

EXPERIMENT NO- 04

AIM: Building a switch – based network / Configuration of Cisco Catalyst Switch 3560

OBJECTIVE: To demonstrate building a switch – based network / Configuration Cisco Catalyst Switch 3560.

ALGORITHM:

1. Start
2. Setup the Topology and initialize devices
3. Configure Devices and verify connectivity
4. Display Device information
5. End

DESCRIPTION AND EXECUTION:

Resources: 1 Switch, 2 PCs, 1 Router.

The devices are connected in a star topology:



Laying out required devices & connecting the devices using cables:



Configuring PC-A and PC-B:

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.1.3

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::260:47FF:FE48:B740

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

☐ Top

The screenshot shows the 'IP Configuration' window for the 'FastEthernet0/0' interface. The 'Static' radio button is selected under 'IP Configuration'. The fields are filled with the following values:

Field	Value
IP Address	192.168.0.3
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS Server	0.0.0.0

Under 'IPv6 Configuration', the 'Static' radio button is also selected. The fields are empty or contain default values:

Field	Value
IPv6 Address	/
Link Local Address	FE80::201:54FF:FE14:159C
IPv6 Gateway	
IPv6 DNS Server	

At the bottom, there is a section for '802.1X' with a checkbox for 'Use 802.1X Security' (unchecked), an 'Authentication' dropdown set to 'MD5', and empty fields for 'Username' and 'Password'.

Configuring Switch S1:

The screenshot shows the configuration page for 'GigabitEthernet0/1'. The 'Port Status' is set to 'On'. The 'Bandwidth' is set to '1000 Mbps'. The 'Duplex' is set to 'Full Duplex'. The 'MAC Address' is '88D0 BCC6 C102'. The 'IP Configuration' section shows the 'IP Address' as '192.168.0.1' and the 'Subnet Mask' as '255.255.255.0'. The 'Tx Ring Limit' is set to '10'.

Equivalent IOS Commands:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CTRL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
```

Physical **Config** CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

ROUTING

- Static
- RIP

SWITCHING

- VLAN Database

INTERFACE

- GigabitEthernet0/0
- GigabitEthernet0/1

GigabitEthernet0/0

Port Status ☒ On

Bandwidth ☐ 1000 Mbps ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0000.BCC0.C101

IP Configuration

IP 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 GigabitEthernet0/0
Router(config-if)#
```

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Physical

Config

CLI

Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/5
Switch(config-if)#exit
Switch(config)#hostname S1
S1(config)#no ip domain-lookup
S1(config)#int VLAN1
S1(config-if)#ip address 192.168.0.3 255.255.255.0
S1(config-if)#no shutdown

S1(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

S1(config-if)#exit
S1(config)#ip default-gateway 192.168.0.1
S1(config)#exit
S1#
%SYS-5-CONFIG_I: Configured from console by console

S1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

S1#ping 192.168.0.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echoes to 192.168.0.3, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/1/4 ms

S1#0
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

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

Translating "0"
% Unknown command or computer name, or unable to find computer address

S1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
S1(config)#interface FastEthernet0/1
S1(config-if)#
```

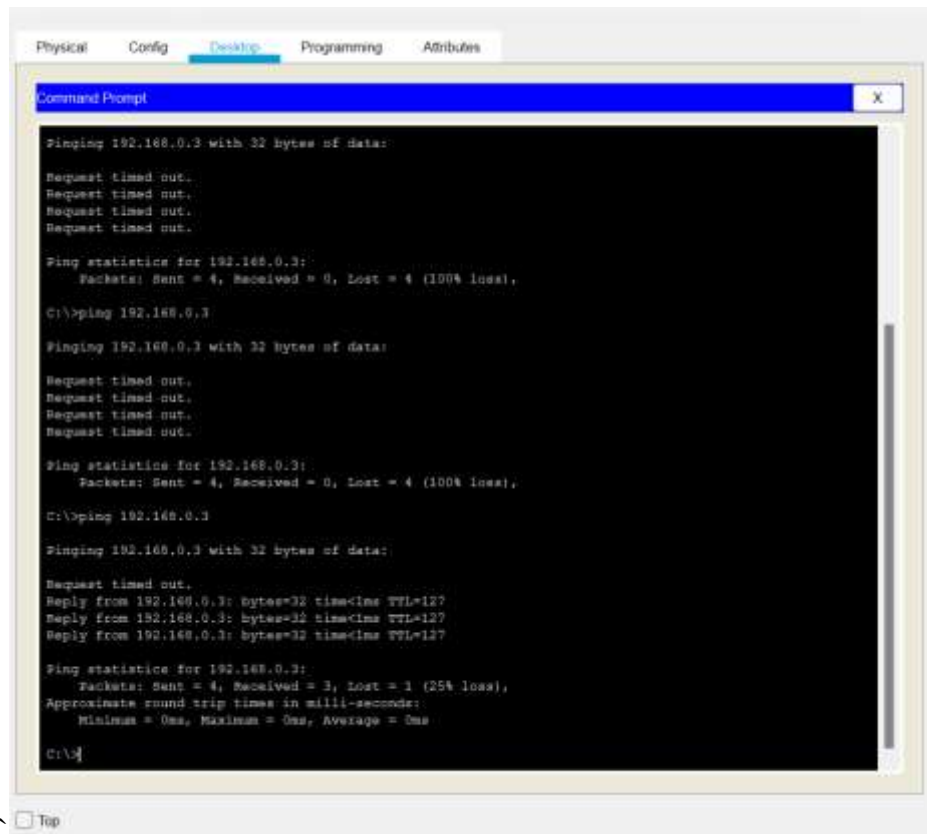
Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

Checking ping from PC-A to PC-B:



The screenshot shows a Command Prompt window with the following text:

```
Physical Config Desktop Programming Attributes
Command Prompt

Pinging 192.168.0.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.0.3: bytes=32 time=1ms TTL=127
Reply from 192.168.0.3: bytes=32 time=1ms TTL=127
Reply from 192.168.0.3: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

RESULTS: After the configuration and connection of all devices, the ping is successful from PC-A to PC-B.