

Objective:

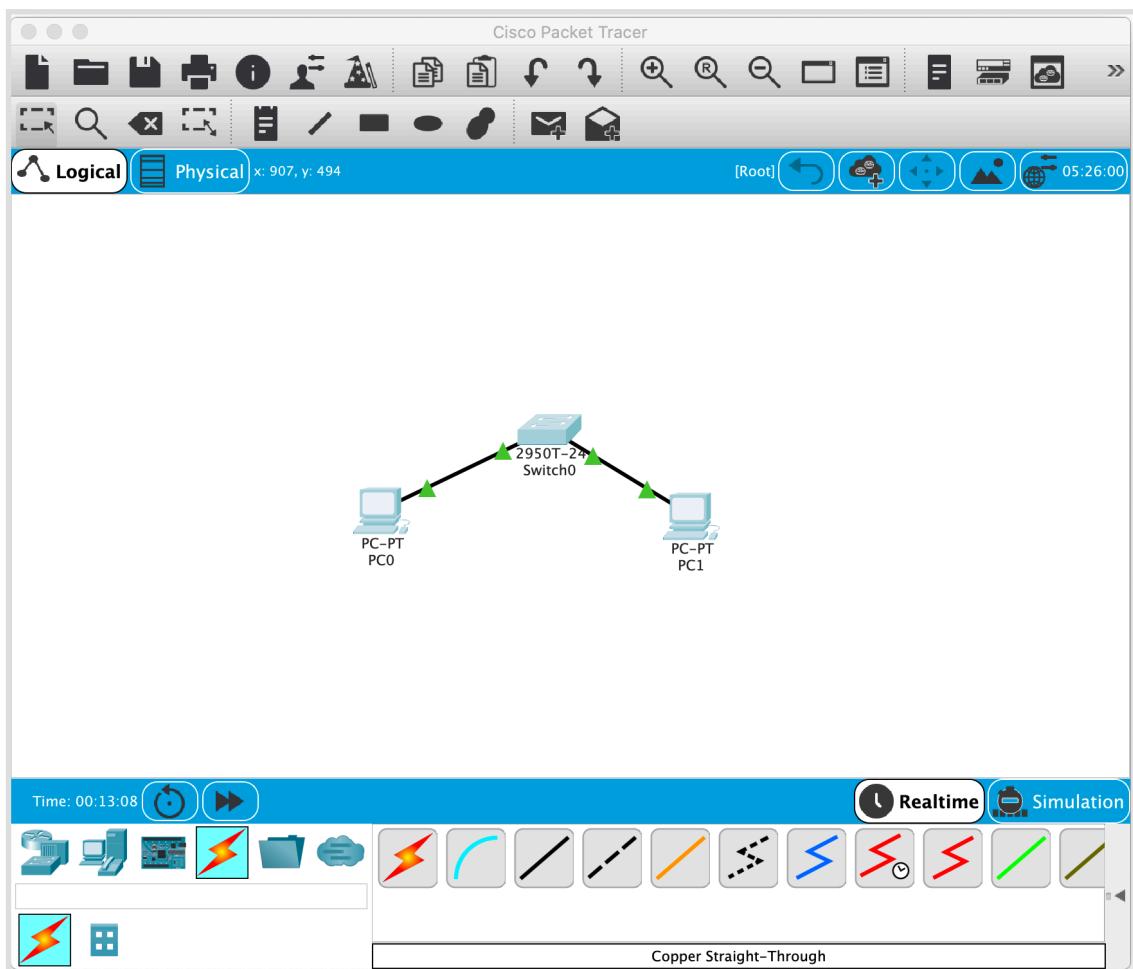
Prototype a network using Packet Tracer

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.

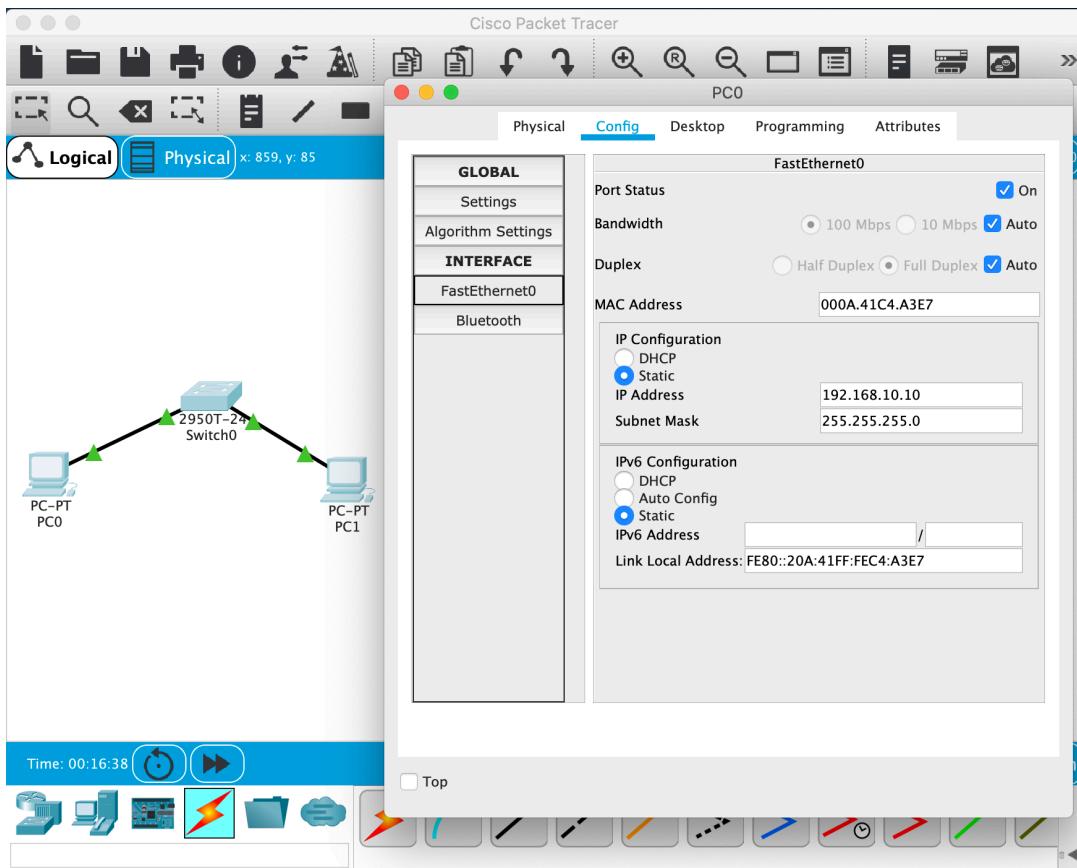
Step 1: Set up the network topology

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



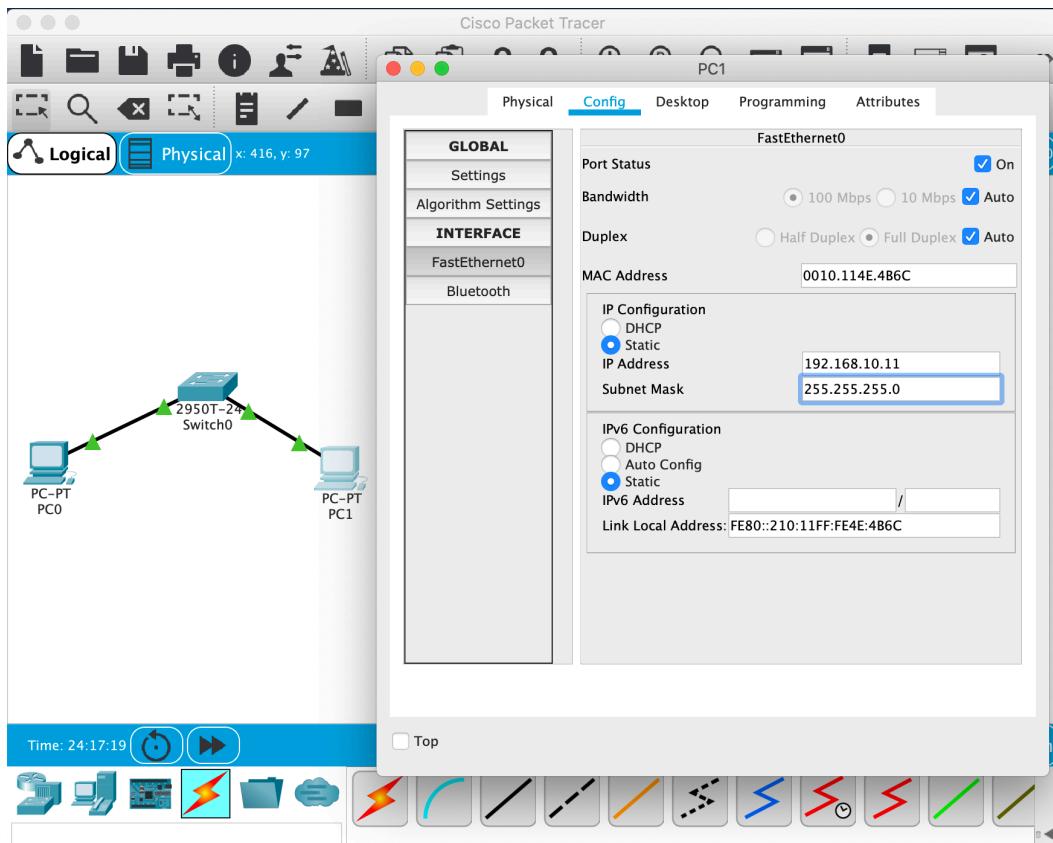
- Configure PC0 using the **Config** tab in the PC0 configuration window:
 - IP address: 192.168.10.10

b. Subnet Mask 255.255.255.0



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

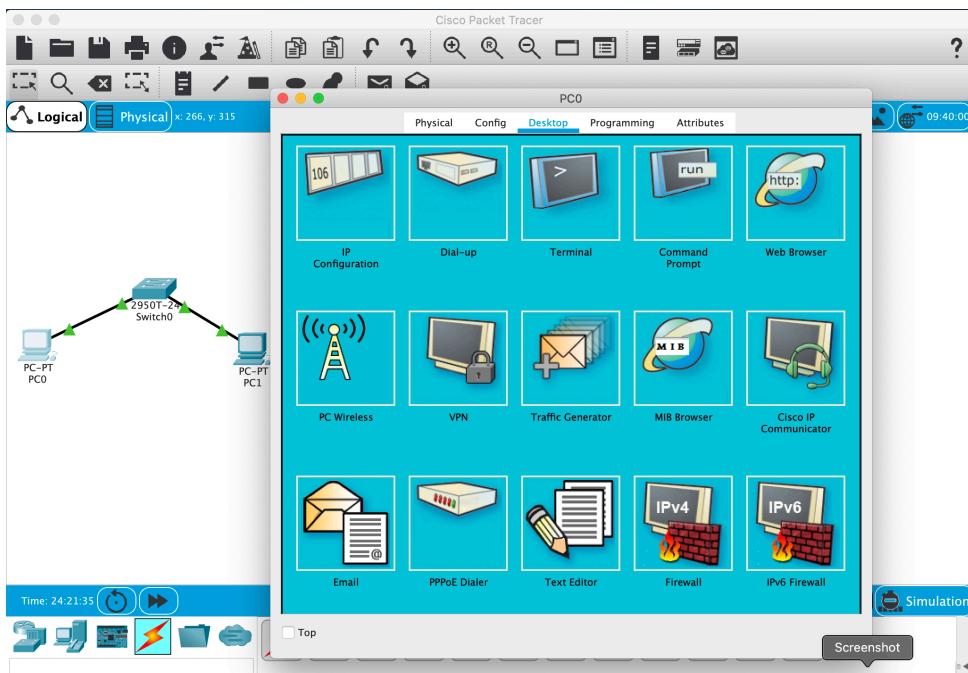
- IP address: 192.168.10.11
- Subnet Mask 255.255.255.0



Step 2: Test connectivity from PC0 to PC1

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

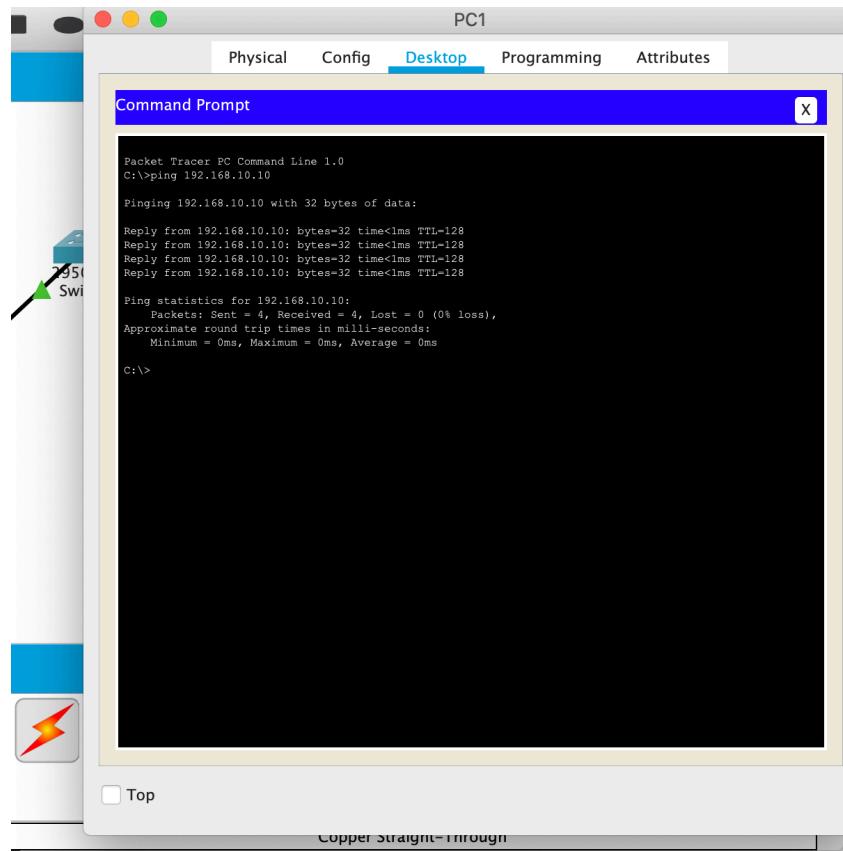
- Click PC0.
- Choose the **Desktop** tab.



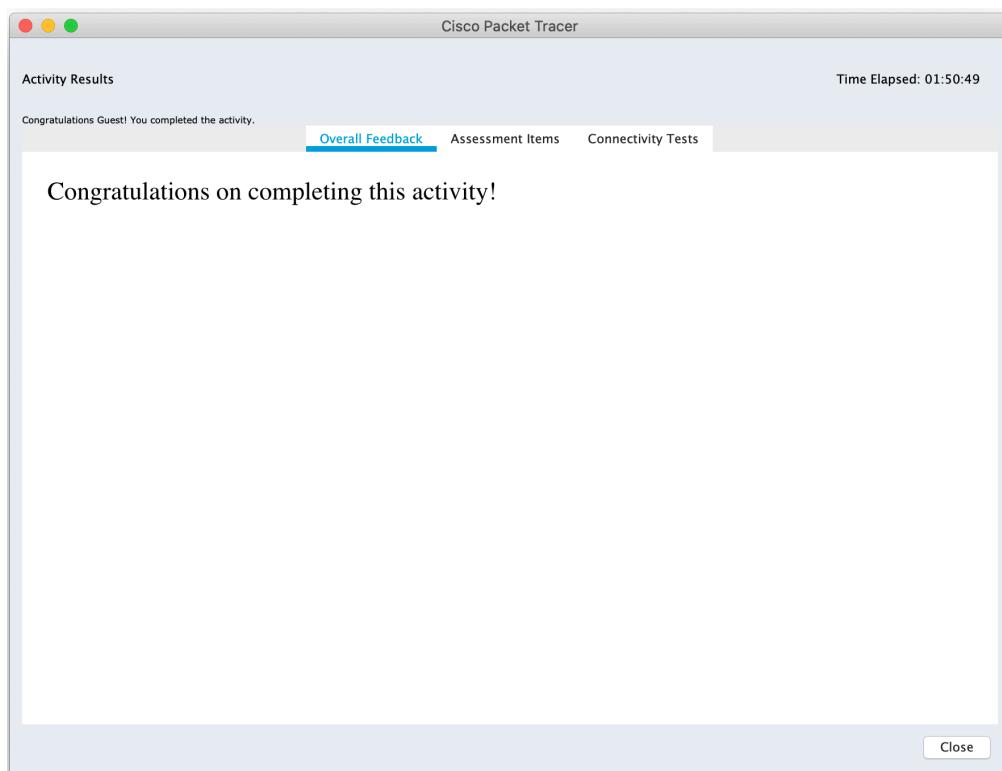
- Choose **Command Prompt**.
 - Type: **ping 192.168.10.11** and press *enter*.
- b) A successful **ping** indicates the network was configured correctly and the prototype validates the hardware and software configurations. A successful ping should resemble the below output:

The screenshot shows the 'Command Prompt' window within the Cisco Packet Tracer interface. The window title is 'Command Prompt' and the tab bar shows 'Physical', 'Config', 'Desktop' (which is selected), 'Programming', and 'Attributes'. The command entered is 'ping 192.168.10.11'. The output shows four successful replies from the target IP address, followed by statistics: 'Ping statistics for 192.168.10.11: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)', 'Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms', and the prompt 'C:\>'. The background of the window shows the network diagram with a host labeled 'h0' and a link labeled '24'.

Repeating steps a for connectivity from PC1 to PC0



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

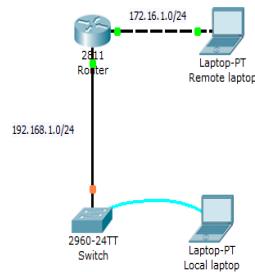


CEL51, DCCN, Monsoon 2020

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

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.

Remote Laptop

Physical Config Desktop Programming Attributes

GLOBAL

Settings Algorithm Settings

INTERFACE

FastEthernet0 Bluetooth

Global Settings

Display Name: Remote Laptop

Interfaces: FastEthernet0

Gateway/DNS IPv4

DHCP Static

Gateway: []

DNS Server: []

Gateway/DNS IPv6

DHCP Auto Config Static

IPv6 Gateway: []

IPv6 DNS Server: []

Top

Local Laptop

Physical Config Desktop Programming Attributes

GLOBAL

Settings Algorithm Settings

INTERFACE

FastEthernet0 Bluetooth

Global Settings

Display Name: Local Laptop

Interfaces: FastEthernet0

Gateway/DNS IPv4

DHCP Static

Gateway: []

DNS Server: []

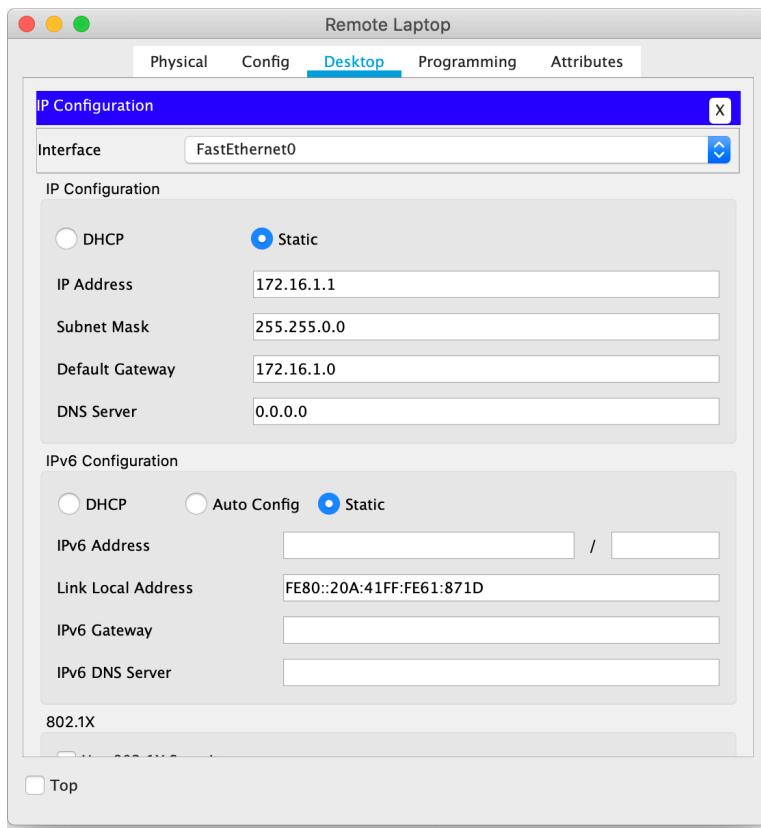
Gateway/DNS IPv6

DHCP Auto Config Static

IPv6 Gateway: []

IPv6 DNS Server: []

Top



Router0

Physical Config CLI Attributes

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 0030.F218.7702

IP Configuration

IP Address	
Subnet Mask	

Tx Ring Limit 10

Equivalent IOS Commands

```

Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config-if)#
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

```

Top

2. Configure Switch hostname as LOCAL-SWITCH

Switch0

Physical Config CLI Attributes

IOS Command Line Interface

```

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!

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

Switch>Switch(config)#hostname LOCAL-SWITCH
% Invalid input detected at '^' marker.

Switch>enable
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#Switch(config)#hostname LOCAL-SWITCH
% Invalid input detected at '^' marker.

Switch(config)#Switch(config)#hostname LOCAL-SWITCH
% Invalid input detected at '^' marker.

Switch(config)#
Switch(config)#hostname LOCAL-SWITCH
LOCAL-SWITCH(config)#

```

Command+F6 to exit CLI focus

Top

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

The screenshot shows a Cisco IOS Command Line Interface window titled "Switch0". The "CLI" tab is selected. The terminal window displays the following configuration commands:

```
Switch#banner motd #
Enter TEXT message. End with the character '#'.
Unauthorized access is forbidden#
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#conf t
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#service password-encryption
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#enable secret cisco
LOCAL-SWITCH(config)#[
```

At the bottom of the window, there are "Copy" and "Paste" buttons, and a checkbox labeled "Top".

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

The screenshot shows a Cisco IOS Command Line Interface window titled "Switch0". The "CLI" tab is selected. The terminal window displays the following configuration commands:

```
LOCAL-SWITCH(config)#
LOCAL-SWITCH(config)#banner motd #
Enter TEXT message. End with the character '#'.
Unauthorized access is forbidden#
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#conf t
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#service password-encryption
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#enable secret cisco
LOCAL-SWITCH(config)#[
```

At the bottom of the window, there are "Copy" and "Paste" buttons, and a checkbox labeled "Top".

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

The screenshot shows the CLI interface for a device named "Switch0". The tab bar at the top has four tabs: Physical, Config, CLI (which is selected), and Attributes. Below the tabs is a title "IOS Command Line Interface". The main window contains the following configuration commands:

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

LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#
LOCAL-SWITCH#conf t
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#enable secret cisco
LOCAL-SWITCH(config)#service password-encryption
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console
show run
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 $1$eERr$hx5rVt7rPNoS4wqbXKX7m0
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
--More-- |
```

At the bottom of the window, there are two buttons: "Copy" and "Paste". Below the window, there is a status bar with a checkbox labeled "Top".

The screenshot shows the CLI interface for a device named "Switch0". The tab bar at the top has four tabs: Physical, Config, CLI (which is selected), and Attributes. Below the tabs is a title "IOS Command Line Interface". The main window contains the following text:

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

interface FastEthernet0/8
!
interface FastEthernet0/9
LOCAL-SWITCH#exit

LOCAL-SWITCH con0 is now available

Press RETURN to get started.

Unauthorized access is forbidden
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#
```

At the bottom of the window, there are two buttons: "Copy" and "Paste". Below the window, there is a status bar with a checkbox labeled "Top".

6. Configure CONSOLE access with the following settings :

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

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
LOCAL-SWITCH con0 is now available

Press RETURN to get started.

Unauthorized access is forbidden
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#conf t
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)#end
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console
LOCAL-SWITCH#
```

Command+F6 to exit CLI focus

Top

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Unauthorized access is forbidden
User Access Verification

Password:
Password:
Password:
% Bad passwords

Press RETURN to get started!

Unauthorized access is forbidden
User Access Verification

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

Command+F6 to exit CLI focus

Top

6. Configure TELNET access with the following settings :

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

The screenshots show the Cisco IOS Command Line Interface (CLI) running on a device named 'Switch0'. The interface is divided into several tabs: Physical, Config, CLI (which is selected), and Attributes.

Top Window (Configuration Mode):

```
Press RETURN to get started!
Unauthorized access is forbidden
User Access Verification
Password:
LOCAL-SWITCH>conf t
^
% Invalid input detected at '^' marker.

LOCAL-SWITCH>enable
Password:
Password:
LOCAL-SWITCH#conf t
Enter configuration commands, one per line. End with CNTL/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)#end
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console
LOCAL-SWITCH#
```

Bottom Window (User Mode):

```
LOCAL-SWITCH con0 is now available

Press RETURN to get started.

Unauthorized access is forbidden
User Access Verification
Password:
Password:
Password:

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

At the bottom of the interface, there are buttons for 'Copy' and 'Paste', and a status message: 'Command+F6 to exit CLI focus'.

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

The screenshot shows a terminal window titled "Switch0" with the tab "CLI" selected. The window displays the following command-line session:

```
Unauthorized access is forbidden
User Access Verification
Password:
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#conf t
Enter configuration commands, one per line. End with CNTL/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)#end
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console

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-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 are "Copy" and "Paste" buttons, and a "Command+F6 to exit CLI focus" instruction. A "Top" button is located at the bottom left.

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

The screenshot shows a "Command Prompt" window with the title bar "Command Prompt". The window displays the following output:

```
Packet Tracer PC Command Line 1.0
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#
```

A large portion of the terminal window content is blacked out for security reasons.

Command Prompt

```
Packet Tracer PC Command Line 1.0
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#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

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 = 0ms, Average = 0ms

C:\>
```

Top