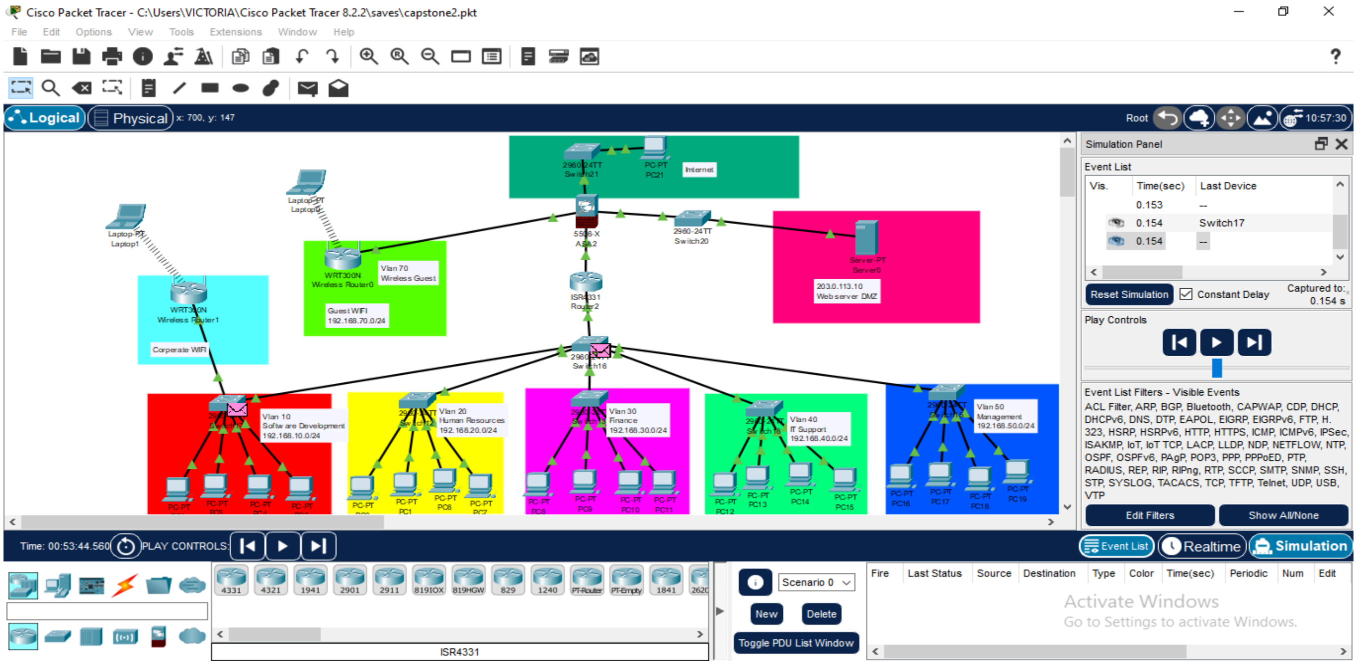
Capstone Project: Cybersecurity Network Design for “Kafitech Solutions” using Cisco Packet Tracer

📌 1. Executive Summary

This project implements a secure enterprise network for a fictional organization using **Cisco Packet Tracer**. The design emphasizes **network segmentation**, **Layer 2 & Layer 3 security**, **firewall protection**, **wireless configuration**, and **secure internet access**. Key components include **20 PCs across 7 VLANs**, **one router-on-a-stick**, **5 access switches**, **1 core switch**, **ASA firewall**, and a **DMZ** hosting a public web server (IP: `203.0.113.10`). The architecture aligns with best practices in cybersecurity, supporting scalability, performance, and secure user access.

🌐 2. Network Topology Diagram



Cisco Packet Tracer - C:\Users\VICTORIA\Cisco Packet Tracer 8.2.2\saves\capstone2.pkt

Simulation Panel

Event List

Vis.	Time(sec)	Last Device
	0.153	--
👁	0.154	Switch17
👁	0.154	--

Reset Simulation ☑ Constant Delay Captured to: 0.154 s

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Time: 00:53:44.560

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit

Activate Windows
Go to Settings to activate Windows.

🗂️ 3. IP Addressing & VLAN Table

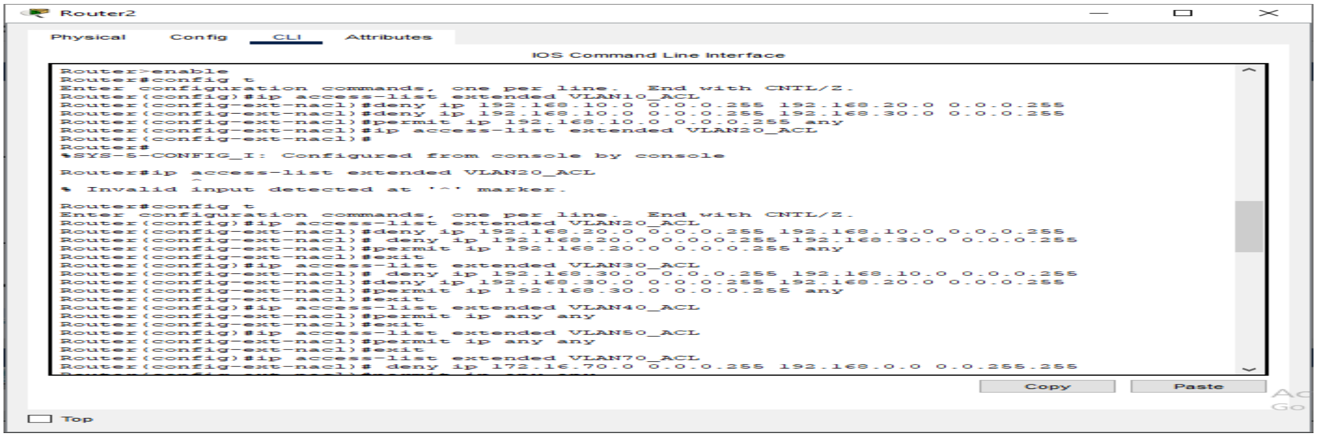
VLAN Name	VLAN ID	Subnet	Default Gateway
Software Development	10	192.168.10.0/24	192.168.10.1

Human Resources	20	192.168.20.0/24	192.168.20.1
Finance	30	192.168.30.0/24	192.168.30.1
IT Support	40	192.168.40.0/24	192.168.40.1
Management	50	192.168.50.0/24	192.168.50.1
Guest WiFi	70	172.16.70.0/24	172.16.70.1
Blackhole	99	-	-
DMZ Web Server	-	203.0.113.10/24	203.0.113.1 (ASA)

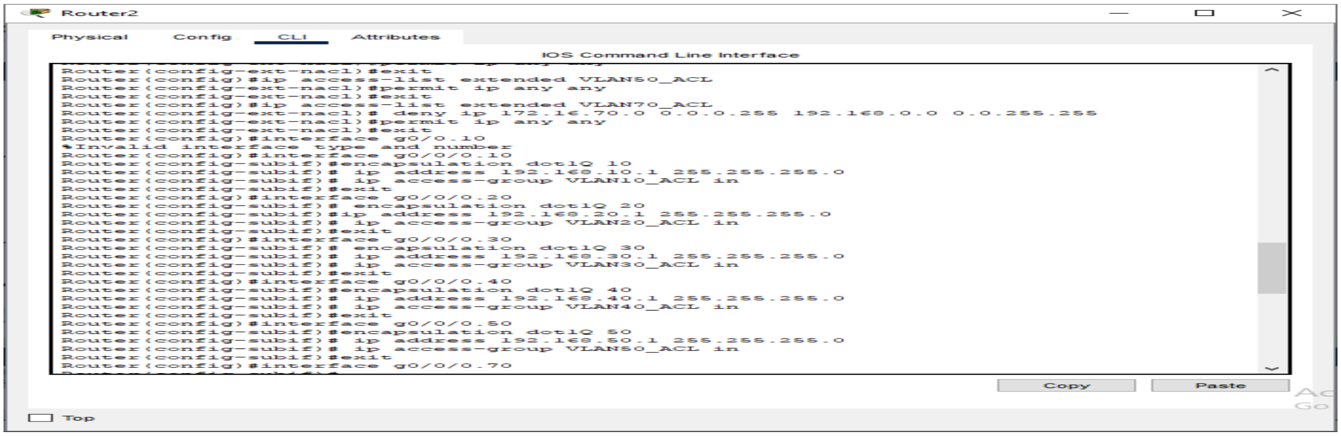
🔐 4. ACL List with Purpose

ACL Name	Purpose
VLAN10_ACL	Allow Software Dev to access Finance only, block all else
VLAN30_ACL	Restrict Finance from accessing Software and HR
GUEST_ACL	Allow Guest VLAN internet only via ASA
MANAGEMENT_ACL	Allow Management to access all internal VLANs

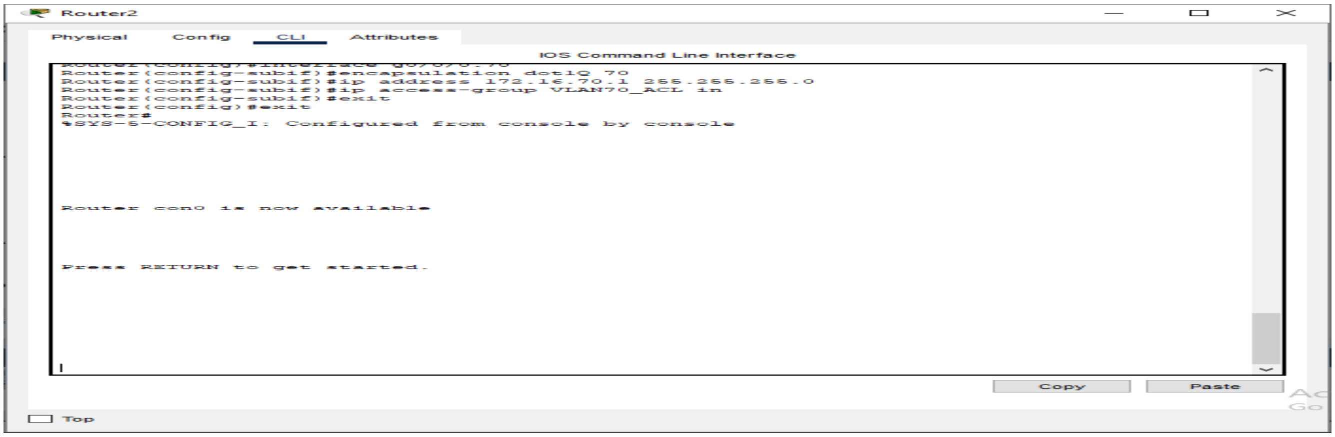
ACLs applied on subinterfaces of the router (`g0/0/0.X`) using `ip access-group`.



```
Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip access-list extended VLAN10_ACL
Router(config-ext-nacl)#deny ip 192.168.10.0 0.0.0.255 192.168.20.0 0.0.0.255
Router(config-ext-nacl)#deny ip 192.168.10.0 0.0.0.255 192.168.30.0 0.0.0.255
Router(config-ext-nacl)#permit ip 192.168.10.0 0.0.0.255 any
Router(config-ext-nacl)#ip access-list extended VLAN20_ACL
Router(config-ext-nacl)#
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#ip access-list extended VLAN20_ACL
           ^
% Invalid input detected at '^' marker.

Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip access-list extended VLAN20_ACL
Router(config-ext-nacl)#deny ip 192.168.20.0 0.0.0.255 192.168.10.0 0.0.0.255
Router(config-ext-nacl)# deny ip 192.168.20.0 0.0.0.255 192.168.30.0 0.0.0.255
Router(config-ext-nacl)#permit ip 192.168.20.0 0.0.0.255 any
Router(config-ext-nacl)#exit
Router(config)#ip access-list extended VLAN30_ACL
Router(config-ext-nacl)# deny ip 192.168.30.0 0.0.0.255 192.168.10.0 0.0.0.255
Router(config-ext-nacl)#deny ip 192.168.30.0 0.0.0.255 192.168.20.0 0.0.0.255
Router(config-ext-nacl)#permit ip 192.168.30.0 0.0.0.255 any
Router(config-ext-nacl)#exit
Router(config)#ip access-list extended VLAN40_ACL
Router(config-ext-nacl)#permit ip any any
Router(config-ext-nacl)#exit
Router(config)#ip access-list extended VLAN50_ACL
Router(config-ext-nacl)#permit ip any any
Router(config-ext-nacl)#exit
Router(config)#ip access-list extended VLAN70_ACL
Router(config-ext-nacl)# deny ip 172.16.70.0 0.0.0.255 192.168.0.0 0.0.255.255
```



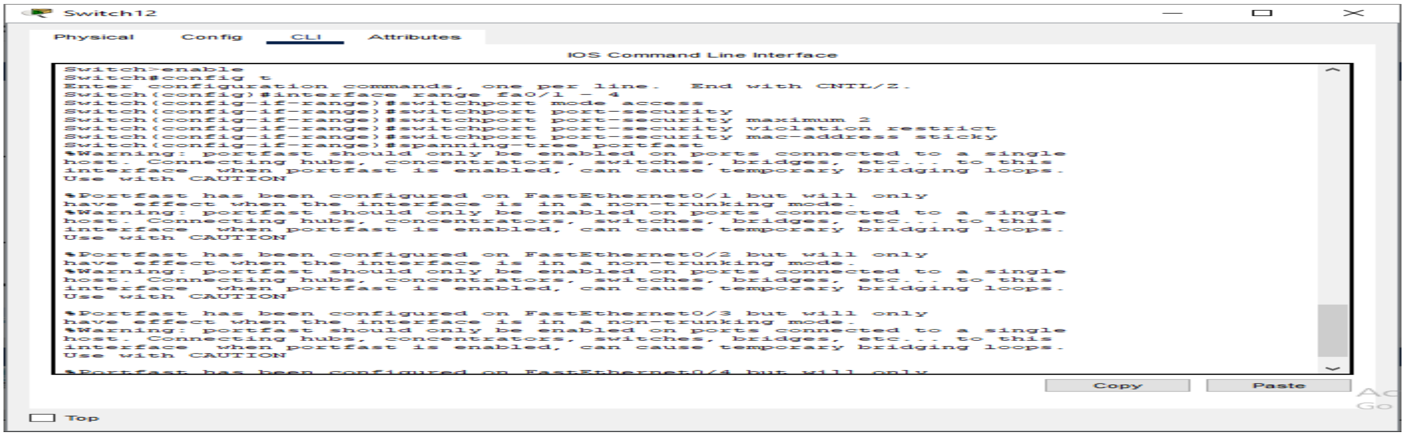
```
Router(config-ext-nacl)#exit
Router(config)#ip access-list extended VLAN50_ACL
Router(config-ext-nacl)#permit ip any any
Router(config-ext-nacl)#exit
Router(config)#ip access-list extended VLAN70_ACL
Router(config-ext-nacl)# deny ip 172.16.70.0 0.0.0.255 192.168.0.0 0.0.255.255
Router(config-ext-nacl)#permit ip any any
Router(config-ext-nacl)#exit
Router(config)#interface g0/0.10
%Invalid interface type and number
Router(config)#interface g0/0/0.10
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)# ip address 192.168.10.1 255.255.255.0
Router(config-subif)# ip access-group VLAN10_ACL in
Router(config-subif)#exit
Router(config)#interface g0/0/0.20
Router(config-subif)# encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)# ip access-group VLAN20_ACL in
Router(config-subif)#exit
Router(config)#interface g0/0/0.30
Router(config-subif)# encapsulation dot1Q 30
Router(config-subif)# ip address 192.168.30.1 255.255.255.0
Router(config-subif)# ip access-group VLAN30_ACL in
Router(config-subif)#exit
Router(config)#interface g0/0/0.40
Router(config-subif)#encapsulation dot1Q 40
Router(config-subif)# ip address 192.168.40.1 255.255.255.0
Router(config-subif)# ip access-group VLAN40_ACL in
Router(config-subif)#exit
Router(config)#interface g0/0/0.50
Router(config-subif)#encapsulation dot1Q 50
Router(config-subif)# ip address 192.168.50.1 255.255.255.0
Router(config-subif)# ip access-group VLAN50_ACL in
Router(config-subif)#exit
Router(config)#interface g0/0/0.70
```



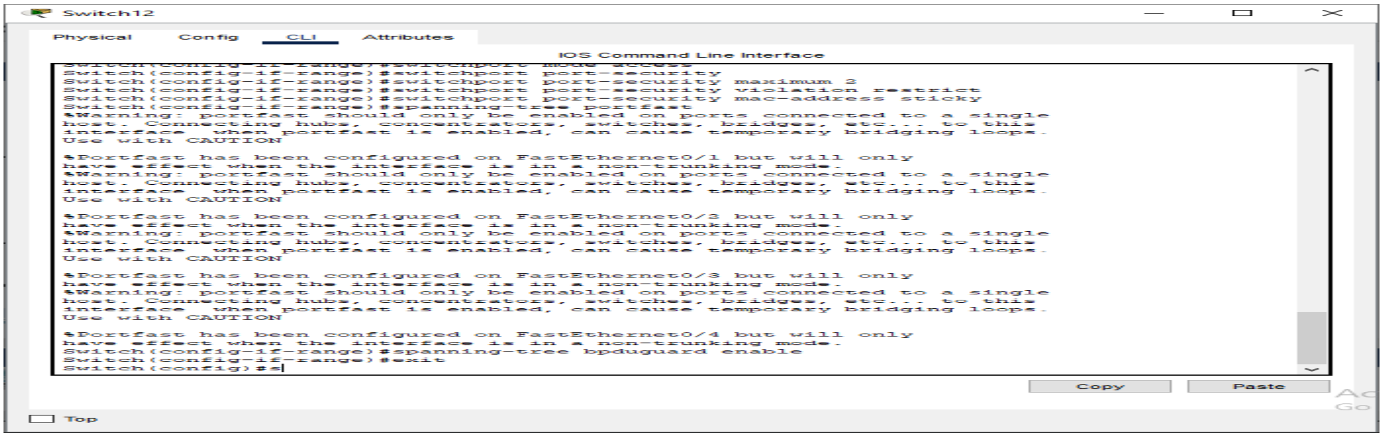
```
Router(config-subif)#encapsulation dot1Q 70
Router(config-subif)#ip address 172.16.70.1 255.255.255.0
Router(config-subif)#ip access-group VLAN70_ACL in
Router(config-subif)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console




Router con0 is now available




Press RETURN to get started.
```

🛡️ 5. Layer 2 Security Configuration Summary

- **BPDU Guard**: Prevents topology manipulation.
- **Port Security**: Max 2 MACs, sticky learning, violation = restrict.
- **Unused Ports**: Shutdown & assigned to VLAN 99.
- **CDP Disabled**, **no IP domain lookup**.
- **Spanning Tree Portfast** for end devices.
- **MAC Sticky**, **storm control** configured.



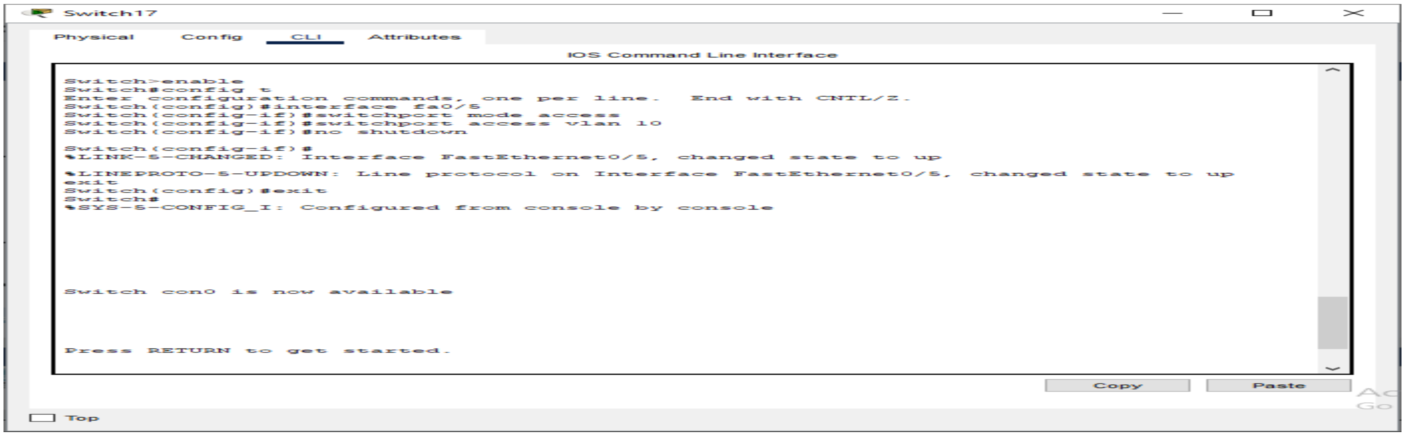
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport port-security
Switch(config-if-range)#switchport port-security maximum 2
Switch(config-if-range)#switchport port-security violation restrict
Switch(config-if-range)#switchport port-security mac-address sticky
Switch(config-if-range)#spanning-tree portfast
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/1 but will only
have effect when the interface is in a non-trunking mode.
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/2 but will only
have effect when the interface is in a non-trunking mode.
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/3 but will only
have effect when the interface is in a non-trunking mode.
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/4 but will only
```



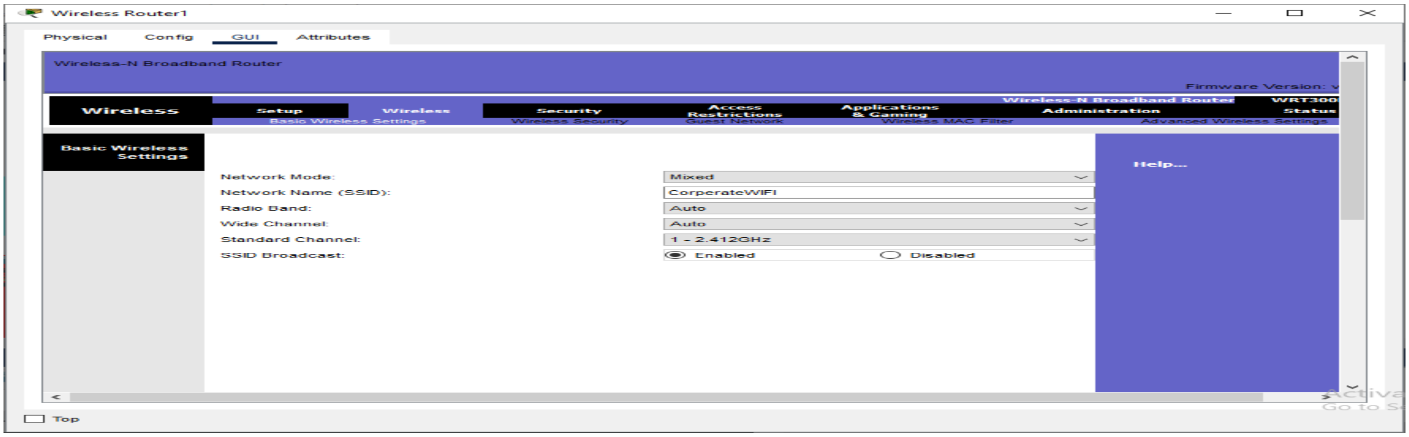
```
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport port-security
Switch(config-if-range)#switchport port-security maximum 2
Switch(config-if-range)#switchport port-security violation restrict
Switch(config-if-range)#switchport port-security mac-address sticky
Switch(config-if-range)#spanning-tree portfast
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/1 but will only
have effect when the interface is in a non-trunking mode.
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/2 but will only
have effect when the interface is in a non-trunking mode.
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/3 but will only
have effect when the interface is in a non-trunking mode.
%Warning: portfast should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc... to this
interface  when portfast is enabled, can cause temporary bridging loops.
Use with CAUTION

%Portfast has been configured on FastEthernet0/4 but will only
have effect when the interface is in a non-trunking mode.
Switch(config-if-range)#spanning-tree bpduguard enable
Switch(config-if-range)#exit
Switch(config)#s
```

📶 6. Wi-Fi Security Implementation

- **Internal Wi-Fi Router**
    - SSID: `CorpWiFi`
    - IP: `192.168.60.1/24`, DHCP enabled
    - WPA2 encryption (passphrase-protected)
    - Connected to internal switch



```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface fa0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#no shutdown

Switch(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console





Switch con0 is now available




Press RETURN to get started.
```



Network Mode: Mixed

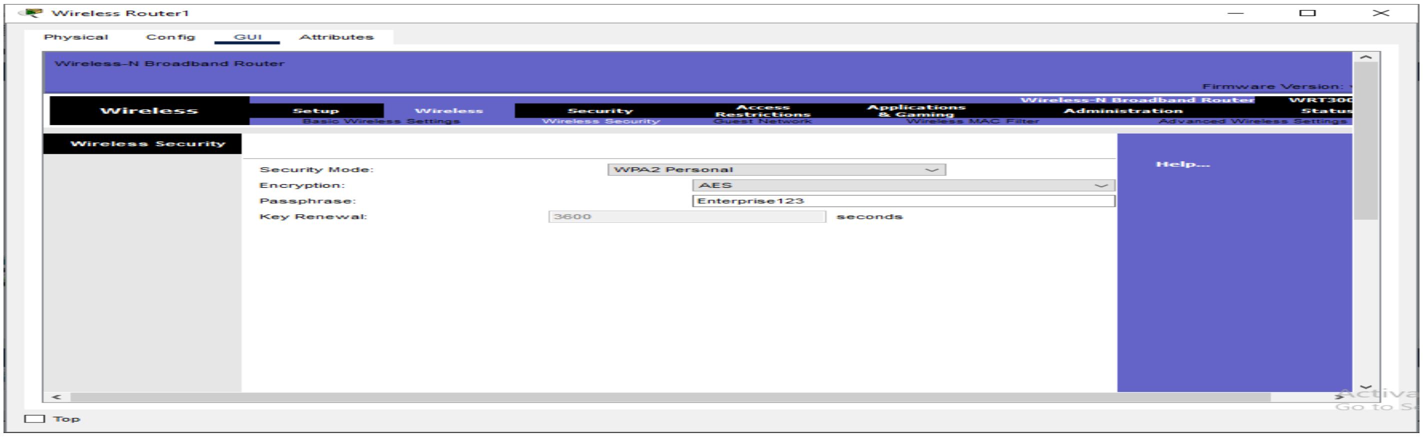
Network Name (SSID): CorperateWIFI

Radio Band: Auto

Wide Channel: Auto

Standard Channel: 1 - 2.412GHz

SSID Broadcast: ● Enabled ○ Disabled

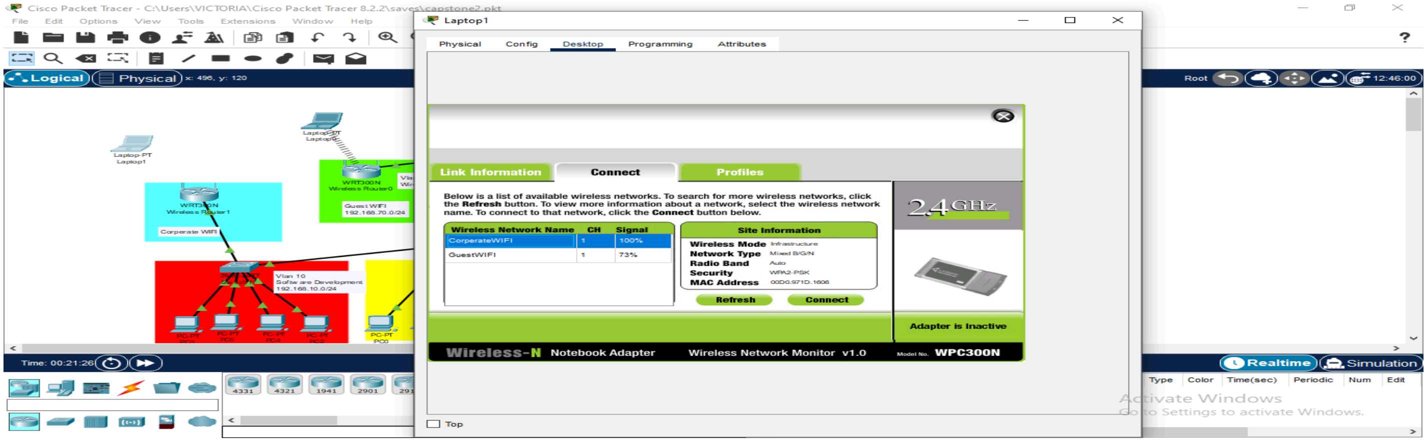


Security Mode: WPA2 Personal

Encryption: AES

Passphrase: Enterprise123

Key Renewal: 3600 seconds



Link Information | Connect | Profiles

Below is a list of available wireless networks. To search for more wireless networks, click the **Refresh** button. To view more information about a network, select the wireless network name. To connect to that network, click the **Connect** button below.

Wireless Network Name	CH	Signal
CorperateWIFI	1	100%
GuestWIFI	1	73%

Site Information

Wireless Mode	Infrastructure
Network Type	Mixed B/G/N
Radio Band	Auto
Security	WPA2-PSK
MAC Address	00D0.971D.1606

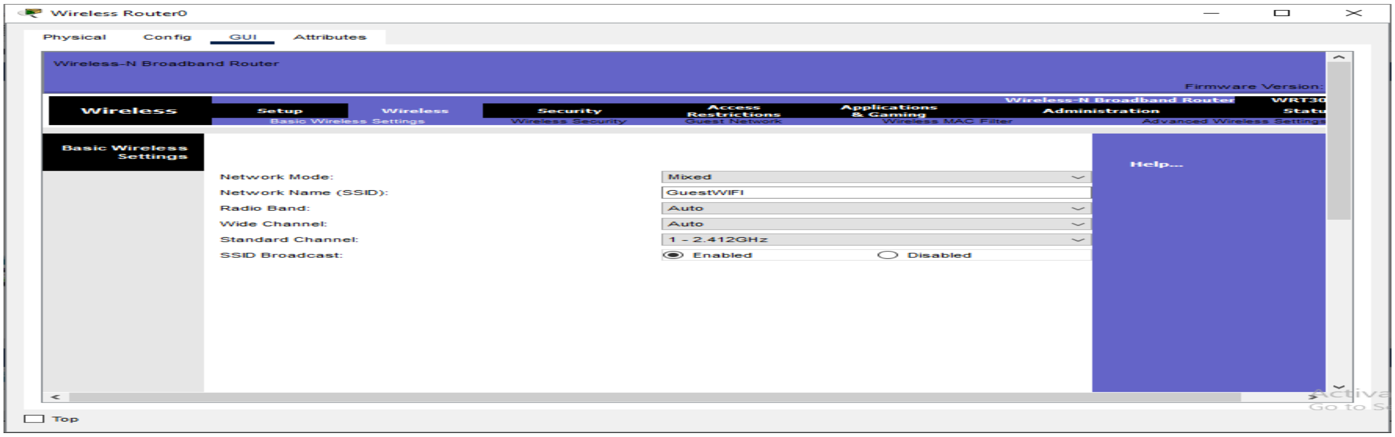
Refresh | Connect

2.4GHz

Adapter is Inactive

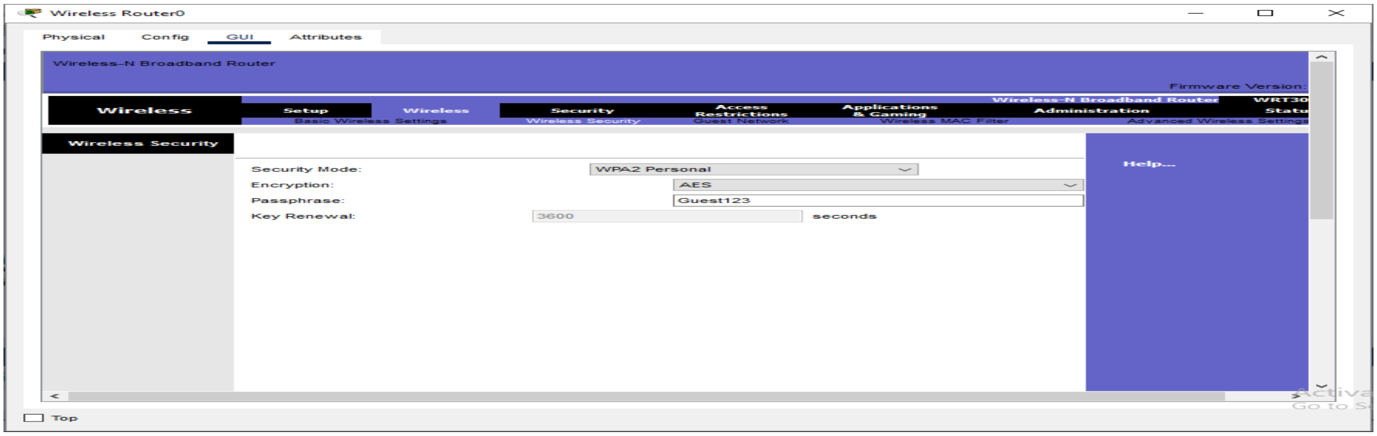
Wireless-N Notebook Adapter Wireless Network Monitor v1.0 Model No. WPC300N

- **Guest Wi-Fi Router**
    - SSID: `GuestWiFi`
    - IP: `172.16.70.2/24`, DHCP enabled
    - Directly connected to ASA (Interface: `g1/2`)
    - No access to internal VLANs

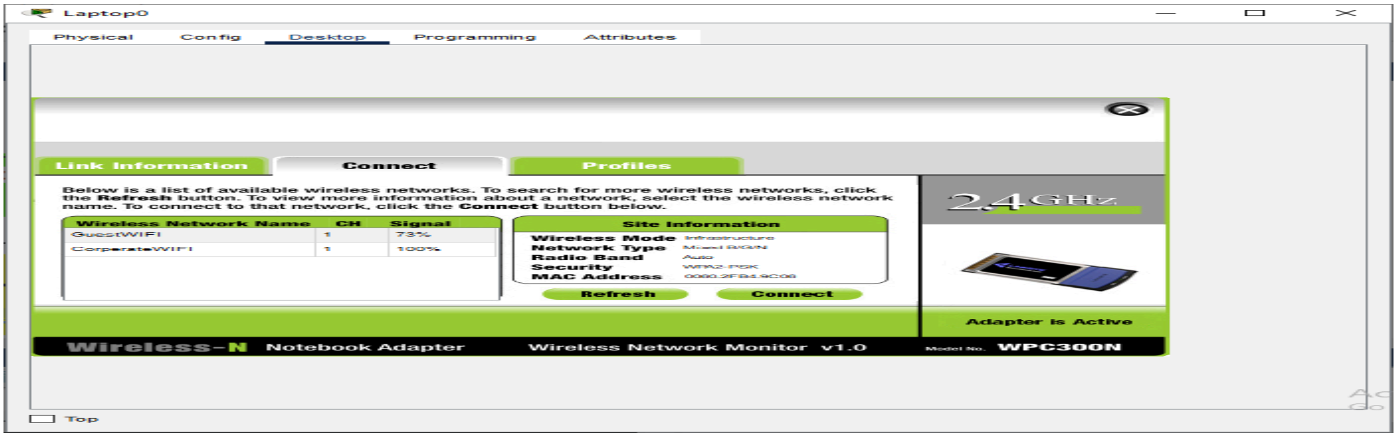


Basic Wireless Settings

Network Mode:	Mixed
Network Name (SSID):	GuestWIFI
Radio Band:	Auto
Wide Channel:	Auto
Standard Channel:	1 - 2.412GHz
SSID Broadcast:	● Enabled ○ Disabled



Security Mode: WPA2 Personal
Encryption: AES
Passphrase: Guest123
Key Renewal: 3600 seconds



Below is a list of available wireless networks. To search for more wireless networks, click the **Refresh** button. To view more information about a network, select the wireless network name. To connect to that network, click the **Connect** button below.

Wireless Network Name	CH	Signal
GuestWIFI	1	73%
CorperateWIFI	1	100%

Site Information

Wireless Mode	Infrastructure
Network Type	Mixed B/G/N
Radio Band	Auto
Security	WPA2-PSK
MAC Address	0060.2FB4.9C06

🧾 7. Sample Configuration Snippets

VLAN Example:

bash

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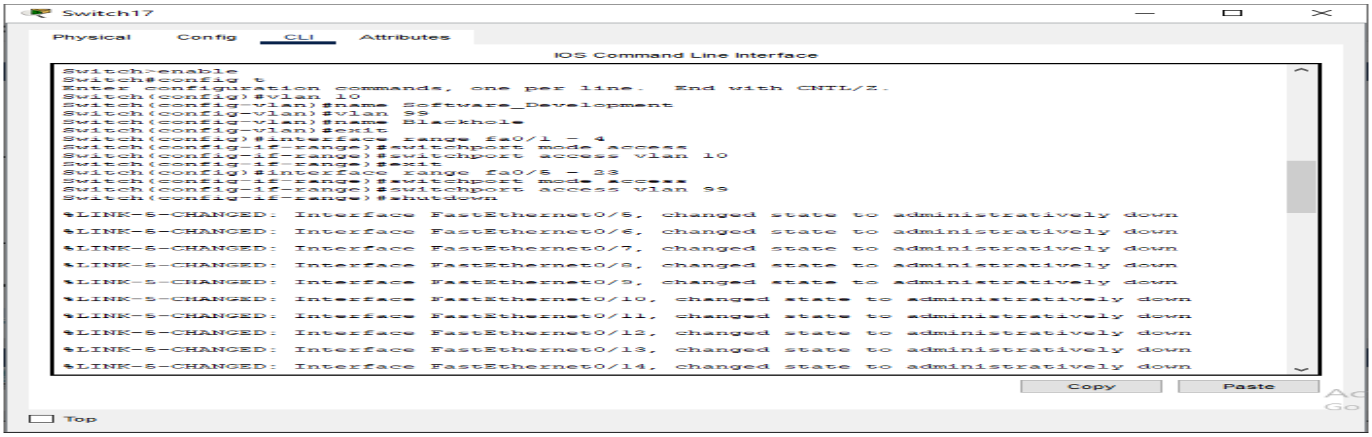
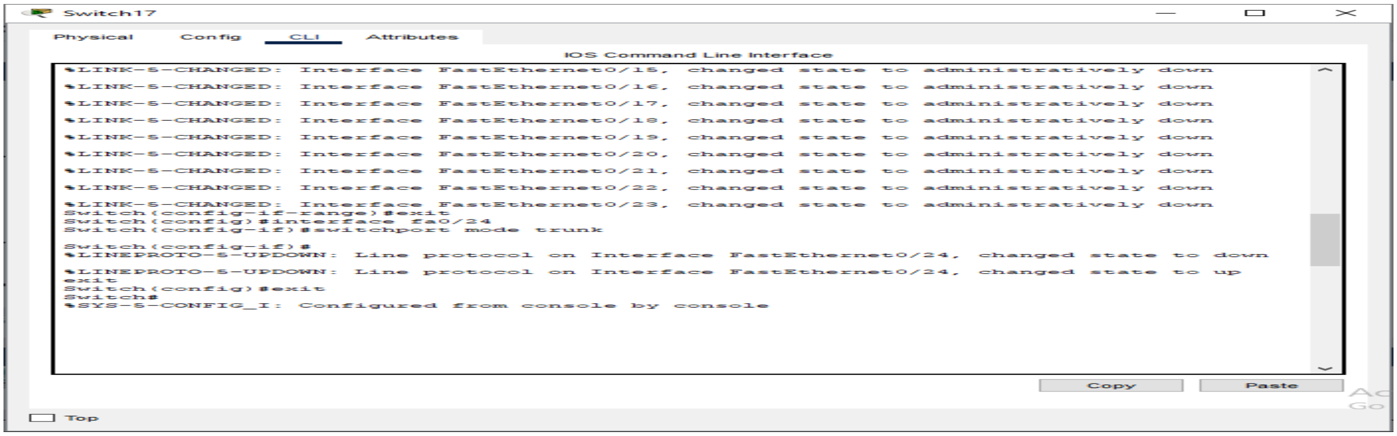
```
Switch(config)#vlan 10
Switch(config-vlan)#name Software_Development
```



```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name Software_Development
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5 - 23
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 99
Switch(config-if-range)#shutdown

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
```



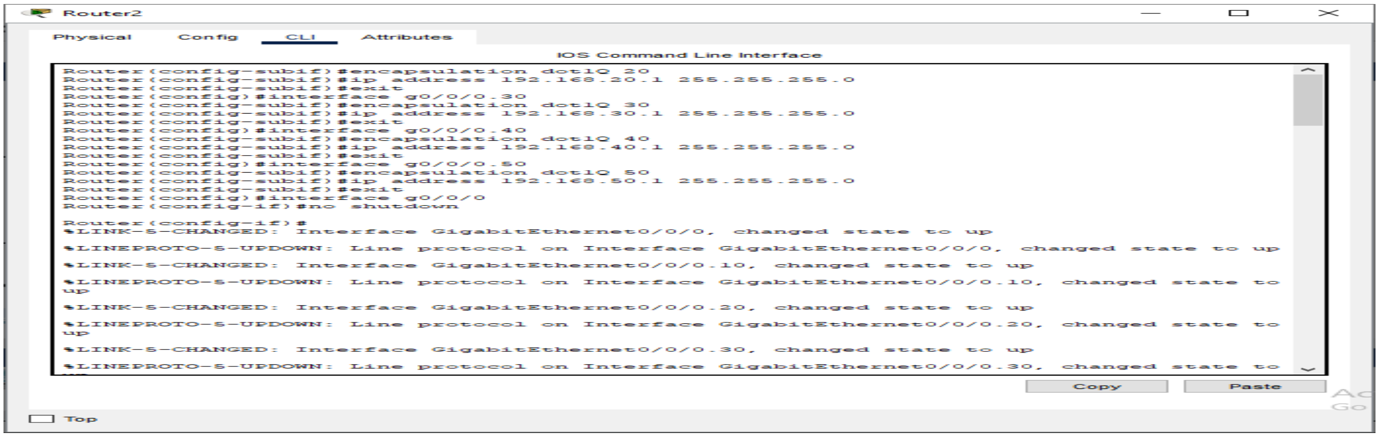
```
%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

Router-on-a-Stick Subinterface:

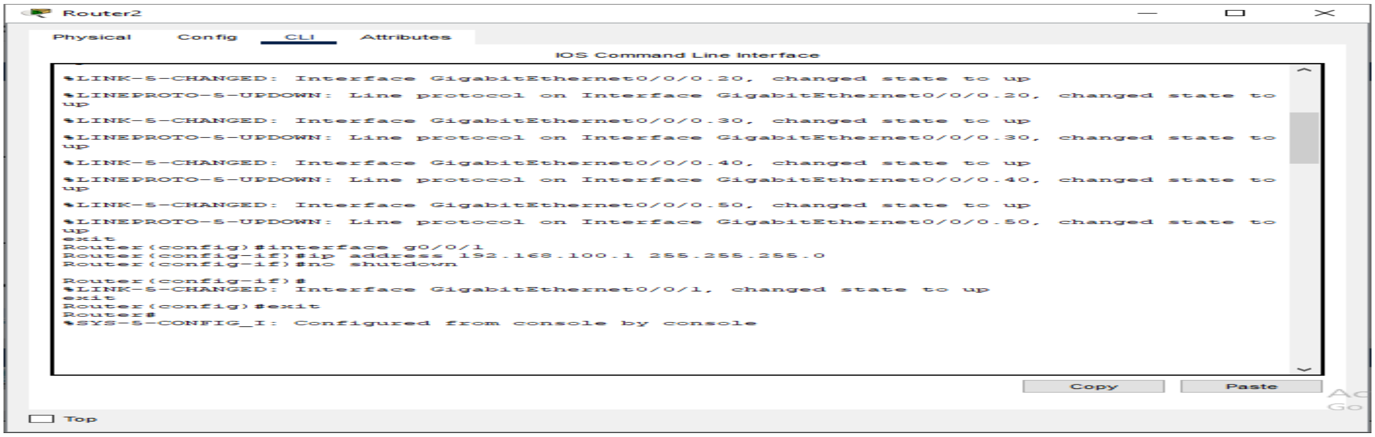
bash

CopyEdit

```
Router(config)#interface g0/0/0.10
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
```



```
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface g0/0/0.30
Router(config-subif)#encapsulation dot1Q 30
Router(config-subif)#ip address 192.168.30.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface g0/0/0.40
Router(config-subif)#encapsulation dot1Q 40
Router(config-subif)#ip address 192.168.40.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface g0/0/0.50
Router(config-subif)#encapsulation dot1Q 50
Router(config-subif)#ip address 192.168.50.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface g0/0/0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.10, changed state to
up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.20, changed state to
up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.30, changed state to
```



```
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.20, changed state to
up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.30, changed state to
up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.40, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.40, changed state to
up

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.50, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.50, changed state to
up
exit
Router(config)#interface g0/0/1
Router(config-if)#ip address 192.168.100.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up
exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

ASA NAT:

bash

CopyEdit

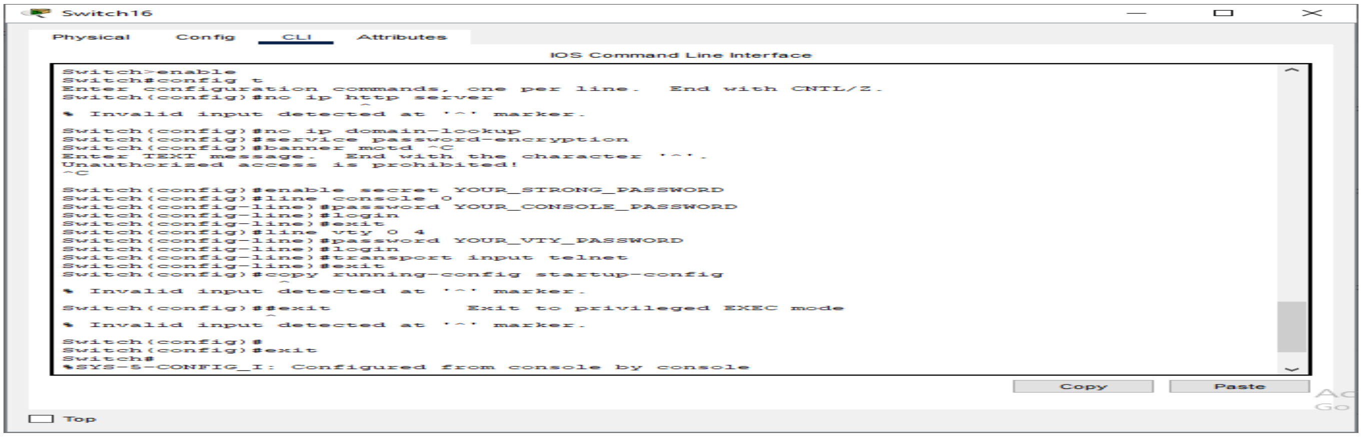
```
ciscoasa(config)#object network WEB-SERVER
ciscoasa(config-network-object)#host 203.0.113.10
ciscoasa(config-network-object)#nat (dmz,outside) static interface
```

Banner & SSH:

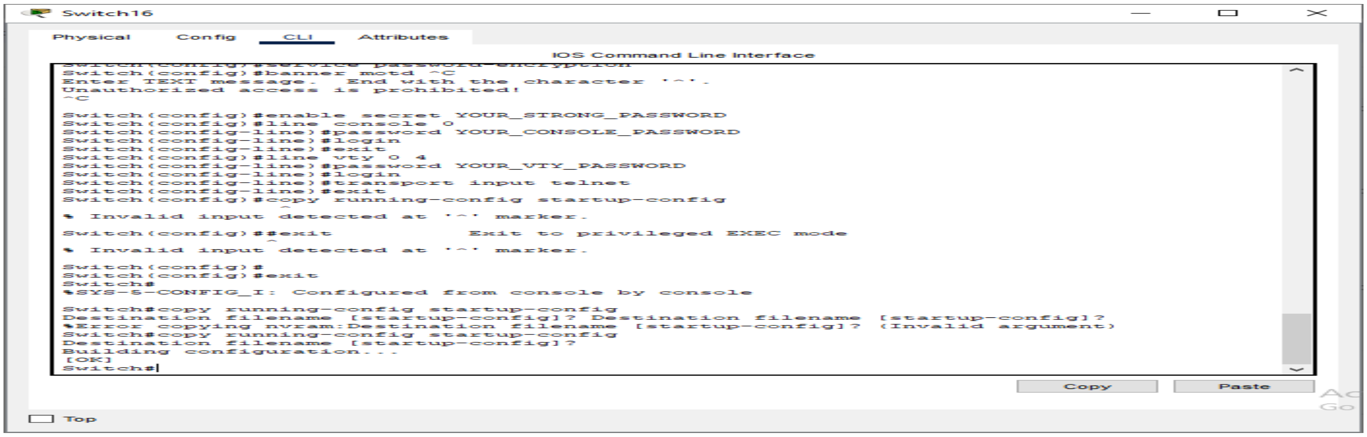
bash

CopyEdit

```
Switch(config)#banner motd # UNAUTHORIZED ACCESS PROHIBITED #
Switch(config)#ip domain-name corp.local
Switch(config)#crypto key generate rsa
Switch(config)#line vty 0 4
Switch(config-line)#transport input ssh
```



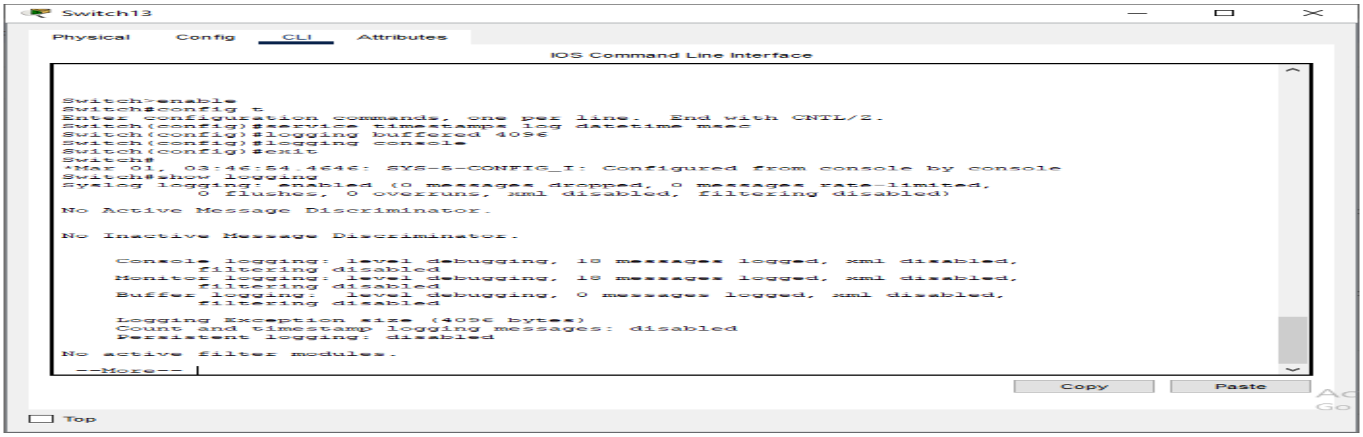
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no ip http server
                        ^
% Invalid input detected at '^' marker.

Switch(config)#no ip domain-lookup
Switch(config)#service password-encryption
Switch(config)#banner motd ^C
Enter TEXT message.  End with the character '^'.
Unauthorized access is prohibited!
^C

Switch(config)#enable secret YOUR_STRONG_PASSWORD
Switch(config)#line console 0
Switch(config-line)#password YOUR_CONSOLE_PASSWORD
Switch(config-line)#login
Switch(config-line)#exit
Switch(config)#line vty 0 4
Switch(config-line)#password YOUR_VTY_PASSWORD
Switch(config-line)#login
Switch(config-line)#transport input telnet
Switch(config-line)#exit
Switch(config)#copy running-config startup-config
                 ^
% Invalid input detected at '^' marker.

Switch(config)##exit          Exit to privileged EXEC mode
                ^
% Invalid input detected at '^' marker.

Switch(config)#
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```



```
Switch(config)#service password-encryption
Switch(config)#banner motd ^C
Enter TEXT message.  End with the character '^'.
Unauthorized access is prohibited!
^C

Switch(config)#enable secret YOUR_STRONG_PASSWORD
Switch(config)#line console 0
Switch(config-line)#password YOUR_CONSOLE_PASSWORD
Switch(config-line)#login
Switch(config-line)#exit
Switch(config)#line vty 0 4
Switch(config-line)#password YOUR_VTY_PASSWORD
Switch(config-line)#login
Switch(config-line)#transport input telnet
Switch(config-line)#exit
Switch(config)#copy running-config startup-config
                 ^
% Invalid input detected at '^' marker.

Switch(config)##exit          Exit to privileged EXEC mode
                ^
% Invalid input detected at '^' marker.

Switch(config)#
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#copy running-config startup-config
Destination filename [startup-config]? Destination filename [startup-config]?
%Error copying nvram:Destination filename [startup-config]? (Invalid argument)
Switch#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Switch#
```

📊 8. Monitoring Strategy

- **Syslog**: Simulated in Packet Tracer using console/log commands.
- **SNMP**: Simulation mode shows SNMP-style traffic.
- **Packet Tracer simulation tools**: used to monitor ICMP, HTTP, DNS, and ARP.
- **Manual logging**:
    - `show interface`
    - `show logging`
    - `show access-list`
- ASA Firewall can be observed in **Simulation Mode** for HTTP, ICMP, NAT, etc.



```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#service timestamps log datetime msec
Switch(config)#logging buffered 4096
Switch(config)#logging console
Switch(config)#exit
Switch#
*Mar 01, 03:46:54.4646: SYS-5-CONFIG_I: Configured from console by console
Switch#show logging
Syslog logging: enabled (0 messages dropped, 0 messages rate-limited,
          0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.


No Inactive Message Discriminator.


    Console logging: level debugging, 18 messages logged, xml disabled,
          filtering disabled
    Monitor logging: level debugging, 18 messages logged, xml disabled,
          filtering disabled
    Buffer logging:  level debugging, 0 messages logged, xml disabled,
          filtering disabled

    Logging Exception size (4096 bytes)
    Count and timestamp logging messages: disabled
    Persistent logging: disabled

No active filter modules.

 --More--
```

📌 9. Non-Emulated Config Steps

Since Packet Tracer does **not fully emulate** external syslog/SNMP servers:

- **Syslog**: Show how to forward logs from router/switch to a server IP:

bash
CopyEdit

```
Switch(config)#logging host 192.168.1.100
```

- **SNMP** (for future real-world deployment):

bash
CopyEdit

```
Switch(config)#snmp-server community public RO
Switch(config)#snmp-server enable traps
```

⚠️ 10. Challenges & Mitigations

Challenge	Mitigation
ASA limitations in Packet Tracer	Used simulation to verify NAT and ACL effectiveness
No real syslog/SNMP servers	Described steps with placeholder IPs for real-world use
Static routing for simplicity	Could be enhanced with OSPF or EIGRP in larger deployments
DHCP relay not supported	DHCP configured locally on routers or wireless devices

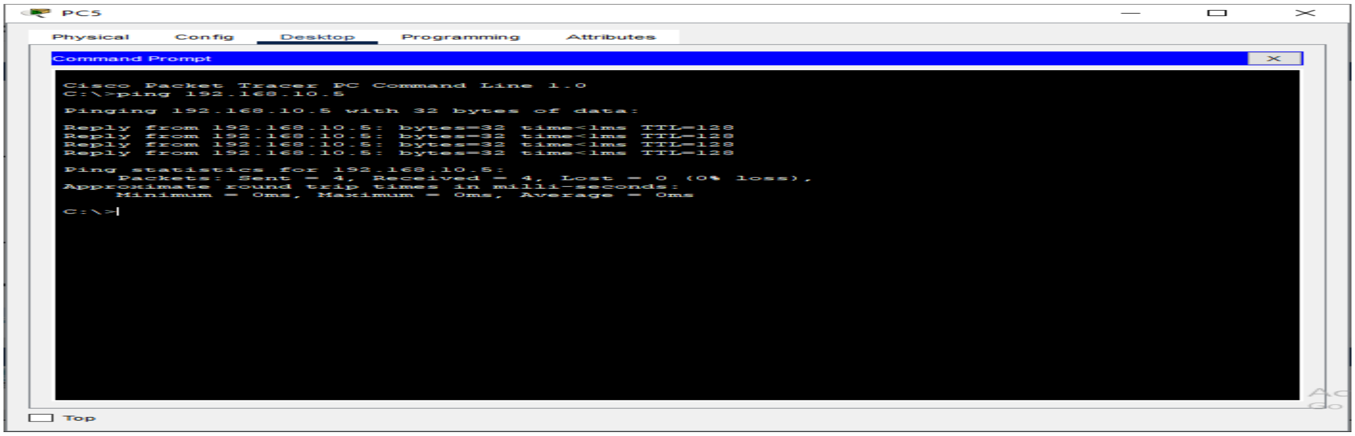
💡 11. Recommendations for Real Deployment

- Use **dedicated Syslog and SNMP servers** (e.g., SolarWinds, Graylog).
- Implement **802.1X authentication** with RADIUS for better access control.
- Deploy **endpoint protection agents** (e.g., CrowdStrike, Defender ATP).
- Replace static ACLs with **zone-based firewall policies** or **NGFW**.
- Conduct **periodic penetration tests** and **vulnerability scans**.

📸 Ping Test Screenshots Required

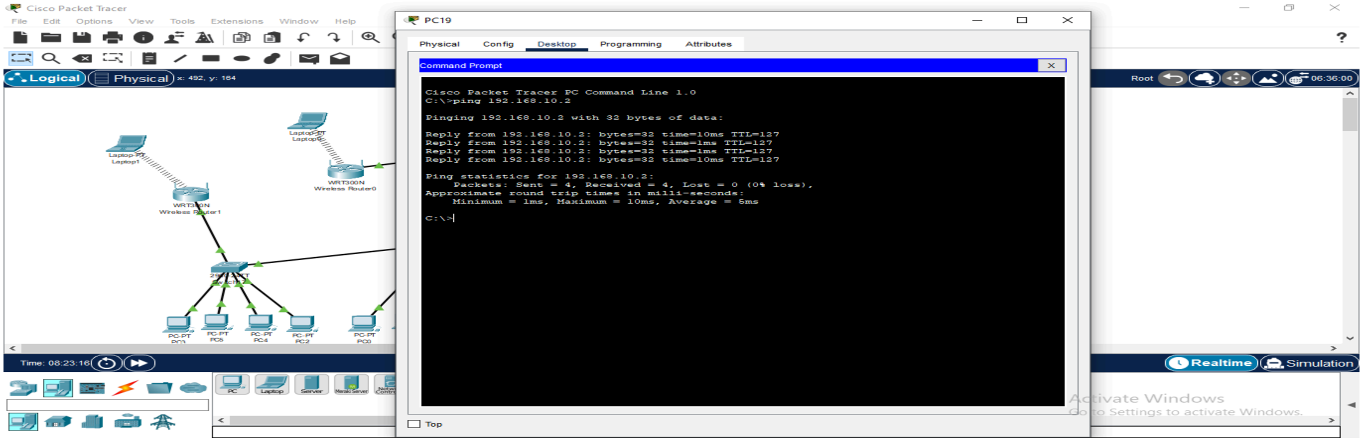
Take screenshots of:

- PC-to-PC pings within the **same VLAN**.



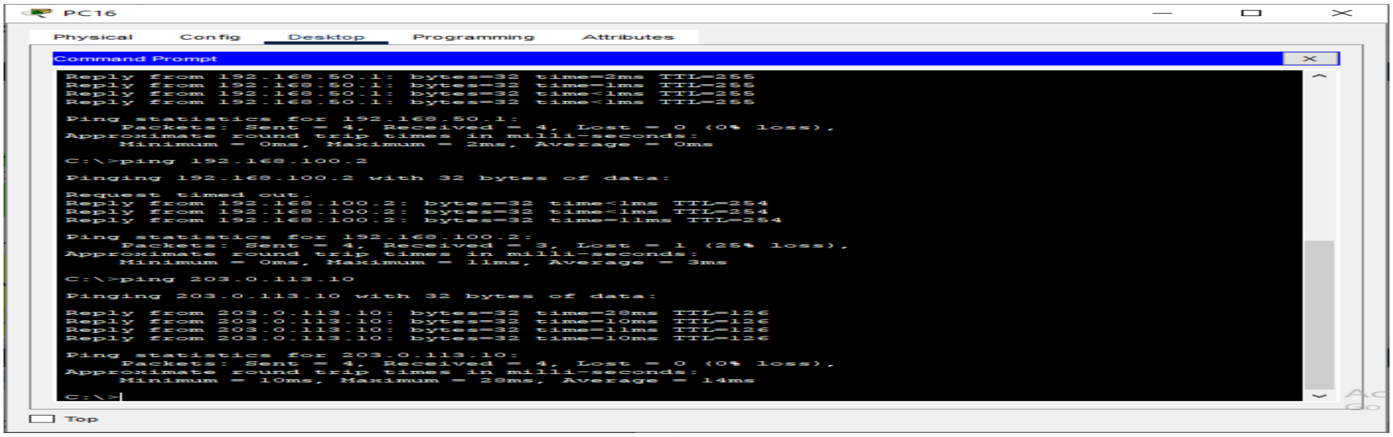
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.5

Pinging 192.168.10.5 with 32 bytes of data:

Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128
Reply from 192.168.10.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

- PC-to-PC pings **across VLANs (with ACL applied)**.



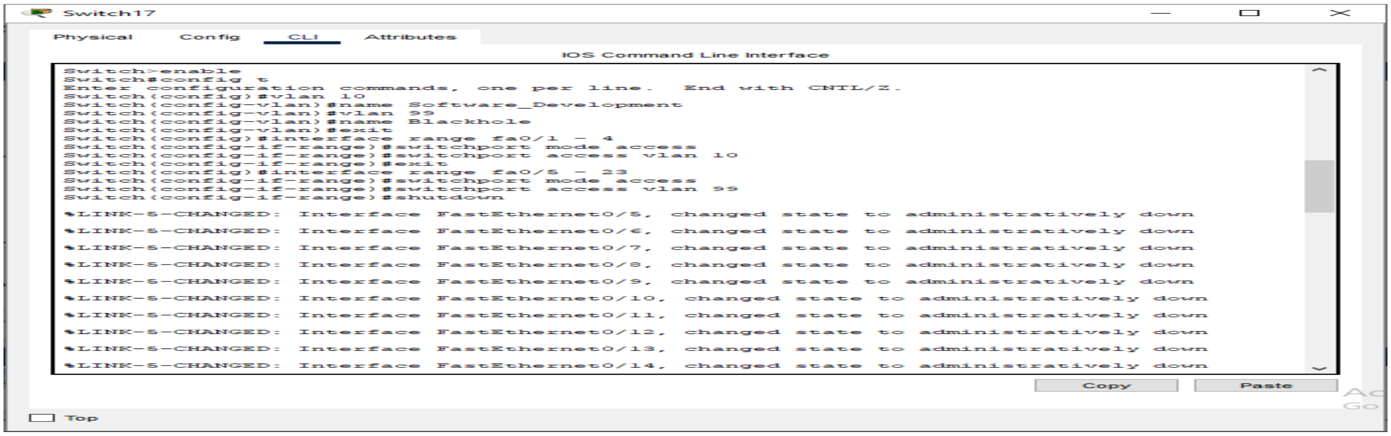
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time=10ms TTL=127
Reply from 192.168.10.2: bytes=32 time=1ms TTL=127
Reply from 192.168.10.2: bytes=32 time=1ms TTL=127
Reply from 192.168.10.2: bytes=32 time=10ms TTL=127

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 10ms, Average = 5ms

C:\>
```

- PC pinging the **DMZ Web Server** at `203.0.113.10`.

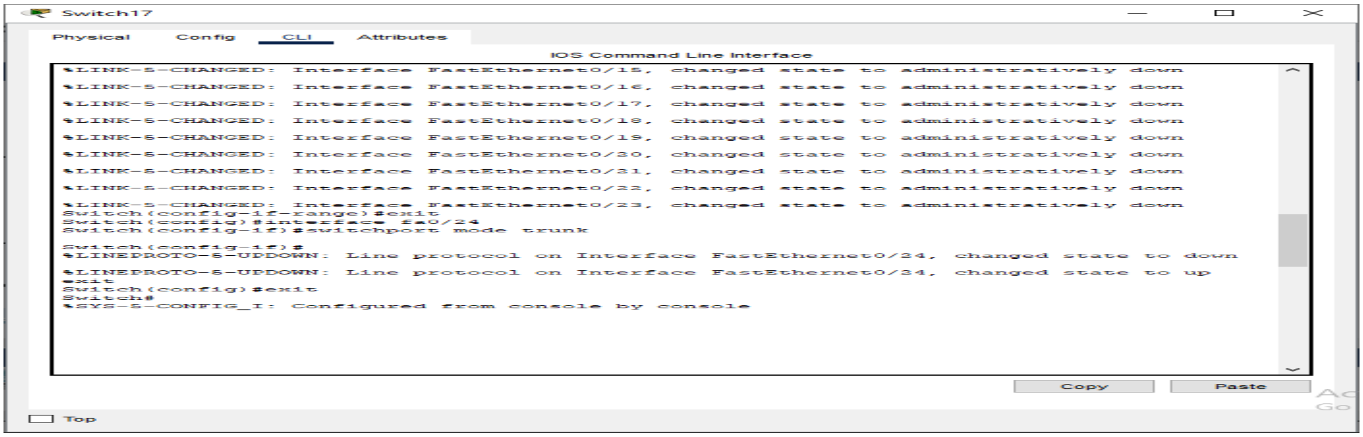


```
Reply from 192.168.50.1: bytes=32 time=2ms TTL=255
Reply from 192.168.50.1: bytes=32 time=1ms TTL=255
Reply from 192.168.50.1: bytes=32 time<1ms TTL=255
Reply from 192.168.50.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.50.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>ping 192.168.100.2

Pinging 192.168.100.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.100.2: bytes=32 time<1ms TTL=254
Reply from 192.168.100.2: bytes=32 time<1ms TTL=254
Reply from 192.168.100.2: bytes=32 time=11ms TTL=254

Ping statistics for 192.168.100.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 3ms

C:\>ping 203.0.113.10

Pinging 203.0.113.10 with 32 bytes of data:

Reply from 203.0.113.10: bytes=32 time=28ms TTL=126
Reply from 203.0.113.10: bytes=32 time=10ms TTL=126
Reply from 203.0.113.10: bytes=32 time=11ms TTL=126
Reply from 203.0.113.10: bytes=32 time=10ms TTL=126

Ping statistics for 203.0.113.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 28ms, Average = 14ms

C:\>
```

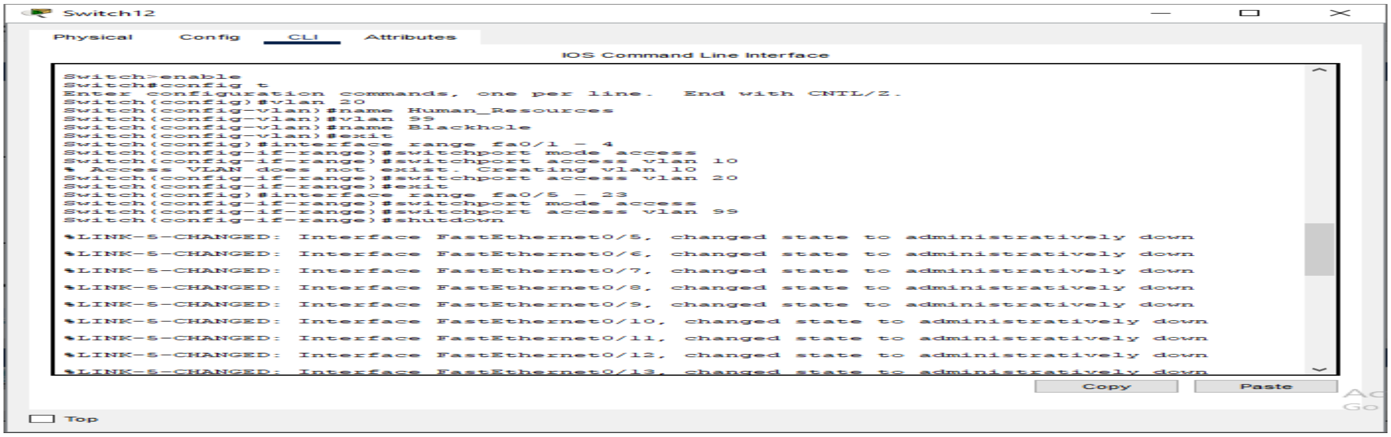
Screenshot of Vlan Configurations



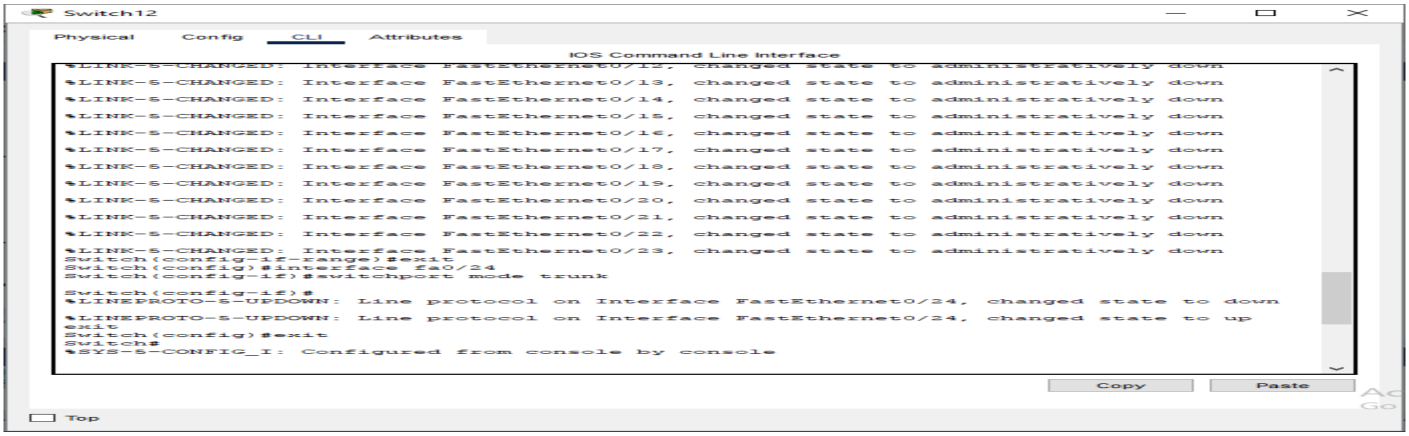
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name Software_Development
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5 - 23
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 99
Switch(config-if-range)#shutdown

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
```



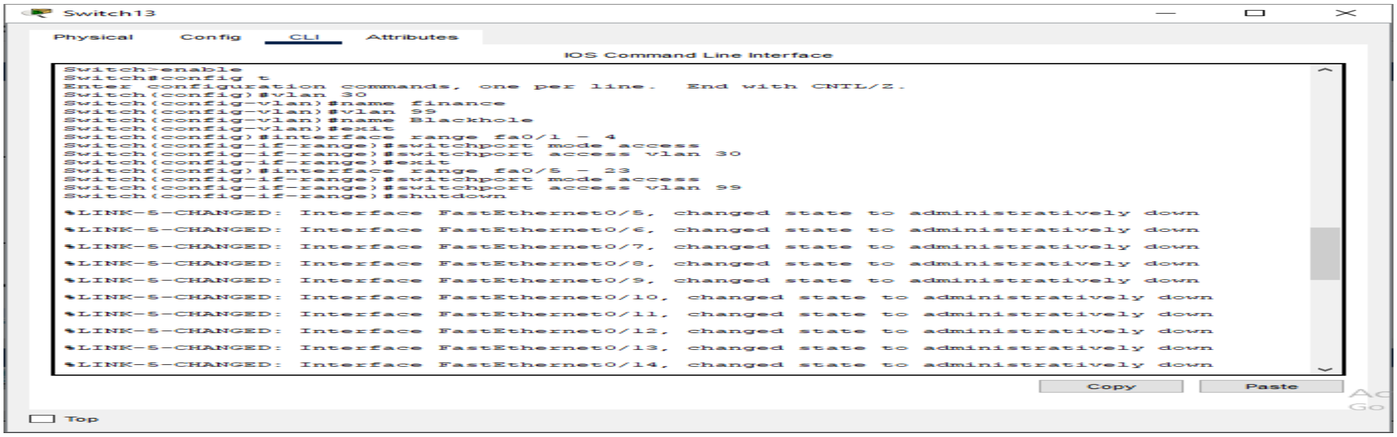
```
%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```



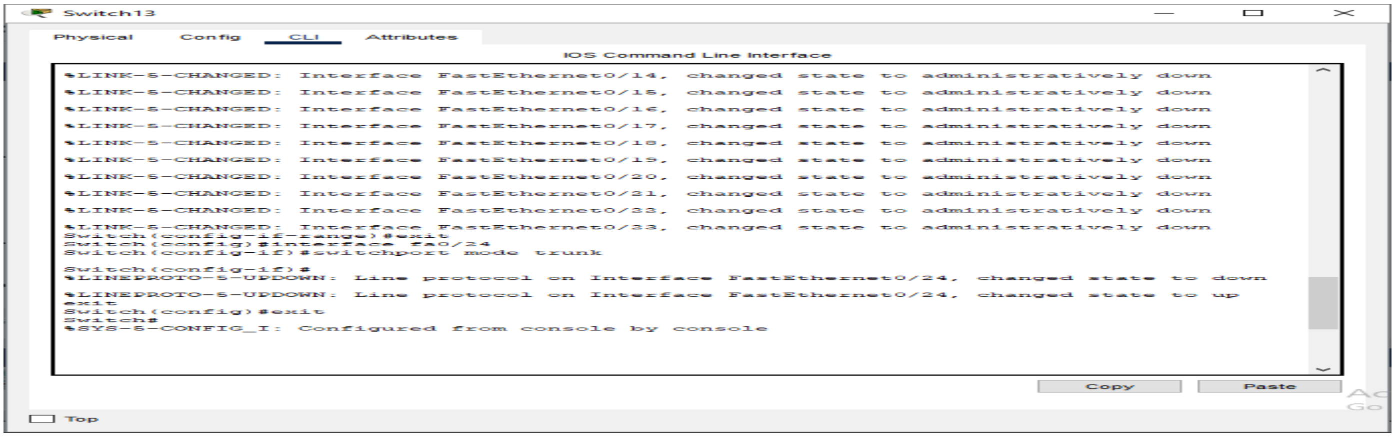
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 20
Switch(config-vlan)#name Human_Resources
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
% Access VLAN does not exist. Creating vlan 10
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5 - 23
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 99
Switch(config-if-range)#shutdown

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down
```



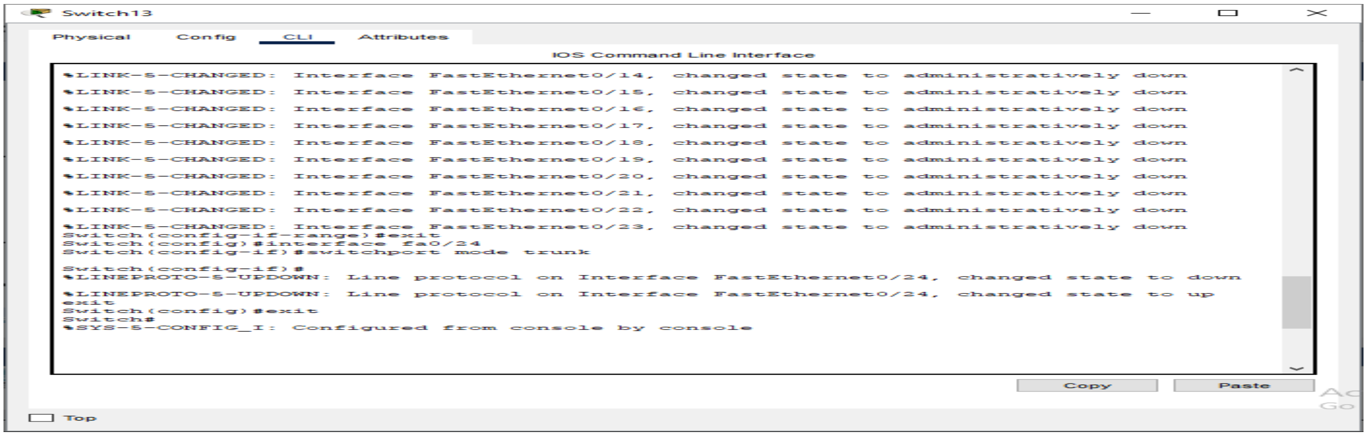
```
%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```



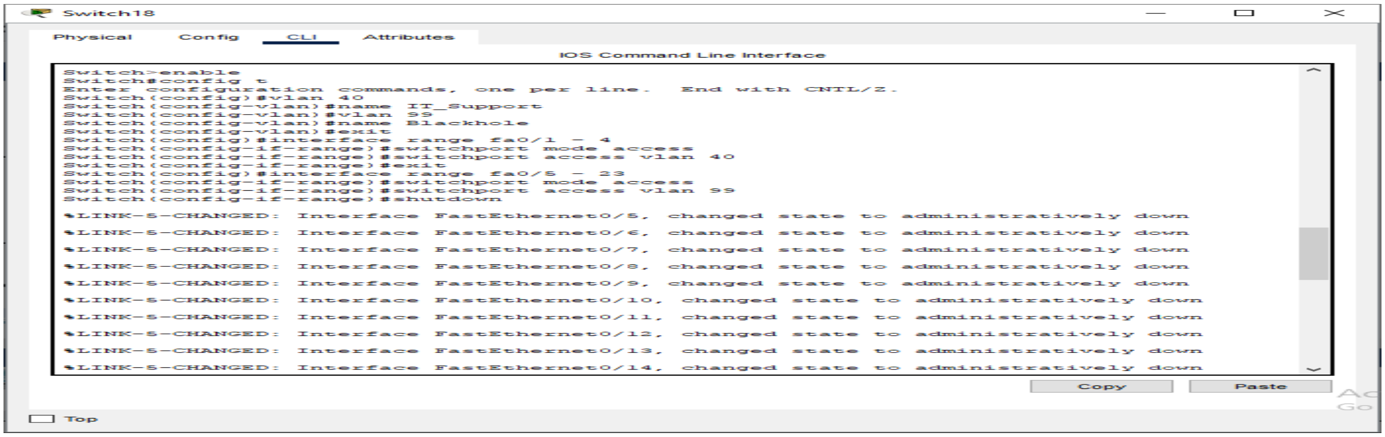
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 30
Switch(config-vlan)#name finance
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 30
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5 - 23
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 99
Switch(config-if-range)#shutdown

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
```



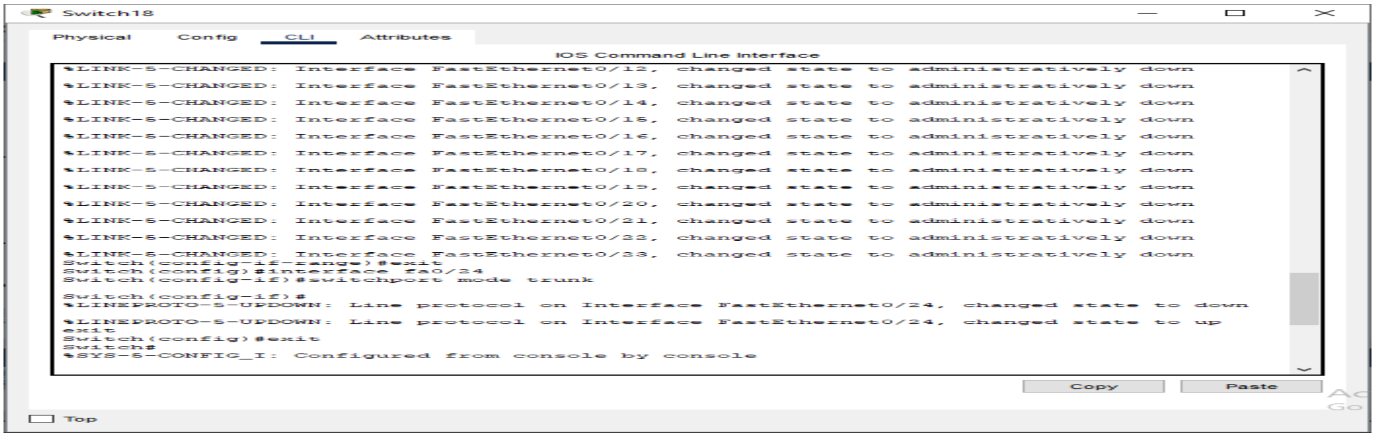
```
%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```



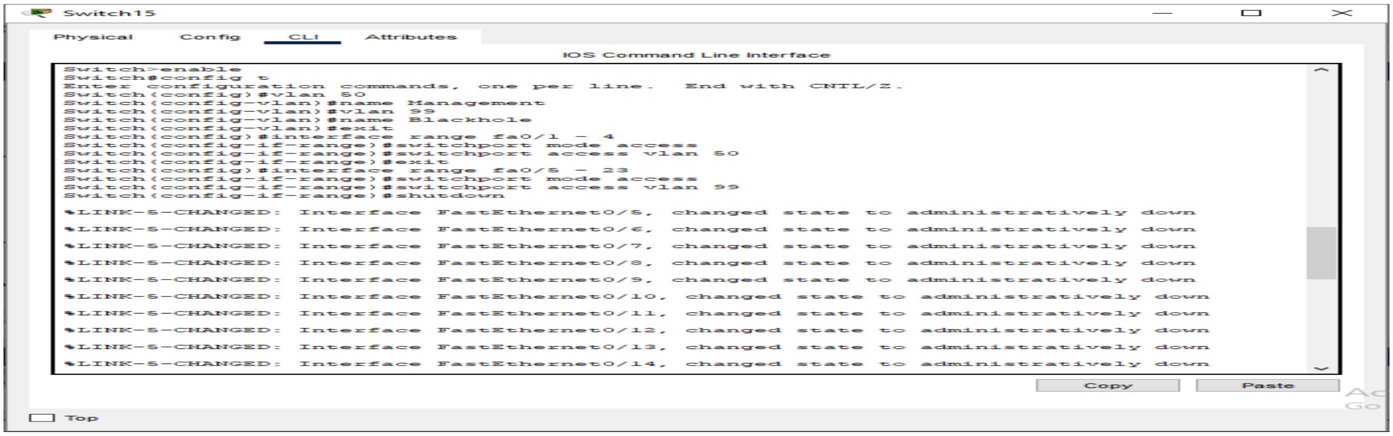
```
%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```



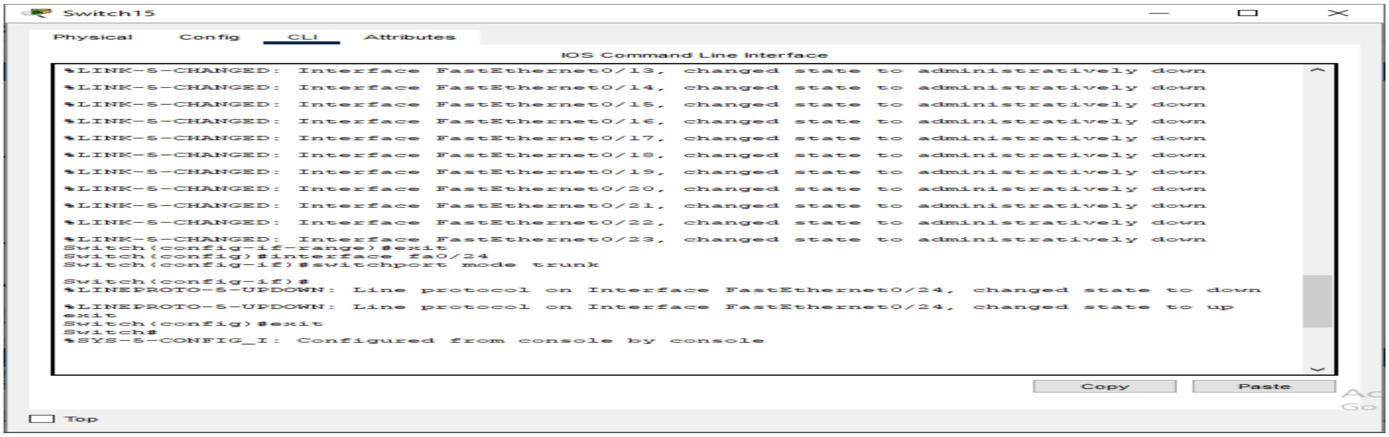
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 40
Switch(config-vlan)#name IT_Support
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 40
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5 - 23
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 99
Switch(config-if-range)#shutdown

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
```



```
%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

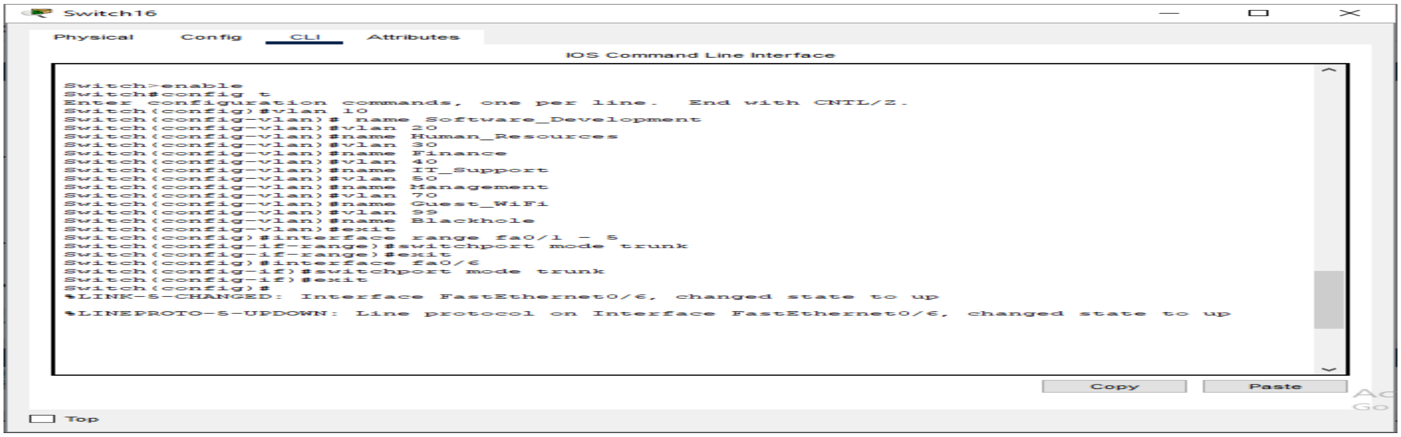


```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 50
Switch(config-vlan)#name Management
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 4
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 50
Switch(config-if-range)#exit
Switch(config)#interface range fa0/5 - 23
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 99
Switch(config-if-range)#shutdown

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
```



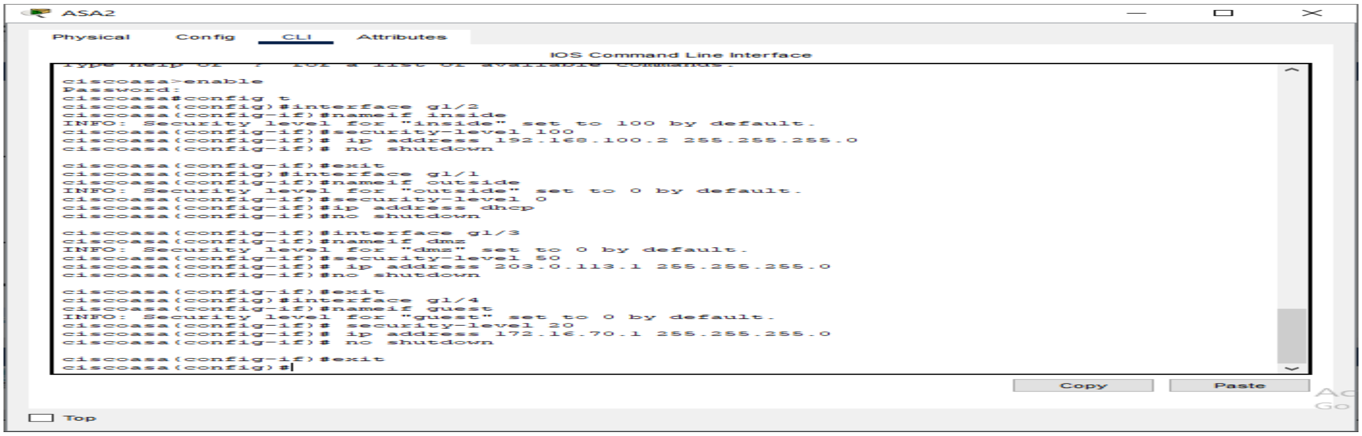
```
%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
Switch(config-if-range)#exit
Switch(config)#interface fa0/24
Switch(config-if)#switchport mode trunk

Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up
exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

Screenshot of inter-Vlan Switch



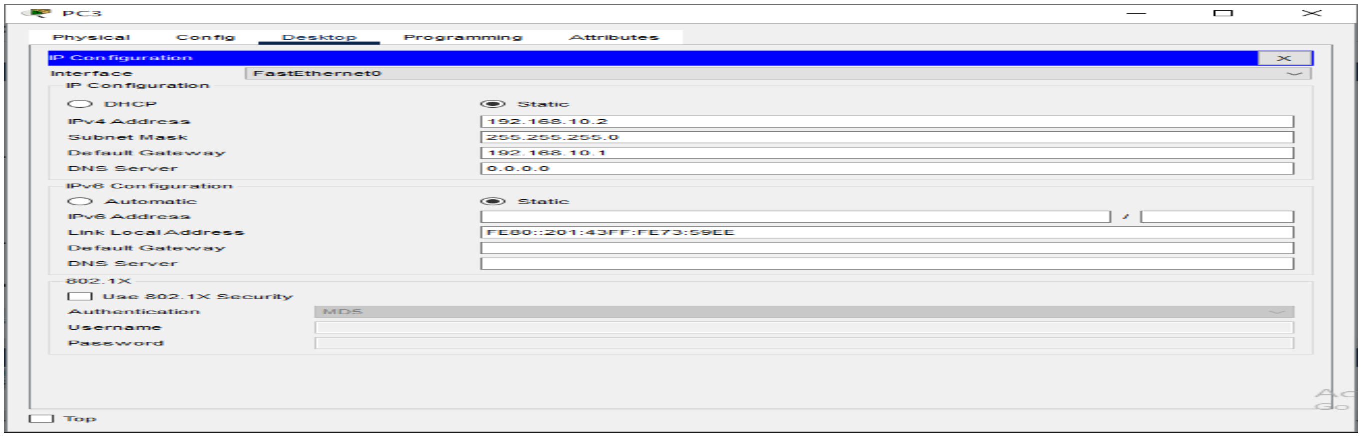
```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)# name Software_Development
Switch(config-vlan)#vlan 20
Switch(config-vlan)#name Human_Resources
Switch(config-vlan)#vlan 30
Switch(config-vlan)#name Finance
Switch(config-vlan)#vlan 40
Switch(config-vlan)#name IT_Support
Switch(config-vlan)#vlan 50
Switch(config-vlan)#name Management
Switch(config-vlan)#vlan 70
Switch(config-vlan)#name Guest_WiFi
Switch(config-vlan)#vlan 99
Switch(config-vlan)#name Blackhole
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1 - 5
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#exit
Switch(config)#interface fa0/6
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit
Switch(config)#
%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up
```

Screenshot of ASA firewall configuration



```
Type help or '?' for a list of available commands.
ciscoasa>enable
Password:
ciscoasa#config t
ciscoasa(config)#interface g1/2
ciscoasa(config-if)#nameif inside
INFO: Security level for "inside" set to 100 by default.
ciscoasa(config-if)#security-level 100
ciscoasa(config-if)# ip address 192.168.100.2 255.255.255.0
ciscoasa(config-if)# no shutdown

ciscoasa(config-if)#exit
ciscoasa(config)#interface g1/1
ciscoasa(config-if)#nameif outside
INFO: Security level for "outside" set to 0 by default.
ciscoasa(config-if)#security-level 0
ciscoasa(config-if)#ip address dhcp
ciscoasa(config-if)#no shutdown

ciscoasa(config-if)#interface g1/3
ciscoasa(config-if)#nameif dmz
INFO: Security level for "dmz" set to 0 by default.
ciscoasa(config-if)#security-level 50
ciscoasa(config-if)# ip address 203.0.113.1 255.255.255.0
ciscoasa(config-if)#no shutdown

ciscoasa(config-if)#exit
ciscoasa(config)#interface g1/4
ciscoasa(config-if)#nameif guest
INFO: Security level for "guest" set to 0 by default.
ciscoasa(config-if)# security-level 20
ciscoasa(config-if)# ip address 172.16.70.1 255.255.255.0
ciscoasa(config-if)# no shutdown

ciscoasa(config-if)#exit
ciscoasa(config)#
```

Screenshot of a PC in Vlan 10



Interface: FastEthernet0

IP Configuration

○ DHCP ● Static

IPv4 Address: 192.168.10.2

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.1

DNS Server: 0.0.0.0

IPv6 Configuration

○ Automatic ● Static

IPv6 Address: /

Link Local Address: FE80::201:43FF:FE73:59EE

Default Gateway:

DNS Server:

802.1X

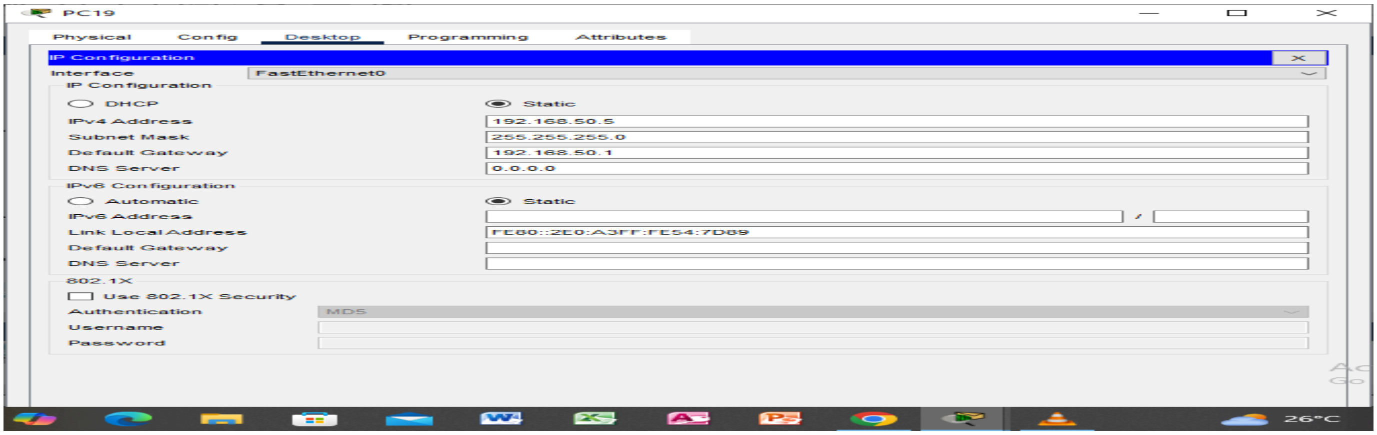
□ Use 802.1X Security

Authentication: MD5

Username:

Password:

Screenshot of a PC in Vlan 50



Interface: FastEthernet0

IP Configuration

○ DHCP ● Static

IPv4 Address: 192.168.50.5

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.50.1

DNS Server: 0.0.0.0

IPv6 Configuration

○ Automatic ● Static

IPv6 Address: /

Link Local Address: FE80::2E0:A3FF:FE54:7D89

Default Gateway:

DNS Server:

802.1X

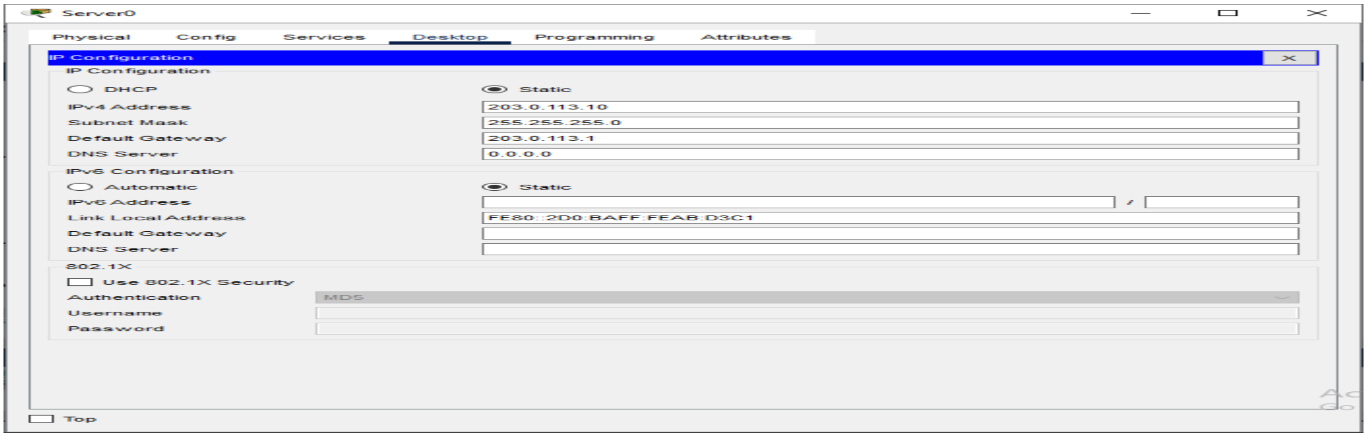
□ Use 802.1X Security

Authentication: MD5

Username:

Password:

Screenshot of IP configuration on DMZ



IP Configuration

IP Configuration

○ DHCP ● Static

IPv4 Address: 203.0.113.10

Subnet Mask: 255.255.255.0

Default Gateway: 203.0.113.1

DNS Server: 0.0.0.0

IPv6 Configuration

○ Automatic ● Static

IPv6 Address: /

Link Local Address: FE80::2D0:BAFF:FEAB:D3C1

Default Gateway:

DNS Server:

802.1X

□ Use 802.1X Security

Authentication: MD5

Username:

Password:

□ Top