

CEL 51, DCCN, Monsoon 2020

Lab 4: Prototyping a Network

Objective:

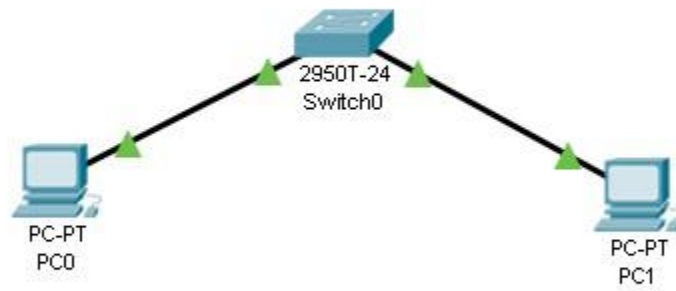
Prototype a network using Packet Tracer

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:

The screenshot shows the configuration window for PC0, specifically the 'Config' tab. The left sidebar has a tree view with 'GLOBAL' expanded, showing 'Settings', 'Algorithm Settings', and 'INTERFACE'. Under 'INTERFACE', 'FastEthernet0' is selected. The main area is titled 'FastEthernet0' and contains the following settings:

- Port Status:** ☒ On
- Bandwidth:** ☒ 100 Mbps ☐ 10 Mbps ☒ Auto
- Duplex:** ☐ Half Duplex ☒ Full Duplex ☒ Auto
- MAC Address:** 0005.5EEA.120C
- IP Configuration:** ☐ DHCP ☒ Static
 - IP Address:** 192.168.10.10
 - Subnet Mask:** 255.255.255.0
- IPv6 Configuration:** ☐ DHCP ☐ Auto Config ☒ Static
 - IPv6 Address:** [Empty field]
 - Link Local Address:** FE80::205:5EFF:FEAA:120C

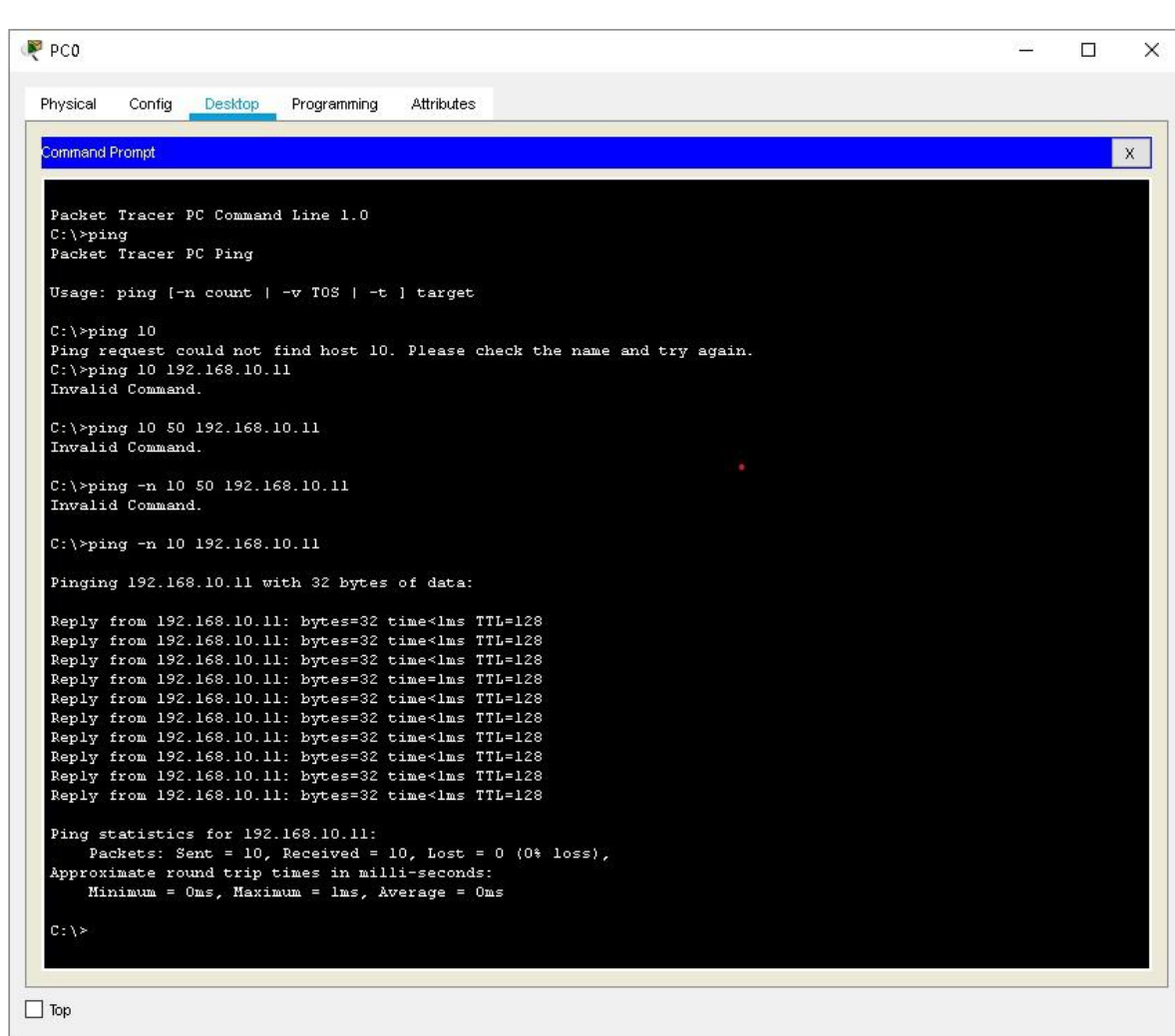
d) Configure PC1 using the **Config** tab in the PC1 configuration window

The screenshot shows the configuration window for PC1, specifically the 'Config' tab. The left sidebar has a tree view with 'GLOBAL' expanded, showing 'Settings', 'Algorithm Settings', and 'INTERFACE'. Under 'INTERFACE', 'FastEthernet0' is selected. The main area is titled 'FastEthernet0' and contains the following settings:

- Port Status:** ☒ On
- Bandwidth:** ☒ 100 Mbps ☐ 10 Mbps ☒ Auto
- Duplex:** ☐ Half Duplex ☒ Full Duplex ☒ Auto
- MAC Address:** 00E0.8FA0.9E32
- IP Configuration:** ☐ DHCP ☒ Static
 - IP Address:** 192.168.10.11
 - Subnet Mask:** 255.255.255.0
- IPv6 Configuration:** ☐ DHCP ☐ Auto Config ☒ Static
 - IPv6 Address:** [Empty field]
 - Link Local Address:** FE80::2E0:8FFF:FEA0:9E32

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:



```
Packet Tracer PC Command Line 1.0
C:\>ping
Packet Tracer PC Ping

Usage: ping [-n count | -v TOS | -t ] target

C:\>ping 10
Ping request could not find host 10. Please check the name and try again.
C:\>ping 10 192.168.10.11
Invalid Command.

C:\>ping 10 50 192.168.10.11
Invalid Command.

C:\>ping -n 10 50 192.168.10.11
Invalid Command.

C:\>ping -n 10 192.168.10.11

Pinging 192.168.10.11 with 32 bytes of data:

Reply from 192.168.10.11: bytes=32 time<1ms TTL=128
Reply from 192.168.10.11: bytes=32 time<1ms TTL=128
Reply from 192.168.10.11: bytes=32 time<1ms TTL=128
Reply from 192.168.10.11: bytes=32 time<1ms TTL=128
Reply from 192.168.10.11: bytes=32 time<1ms TTL=128
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Reply from 192.168.10.11: bytes=32 time<1ms TTL=128
Reply from 192.168.10.11: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.11:
    Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

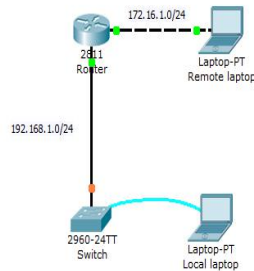
- c) Close the configuration window.
- d) Click the **Check Results** button at the bottom of the instruction window to check your work..

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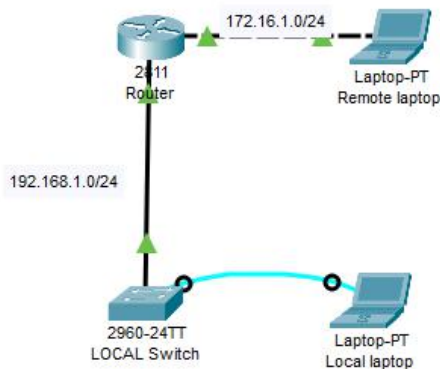
Lab 4.1: Basic configuration - hostname, motd banner, passwd etc

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.



2. Configure Switch hostname as LOCAL-SWITCH

```
Unauthorized access is forbidden
```

```
LOCAL-SWITCH>enable
```

```
Password:
```

```
LOCAL-SWITCH#configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

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

```
LOCAL-SWITCH(config)#
```

Ctrl+F6 to exit CLI focus

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

```
LOCAL-SWITCH(config)#banner motd #  
Enter TEXT message. End with the character '#'.  
Unauthorized access is forbidden #  
  
LOCAL-SWITCH(config)#exit  
LOCAL-SWITCH#  
%SYS-5-CONFIG_I: Configured from console by console  
exit
```

LOCAL-SWITCH con0 is now available

Press RETURN to get started.

Unauthorized access is forbidden

LOCAL-SWITCH>|

Ctrl+F6 to exit CLI focus

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

```
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
LOCAL-SWITCH(config)#enable secret cisco
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console

LOCAL-SWITCH#show running-config | include enable
enable secret 5 $l$mERr$hx5rVt7rPNoS4wqbXGX7m0
LOCAL-SWITCH#
```

Ctrl+F6 to exit CLI focus

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☐ Top

LOCAL-SWITCH con0 is now available

Press RETURN to get started.

Unauthorized access is forbidden

User Access Verification

Password:

LOCAL-SWITCH>enable

Password:

LOCAL-SWITCH#configure terminal

5. Configure CONSOLE access with the following settings :

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

```
LOCAL-SWITCH(config)#line con 0
LOCAL-SWITCH(config-line)#password cisc0l
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#
```

6. Configure TELNET access with the following settings :

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

```
LOCAL-SWITCH#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
LOCAL-SWITCH(config)#line vty 0 15
LOCAL-SWITCH(config-line)#password darshak
LOCAL-SWITCH(config-line)#login
LOCAL-SWITCH(config-line)#history size 15
LOCAL-SWITCH(config-line)#exec-timeout 8 20
LOCAL-SWITCH(config-line)#logging synchronous
LOCAL-SWITCH(config-line)#exit
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console

LOCAL-SWITCH#
```

Ctrl+F6 to exit CLI focus

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

```
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
^
% Invalid input detected at '^' marker.

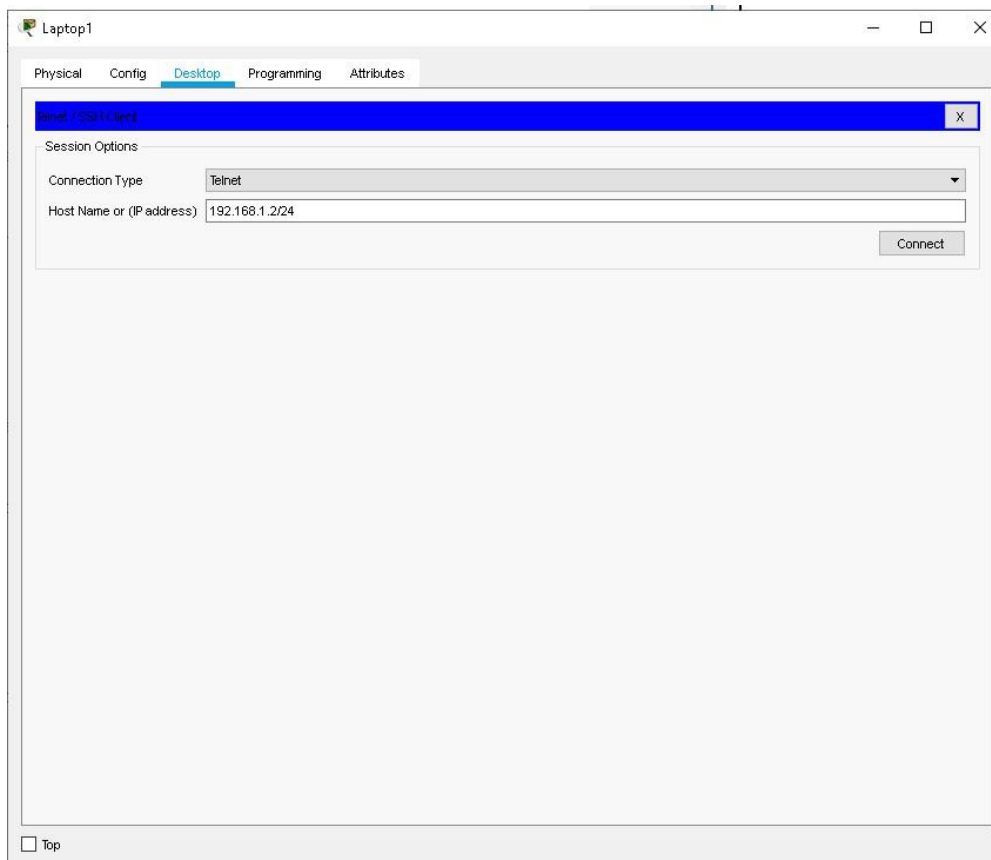
LOCAL-SWITCH(config-if)#ip default-gateway 192.168.1.1
LOCAL-SWITCH(config)#exit
LOCAL-SWITCH#
%SYS-5-CONFIG_I: Configured from console by console
LOCAL-SWITCH#
```

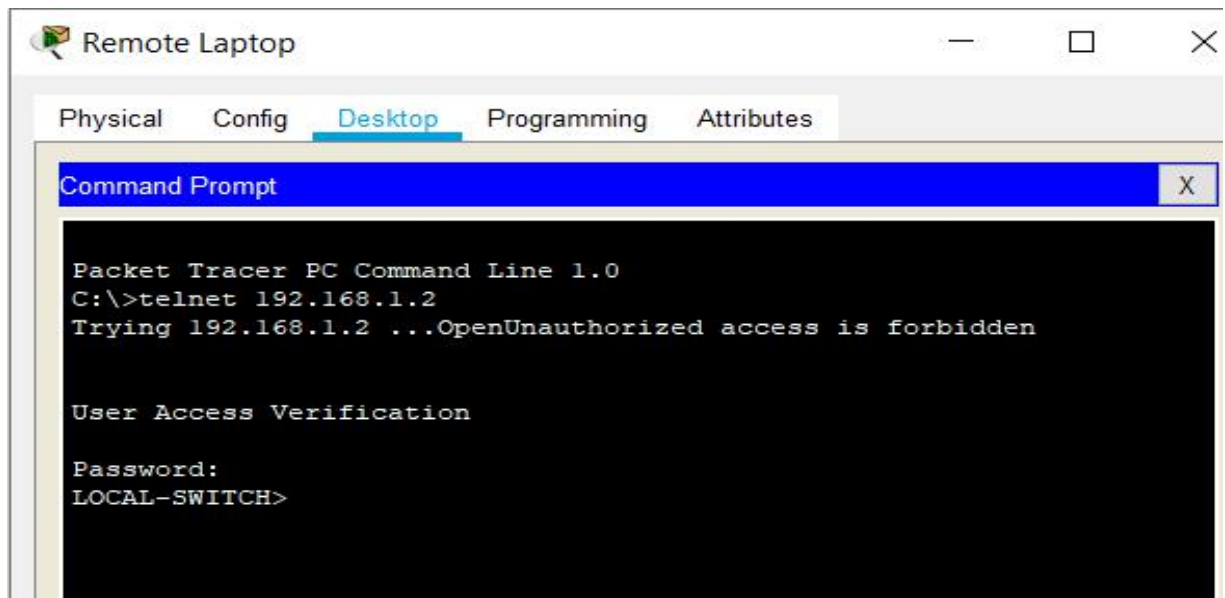
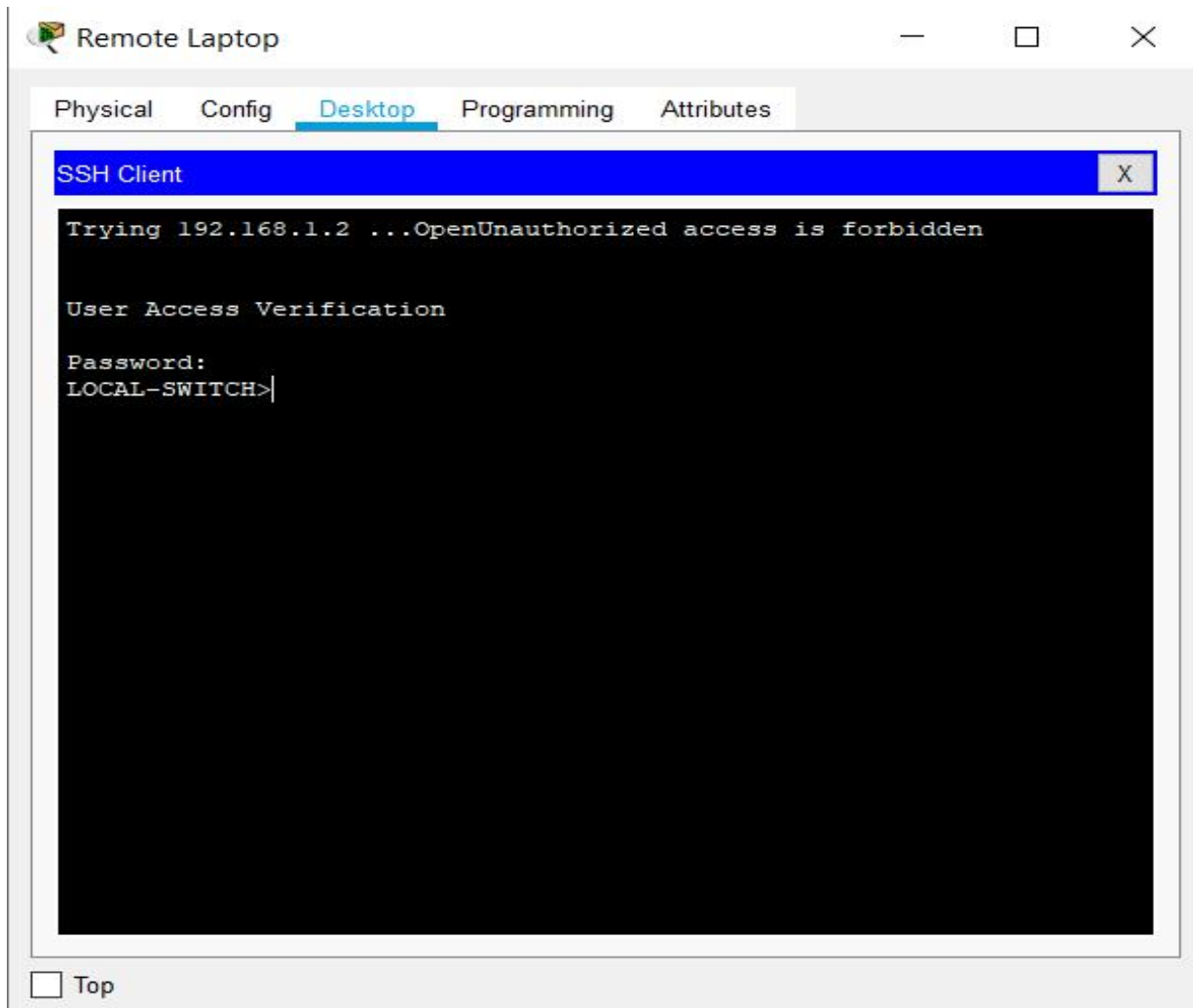
Ctrl+F6 to exit CLI focus

Copy

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





Command Prompt

```
Control-C
^C
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Ping statistics for 192.168.1.2:
    Packets: Sent = 1, Received = 0, Lost = 1 (100% loss),

Control-C
^C
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:\>
```