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TE COMPS

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CEL 51, DCCN, Monsoon 2020

Lab 4: Prototyping a Network

Objective:

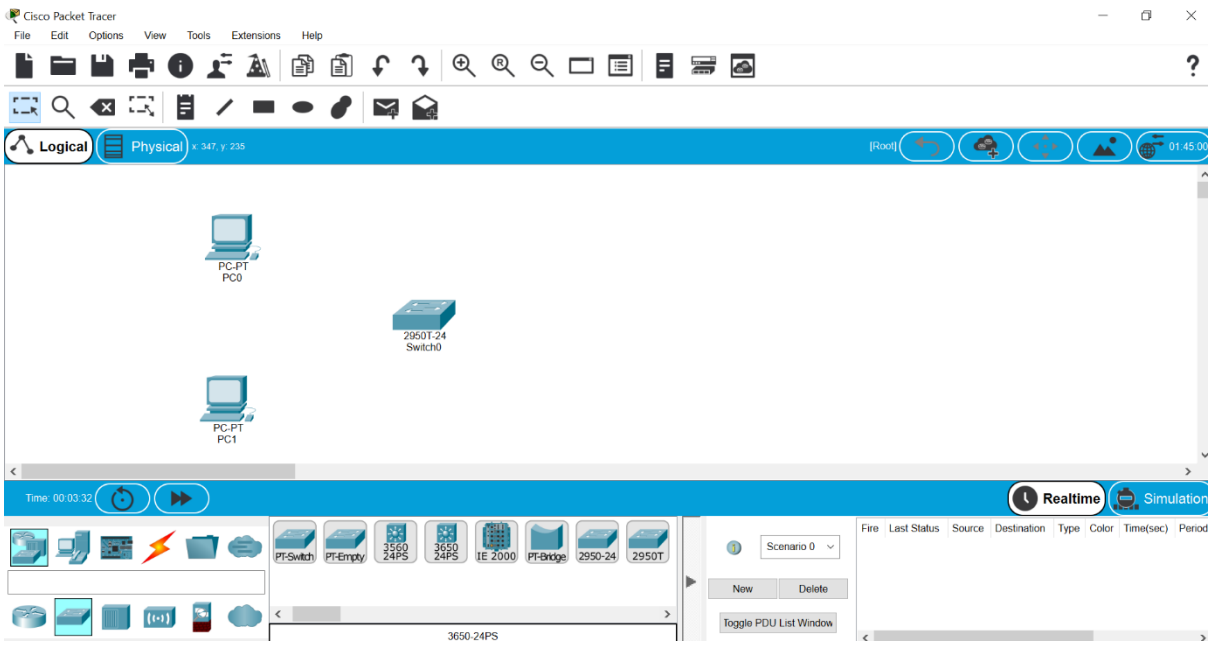
Prototype a network using Packet Tracer

Background

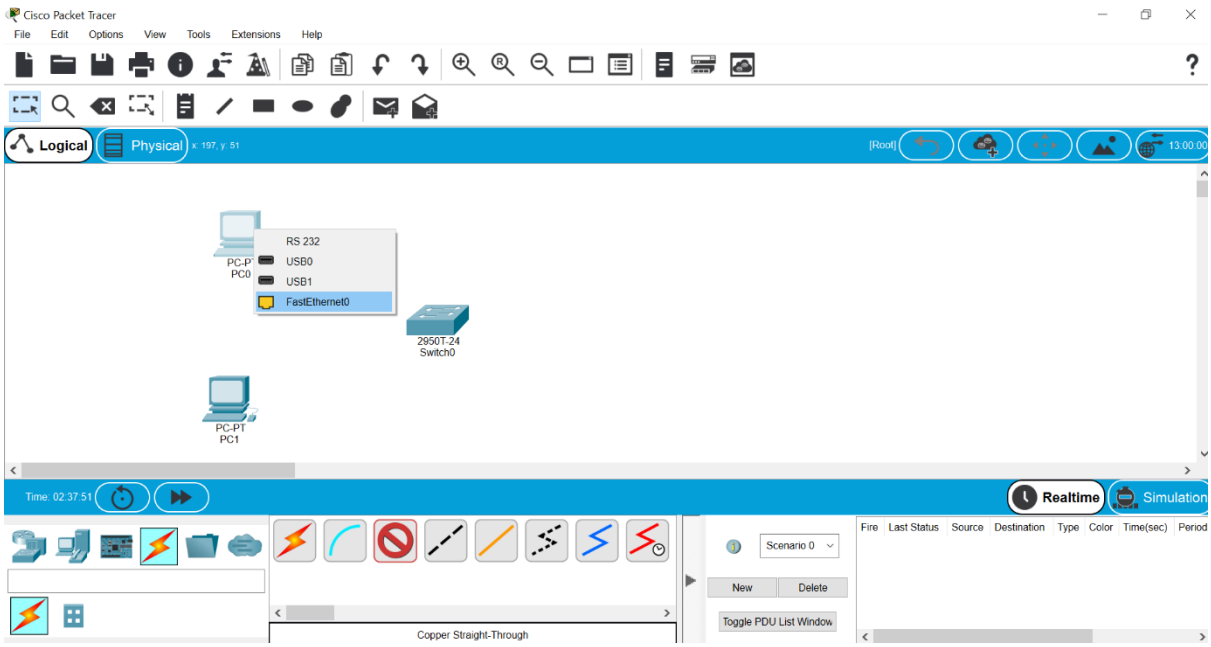
A client has requested that you set up a simple network with two PCs connected to a switch. Verify that the hardware, along with the given configurations, meet the requirements of the client.

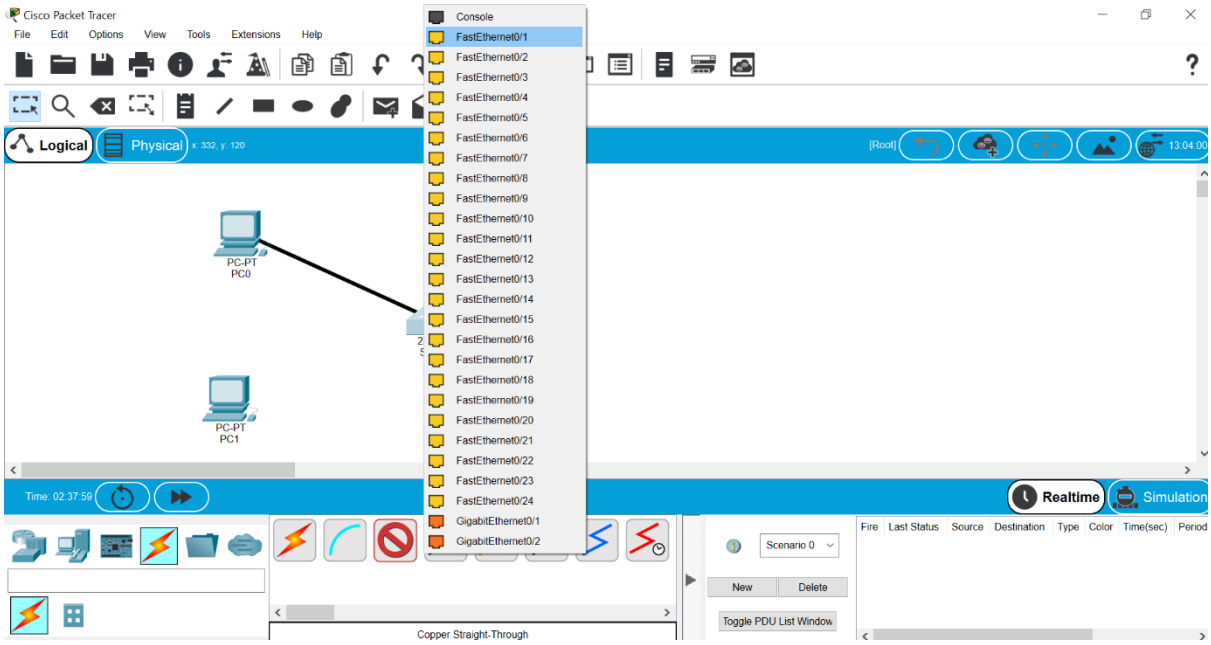
<u>Step 1: Set up the network topology</u>

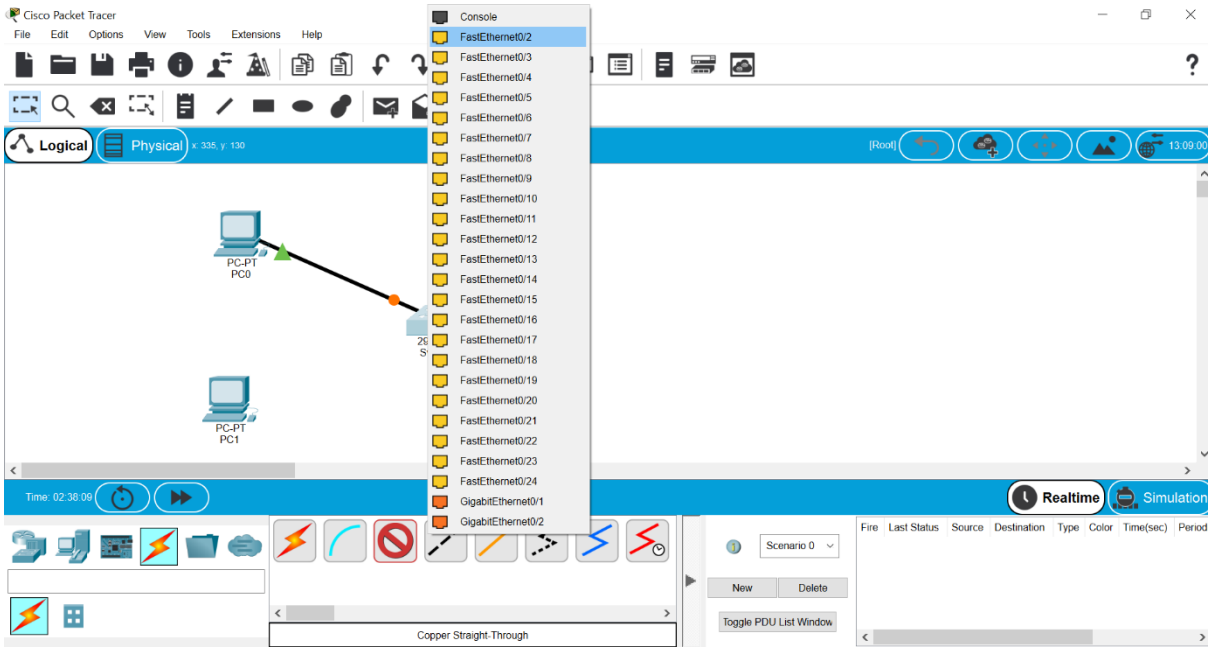
a) Add two PCs and a Cisco 2950T switch

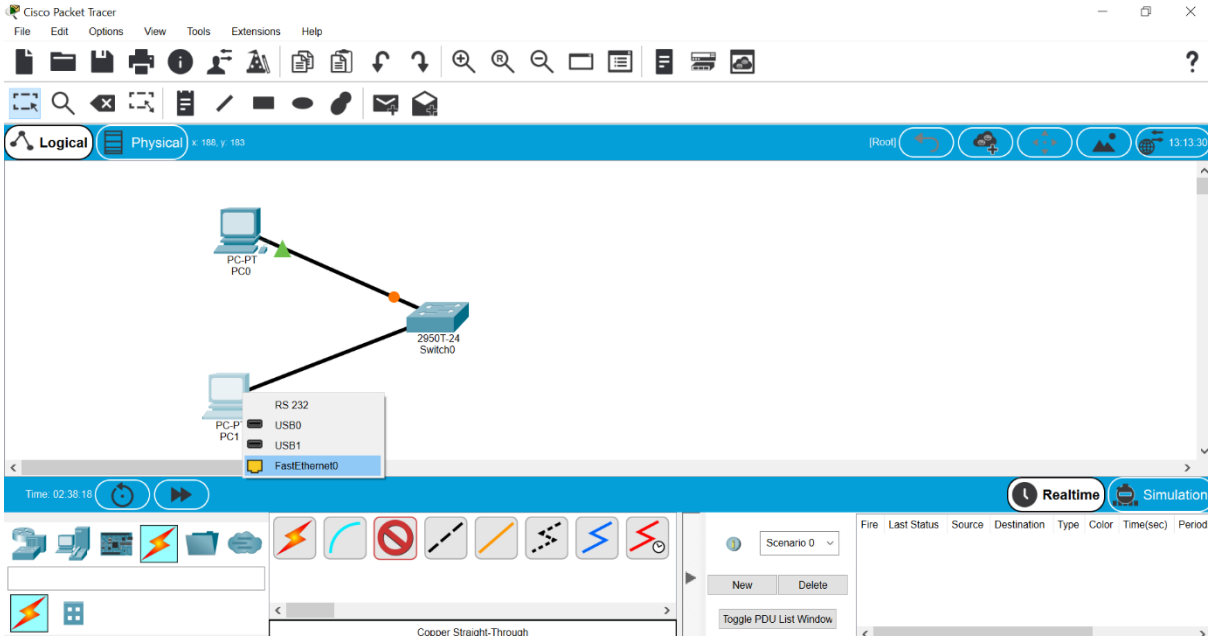


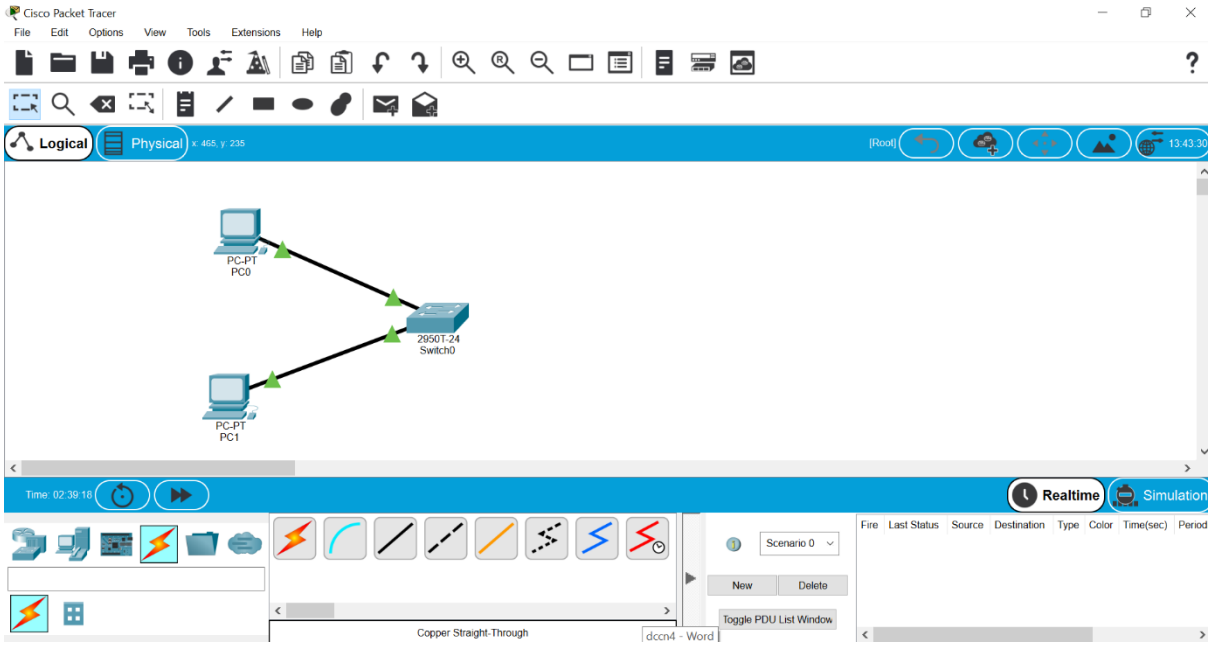
b) Using straight-through cables, connect PC0 to interface Fa0/1 on Switch0 and PC1 to interface Fa0/2 on Switch0.






Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
PC-PT PC0
PC-PT PC1
Console
FastEthernet0/2
FastEthernet0/3
FastEthernet0/4
FastEthernet0/5
FastEthernet0/6
FastEthernet0/7
FastEthernet0/8
FastEthernet0/9
FastEthernet0/10
FastEthernet0/11
FastEthernet0/12
FastEthernet0/13
FastEthernet0/14
FastEthernet0/15
FastEthernet0/16
FastEthernet0/17
FastEthernet0/18
FastEthernet0/19
FastEthernet0/20
FastEthernet0/21
FastEthernet0/22
FastEthernet0/23
FastEthernet0/24
GigabitEthernet0/1
GigabitEthernet0/2
Realtime
Simulation
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window

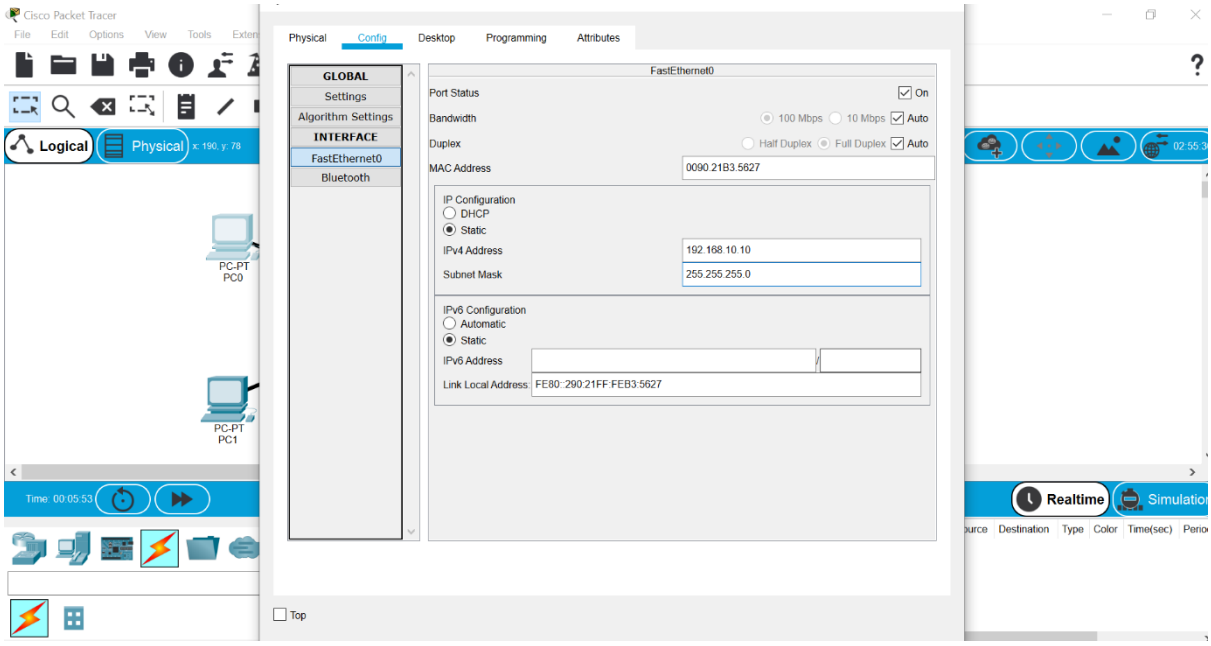

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical Physical
PC-PT PC0
2950T-24 Switch0
PC-PT PC1
RS 232
USB0
USB1
FastEthernet0
Realtime
Simulation
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window



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

a. IP address: 192.168.10.10

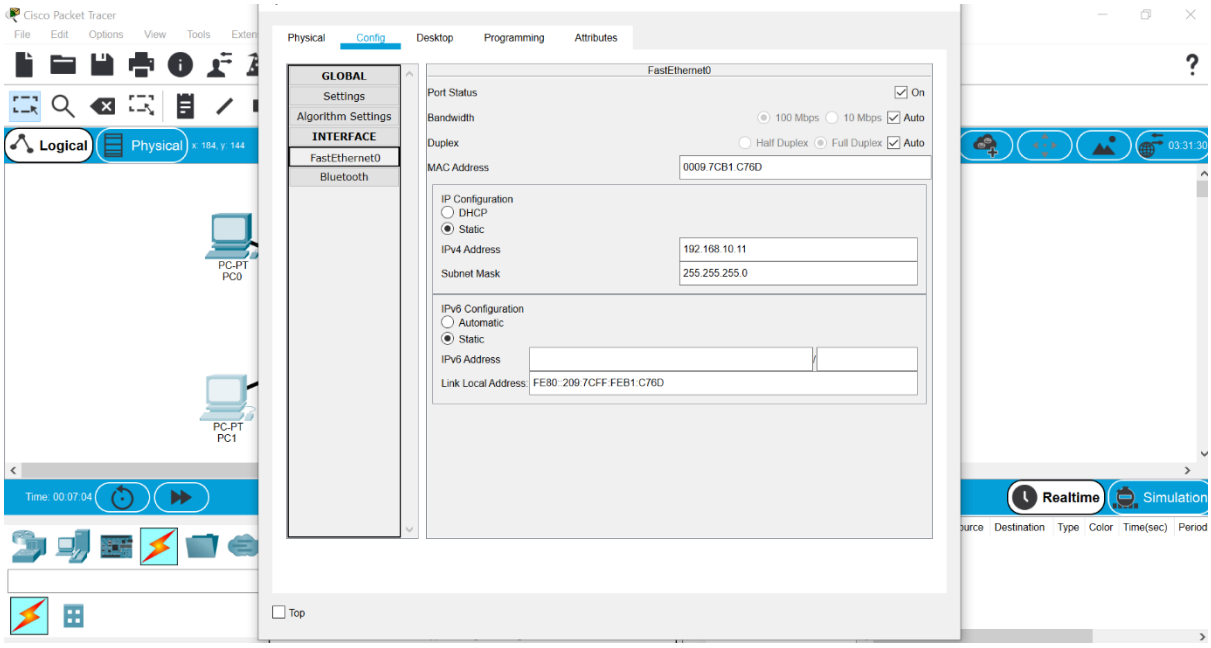
b. Subnet Mask 255.255.255.0



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

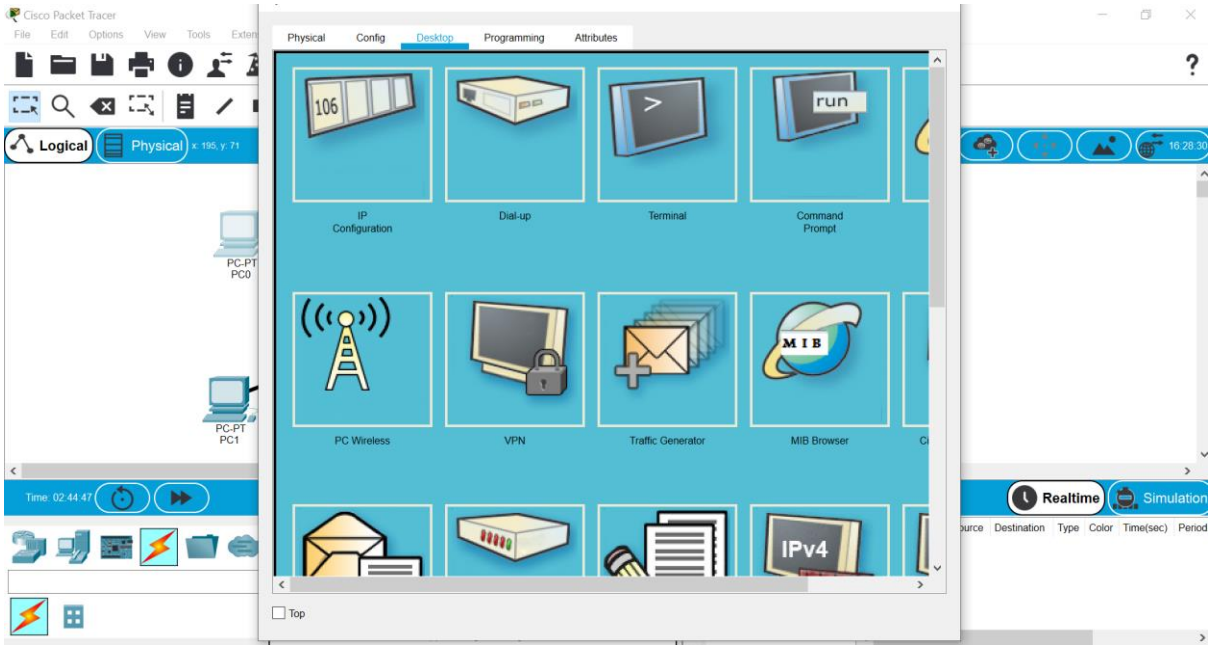


Step 2: Test connectivity from PC0 to PC1

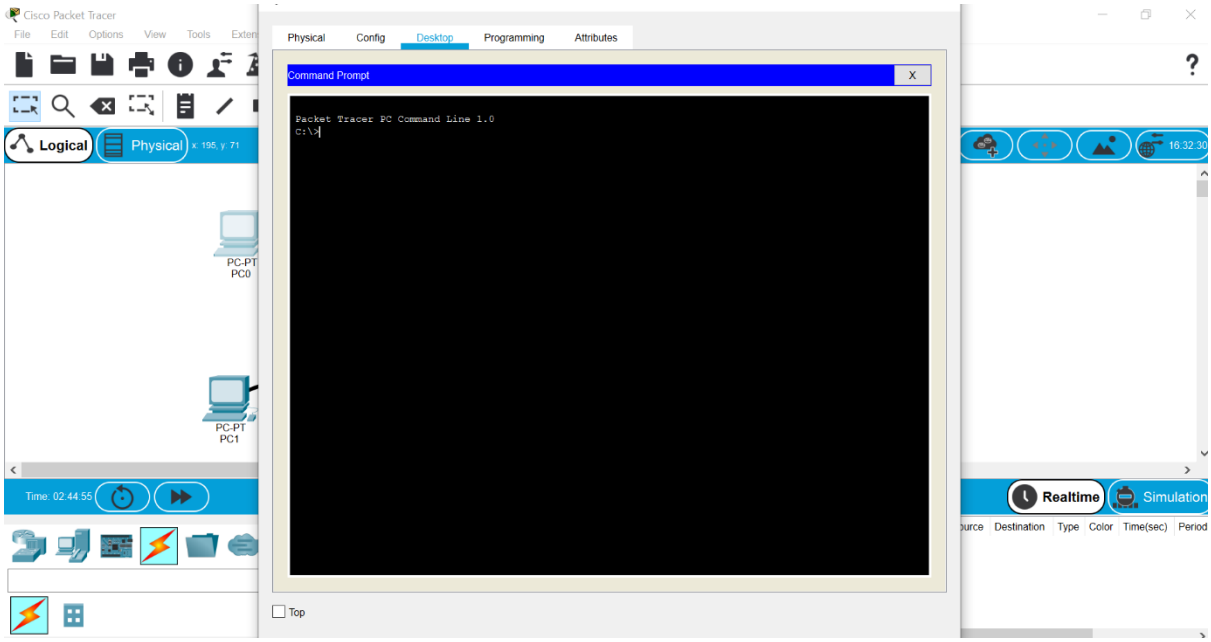
a) Use the ping command to test connectivity.

a. Click PC0.

b. Choose the Desktop tab.

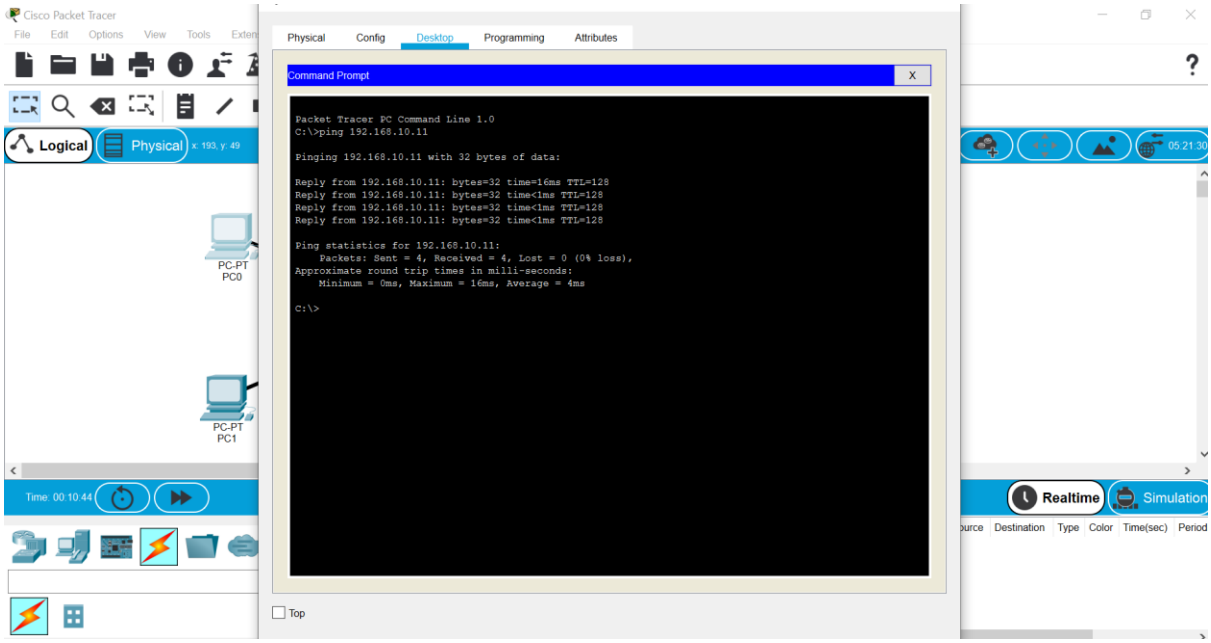


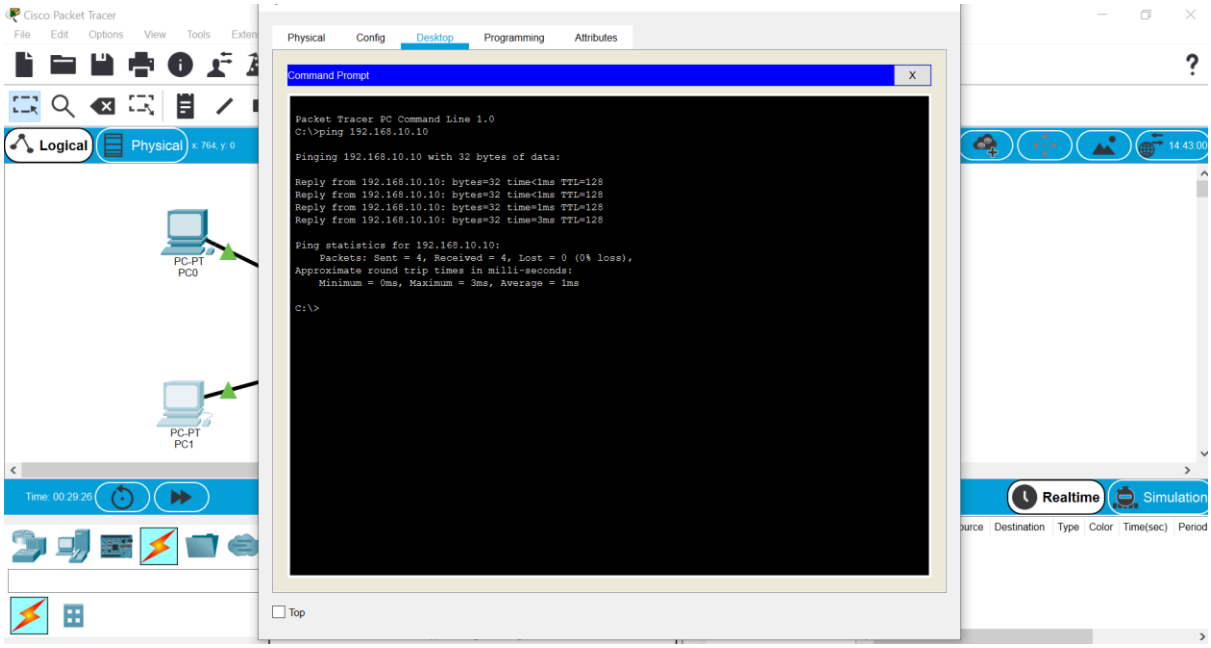
c. Choose Command Prompt.



d. Type: ping 192.168.10.11 and press enter.

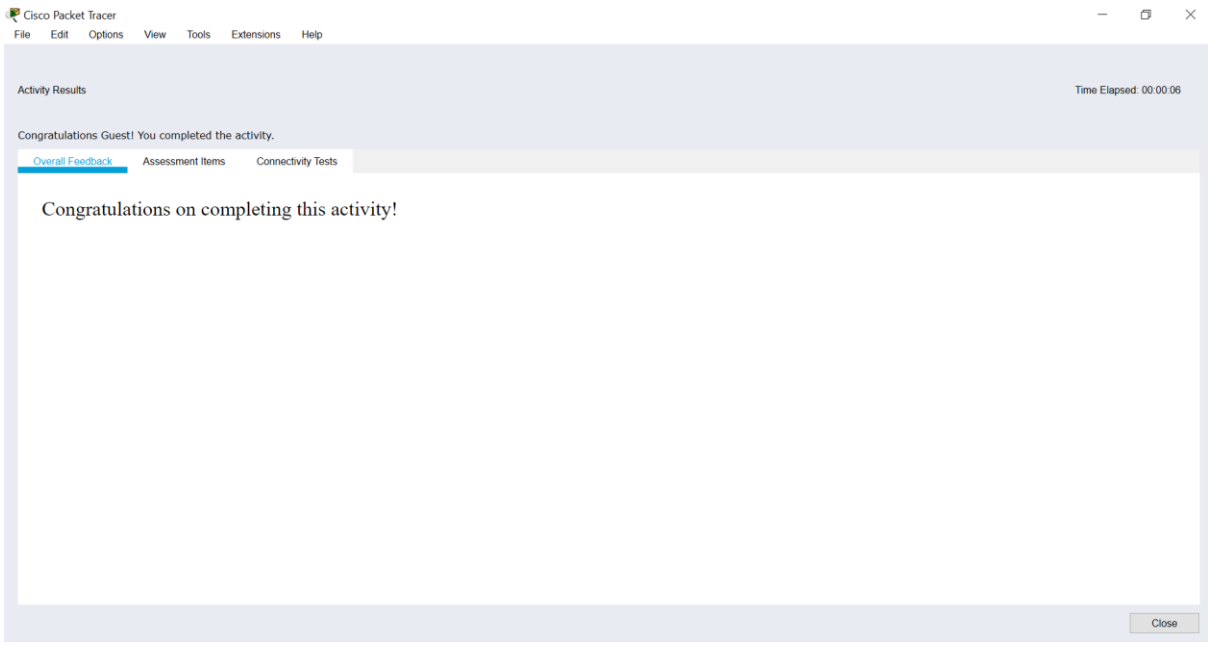
b) A successful ping indicates the network was configured correctly and the prototype validates the hardware and software configurations. A successful ping should resemble the below output:





c) Close the configuration window.

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

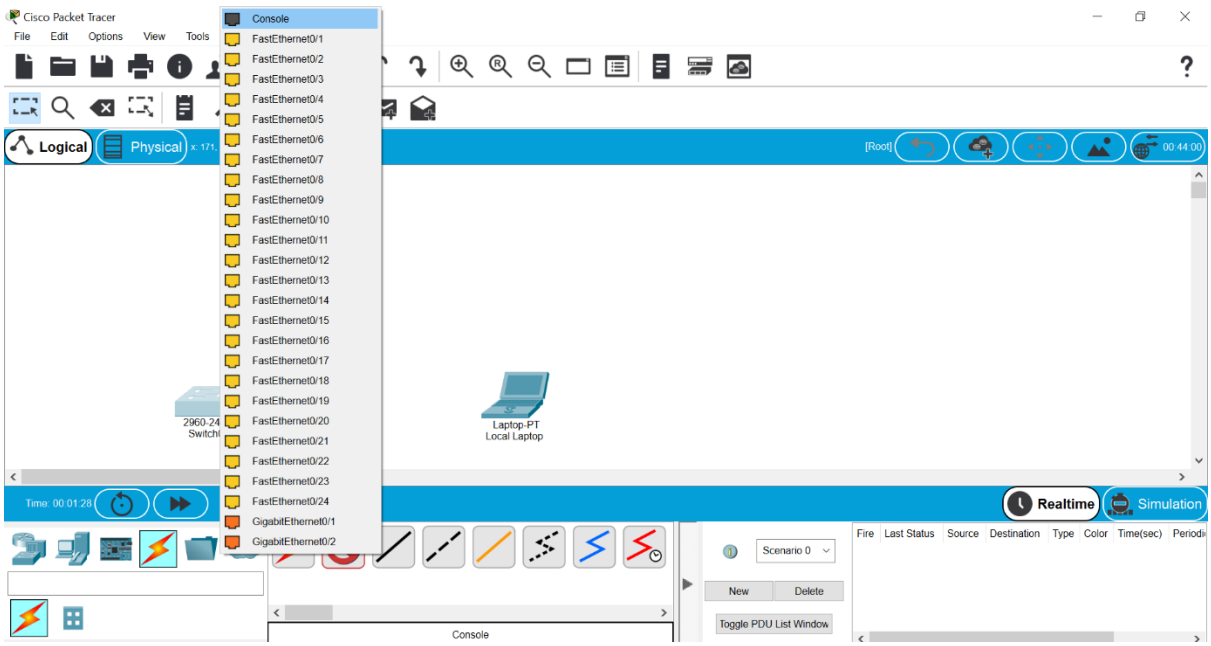


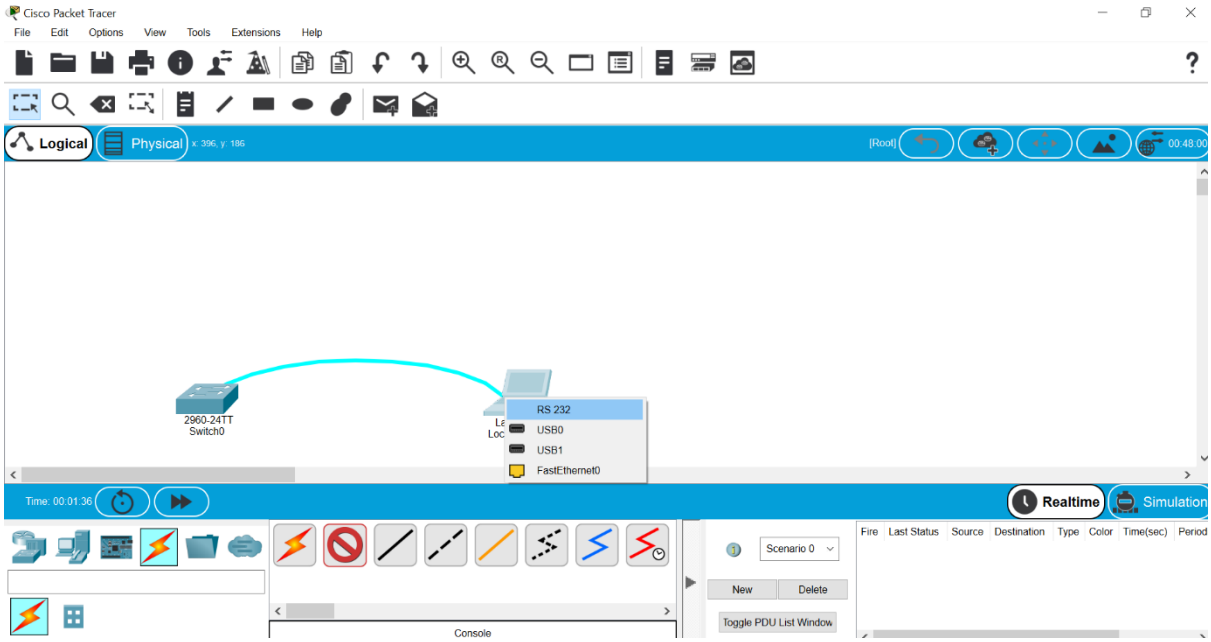
Lab 4.1: Basic configuration - hostname, motd banner, passwd etc

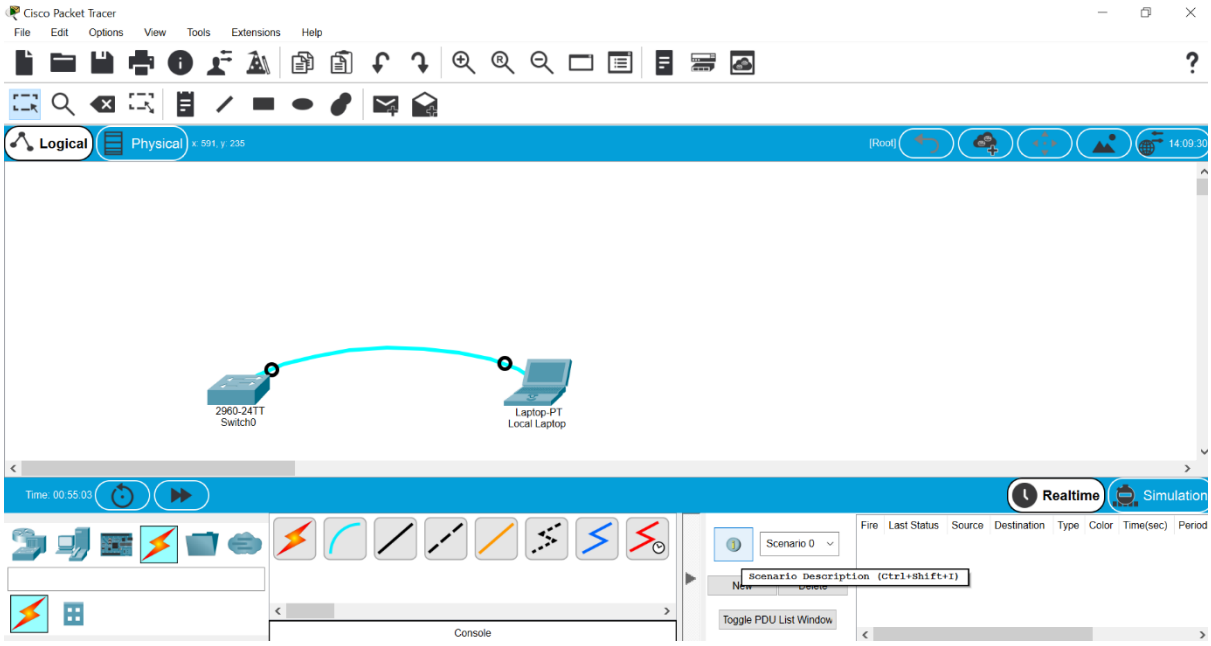
Objective:

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.

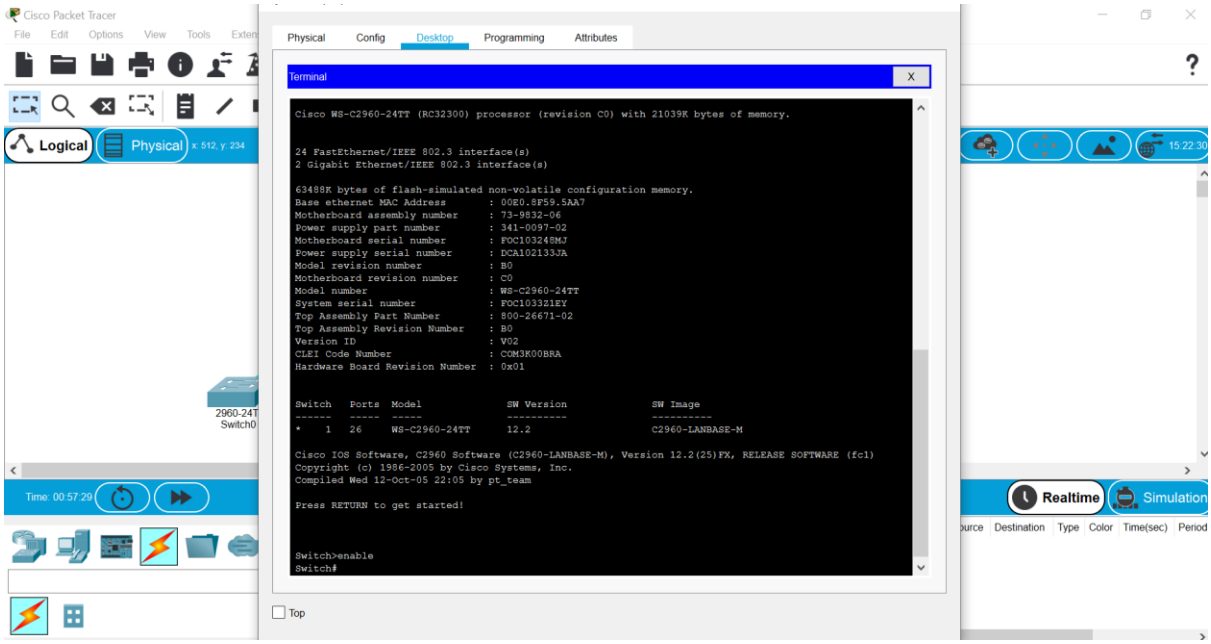
1. Use the local laptop connect to the switch console.

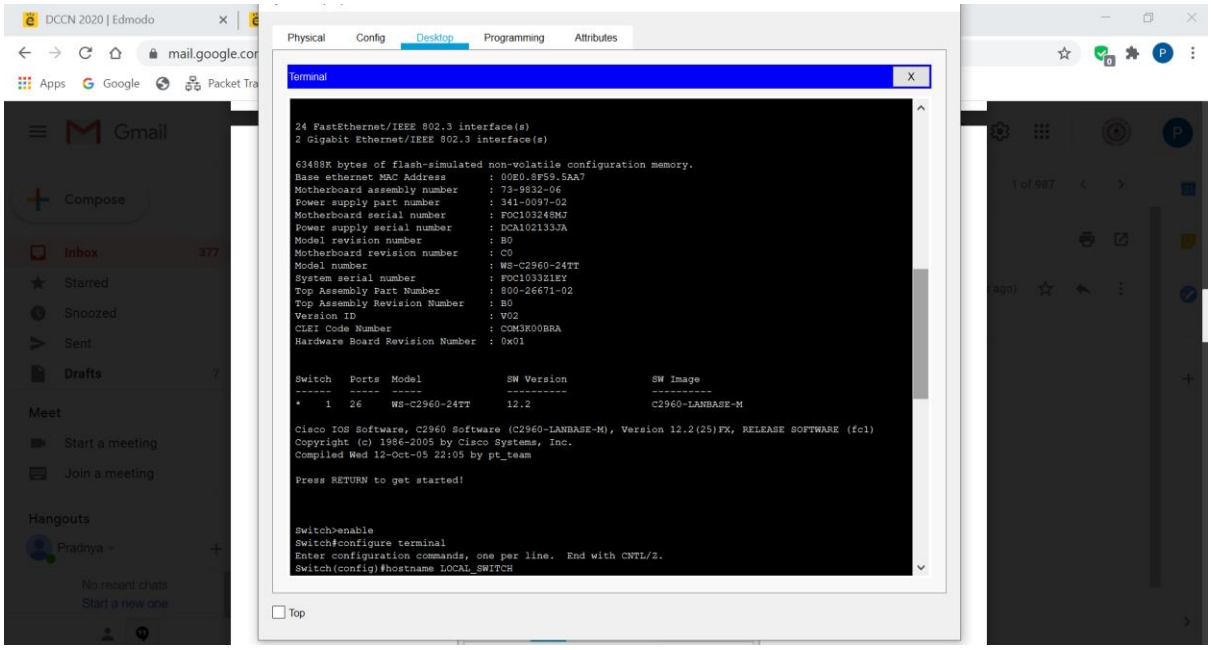


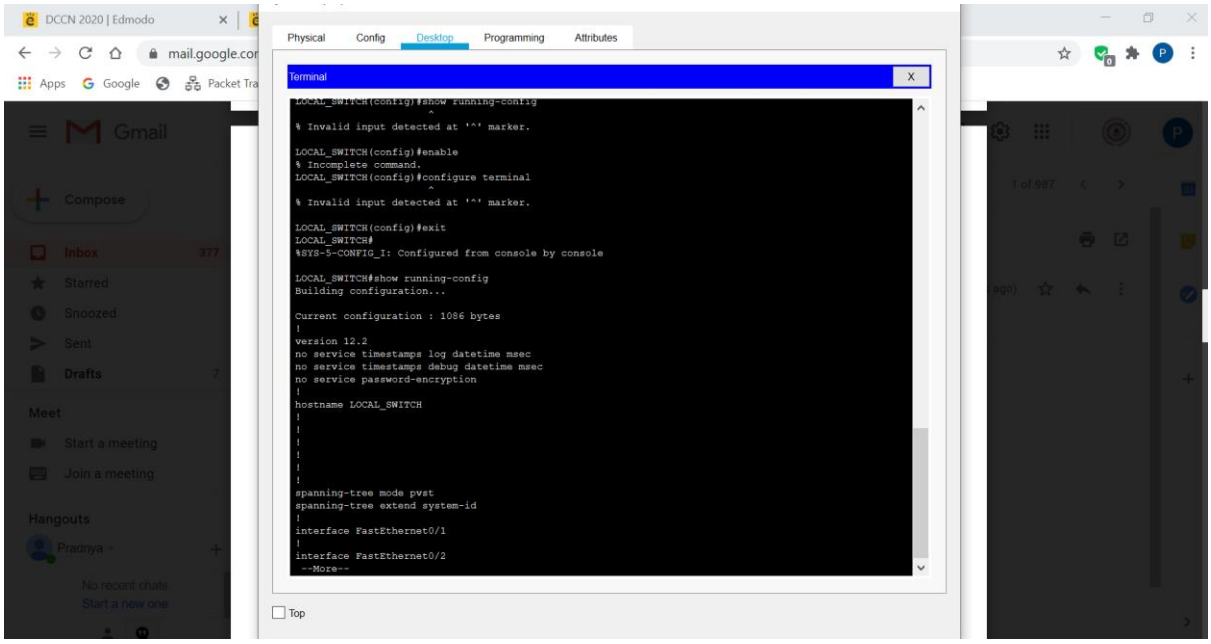




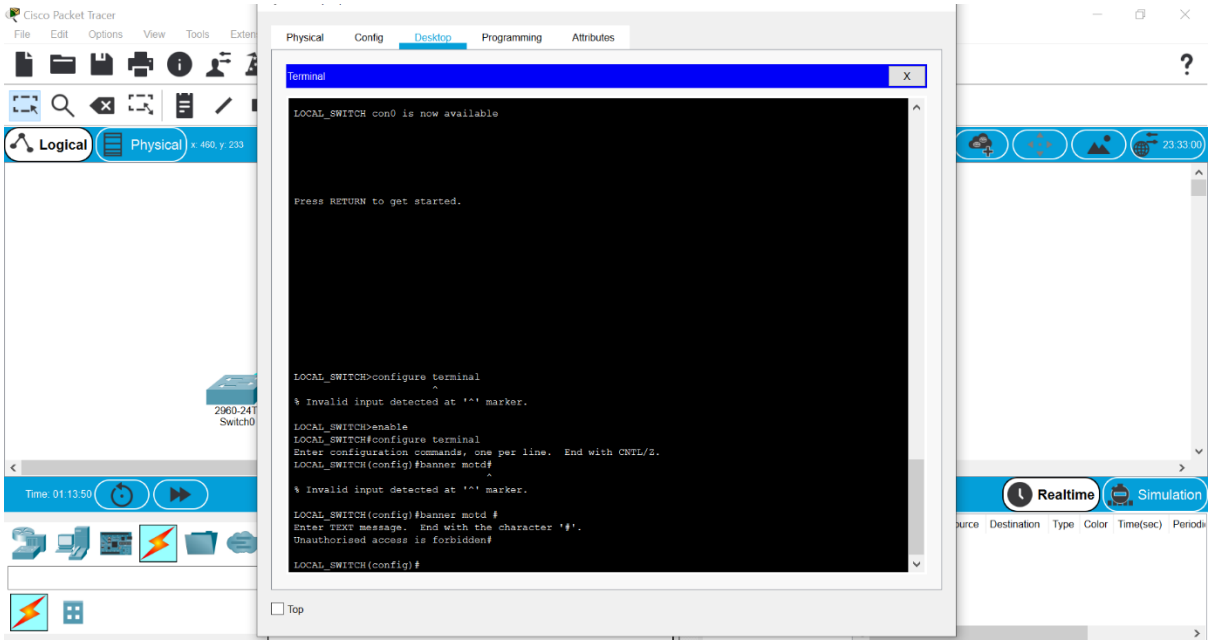
2. Configure Switch hostname as LOCAL-SWITCH

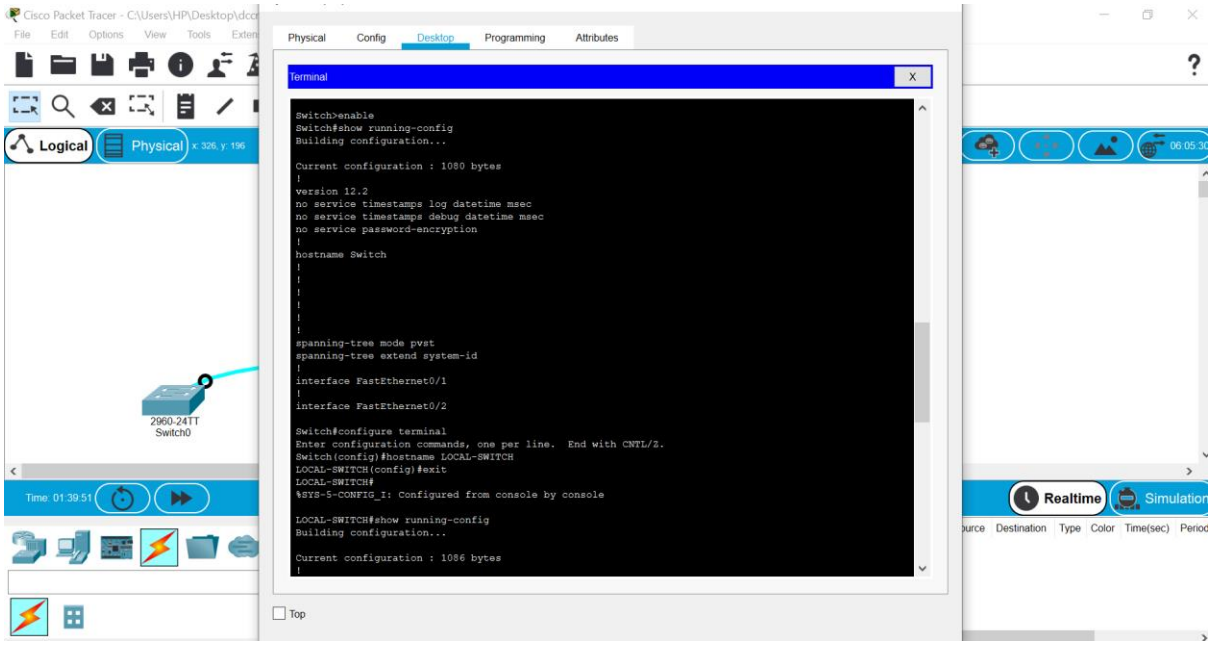


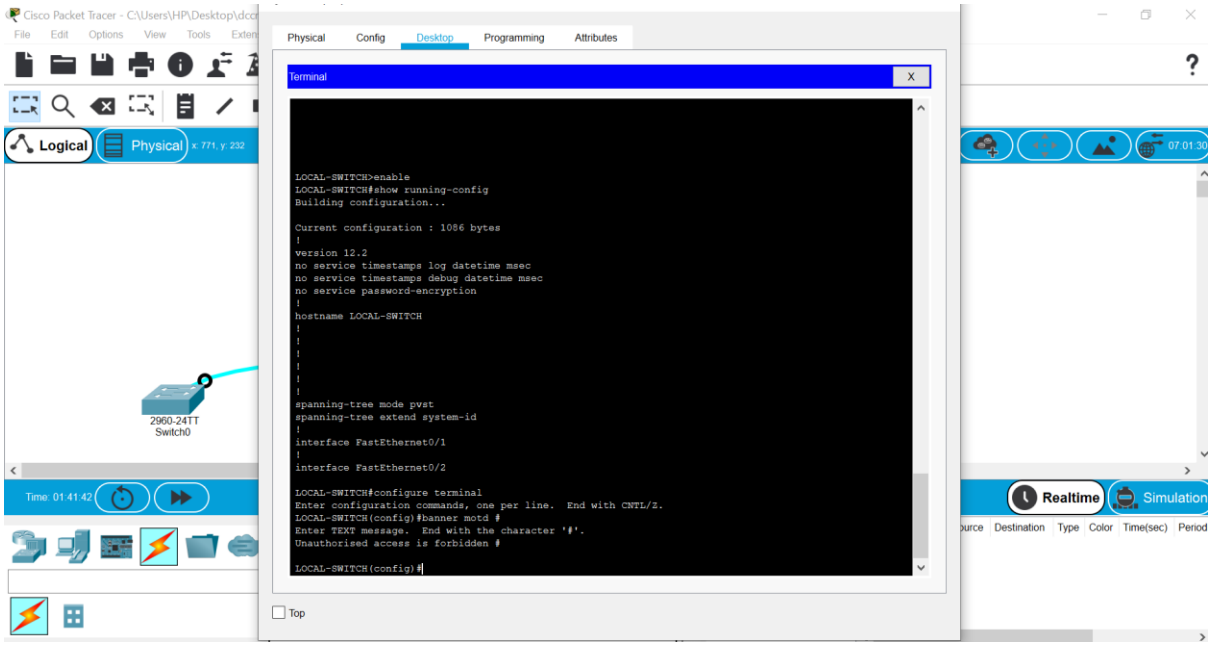


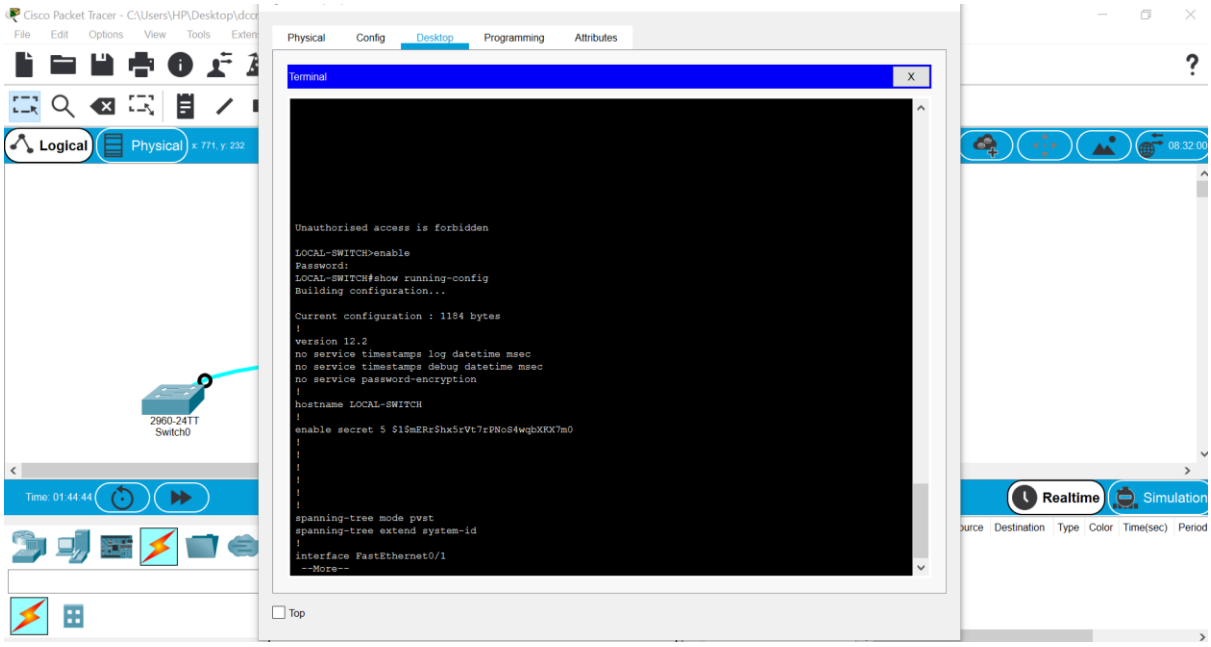


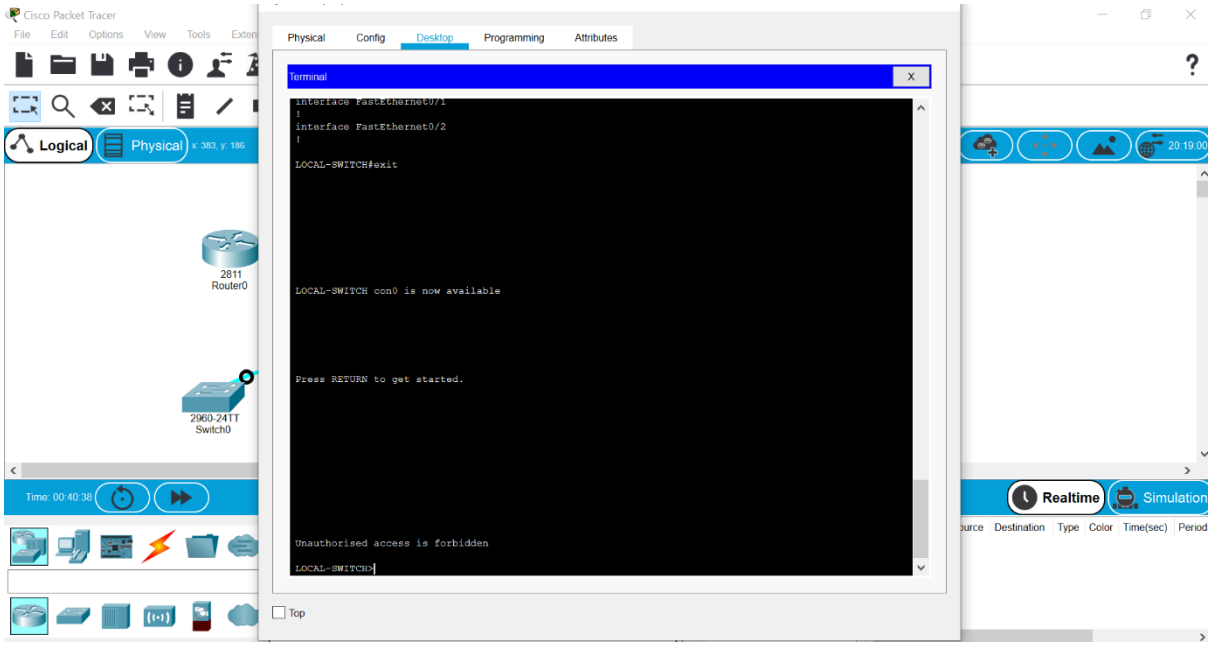
3. Configure the message of the day as "Unauthorized access is forbidden"


Cisco Packet Tracer
File Edit Options View Tools
Logical
Physical
Physical Config Desktop Programming Attributes
Terminal
LOCAL_SWITCH con0 is now available
Press RETURN to get started.
LOCAL_SWITCH>configure terminal
% Invalid input detected at '^' marker.
LOCAL_SWITCH>enable
LOCAL_SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL_SWITCH(config)#banner motd#
% Invalid input detected at '^' marker.
LOCAL_SWITCH(config)#banner motd #
Enter TEXT message. End with the character '#'.
Unauthorised access is forbidden#
LOCAL_SWITCH(config)#
Top
2960-24T
Switch0
Time: 01:13:50
Realtime
Simulation

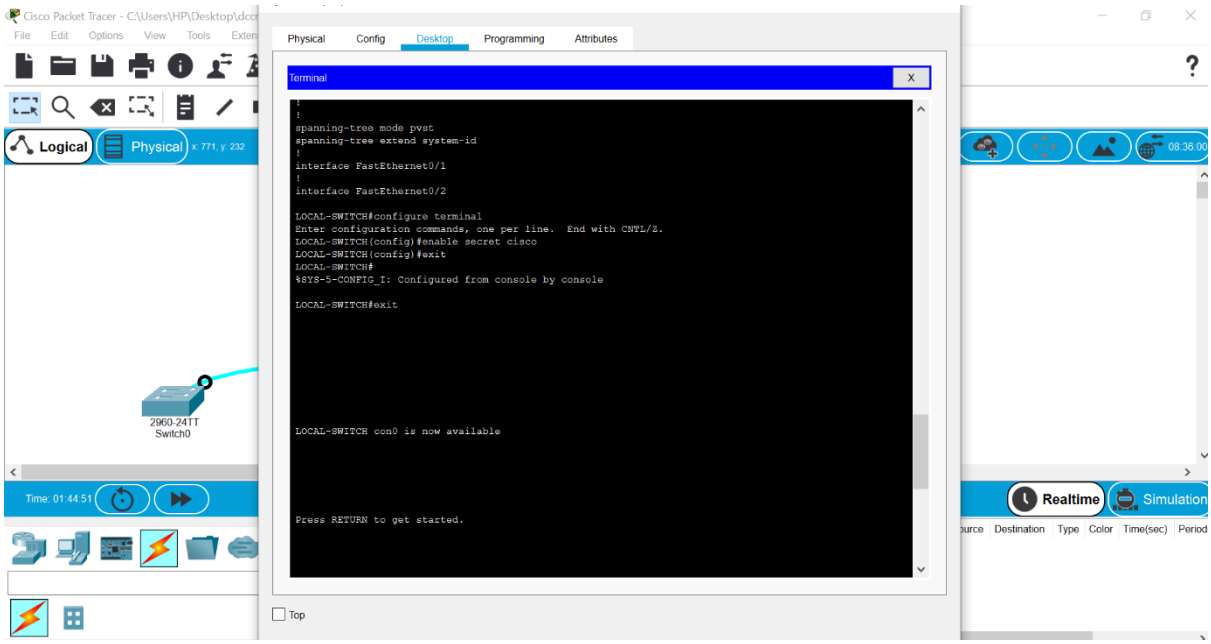

Physical Config Desktop Programming Attributes
Terminal
Switch>enable
Switch#show running-config
Building configuration...
Current configuration : 1080 bytes
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
hostname Switch
spanning-tree mode pvst
spanning-tree extend system-id
interface FastEthernet0/1
interface FastEthernet0/2
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname LOCAL-SWITCH
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console
LOCAL-SWITCH#show running-config
Building configuration...
Current configuration : 1086 bytes
Top
2960-24TT
Switch0
Time: 01:39:51
Realtime
Simulation

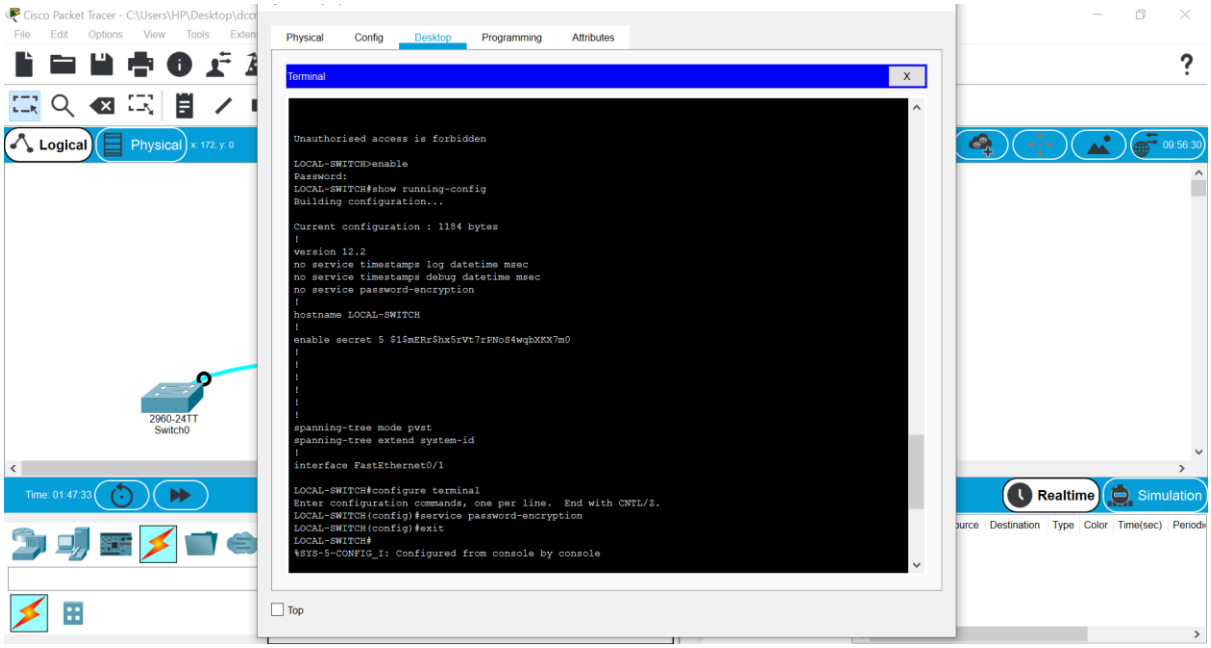

Physical
Config
Desktop
Programming
Attributes
Terminal
X
LOCAL-SWITCH>enable
LOCAL-SWITCH#show running-config
Building configuration...
Current configuration : 1086 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname LOCAL-SWITCH
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
interface FastEthernet0/2
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 '#'.
Unauthorised access is forbidden #
LOCAL-SWITCH(config)#
Top
Logical
Physical
2960-24TT
Switch0
Realtime
Simulation


Physical
Config
Desktop
Programming
Attributes
Terminal
X
Unauthorised access is forbidden
LOCAL-SWITCH>enable
Password:
LOCAL-SWITCH#show running-config
Building configuration...
Current configuration : 1184 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 1mERr$hx5rVt7rPNoS4wqbXKX7m0
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
--More--
Top
Logical
Physical
2960-24TT
Switch0
Realtime
Simulation

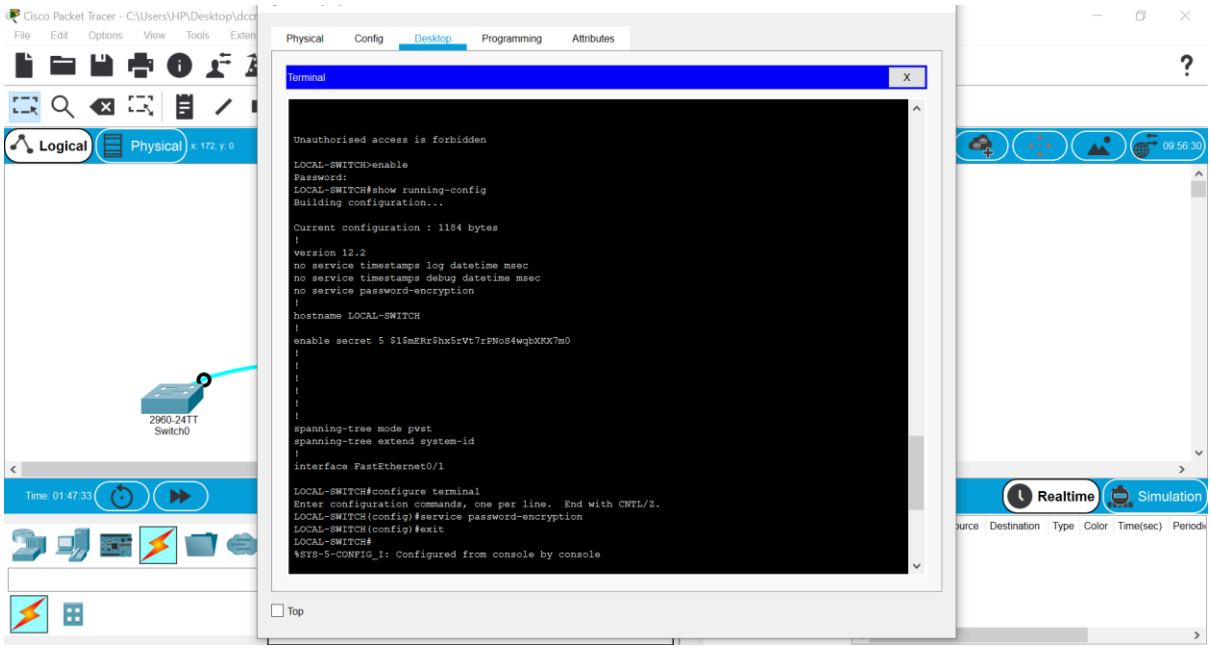


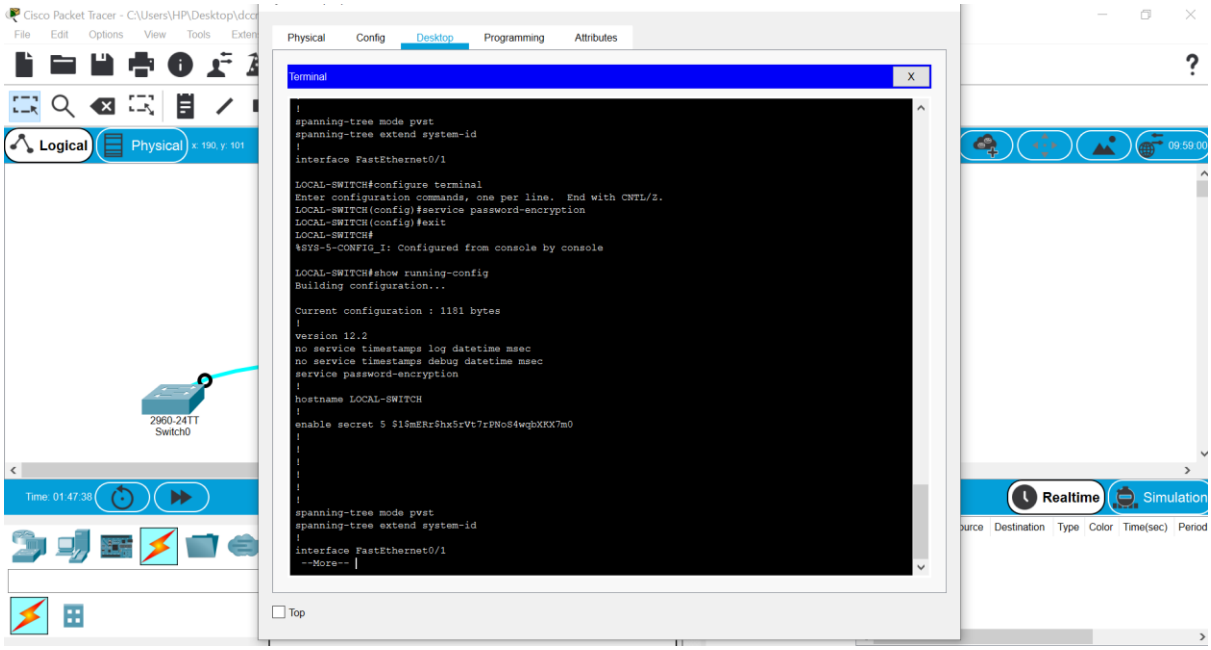
4. Configure the password for privileged mode access as "cisco". The password must be md5 encrypted





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





6. Configure CONSOLE access with the following settings :

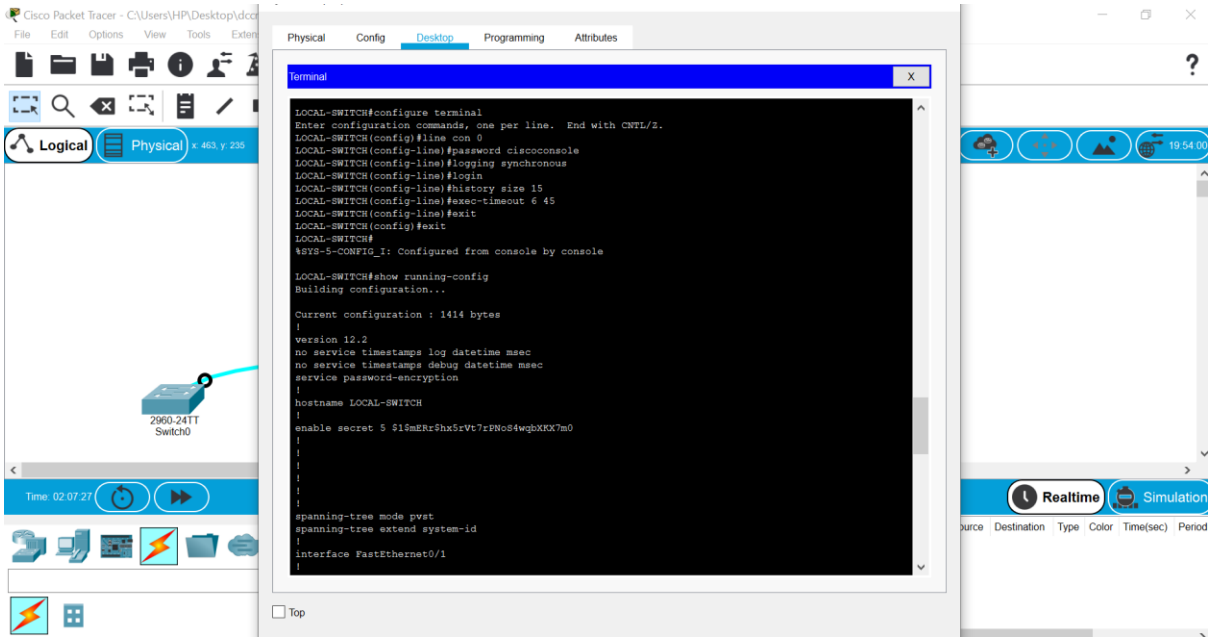
- Login enabled

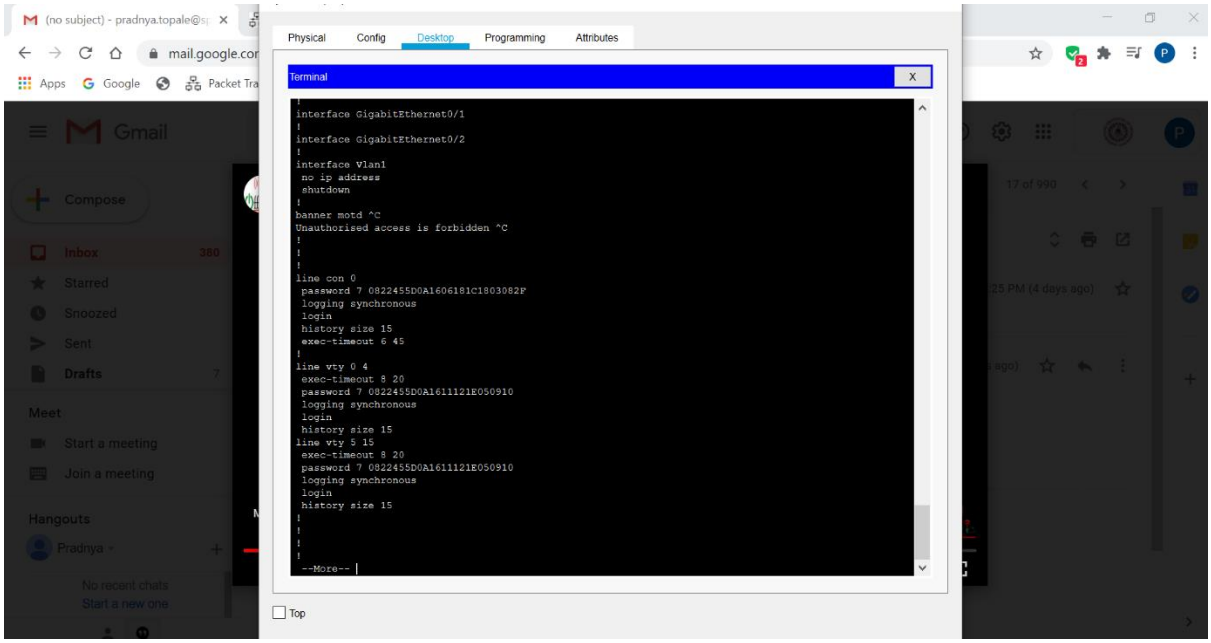
- Password : whatever you like

- History size : 15 commands

- Timeout : 6'45"

- Synchronous logging





6. Configure TELNET access with the following settings : -

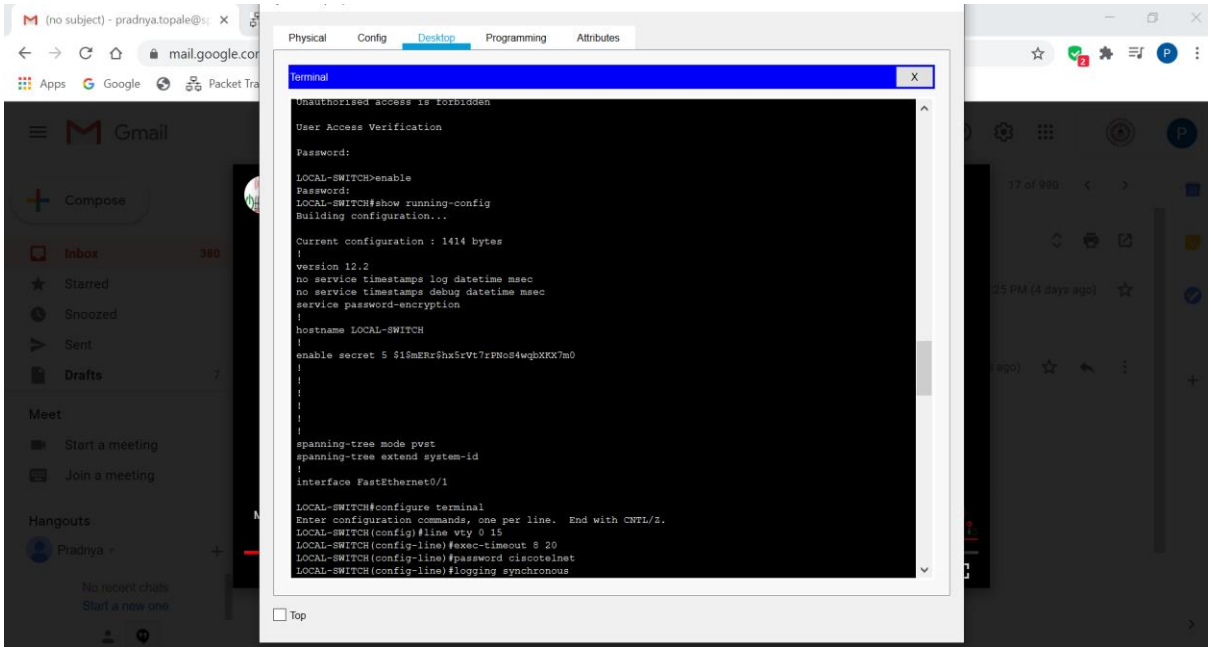
Login enabled

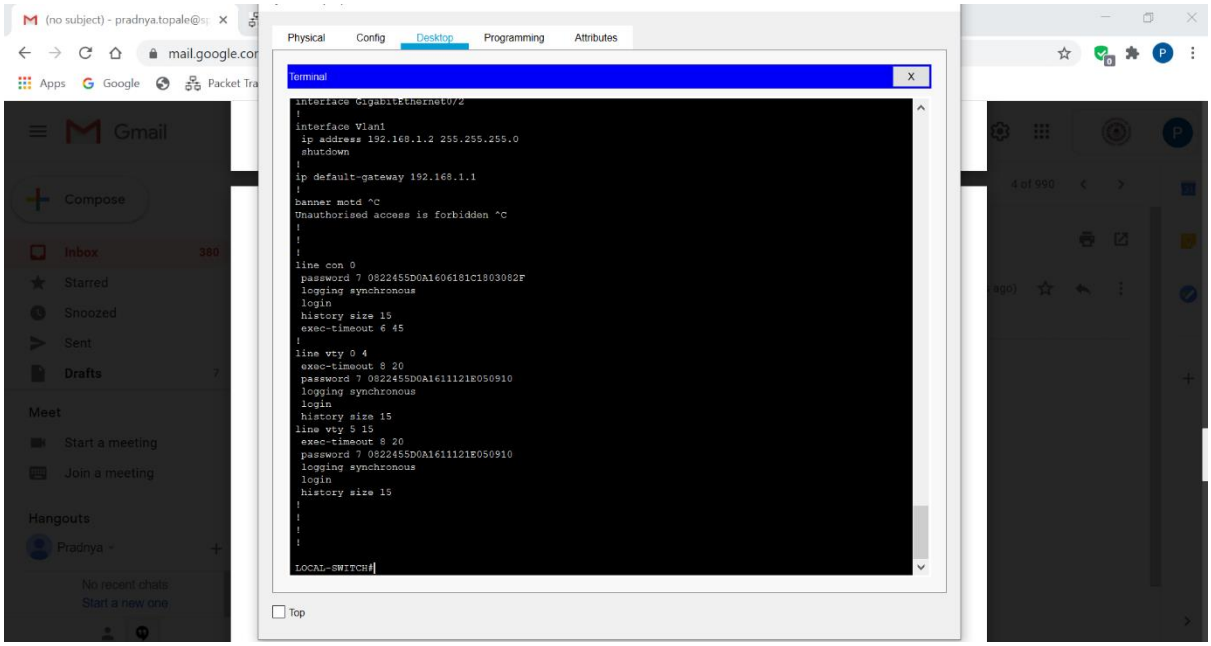
- Password : whatever you like

- History size : 15 commands

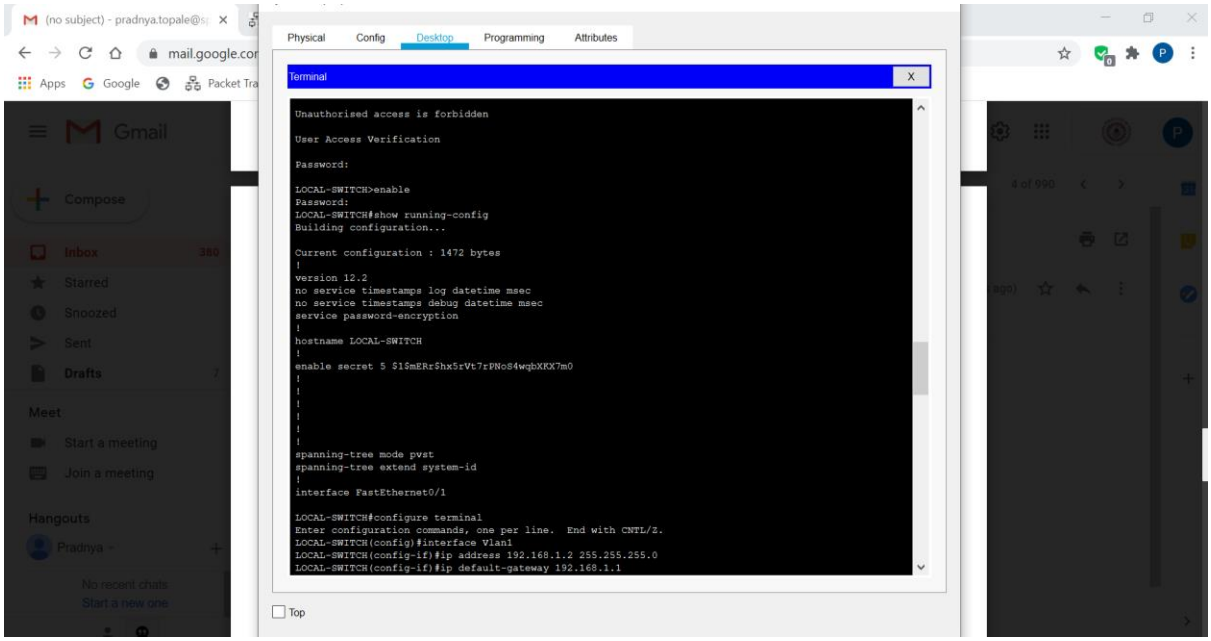
- Timeout : 8'20"

- Synchronous logging

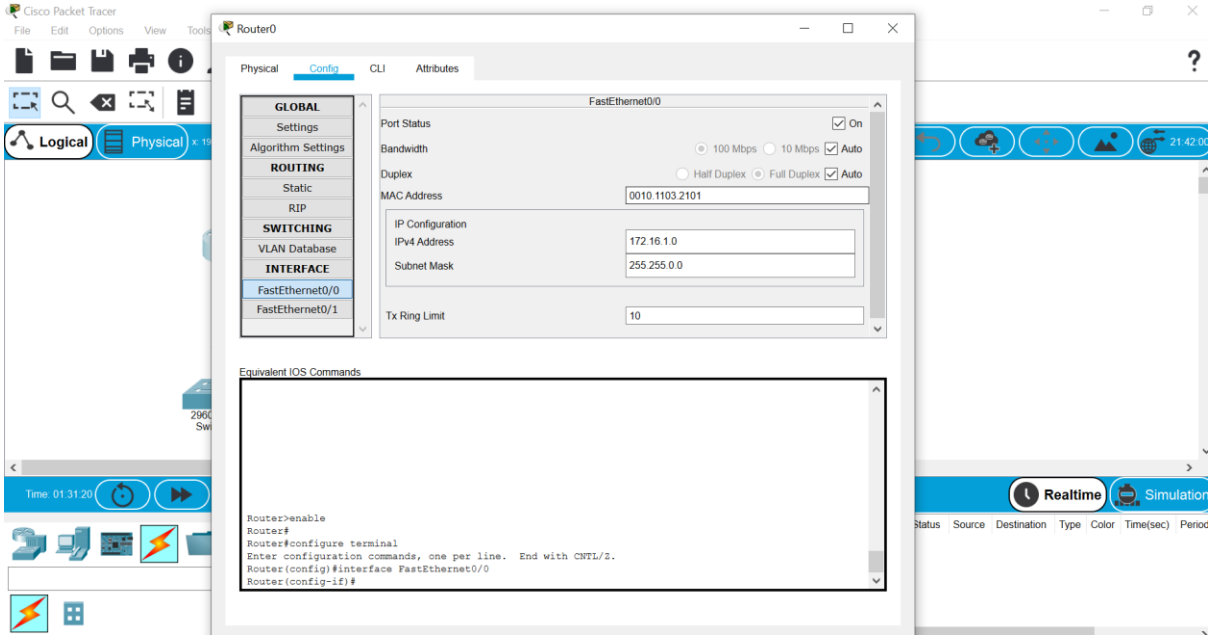


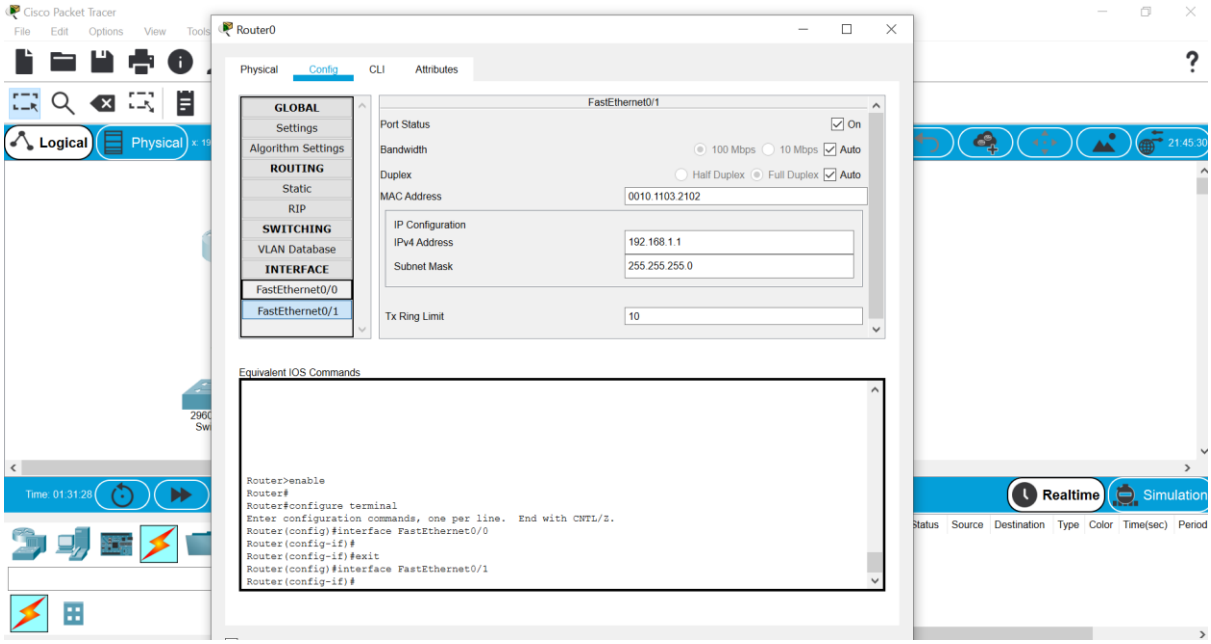


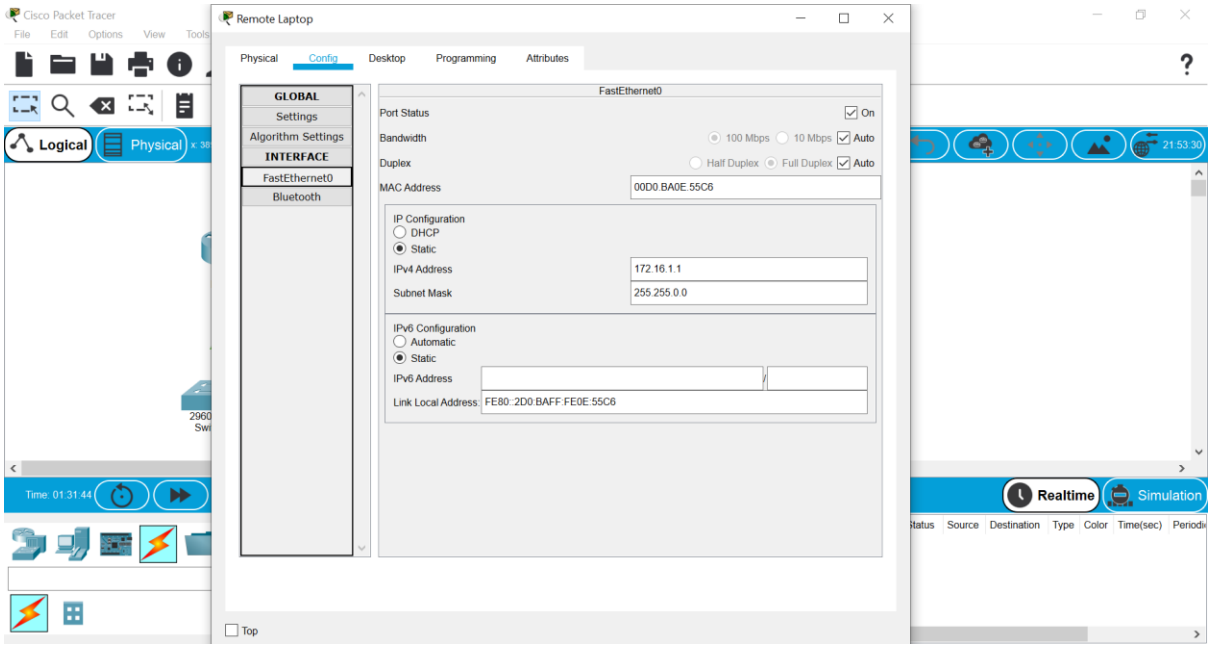
7.Configure the IP address of the switch as 192.168.1.2/24 and it's default gateway IP (192.168.1.1).

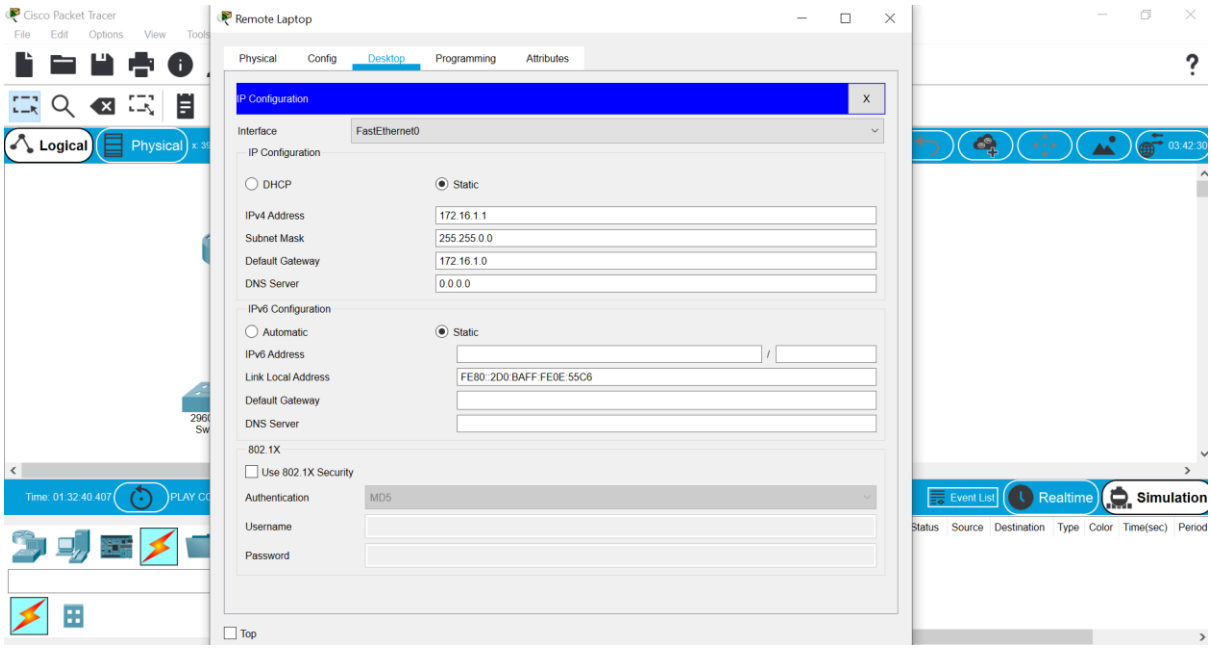


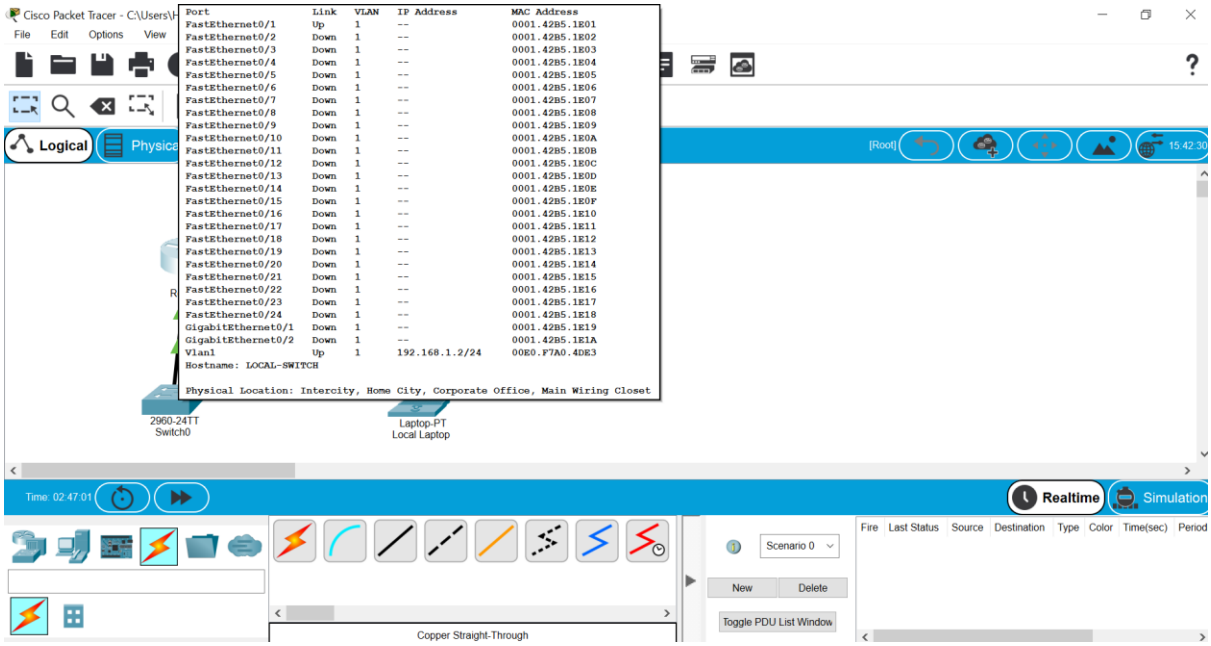
8. Test telnet connectivity from the Remote Laptop using the telnet client.

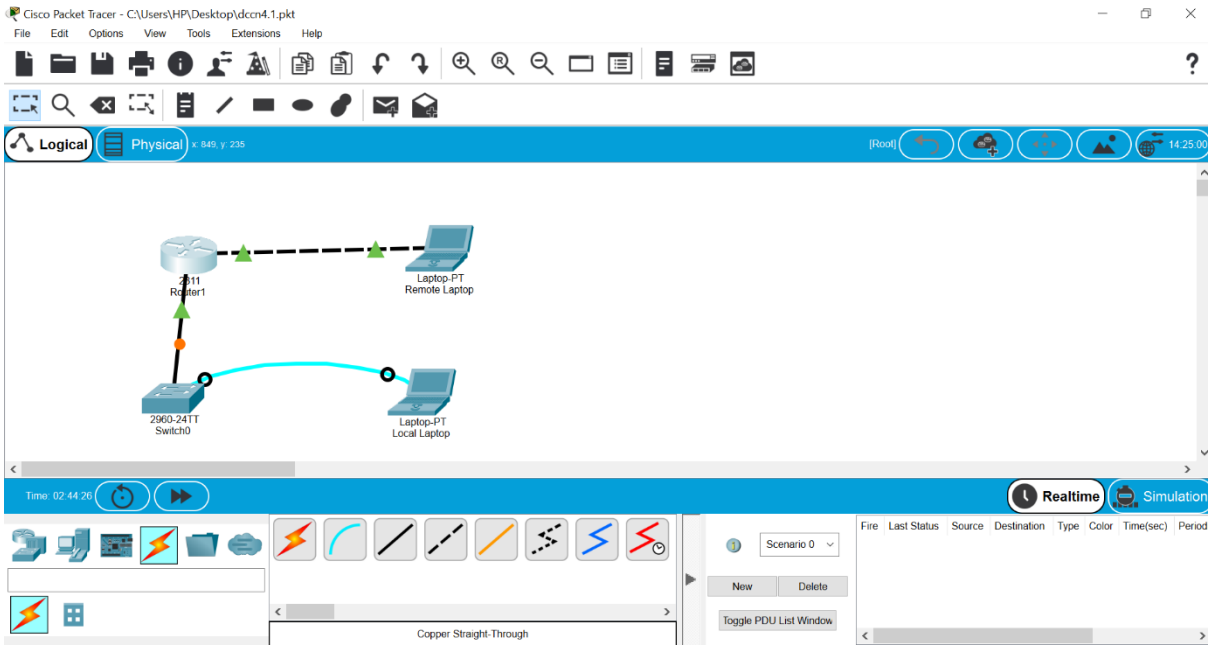

Cisco Packet Tracer
File Edit Options View Tools
Logical
Physical
Router0
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/0
Port Status
On
Bandwidth
100 Mbps 10 Mbps Auto
Duplex
Half Duplex Full Duplex Auto
MAC Address
0010.1103.2101
IP Configuration
IPv4 Address
172.16.1.0
Subnet Mask
255.255.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Realtime
Simulation
Time: 01:31:20
Status Source Destination Type Color Time(sec) Period

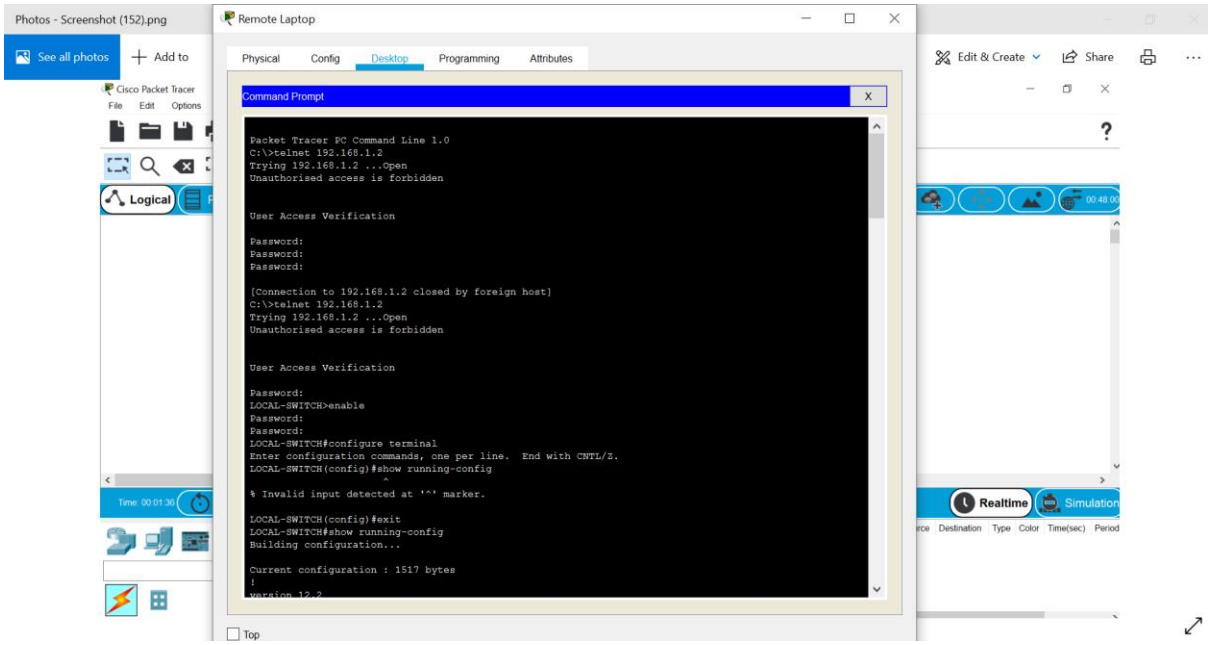

Cisco Packet Tracer
File Edit Options View Tools
Logical
Physical
Router0
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/1
Port Status
On
Bandwidth
100 Mbps 10 Mbps Auto
Duplex
Half Duplex Full Duplex Auto
MAC Address
0010.1103.2102
IP Configuration
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10
Equivalent IOS Commands
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#
Realtime
Simulation
Time: 01:31:28
Status Source Destination Type Color Time(sec) Period

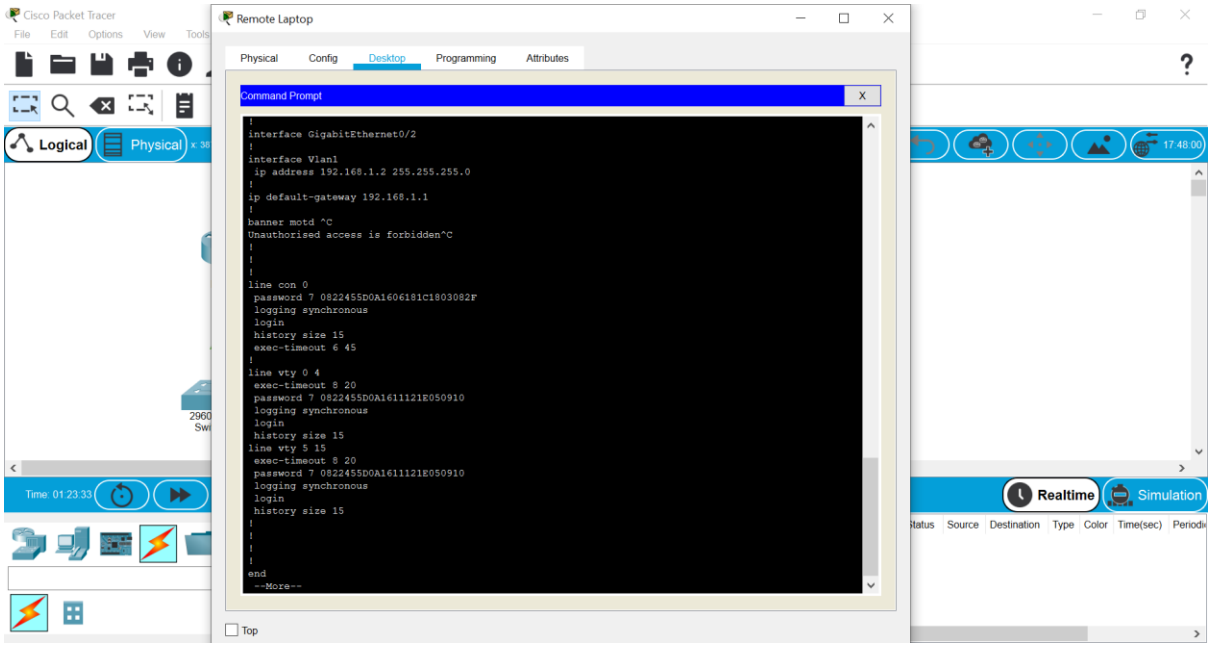

Cisco Packet Tracer
File Edit Options View Tools
Logical
Physical
Remote Laptop
Physical Config Desktop Programming Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps 10 Mbps Auto
Duplex
Half Duplex Full Duplex Auto
MAC Address
00D0.BA0E.55C6
IP Configuration
DHCP
Static
IPv4 Address
172.16.1.1
Subnet Mask
255.255.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2D0:BAFF:FE0E:55C6
Top
Time: 01:31:44
Realtime
Simulation
Status Source Destination Type Color Time(sec) Periodi

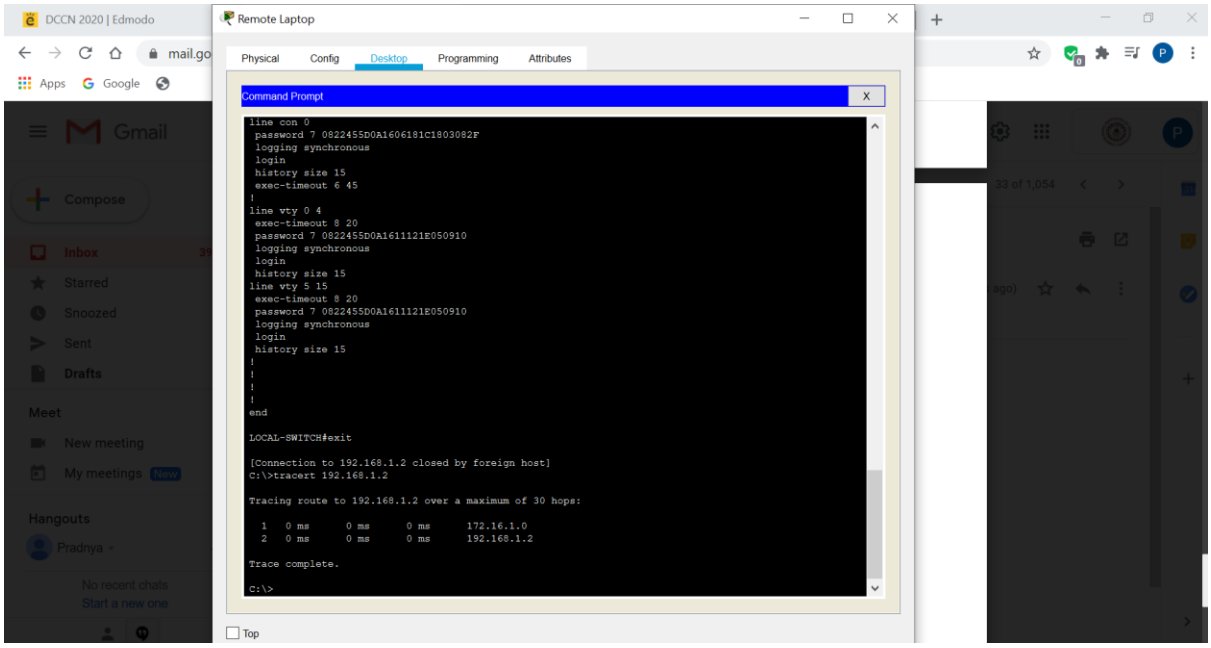

Cisco Packet Tracer
File Edit Options View Tools
Logical
Physical
Remote Laptop
Physical Config Desktop Programming Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
172.16.1.1
Subnet Mask
255.255.0.0
Default Gateway
172.16.1.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2D0:BAFF:FE0E:55C6
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top
Time: 01:32:40.407
Event List
Realtime
Simulation
Status Source Destination Type Color Time(sec) Period


Cisco Packet Tracer - C:\Users\H
File Edit Options View
Logical Physica
[Root]
15:42:30
Port Link VLAN IP Address MAC Address
FastEthernet0/1 Up 1 -- 0001.42B5.1E01
FastEthernet0/2 Down 1 -- 0001.42B5.1E02
FastEthernet0/3 Down 1 -- 0001.42B5.1E03
FastEthernet0/4 Down 1 -- 0001.42B5.1E04
FastEthernet0/5 Down 1 -- 0001.42B5.1E05
FastEthernet0/6 Down 1 -- 0001.42B5.1E06
FastEthernet0/7 Down 1 -- 0001.42B5.1E07
FastEthernet0/8 Down 1 -- 0001.42B5.1E08
FastEthernet0/9 Down 1 -- 0001.42B5.1E09
FastEthernet0/10 Down 1 -- 0001.42B5.1E0A
FastEthernet0/11 Down 1 -- 0001.42B5.1E0B
FastEthernet0/12 Down 1 -- 0001.42B5.1E0C
FastEthernet0/13 Down 1 -- 0001.42B5.1E0D
FastEthernet0/14 Down 1 -- 0001.42B5.1E0E
FastEthernet0/15 Down 1 -- 0001.42B5.1E0F
FastEthernet0/16 Down 1 -- 0001.42B5.1E10
FastEthernet0/17 Down 1 -- 0001.42B5.1E11
FastEthernet0/18 Down 1 -- 0001.42B5.1E12
FastEthernet0/19 Down 1 -- 0001.42B5.1E13
FastEthernet0/20 Down 1 -- 0001.42B5.1E14
FastEthernet0/21 Down 1 -- 0001.42B5.1E15
FastEthernet0/22 Down 1 -- 0001.42B5.1E16
FastEthernet0/23 Down 1 -- 0001.42B5.1E17
FastEthernet0/24 Down 1 -- 0001.42B5.1E18
GigabitEthernet0/1 Down 1 -- 0001.42B5.1E19
GigabitEthernet0/2 Down 1 -- 0001.42B5.1E1A
Vlan1 Up 1 192.168.1.2/24 00E0.F7A0.4DE3
Hostname: LOCAL-SWITCH
Physical Location: Intercity, Home City, Corporate Office, Main Wiring Closet
2960-24TT
Switch0
Laptop-PT
Local Laptop
Time: 02:47:01
Realtime
Simulation
Fire Last Status Source Destination Type Color Time(sec) Period
Scenario 0
New
Delete
Toggle PDU List Window
Copper Straight-Through


Cisco Packet Tracer - C:\Users\HP\Desktop\dccn4.1.pkt
File Edit Options View Tools Extensions Help
Logical Physical x: 849, y: 235
[Root]
14:25:00
2911
Router1
Laptop-PT
Remote Laptop
2960-24TT
Switch0
Laptop-PT
Local Laptop
Time: 02:44:26
Realtime
Simulation
Fire Last Status Source Destination Type Color Time(sec) Period
Scenario 0
New
Delete
Toggle PDU List Window
Copper Straight-Through


Photos - Screenshot (152).png
Remote Laptop
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>telnet 192.168.1.2
Trying 192.168.1.2 ...Open
Unauthorised access is forbidden
User Access Verification
Password:
Password:
Password:
[Connection to 192.168.1.2 closed by foreign host]
C:\>telnet 192.168.1.2
Trying 192.168.1.2 ...Open
Unauthorised access is forbidden
User Access Verification
Password:
LOCAL-SWITCH>enable
Password:
Password:
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
LOCAL-SWITCH(config)#show running-config
% Invalid input detected at '^' marker.
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#show running-config
Building configuration...
Current configuration : 1517 bytes
version 12.2
Top
Logical
Realtime
Simulation


Cisco Packet Tracer
Remote Laptop
Physical
Config
Desktop
Programming
Attributes
Command Prompt
interface GigabitEthernet0/2
interface Vlan1
ip address 192.168.1.2 255.255.255.0
ip default-gateway 192.168.1.1
banner motd ^C
Unauthorised 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
line vty 5 15
exec-timeout 8 20
password 7 0822455D0A1611121E050910
logging synchronous
login
history size 15
end
--More--
Top
Logical
Physical
Realtime
Simulation



CONCLUSION: 1. From the above experiment, I learnt the basics of switch and configurations like motd, encrypted passwords, etc.

2.I also understood how to prototype a network.