

**Narciso Mora**  
**Computer Networking Final Project**

**Lab Task 1: Design an IP Address Scheme**

1. The network 172.16.10.0/24 was divided into eight subnets, as outlined below:
2. The value of the new subnet mask is 255.255.255.224.
3. 30 usable hosts exist per subnet.
- 4.

<b>Subnet Number</b>	<b>Network Address</b>	<b>Usable Host Address Range</b>	<b>Broadcast Address</b>
1	172.16.10.0	172.16.10.1 - 172.16.10.30	172.16.10.31
2	172.16.10.32	172.16.10.33 - 172.16.10.62	172.16.10.63
3	172.16.10.64	172.16.10.65 - 172.16.10.94	172.16.10.95
4	172.16.10.96	172.16.10.97 - 172.16.10.126	172.16.10.127
5	172.16.10.128	172.16.10.129 - 172.16.10.158	172.16.10.159
6	172.16.10.160	172.16.10.161 - 172.16.10.190	172.16.10.191
7	172.16.10.192	172.16.10.193 - 172.16.10.222	172.16.10.223
8	172.16.10.224	172.16.10.225 - 172.16.10.254	172.16.10.255

## **Lab Task 2: Implement VLANs and Trunk**

*(Listed commands were executed on S1-Office1 and S2-Office1.)*

1. en  
conf t  
vlan 10  
name Management  
exit  
vlan 20  
name Marketing  
exit  
vlan 30  
name Accounting  
exit  
vlan 100  
name Native  
exit
  
2. int range fa0/1-10  
switchport mode access  
switchport access vlan 10  
exit  
int range fa0/11-20  
switchport mode access  
switchport access vlan 20  
exit  
int range fa0/21-24  
switchport mode access  
switchport access vlan 30  
exit
  
3.
  - a. *On S1-Office1:*  
int gi0/2  
switchport mode trunk  
switchport trunk native vlan 100  
exit  
do sho vlan brief  
do sho int trunk
  - b. *On S2-Office1:*  
int gi0/1

```

switchport mode trunk
switchport trunk native vlan 100
exit
do sho vlan brief
do sho int trunk

```

```

4. int range fa0/1-24
   switchport nonegotiate
   exit
   do wr

```

S1-Office1

Physical

Config

CLI

Attributes

IOS Command Line Interface

S1-Office1(config)#do sho vlan brief

VLAN	Name	Status	Ports
1	default	active	Gig0/1
10	Management	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10
20	Marketing	active	Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20
30	Accounting	active	Fa0/21, Fa0/22, Fa0/23, Fa0/24
100	Native	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

S1-Office1(config)#do sho int trunk

Port	Mode	Encapsulation	Status	Native vlan
Gig0/2	on	802.1q	trunking	100

Port Vlans allowed on trunk

Gig0/2	1-1005
--------	--------

Port Vlans allowed and active in management domain

Gig0/2	1,10,20,30,100
--------	----------------

Port Vlans in spanning tree forwarding state and not pruned

Gig0/2	none
--------	------

S1-Office1(config)#

Ctrl+F6 to exit CLI focus

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S2-Office1



Physical

Config

CLI

Attributes

## IOS Command Line Interface

```
S2-Office1(config)#do sho vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Gig0/2
10	Management	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10
20	Marketing	active	Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20
30	Accounting	active	Fa0/21, Fa0/22, Fa0/23, Fa0/24
100	Native	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
S2-Office1(config)#do sho int trunk
```

Port	Mode	Encapsulation	Status	Native vlan
Gig0/1	on	802.1q	trunking	100

Port	Vlans allowed on trunk
Gig0/1	1-1005

Port	Vlans allowed and active in management domain
Gig0/1	1,10,20,30,100

Port	Vlans in spanning tree forwarding state and not pruned
Gig0/1	10,20,30

Ctrl+F6 to exit CLI focus

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### **Lab Task 3: Assign IP Addresses**

1. Address 172.16.10.1 (from subnet 1) was assigned to the R3 / S1-Office3 link.  
*On R3:*  
en  
conf t  
int gi0/0  
ip address 172.16.10.1 255.255.255.224  
desc To S1-Office3  
no shut  
exit
2. Address 172.16.10.33 (from subnet 2) was assigned to the R3 / S1-Office2 link.  
*On R3:*  
int gi0/1  
ip address 172.16.10.33 255.255.255.224  
desc To S1-Office2  
no shut  
exit
3. For the R1 / R2 WAN link, addresses from subnet 3 were used. Address 172.16.10.65 was assigned on the R1 side, and address 172.16.10.66 was assigned on the R2 side.  
*On R1:*  
en  
conf t  
int se0/0/1  
ip addr 172.16.10.65 255.255.255.224  
desc To R2  
no shut  
ex  
*On R2:*  
en  
conf t  
int se0/0/1  
ip addr 172.16.10.66 255.255.255.224  
desc To R1  
no shut  
ex
4. For the R1 / R3 WAN link, addresses from subnet 4 were used. Address 172.16.10.97 was assigned on the R1 side, and address 172.16.10.98 was assigned on the R3 side.  
*On R1:*

```
int se0/0/0
ip addr 172.16.10.97 255.255.255.224
desc To R3
no shut
ex
do wr
On R3:
int se0/0/0
ip addr 172.16.10.98 255.255.255.224
desc To R1
no shut
ex
```

5. For the R2 / R3 WAN link, addresses from subnet 5 were used. Address 172.16.10.129 was assigned on the R2 side, and address 172.16.10.130 was assigned on the R3 side.

```
On R2:
int se0/0/0
ip addr 172.16.10.129 255.255.255.224
desc To R3
no shut
ex
do wr
On R3:
int se0/0/1
ip addr 172.16.10.130 255.255.255.224
desc To R2
no shut
ex
do wr
```

6. The last usable addresses on subnet 6 were assigned to end devices on VLAN 10 on the Office 1 LAN. The first usable address in subnet 6, 172.16.10.161, was set as the default gateway.
- CEO1: 172.16.10.189
  - CEO2: 172.16.10.190
7. The last usable addresses on subnet 7 were assigned to end devices on VLAN 20 on the Office 1 LAN. The first usable address in subnet 7, 172.16.10.193, was set as the default gateway.
- Copywriter1: 172.16.10.221
  - Copywriter2: 172.16.10.222

8. The last usable addresses on subnet 8 were assigned to end devices on VLAN 30 on the Office 1 LAN. The first usable address in subnet 8, 172.16.10.225, was set as the default gateway.
  - a. Dialer1: 172.16.10.253
  - b. Dialer2: 172.16.10.254
  
9. IP addresses were assigned to end devices in Offices 2 and 3:
  - a. The last usable addresses on subnet 2 were assigned to end devices on the Office 2 LAN. The first usable address in subnet 2, 172.16.10.33, was set as the default gateway.
    - i. Employee 1: 172.16.10.60
    - ii. Employee 2: 172.16.10.61
    - iii. Guest: 172.16.10.62
  - b. The last usable addresses on subnet 1 were assigned to end devices on the Office 3 LAN. The first usable address in subnet 1, 172.16.10.1, was set as the default gateway (as configured in step 1).
    - i. Email Server: 172.16.10.28
    - ii. Syslog / NTP Server: 172.16.10.29
    - iii. Admin: 172.16.10.30

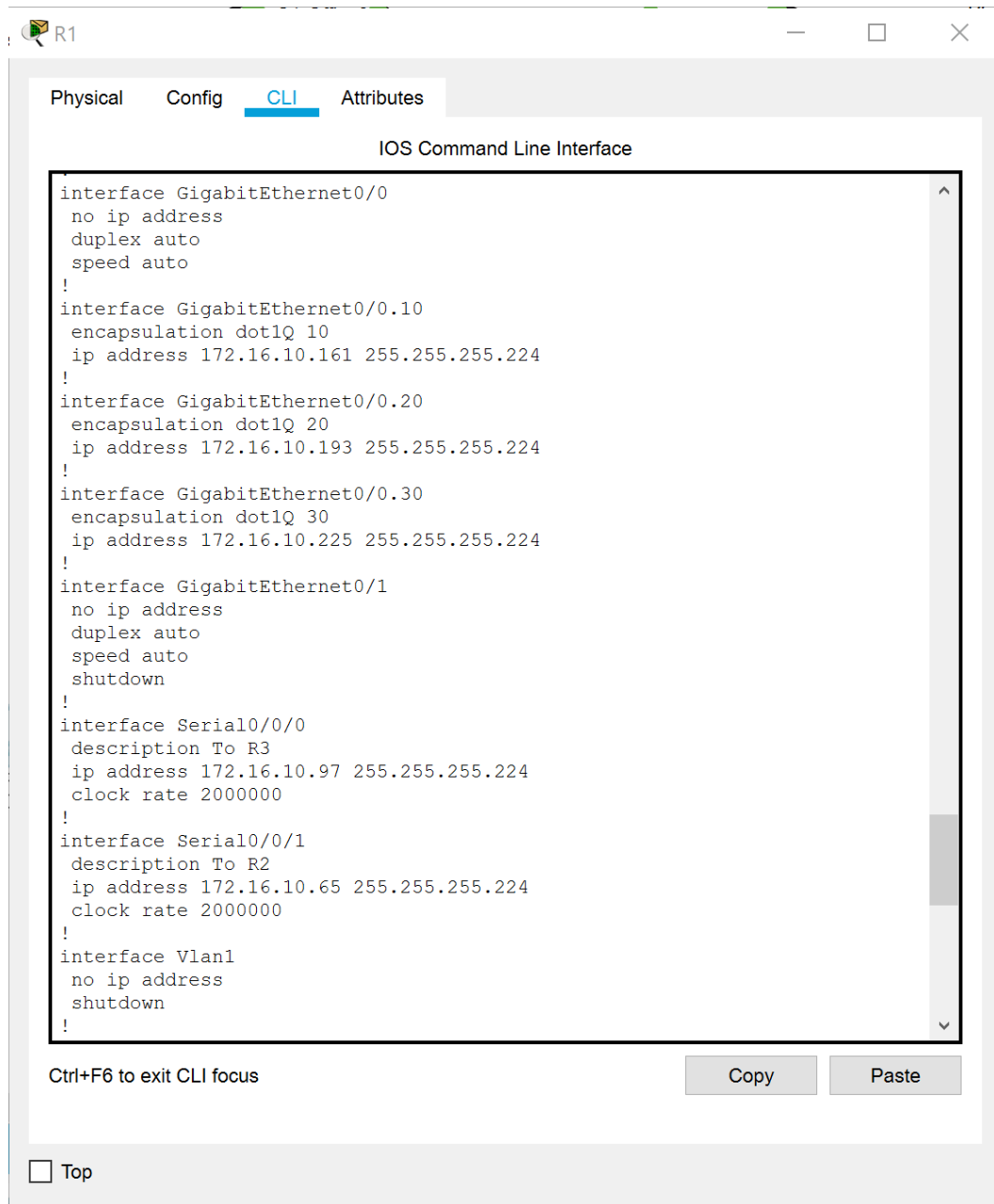
IP Address Usage Summary	
Subnet	Use
1	Office 3 LAN
2	Office 2 LAN
3	R1 / R2 WAN link
4	R1 / R3 WAN link
5	R2 / R3 WAN link
6	VLAN 10 (Management)
7	VLAN 20 (Marketing)
8	VLAN 30 (Accounting)

#### **Lab Task 4: Configure R1 for Inter-VLAN Routing**

*(Listed commands were executed on R1, unless otherwise stated.)*

1. en  
conf t  
int gi0/0  
no shut  
ex
  
2. *(The commands below cover lab steps 2 through 4)*  
int gi0/0.10  
encapsulation dot1q 10  
ip addr 172.16.10.161 255.255.255.224  
ex  
int gi0/0.20  
encapsulation dot1q 20  
ip addr 172.16.10.193 255.255.255.224  
ex  
int gi0/0.30  
encapsulation dot1q 30  
ip addr 172.16.10.225 255.255.255.224  
ex
  
5. do sho run





6. *On SI-Office1:*

```
en
conf t
int gi0/1
switchport mode trunk
switchport trunk native vlan 100
no shut
ex
```

7. On S1-Office1: do `sho int trunk`

8. I was able to successfully ping Copywriter1 and Dialer1 from the CEO1 PC.

S1-Office1

PhysicalConfigCLIAttributes

IOS Command Line Interface

```
S1-Office1(config-if)#ex
S1-Office1(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to up

S1-Office1(config)#do sho int trunk
Port      Mode      Encapsulation  Status      Native vlan
Gig0/1    on        802.1q         trunking    100
Gig0/2    on        802.1q         trunking    100

Port      Vlans allowed on trunk
Gig0/1    1-1005
Gig0/2    1-1005

Port      Vlans allowed and active in management domain
Gig0/1    1,10,20,30,100
Gig0/2    1,10,20,30,100

Port      Vlans in spanning tree forwarding state and not pruned
Gig0/1    none
Gig0/2    1,10,20,30,100

S1-Office1(config)#|
```

Ctrl+F6 to exit CLI focus

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CEO1



Physical

Config

Desktop

Programming

Attributes

Command Prompt



```
C:\>ping 172.16.10.221
```

```
Pinging 172.16.10.221 with 32 bytes of data:
```

```
Reply from 172.16.10.221: bytes=32 time<1ms TTL=127
Reply from 172.16.10.221: bytes=32 time<1ms TTL=127
Reply from 172.16.10.221: bytes=32 time<1ms TTL=127
Reply from 172.16.10.221: bytes=32 time=12ms TTL=127
```

```
Ping statistics for 172.16.10.221:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 3ms
```

```
C:\>ping 172.16.10.253
```

```
Pinging 172.16.10.253 with 32 bytes of data:
```

```
Reply from 172.16.10.253: bytes=32 time<1ms TTL=127
Reply from 172.16.10.253: bytes=32 time<1ms TTL=127
Reply from 172.16.10.253: bytes=32 time=4ms TTL=127
Reply from 172.16.10.253: bytes=32 time=1ms TTL=127
```

```
Ping statistics for 172.16.10.253:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 4ms, Average = 1ms
```

```
C:\>|
```

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## Lab Task 5: Secure Switch Physical Ports

(Listed commands were executed on both S1-Office1 and S2-Office1, unless otherwise stated)

1. en  
conf t  
int range fa0/1-24  
switchport port-security  
switchport port-security violation restrict
2. switchport port-security mac-address sticky  
switchport port-security maximum 1  
ex
3. do sh port-sec

The image shows two side-by-side screenshots of network switch CLI interfaces. The left window is titled 'S1-Office1' and the right window is titled 'S2-Office1'. Both windows show the output of the command 'do sh port-sec' in the CLI. The output is a table with columns: Secure, Port, MaxSecureAddr (Count), CurrentAddr (Count), SecurityViolation (Count), and Security Action. The tables list ports from Fa0/1 to Fa0/24. In both switches, all ports are configured with 'Restrict' security action, and the 'SecurityViolation' count is 0 for all ports. The 'MaxSecureAddr' and 'CurrentAddr' counts are also 0 for all ports. The CLI prompt is 'S1-Office1(config)#' for the left and 'S2-Office1(config)#' for the right.

Secure	Port	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action
1	Fa0/1	0	0	0	Restrict
1	Fa0/2	0	0	0	Restrict
1	Fa0/3	0	0	0	Restrict
1	Fa0/4	0	0	0	Restrict
1	Fa0/5	0	0	0	Restrict
1	Fa0/6	0	0	0	Restrict
1	Fa0/7	0	0	0	Restrict
1	Fa0/8	0	0	0	Restrict
1	Fa0/9	0	0	0	Restrict
1	Fa0/10	0	0	0	Restrict
1	Fa0/11	0	0	0	Restrict
1	Fa0/12	0	0	0	Restrict
1	Fa0/13	0	0	0	Restrict
1	Fa0/14	0	0	0	Restrict
1	Fa0/15	0	0	0	Restrict
1	Fa0/16	0	0	0	Restrict
1	Fa0/17	0	0	0	Restrict
1	Fa0/18	0	0	0	Restrict
1	Fa0/19	0	0	0	Restrict
1	Fa0/20	0	0	0	Restrict
1	Fa0/21	0	0	0	Restrict
1	Fa0/22	0	0	0	Restrict
1	Fa0/23	0	0	0	Restrict
1	Fa0/24	0	0	0	Restrict

4. On S1-Office1:  
int range fa0/2-10  
shut  
ex  
int range fa0/12-20  
shut  
ex  
int range fa0/22-24  
shut

```
ex
do wr
On S2-Office1:
int range fa0/2-10
shut
ex
int range fa0/12-20
shut
ex
int range fa0/22-24
shut
ex
int gi0/2
shut
ex
do wr
```

## **Lab Task 6: Configure OSPF**

*(Listed commands were executed on R1, R2, and R3, unless otherwise stated)*

1. en  
conf t  
int se0/0/0  
no shut  
ex  
int se0/0/1  
no shut  
ex
2. *On R3 only:*  
int range gi0/0-1  
no shut  
ex
3. router ospf 1  
auto-cost reference-bandwidth 1000  
*On R1:*  
router-id 1.1.1.1  
network 172.16.10.64 0.0.0.31 area 0  
network 172.16.10.96 0.0.0.31 area 0  
network 172.16.10.160 0.0.0.31 area 0  
network 172.16.10.192 0.0.0.31 area 0  
network 172.16.10.224 0.0.0.31 area 0  
*On R2:*  
router-id 2.2.2.2  
network 172.16.10.64 0.0.0.31 area 0  
network 172.16.10.128 0.0.0.31 area 0  
*On R3:*  
router-id 3.3.3.3  
network 172.16.10.96 0.0.0.31 area 0  
network 172.16.10.128 0.0.0.31 area 0  
network 172.16.10.32 0.0.0.31 area 0  
network 172.16.10.0 0.0.0.31 area 0
4. *On R1:*  
passive-int gi0/0  
passive-int gi0/0.10  
passive-int gi0/0.20  
passive-int gi0/0.30

On R3:

```
passive-int gi0/0
```

```
passive-int gi0/1
```

5. ex

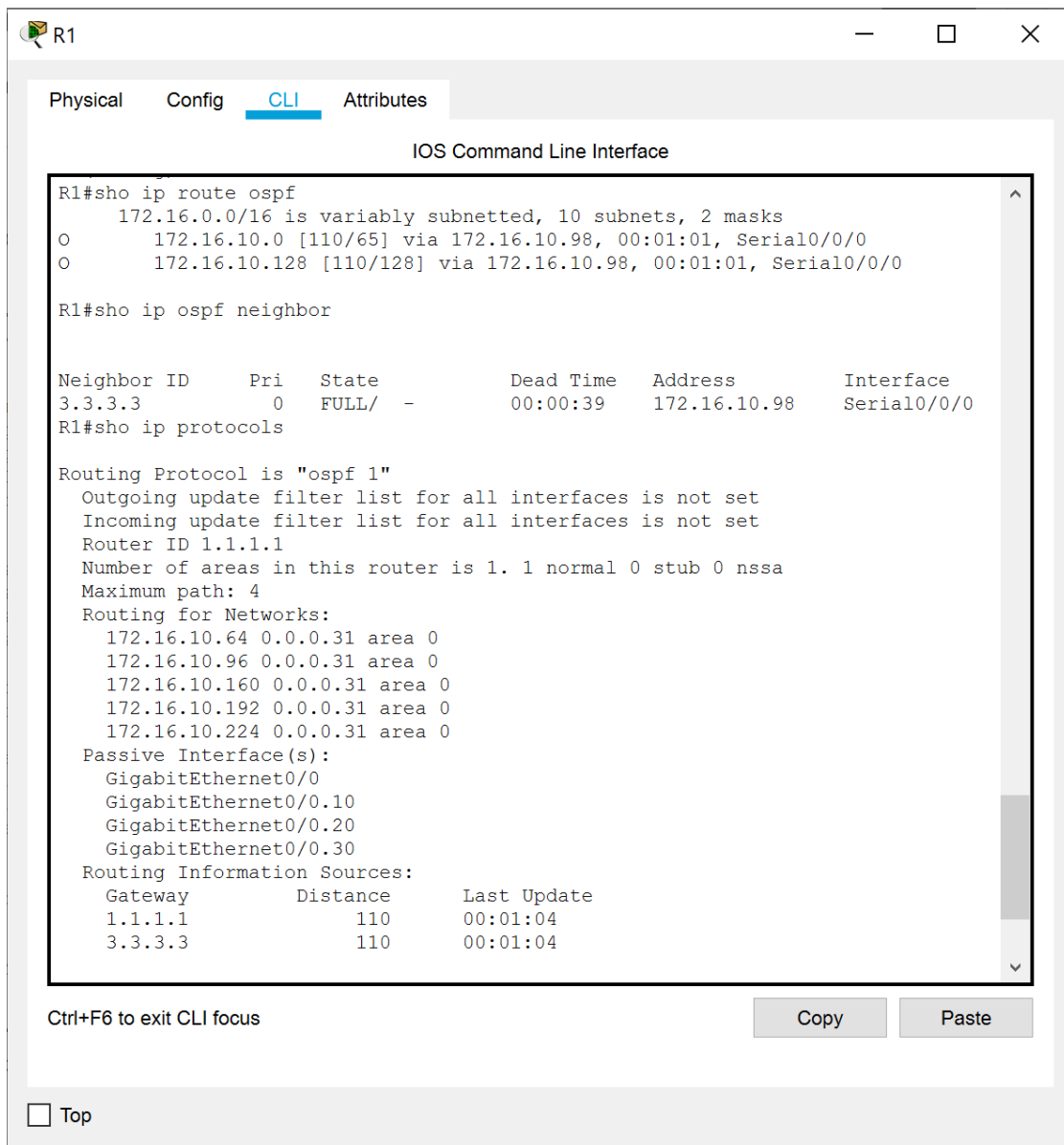
ex

```
sho ip route ospf
```

```
sho ip ospf neighbor
```

```
sho ip protocols
```

wr



R1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
R1#sho ip route ospf
  172.16.0.0/16 is variably subnetted, 10 subnets, 2 masks
O       172.16.10.0 [110/65] via 172.16.10.98, 00:01:01, Serial0/0/0
O       172.16.10.128 [110/128] via 172.16.10.98, 00:01:01, Serial0/0/0

R1#sho ip ospf neighbor

Neighbor ID    Pri   State           Dead Time   Address        Interface
3.3.3.3         0    FULL/ -         00:00:39    172.16.10.98   Serial0/0/0

R1#sho ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 1.1.1.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    172.16.10.64 0.0.0.31 area 0
    172.16.10.96 0.0.0.31 area 0
    172.16.10.160 0.0.0.31 area 0
    172.16.10.192 0.0.0.31 area 0
    172.16.10.224 0.0.0.31 area 0
  Passive Interface(s):
    GigabitEthernet0/0
    GigabitEthernet0/0.10
    GigabitEthernet0/0.20
    GigabitEthernet0/0.30
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1           110          00:01:04
    3.3.3.3           110          00:01:04
```

Ctrl+F6 to exit CLI focus

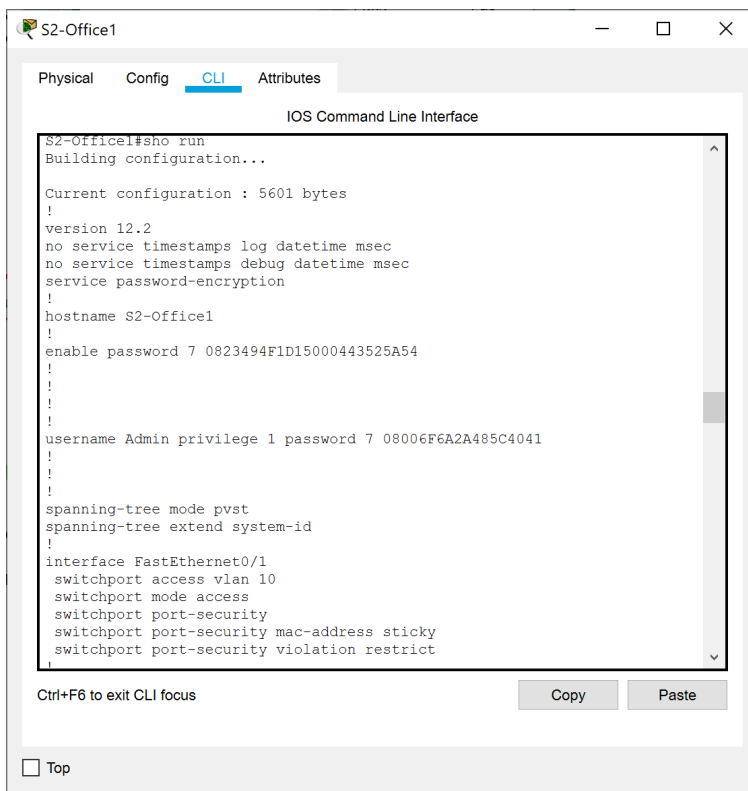
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## **Lab Task 7: Initial and Security Settings for Network Devices**

*(Listed commands were executed on all routers and switches)*

1. en  
conf t  
username Admin password ACDC1973
2. line console 0  
login local  
exit
3. enable password beatles1960
4. service password-encryption
5. banner motd #Access to this device is for authorized personnel only!  
ex  
wr  
ex



The screenshot shows a network device CLI window titled "S2-Office1". The window has tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The command prompt is "S2-Office1#". The user has entered the command "sho run", and the output shows the current configuration of the device. The configuration includes the version 12.2, service timestamps, service password-encryption, hostname S2-Office1, enable password 7 0823494F1D15000443525A54, username Admin privilege 1 password 7 08006F6A2A485C4041, spanning-tree mode pvst, spanning-tree extend system-id, and interface FastEthernet0/1 with switchport access vlan 10, switchport mode access, switchport port-security, switchport port-security mac-address sticky, and switchport port-security violation restrict.

```
S2-Office1#sho run
Building configuration...

Current configuration : 5601 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname S2-Office1
!
enable password 7 0823494F1D15000443525A54
!
!
!
!
username Admin privilege 1 password 7 08006F6A2A485C4041
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security mac-address sticky
switchport port-security violation restrict
!
```

Ctrl+F6 to exit CLI focus

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S2-Office1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
interface GigabitEthernet0/1
  switchport trunk native vlan 100
  switchport mode trunk
!
interface GigabitEthernet0/2
  shutdown
!
interface Vlan1
  no ip address
  shutdown
!
banner motd ^CAccess to this device is for authorized personnel only!^C
!
!
!
line con 0
  login local
!
line vty 0 4
  login
line vty 5 15
  login
!
!
!
end

S2-Office1#
```

Ctrl+F6 to exit CLI focus

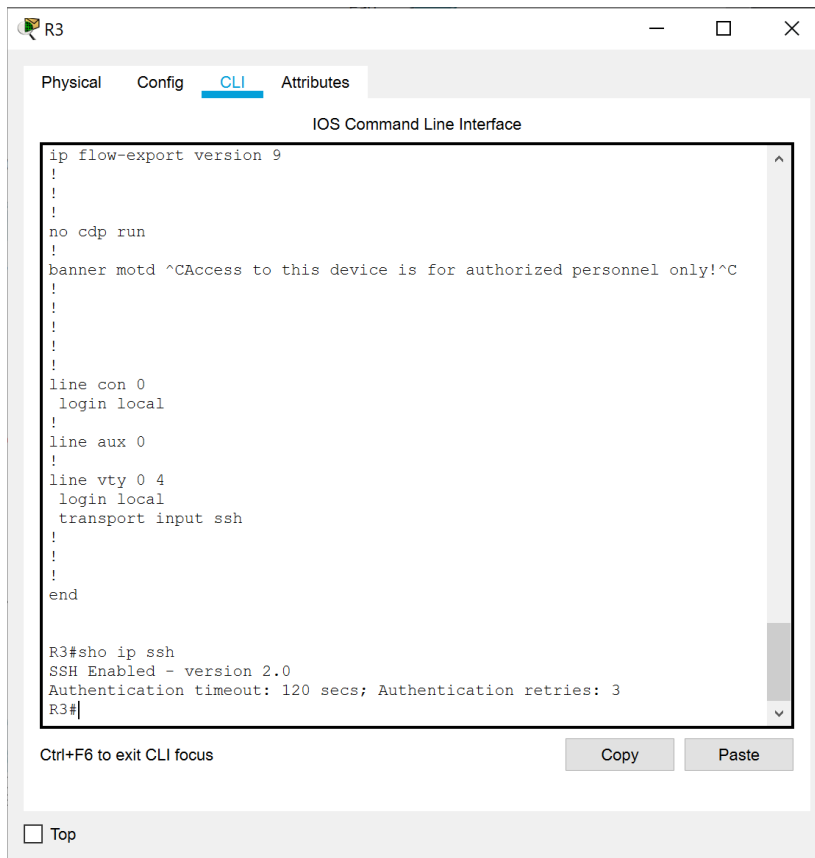
Copy Paste

☐ Top

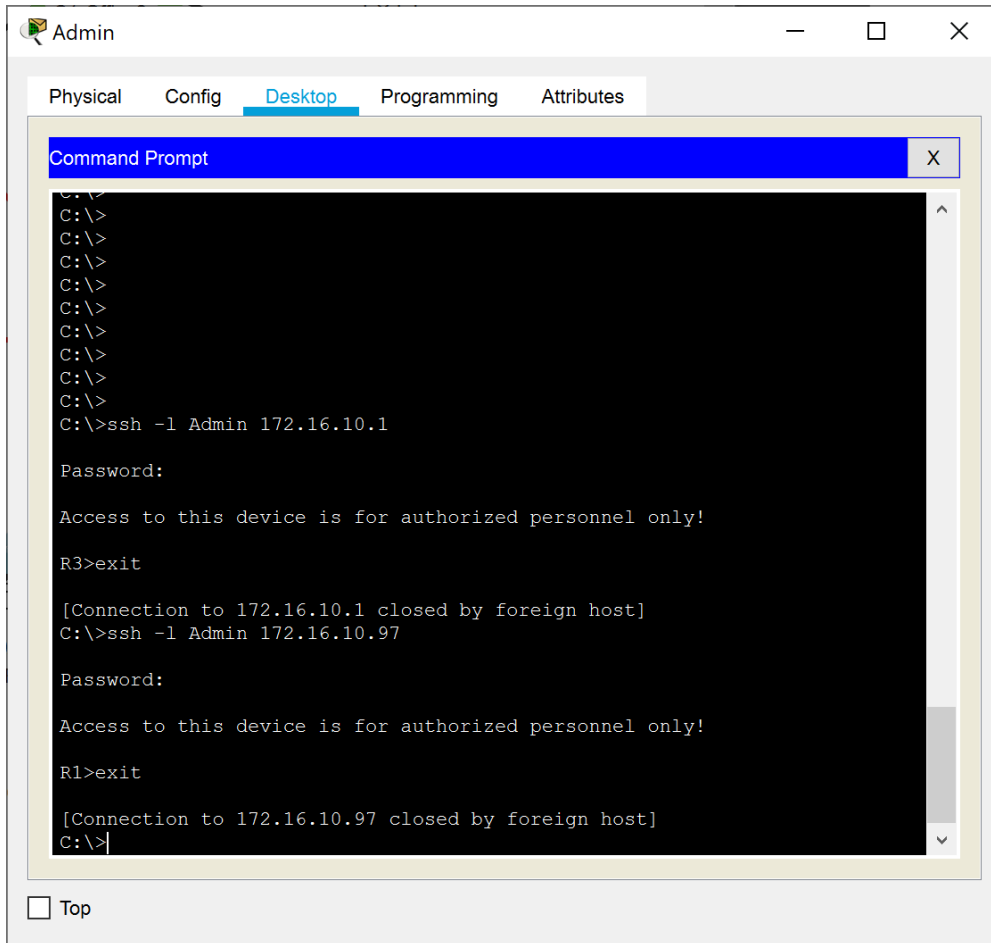
## **Lab Task 8: Secure Remote Access**

*(Listed commands were executed on R1, R2, and R3)*

1. ip domain-name Cyber.com
2. crypto key generate rsa  
2048
3. ip ssh version 2
4. line vty 0 4  
login local  
motd-banner  
transport input ssh  
exit
5. ex  
sho ip ssh  
sho run  
wr



6. Using the command `ssh -l Admin IP-Address`, I was able to successfully SSH into the routers.



The screenshot shows a window titled "Admin" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the following sequence of commands and output:

```
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ssh -l Admin 172.16.10.1

Password:

Access to this device is for authorized personnel only!

R3>exit

[Connection to 172.16.10.1 closed by foreign host]
C:\>ssh -l Admin 172.16.10.97

Password:

Access to this device is for authorized personnel only!

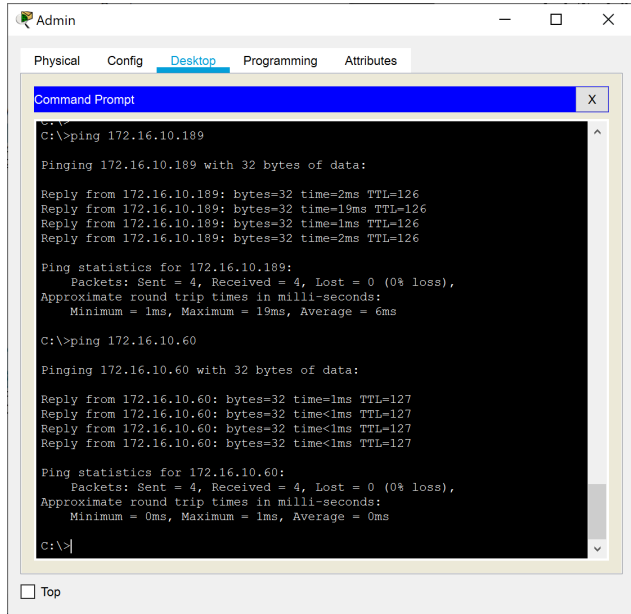
R1>exit

[Connection to 172.16.10.97 closed by foreign host]
C:\>
```

At the bottom of the window, there is a checkbox labeled "Top" which is currently unchecked.

## Lab Task 9: Full Connectivity Test

7. The configuration of IP addresses, subnet masks, default gateways, and wildcard masks were verified to be correct on all devices.
8. From the Admin PC, I was able to successfully ping CEO1 and Employee1.



The screenshot shows the Admin PC's desktop environment with a Command Prompt window open. The window displays the results of two ping commands. The first command is 'ping 172.16.10.189', which shows four successful replies with varying round trip times (2ms, 19ms, 1ms, 2ms) and a TTL of 126. The second command is 'ping 172.16.10.60', which also shows four successful replies with a round trip time of 1ms and a TTL of 127. Both pings show 0% loss and provide statistics on packets sent, received, and lost.

```
C:\>ping 172.16.10.189

Pinging 172.16.10.189 with 32 bytes of data:

Reply from 172.16.10.189: bytes=32 time=2ms TTL=126
Reply from 172.16.10.189: bytes=32 time=19ms TTL=126
Reply from 172.16.10.189: bytes=32 time=1ms TTL=126
Reply from 172.16.10.189: bytes=32 time=2ms TTL=126

Ping statistics for 172.16.10.189:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 19ms, Average = 6ms

C:\>ping 172.16.10.60

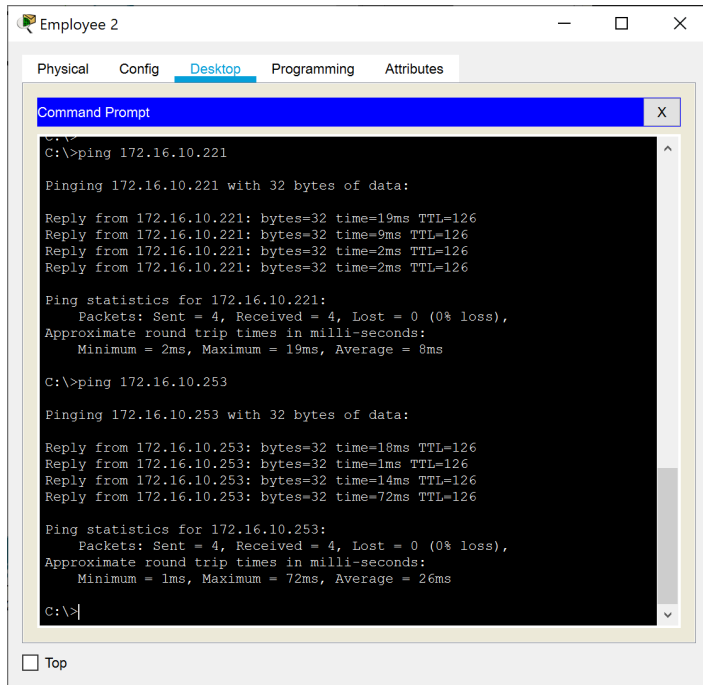
Pinging 172.16.10.60 with 32 bytes of data:

Reply from 172.16.10.60: bytes=32 time=1ms TTL=127
Reply from 172.16.10.60: bytes=32 time=1ms TTL=127
Reply from 172.16.10.60: bytes=32 time=1ms TTL=127
Reply from 172.16.10.60: bytes=32 time=1ms TTL=127

Ping statistics for 172.16.10.60:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

9. From the Employee2 PC, I was able to successfully ping Copywriter1 and Dialer1.



The screenshot shows the Employee 2 PC's desktop environment with a Command Prompt window open. The window displays the results of two ping commands. The first command is 'ping 172.16.10.221', which shows four successful replies with round trip times of 19ms, 9ms, 2ms, and 2ms, and a TTL of 126. The second command is 'ping 172.16.10.253', which shows four successful replies with round trip times of 13ms, 1ms, 14ms, and 72ms, and a TTL of 126. Both pings show 0% loss and provide statistics on packets sent, received, and lost.

```
C:\>ping 172.16.10.221

Pinging 172.16.10.221 with 32 bytes of data:

Reply from 172.16.10.221: bytes=32 time=19ms TTL=126
Reply from 172.16.10.221: bytes=32 time=9ms TTL=126
Reply from 172.16.10.221: bytes=32 time=2ms TTL=126
Reply from 172.16.10.221: bytes=32 time=2ms TTL=126

Ping statistics for 172.16.10.221:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 19ms, Average = 8ms

C:\>ping 172.16.10.253

Pinging 172.16.10.253 with 32 bytes of data:

Reply from 172.16.10.253: bytes=32 time=13ms TTL=126
Reply from 172.16.10.253: bytes=32 time=1ms TTL=126
Reply from 172.16.10.253: bytes=32 time=14ms TTL=126
Reply from 172.16.10.253: bytes=32 time=72ms TTL=126


Ping statistics for 172.16.10.253:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 72ms, Average = 26ms

C:\>
```

### **Lab Task 10: Extended ACL**

*(The below commands were executed on R3.)*

1. en  
conf t  
access-list 100 deny ip host 172.16.10.62 host 172.16.10.29  
access-list 100 permit ip any any  
int gi0/1  
ip access-group 100 in  
ex
2. ex  
sho access-lists  
sho run  
wr
3. From the Guest PC, I was able to ping the email server but was not able to ping the NTP server.

 R3

Physical Config **CLI** Attributes

IOS Command Line Interface

```
interface GigabitEthernet0/1
description To S1-Office2
ip address 172.16.10.33 255.255.255.224
ip access-group 100 in
duplex auto
speed auto
!
interface Serial0/0/0
description To R1
ip address 172.16.10.98 255.255.255.224
!
interface Serial0/0/1
description To R2
ip address 172.16.10.130 255.255.255.224
!
interface Vlan1
no ip address
shutdown
!
router ospf 1
router-id 3.3.3.3
log-adjacency-changes
passive-interface GigabitEthernet0/0
passive-interface GigabitEthernet0/1
auto-cost reference-bandwidth 1000
network 172.16.10.96 0.0.0.31 area 0
network 172.16.10.128 0.0.0.31 area 0
network 172.16.10.32 0.0.0.31 area 0
network 172.16.10.0 0.0.0.31 area 0
!
ip classless
!
ip flow-export version 9
!
!
access-list 100 deny ip host 172.16.10.62 host 172.16.10.29
access-list 100 permit ip any any
!
no cdp run
!
banner motd ^CAccess to this device is for authorized personnel only!^C
!
!
!
!
!
line con 0
login local
!
line aux 0
!
line vty 0 4
login local
transport input ssh
!
!
!
end

R3#sho access-lists
Extended IP access list 100
 10 deny ip host 172.16.10.62 host 172.16.10.29
 20 permit ip any any
```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top