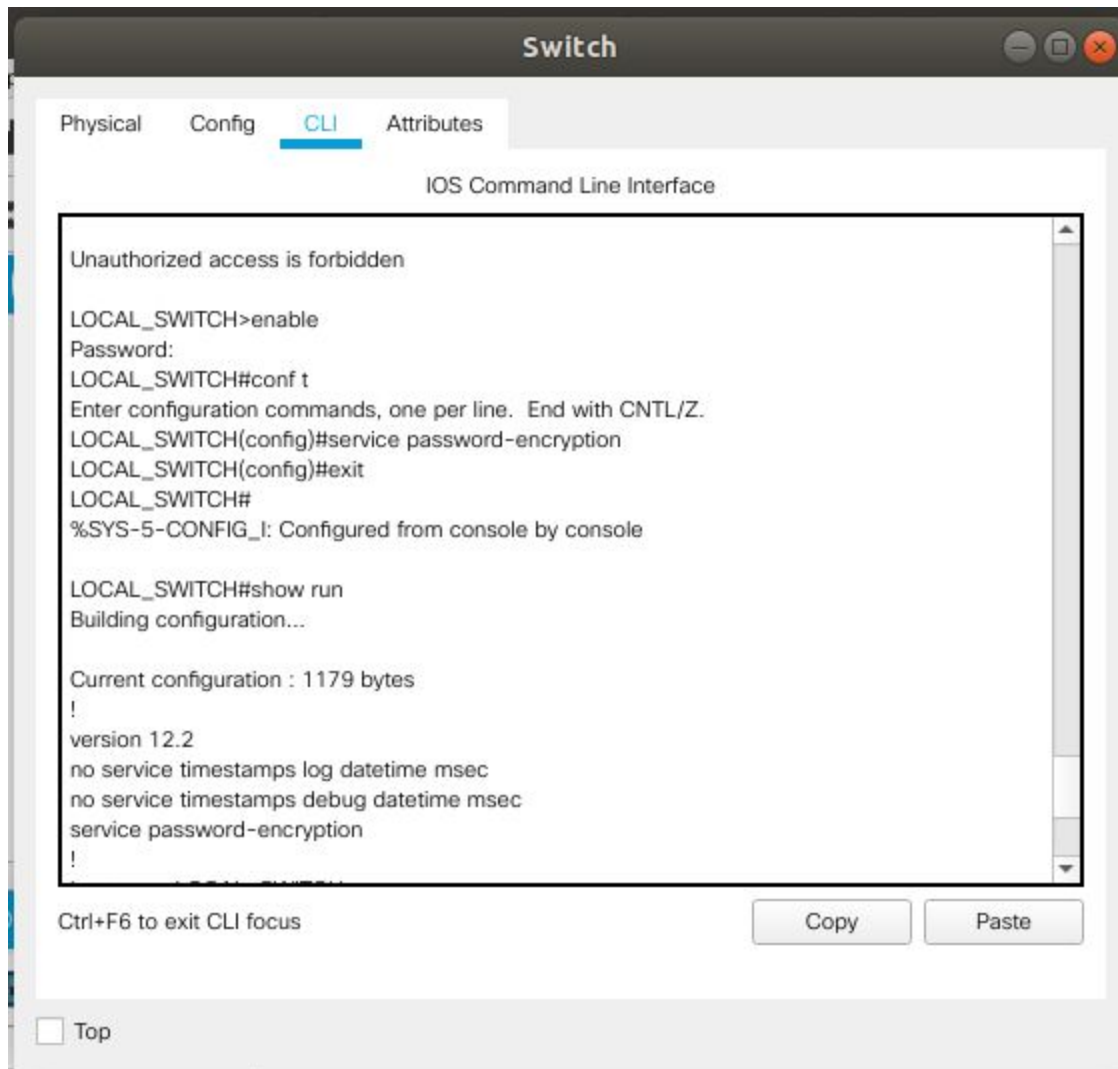
4. Configure the password for privileged mode access as "cisco". The password must be md5 encrypted

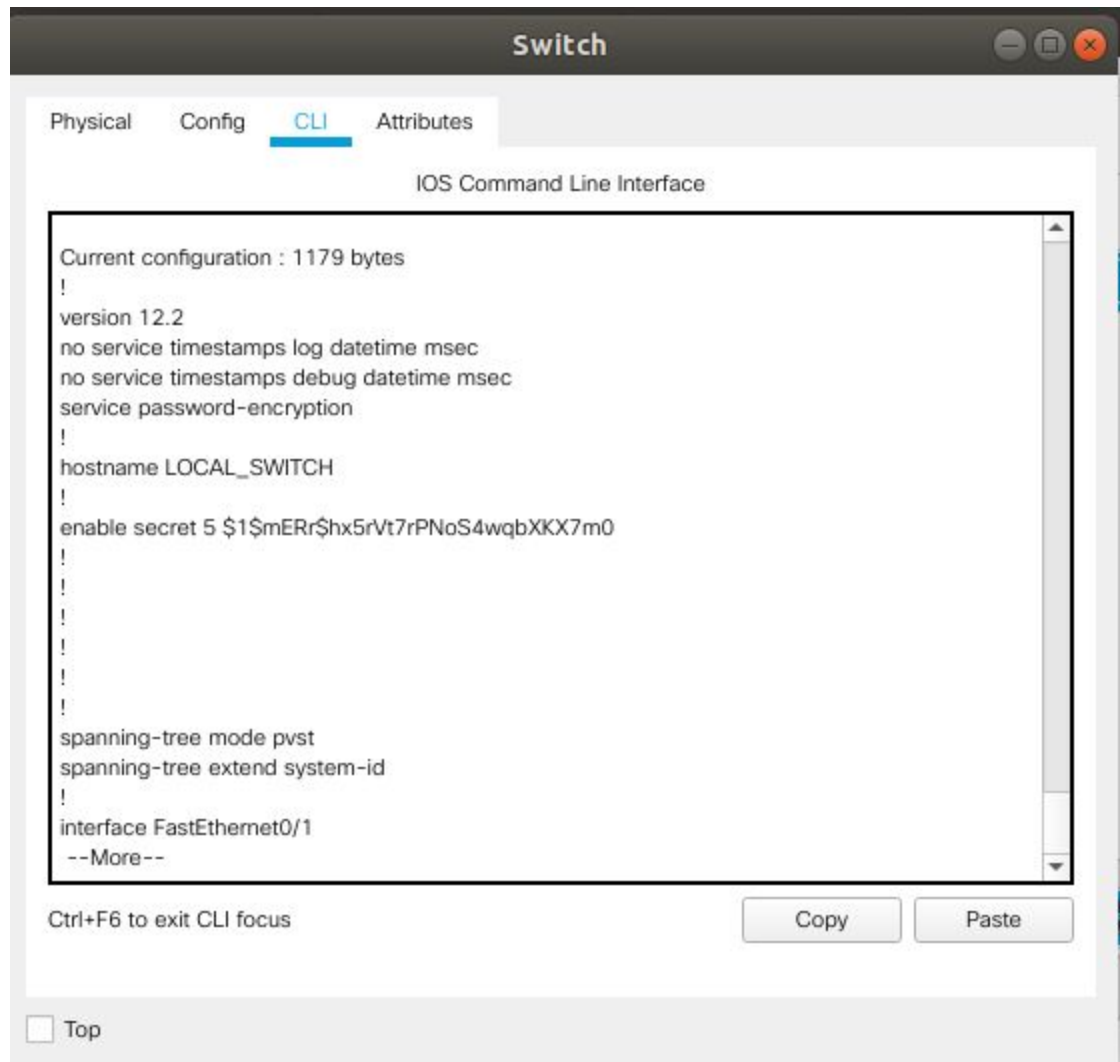






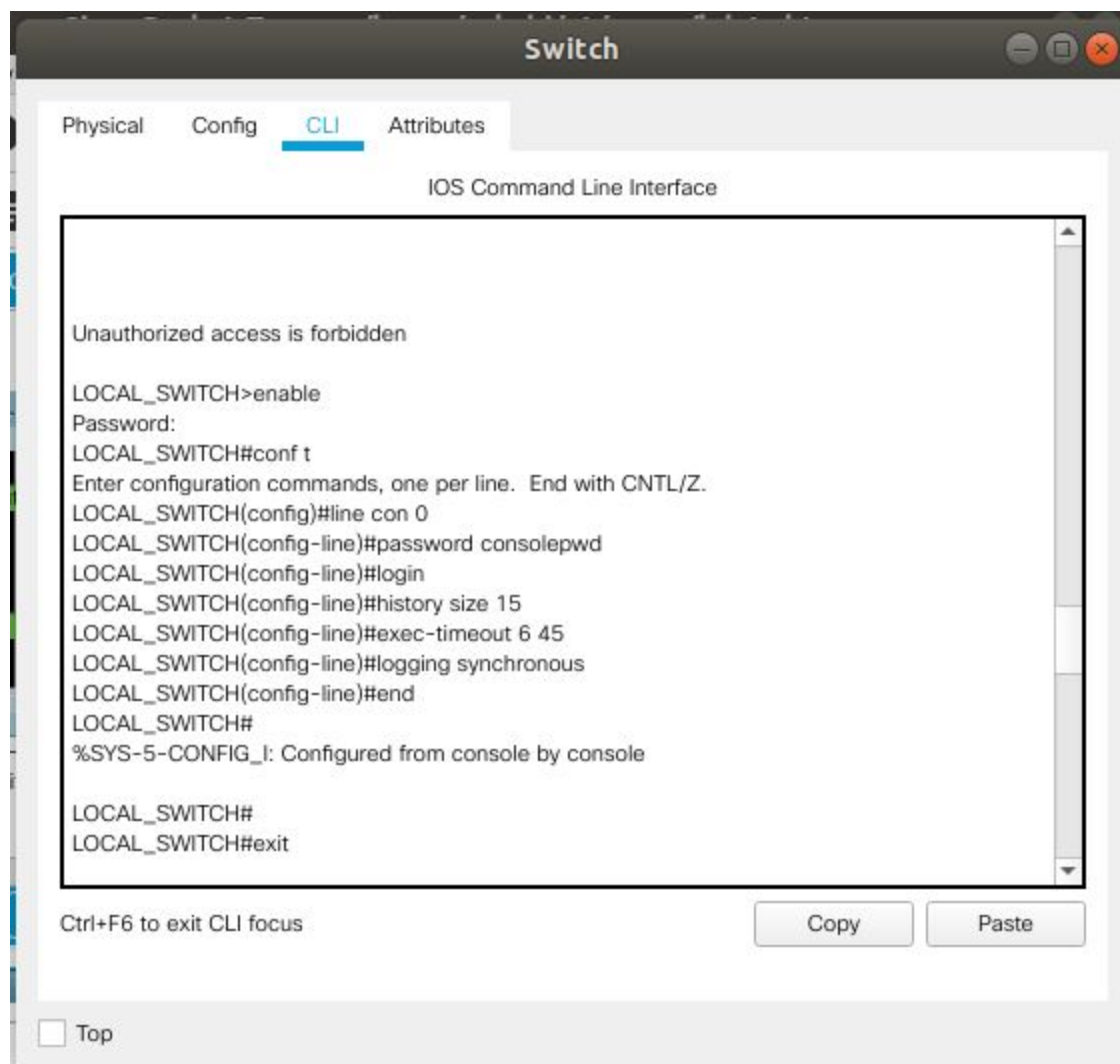
5. Configure password encryption on the switch using the global configuration command





6. Configure CONSOLE access with the following settings :

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



Switch

Physical

Config

CLI

Attributes

IOS Command Line Interface

```
!  
!  
!  
line con 0  
password 7 082243401A160912021C08  
logging synchronous  
login  
history size 15  
exec-timeout 6 45  
!  
line vty 0 4  
login  
line vty 5 15  
login  
!  
!  
!  
end
```

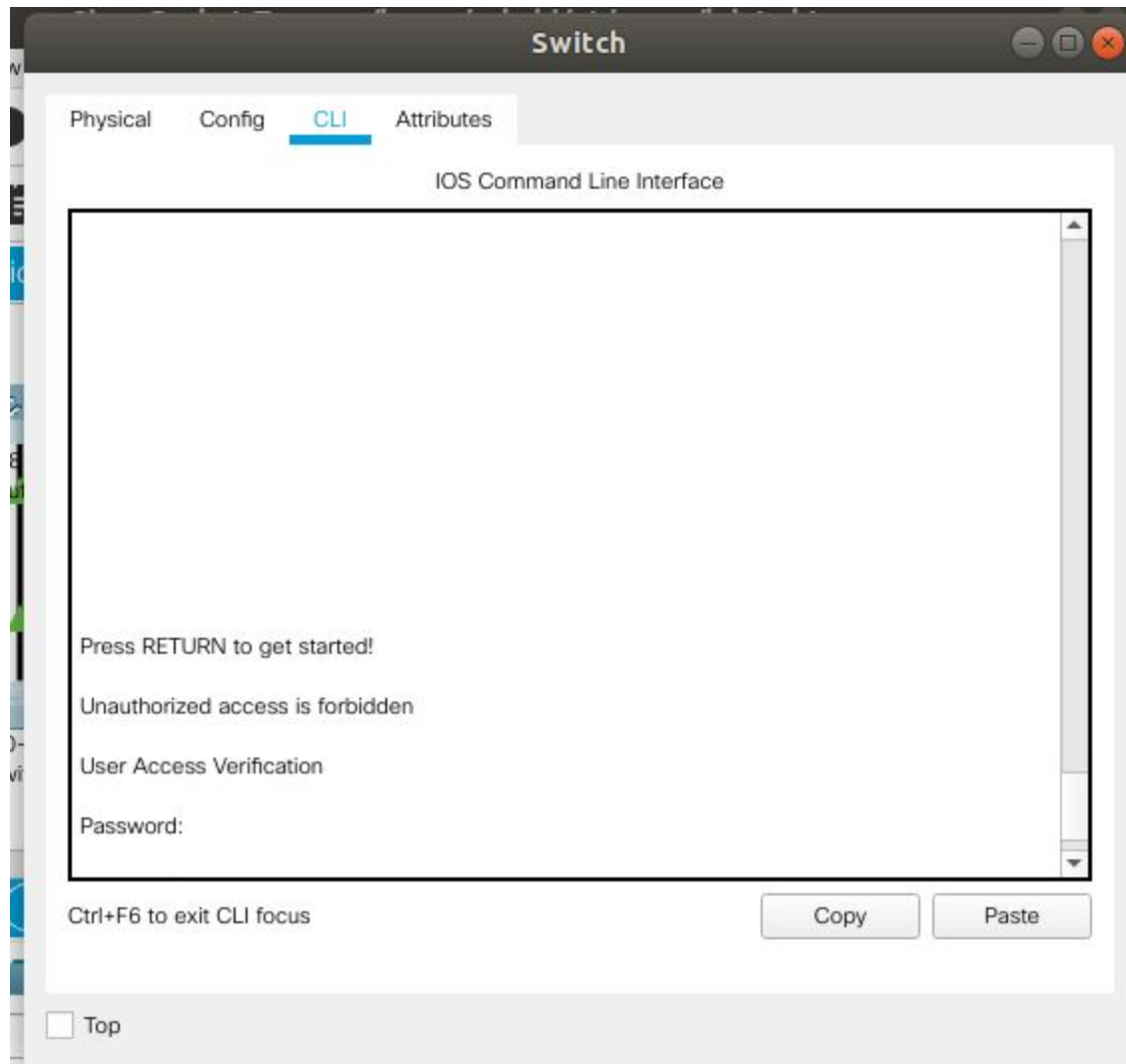
LOCAL-SWITCH#

Ctrl+F6 to exit CLI focus

Copy

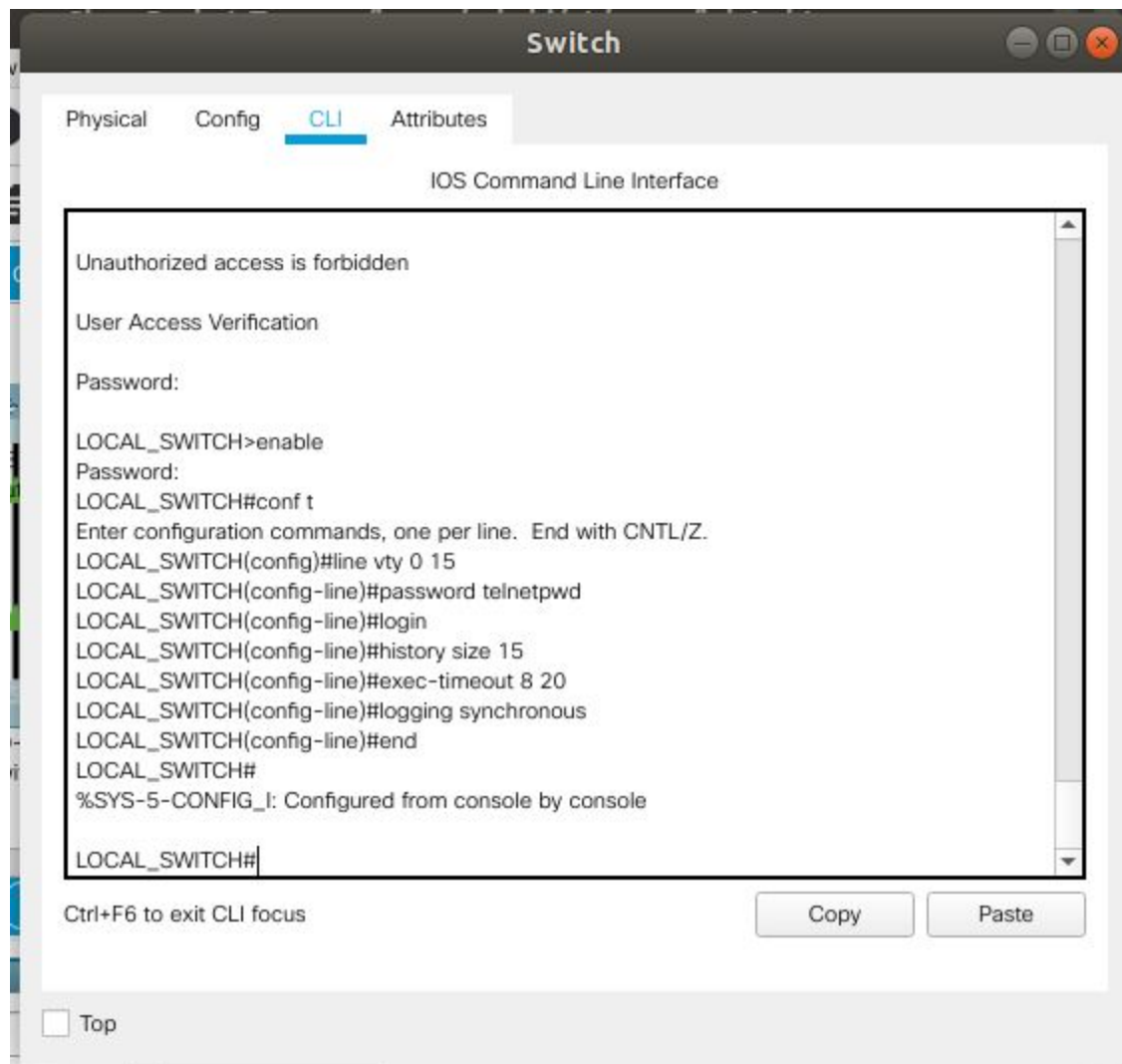
Paste

☐ Top

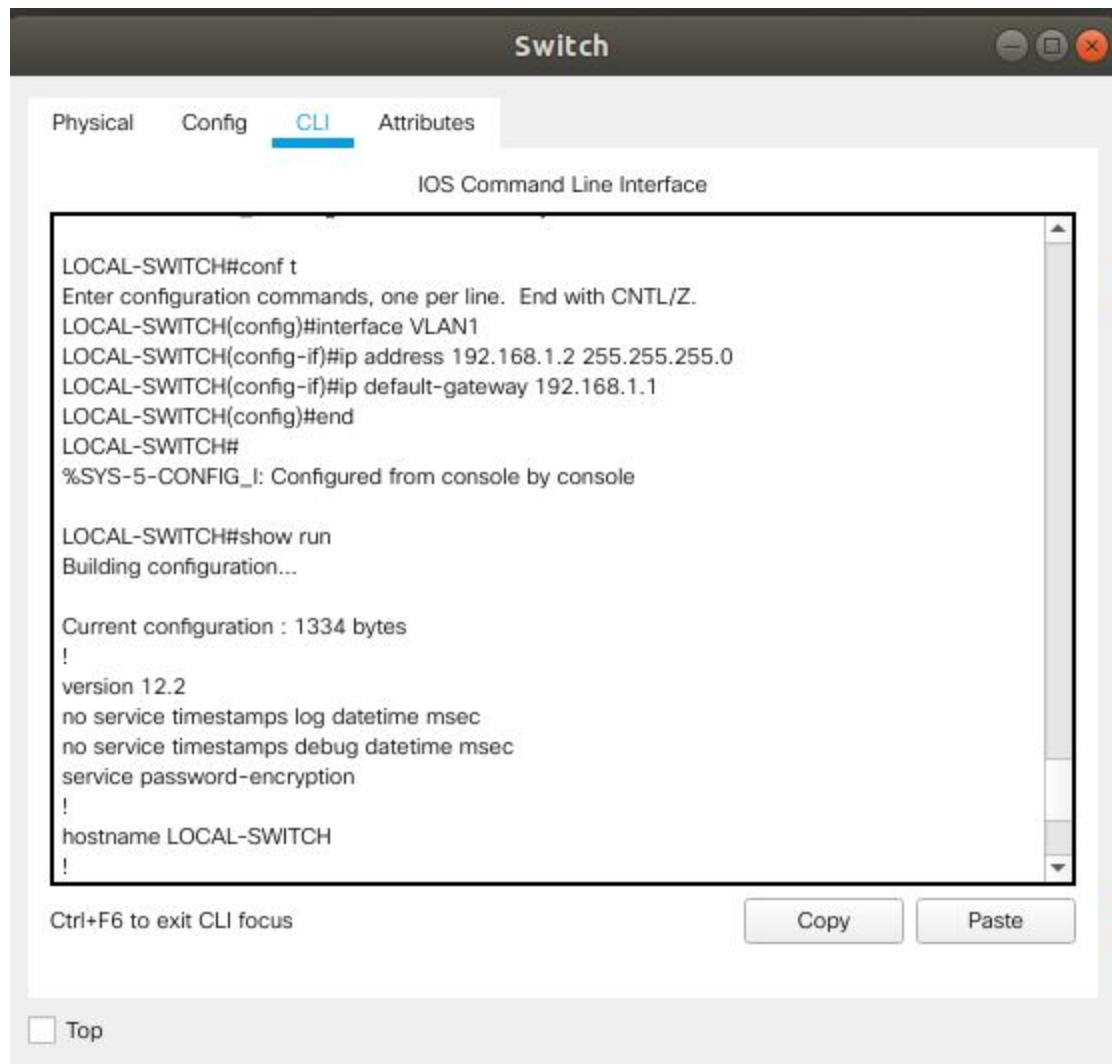


6. Configure TELNET access with the following settings :

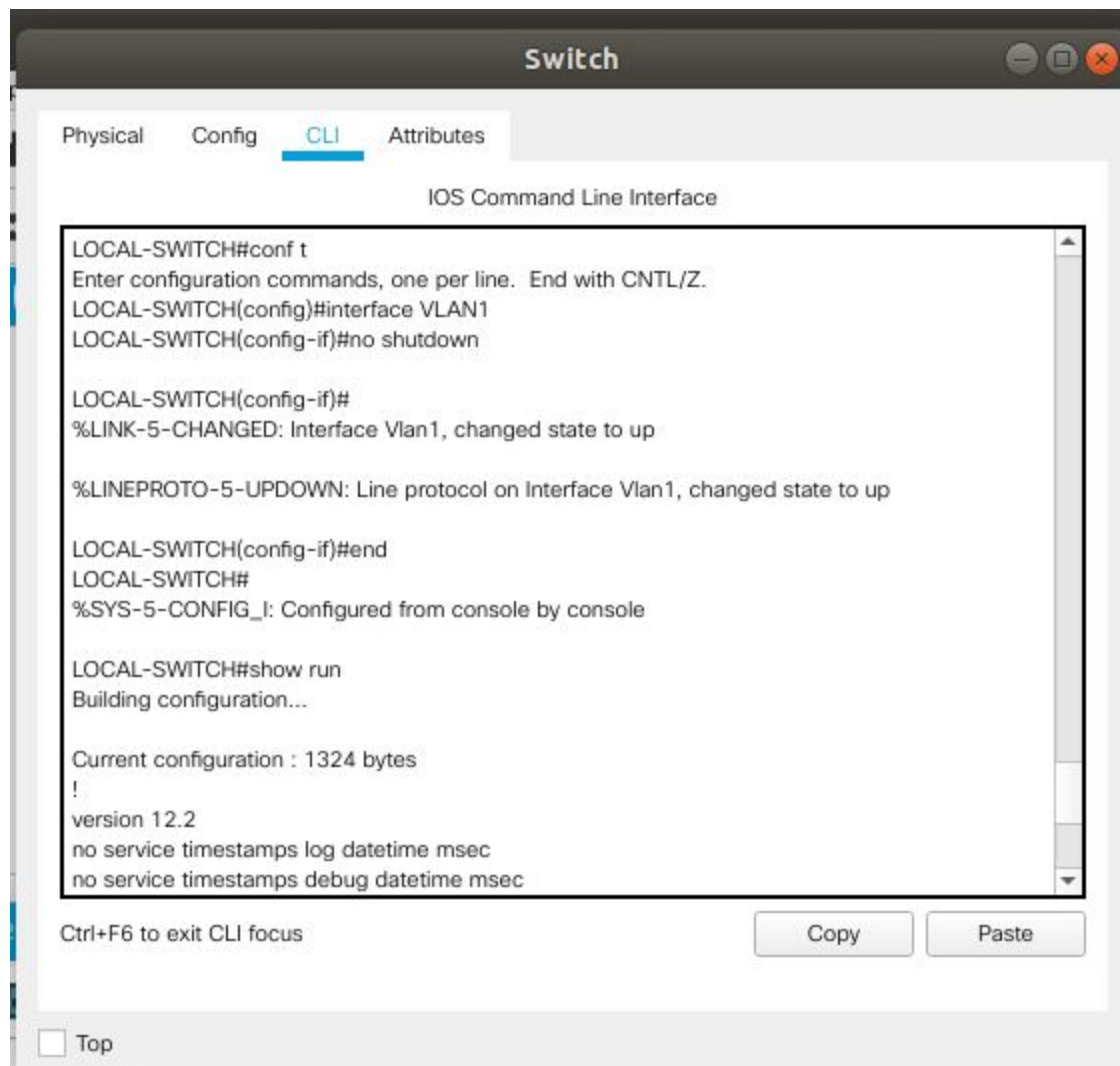
- Login enabled
- Password : whatever you like
- History size : 15 commands
- Timeout : 8'20"
- Synchronous logging



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

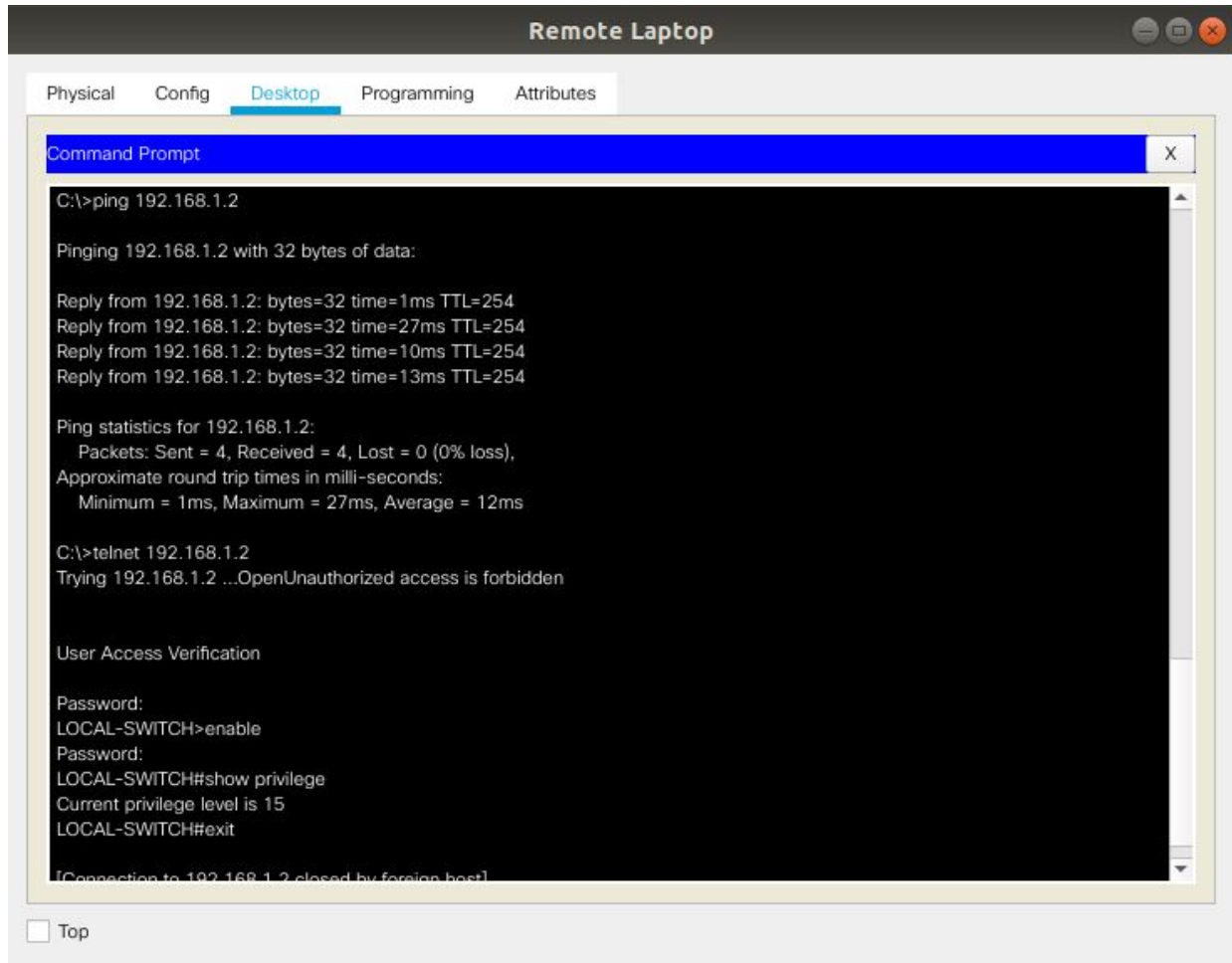








8. Test telnet connectivity from the Remote Laptop using the telnet client.



The screenshot shows a window titled "Remote Laptop" with a tabbed interface. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the execution of a ping command to 192.168.1.2, which is successful. Following this, a telnet command is executed to 192.168.1.2, resulting in an "OpenUnauthorized access is forbidden" message. The user then enters the password "enable" and runs the "show privilege" command, which shows a privilege level of 15. Finally, the user enters "exit", and the connection is closed by the 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=27ms TTL=254
Reply from 192.168.1.2: bytes=32 time=10ms TTL=254
Reply from 192.168.1.2: bytes=32 time=13ms 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 = 1ms, Maximum = 27ms, Average = 12ms

C:\>telnet 192.168.1.2
Trying 192.168.1.2 ...OpenUnauthorized access is forbidden

User Access Verification

Password:
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#show privilege
Current privilege level is 15
LOCAL-SWITCH#exit

[Connection to 192.168.1.2 closed by foreign host]
```

☐ Top