End-to-End Small Office Network Design

ExpGateway

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Project Outline

Design and document an entire small-office network setup for a company with these specifications:

- Employees: 25–30 total

- Departments: 3 (Engineering, NetOps, SecOps)

- Devices: Employee PCs, company laptops, printers, security cameras, and guest Wi-Fi.

Infrastructure:

- At least two VLANs per department (one for users, one for devices like printers/cameras)

- Secure guest wireless network

- Network redundancy (using either STP, Etherchannel, or HSRP/VRRP)

- VPN connectivity option for remote access

- Basic firewall policies or ACLs between segments

Deliverables:

- Labelled Network Diagram

- IP addressing and subnetting plan (private IP scheme, clearly documented in a table or spreadsheet)

- VLAN and Port assignment chart (which ports on the switches are assigned to which VLAN)

Detailed written documentation that includes:

*** Explanation of why each design choice was made (VLAN layout, redundancy, security)

- Example configurations (switches, router, basic firewall, VPN endpoint, DHCP setup)

- List of recommended hardware/software (e.g., switches, routers, APs, firewall device or software)

- One-page summary for management (why this network design works for this company's goals)

Project Summary

This is my first project as a Network Engineer Intern for the company ExpGateway. The project is called "End-to-End Small Office Network Design" and the concept was to build out a small office network that consisted of 3 office buildings (Engineering, NetOps, and SecOps). 2 VLANs that separate end user computers and IoT things such as security cameras, printers, WLCs, and APs. Network Redundancy such as HSRP or Etherchannel and ACL segments was a must in this small office design to add a layer of security within the network. Now, the project stated that the whole office structure was supposed to hold about 25-30 employees in total but like any business out there it strives to grow and expand so with that in mind my network design I allowed for up to 186 active employees. In order to do this I used the private RFC 1918 IP address 192.168.0.0/16 and created 3 VLANs/subnets with VLSM that allow each department to hold 1 VLAN/Subnet which allows up to 62 active employees. After getting the last subnet which ended in 192.168.1.191/26 in order to integrate IoTs such as printers, security cameras, and WLCs I kept using VLSM to add an extra VLAN/Subnet to each department to allow those devices to get integrated within the office while keeping the traffic separated from the end users. I allowed for up to 14 IoT devices just for a bit of wiggle room for expansion. To improve the speed of traffic flow I allowed for switches labeled "B" for intra-department routing and then the central router does inter-department routing, this allows for the router not to handle all the traffic that the office buildings produce. Like every business out there who doesn't like having WiFi for all of our BOYD but it does come with a security risk that is why in my network blueprint I have a secured WiFi access point labeled "Guest" and it is also separate from the internal network infrastructure so no snooping happens. Lastly, I took the last address 192.168.1.239/28 and created 3 extra subnets for 3 P2P connections between each department that leads up to 1 single central router. At the end of the day you want the departments to have full communication with each other so I implemented the link-state routing protocol OSPF with an area of 0. Now with that being said, full communication between every department is not always what happens in a real world scenario so I implemented ACL rules to deny all incoming traffic towards NetOps. The reason why I chose this department is because NetOps is the central management for all the core network devices that a company uses. These systems are critical and have to be protected from unauthorized access at all times. With this project plan a company should easily be able to build this and expand with it, if neccassary.
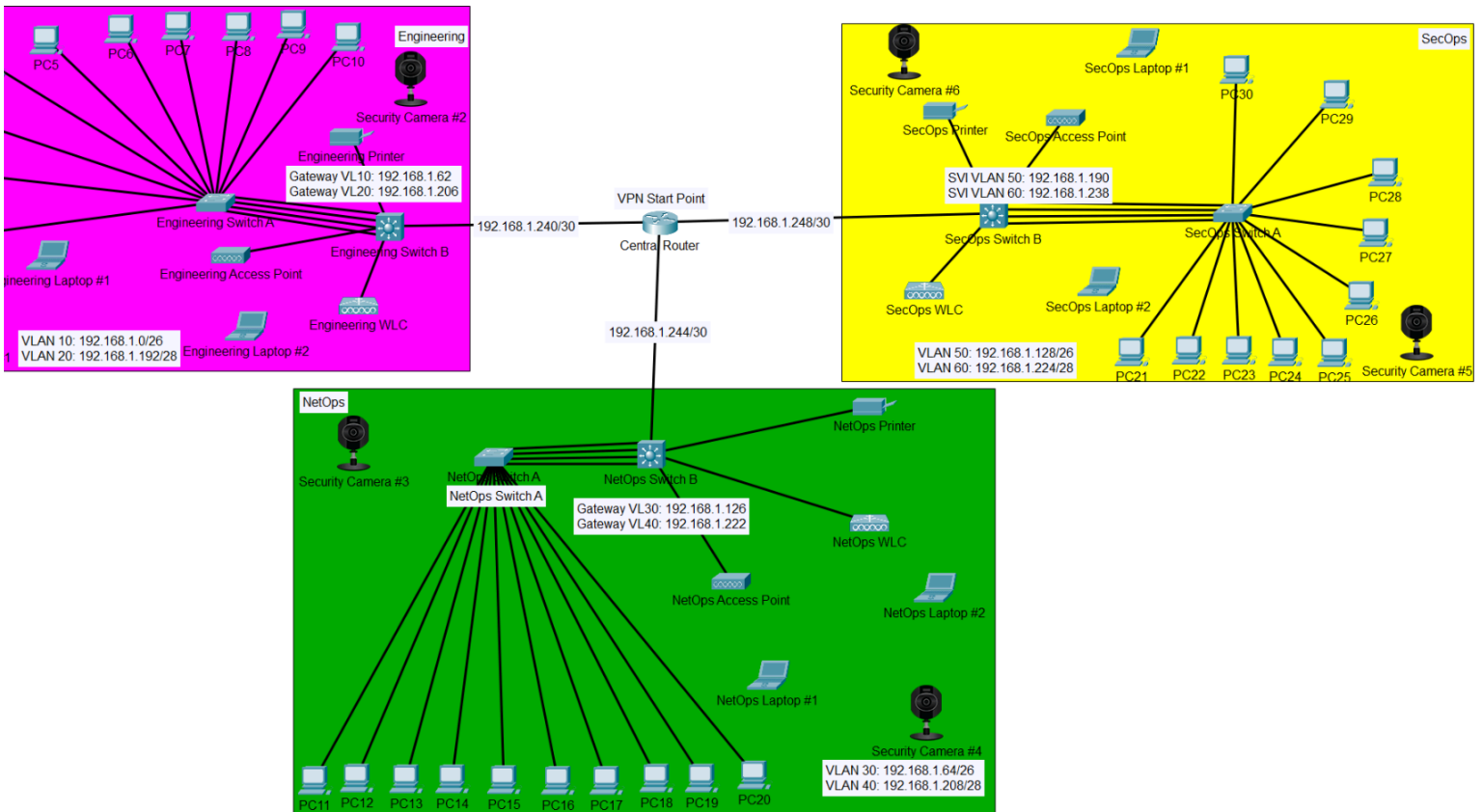
Hardware

3 x 2960 Cisco Switches
3 x 3560 Cisco Switches
1 x 2911 Cisco Router
3 x 3504 WLC Cisco
3 x LAP-PT

Project Design

Engineering

PC5 PC6 PC7 PC8 PC9 PC10

Security Camera #2

Engineering Printer
Gateway VL10: 192.168.1.62
Gateway VL20: 192.168.1.206

Engineering Switch A

Engineering Switch B — 192.168.1.240/30

Engineering Access Point

Engineering Laptop #1

Engineering WLC

VLAN 10: 192.168.1.0/26
VLAN 20: 192.168.1.192/28   Engineering Laptop #2

VPN Start Point

Central Router — 192.168.1.248/30

192.168.1.244/30

SecOps

Security Camera #6

SecOps Laptop #1

PC30

PC29

SecOps Printer   SecOps Access Point

SVI VLAN 50: 192.168.1.190
SVI VLAN 60: 192.168.1.238

PC28

SecOps Switch B   SecOps Switch A

PC27

SecOps WLC   SecOps Laptop #2

PC26

VLAN 50: 192.168.1.128/26
VLAN 60: 192.168.1.224/28

PC21 PC22 PC23 PC24 PC25   Security Camera #5

NetOps

Security Camera #3

NetOps Switch A
NetOps Switch A   NetOps Switch B

Gateway VL30: 192.168.1.126
Gateway VL40: 192.168.1.222

NetOps Printer

NetOps WLC

NetOps Access Point

NetOps Laptop #2

NetOps Laptop #1

Security Camera #4

VLAN 30: 192.168.1.64/26
VLAN 40: 192.168.1.208/28

PC11 PC12 PC13 PC14 PC15 PC16 PC17 PC18 PC19 PC20

Design choice:

My design choice for this small office network was to separate each department (Engineering, NetOps, and SecOps) into its own building with each having 2 VLANs. In each building I used 2 switches, one switch labeled with "A" is a layer 2 that holds all the company computers and extra ports were left on the switch in case expansion is needed, the other switch is layer 3 labeled "B" acting like a default gateway to improve traffic flow. The reason why I decided that the layer 3 switch needed to be the default gateway is because I wanted all the "B" switches to do intra-department routing while the "central router" did inter-department routing. The layer 3 switch is also for the expansion of IoT so there is plenty of space for things such as access points, WLCs, Security Cameras and much more. Switch "A" and "B" are both connected via etherchannel so there is improved bandwidth speed and also a layer of redundancy. The whole office building uses the foundation of OSPF with an area of 0 for full communication. I also implemented a VPN startpoint on the "central router" for easy access to the network infrastructure. The VPN allows for all access to any department within the office.

Central Router

G 0/0	Engineering Switch B [F0/5]
G 0/1	NetOps Switch B [F0/5]
G 0/2	SecOps Switch B [F0/5]

Router>en

Router#conf t

Router(config)#hostname Central_Router

Central_Router(config)#int g0/0

Central_Router(config-if)#ip address 192.168.1.242 255.255.255.252

Central_Router(config-if)#ip ospf 1 area 0

Central_Router(config-if)#no shut

Central_Router(config-if)#exit

Central_Router(config)#int g0/1

Central_Router(config-if)#ip address 192.168.1.246 255.255.255.252

Central_Router(config-if)#ip ospf 1 area 0

Central_Router(config-if)#no shut

Central_Router(config-if)#exit

Central_Router(config)#int g0/1

Central_Router(config-if)#ip address 192.168.1.250 255.255.255.252

Central_Router(config-if)#ip ospf 1 area 0

Central_Router(config-if)#no shut

Central_Router(config)#access-list 5 deny 192.168.1.0 0.0.0.63

Central_Router(config)#access-list 5 deny 192.168.1.128 0.0.0.63

Central_Router(config)#access-list 5 deny 192.168.1.192 0.0.0.15

Central_Router(config)#access-list 5 deny 192.168.1.224 0.0.0.15

Central_Router(config)#access-list 5 permit any

Central_Router(config)#int g0/1

Central_Router(config-if)#ip access-group 10 out

Central_Router(config-if)#exit

Engineering Department

VLAN 10:
Network address: 192.168.1.0/26
Gateway: 192.168.1.62/26

VLAN 20:
Network address: 192.168.1.192/28
Gateway: 192.168.1.206/28

P2P Connection:
Network: 192.168.1.240/30

IP Addresses for Engineering Department

Engineering Switch B	SVI VLAN 10	192.168.1.62/26
Engineering Switch B	SVI VLAN 20	192.168.1.206/28
Engineering Switch B	F 0/5	192.168.1.241/30
Central Router	G 0/0	192.168.1.242/30

Engineering Switch A

F 0/1	PC 1 (VLAN 10)
F 0/2	PC 2 (VLAN 10)
F 0/3	PC 3 (VLAN 10)
F 0/4	PC 4 (VLAN 10)
F 0/5	PC 5 (VLAN 10)
F 0/6	PC 6 (VLAN 10)
F 0/7	PC 7 (VLAN 10)
F 0/8	PC 8 (VLAN 10)
F 0/9	PC 9 (VLAN 10)
F 0/10	PC 10 (VLAN 10)
F 0/11	VLAN 10
F 0/12	VLAN 10
F 0/13	VLAN 10
F 0/14	VLAN 10
F 0/15	VLAN 10
F 0/15	VLAN 10
F 0/16	VLAN 10
F 0/17	VLAN 10
F 0/18	VLAN 10
F 0/19	VLAN 10
F 0/20	VLAN 10
F 0/21	Etherchannel
F 0/22	Etherchannel
F 0/23	Etherchannel
F 0/24	Etherchannel

Engineering Switch A

Switch>en

Switch#host

Switch#conf t

Switch(config)#hostname Engineering_Switch_A

Engineering_Switch_A(config)#vl 10

Engineering_Switch_A(config-vlan)#ex

Engineering_Switch_A(config)#vl 20

Engineering_Switch_A(config-vlan)#ex

Engineering_Switch_A(config)#int range f0/1-20

Engineering_Switch_A(config-if)#switchport mode access

Engineering_Switch_A(config-if)#switchport access vl 10

Engineering_Switch_A(config-if)#ex

Engineering_Switch_A(config)#int range f0/21-24

Engineering_Switch_A(config-if-range)#switchport mode trunk

Engineering_Switch_A(config-if-range)#channel-group 1 mode active

Engineering_Switch_A(config-if-range)#switchport trunk allowed vl 10,20

Engineering_Switch_A(config-if-range)#switchport trunk native vl 99

Engineering Switch B

F 0/1	Engineering Printer (VLAN 20)
F 0/2	Security Camera (VLAN 20)
F 0/3	Security Camera (VLAN 20)
F 0/4	WLC (VLAN 20)
F 0/5	Central Router
F 0/6	Engineering Access Point
F 0/7	VLAN 20
F 0/8	VLAN 20
F 0/9	VLAN 20
F 0/10	VLAN 20
F 0/11	VLAN 20
F 0/12	VLAN 20
F 0/13	VLAN 20
F 0/14	VLAN 20
F 0/15	VLAN 20
F 0/16	VLAN 20
F 0/17	VLAN 20
F 0/18	VLAN 20
F 0/19	VLAN 20
F 0/20	VLAN 20
F 0/21	Etherchannel
F 0/22	Etherchannel
F 0/23	Etherchannel
F 0/24	Etherchannel

Engineering Switch B

Switch>en

Switch#host

Switch#conf t

Switch(config)#hostname Engineering_Switch_B

Engineering_Switch_B(config)#vl 10

Engineering_Switch_B(config-vlan)#ex

Engineering_Switch_B(config)#vl 20

Engineering_Switch_B(config-vlan)#ex

Engineering_Switch_B(config)#ip routing

Engineering_Switch_B(config)#int vl 10

Engineering_Switch_B(config-if)#ip address 192.168.1.62 255.255.255.192

Engineering_Switch_B(config-if)#ip ospf 1 area 0

Engineering_Switch_B(config-if)#ex

Engineering_Switch_B(config)#int vl 20

Engineering_Switch_B(config-if)#ip address 192.168.1.206 255.255.255.240

Engineering_Switch_B(config-if)#ip ospf 1 area 0

Engineering_Switch_B(config-if)#ex

Engineering Switch B

Engineering_Switch_B(config)#int range f0/1-3

Engineering_Switch_B(config-if)#switchport mode access

Engineering_Switch_B(config-if)#switchport access vl 20

Engineering_Switch_B(config-if)#ex

Engineering_Switch_B(config)#int range f0/6-20

Engineering_Switch_B(config-if)#switchport mode access

Engineering_Switch_B(config-if)#switchport access vl 20

Engineering_Switch_B(config-if)#ex

Engineering_Switch_B(config)#int f0/4

Engineering_Switch_B(config-if)#switchport trunk encapsulation dot1q

Engineering_Switch_B(config-if)#switchport mode trunk

Engineering_Switch_B(config-if)#switchport trunk allowed vl 10,20

Engineering_Switch_B>en

Engineering_Switch_B#conf t

Engineering_Switch_B(config)#int range f0/21-24

Engineering_Switch_B(config-if)#switchport trunk encapsulation dot1q

Engineering_Switch_B(config-if-range)#switchport mode trunk

Engineering_Switch_B(config-if-range)#channel-group 1 mode active

Engineering_Switch_B(config-if-range)#switchport trunk allowed vl 10,20

Engineering_Switch_B(config-if-range)#switchport trunk native vl 99

Engineering_Switch_B>en

Engineering_Switch_B#conf t

Engineering_Switch_B(config)#int range f0/2-3

Engineering_Switch_B(config-if-range)#power inline auto

Engineering_Switch_B(config-if-range)#ex

Engineering Switch B

Engineering_Switch_B>en

Engineering_Switch_B#conf t

Engineering_Switch_B(config)#int f0/5

Engineering_Switch_B(config)#no switchport

Engineering_Switch_B(config-if-range)#ip address 192.168.1.241 255.255.255.252

Engineering_Switch_B(config-if-range)#ip ospf 1 area 0

Engineering_Switch_B(config-if-range)#ex

NetOps Department

VLAN 30:
Network address: 192.168.1.64/26
Gateway: 192.168.1.126/26

VLAN 40:
Network address: 192.168.1.208/28
Gateway: 192.168.1.222/28

P2P Connection:
Network: 192.168.1.244/30

IP Addresses for NetOps Department

NetOps Switch B	SVI VLAN 30	192.168.1.126/26
NetOps Switch B	SVI VLAN 40	192.168.1.222/28
NetOps Switch B	F 0/5	192.168.1.245/30
Central Router	G 0/1	192.168.1.246/30

NetOps Switch A

F 0/1	PC 11 (VLAN 30)
F 0/2	PC 12 (VLAN 30)
F 0/3	PC 13 (VLAN 30)
F 0/4	PC 14 (VLAN 30)
F 0/5	PC 15 (VLAN 30)
F 0/6	PC 16 (VLAN 30)
F 0/7	PC 17 (VLAN 30)
F 0/8	PC 18 (VLAN 30)
F 0/9	PC 19 (VLAN 30)
F 0/10	PC 20 (VLAN 30)
F 0/11	VLAN 30
F 0/12	VLAN 30
F 0/13	VLAN 30
F 0/14	VLAN 30
F 0/15	VLAN 30
F 0/15	VLAN 30
F 0/16	VLAN 30
F 0/17	VLAN 30
F 0/18	VLAN 30
F 0/19	VLAN 30
F 0/20	VLAN 30
F 0/21	Etherchannel
F 0/22	Etherchannel
F 0/23	Etherchannel
F 0/24	Etherchannel

NetOps Switch A

Switch>en

Switch#host

Switch#conf t

Switch(config)#hostname NetOps_Switch_A

NetOps_Switch_A(config)#vlan 30

NetOps_Switch_A(config-vlan)#exit

NetOps_Switch_A(config)#vlan 40

NetOps_Switch_A(config-vlan)#exit

NetOps_Switch_A(config)#int range f0/1-20

NetOps_Switch_A(config-if)#switchport mode access

NetOps_Switch_A(config-if)#switchport access vlan 30

NetOps_Switch_A(config-if)#exit

NetOps_Switch_A(config)#int range f0/21-24

NetOps_Switch_A(config-if-range)#switchport mode trunk

NetOps_Switch_A(config-if-range)#channel-group 1 mode desirable

NetOps_Switch_A(config-if-range)#switchport trunk allowed vlan 30,40

NetOps_Switch_A(config-if-range)#switchport trunk native vlan 98

NetOps Switch B

F 0/1	NetOps Printer (VLAN 40)
F 0/2	Security Camera (VLAN 40)
F 0/3	Security Camera (VLAN 40)
F 0/4	WLC (VLAN 40)
F 0/5	Central Router
F 0/6	NetOps Access Point
F 0/7	VLAN 40
F 0/8	VLAN 40
F 0/9	VLAN 40
F 0/10	VLAN 40
F 0/11	VLAN 40
F 0/12	VLAN 40
F 0/13	VLAN 40
F 0/14	VLAN 40
F 0/15	VLAN 40
F 0/16	VLAN 40
F 0/17	VLAN 40
F 0/18	VLAN 40
F 0/19	VLAN 40
F 0/20	VLAN 40
F 0/21	Etherchannel
F 0/22	Etherchannel
F 0/23	Etherchannel
F 0/24	Etherchannel

NetOps Switch B

Switch>en

Switch#host

Switch#conf t

Switch(config)#hostname NetOps_Switch_B

NetOps_Switch_B(config)#ip routing

NetOps_Switch_B(config)#vlan 30

NetOps_Switch_B(config-vlan)#exit

NetOps_Switch_B(config)#vlan 40

NetOps_Switch_B(config-vlan)#exit

NetOps_Switch_B(config)#int vlan 30

NetOps_Switch_B(config-if)#ip address 192.168.1.126 255.255.255.192

NetOps_Switch_B(config-if)#ip ospf 1 area 0

NetOps_Switch_B(config-if)#exit

NetOps_Switch_B(config)#int vlan 40

NetOps_Switch_B(config-if)#ip address 192.168.1.222 255.255.255.240

NetOps_Switch_B(config-if)#ip ospf 1 area 0

NetOps_Switch_B(config-if)#exit

NetOps_Switch_B(config)#int range f0/1-3

NetOps_Switch_B(config-if)#switchport mode access

NetOps_Switch_B(config-if)#switchport access vlan 40

NetOps_Switch_B(config-if)#exit

NetOps_Switch_B(config)#int f0/4

NetOps_Switch_B(config-if)#switchport trunk encapsulation dot1q

NetOps_Switch_B(config-if)#switchport mode trunk

NetOps_Switch_B(config-if)#switchport trunk allowed vlan 30,40

NetOps_Switch_B(config)#int range f0/6-20

NetOps_Switch_B(config-if)#switchport mode access

NetOps_Switch_B(config-if)#switchport access vlan 40

NetOps_Switch_B(config-if)#exit

NetOps Switch B

NetOps_Switch_B>en

NetOps_Switch_B#conf t

NetOps_Switch_B(config)#int range f0/21-24

NetOps_Switch_B(config-if)#switchport trunk encapsulation dot1q

NetOps_Switch_B(config-if-range)#switchport mode trunk

NetOps_Switch_B(config-if-range)#channel-group 1 mode desirable

NetOps_Switch_B(config-if-range)#switchport trunk allowed vlan 30,40

NetOps_Switch_B(config-if-range)#switchport trunk native vlan 98

NetOps_Switch_B>en

NetOps_Switch_B#conf t

NetOps_Switch_B(config)#int range f0/2-3

NetOps_Switch_B(config-if-range)#power inline auto

NetOps_Switch_B(config-if-range)#exit

NetOps_Switch_B>en

NetOps_Switch_B#conf t

NetOps_Switch_B(config)#int f0/5

NetOps_Switch_B(config)#no switchport

NetOps_Switch_B(config-if-range)#ip address 192.168.1.245 255.255.255.252

NetOps_Switch_B(config-if-range)#ip ospf 1 area 0

NetOps_Switch_B(config-if-range)#exit

SecOps Department

VLAN 50:
Network address: 192.168.1.128/26
Gateway: 192.168.1.190/26

VLAN 60:
Network address: 192.168.1.224/28
Gateway: 192.168.1.238/28

P2P Connection:
Network: 192.168.1.248/30

IP Addresses for NetOps Department

NetOps Switch B	SVI VLAN 50	192.168.1.190/26
NetOps Switch B	SVI VLAN 60	192.168.1.238/28
NetOps Switch B	F 0/5	192.168.1.249/30
Central Router	G 0/2	192.168.1.250/30

SecOps Switch A

F 0/1	PC 21 (VLAN 50)
F 0/2	PC 22 (VLAN 50)
F 0/3	PC 23 (VLAN 50)
F 0/4	PC 24 (VLAN 50)
F 0/5	PC 25 (VLAN 50)
F 0/6	PC 26 (VLAN 50)
F 0/7	PC 27 (VLAN 50)
F 0/8	PC 28 (VLAN 50)
F 0/9	PC 29 (VLAN 50)
F 0/10	PC 30 (VLAN 50)
F 0/11	VLAN 50
F 0/12	VLAN 50
F 0/13	VLAN 50
F 0/14	VLAN 50
F 0/15	VLAN 50
F 0/15	VLAN 50
F 0/16	VLAN 50
F 0/17	VLAN 50
F 0/18	VLAN 50
F 0/19	VLAN 50
F 0/20	VLAN 50
F 0/21	Etherchannel
F 0/22	Etherchannel
F 0/23	Etherchannel
F 0/24	Etherchannel

SecOps Switch A

Switch>en

Switch#host

Switch#conf t

Switch(config)#hostname SecOps_Switch_A

SecOps_Switch_A(config)#vlan 50

SecOps_Switch_A(config-vlan)#ex

SecOps_Switch_A(config)#vlan 60

SecOps_Switch_A(config-vlan)#ex

SecOps_Switch_A(config)#int range f0/1-20

SecOps_Switch_A(config-if)#switchport mode access

SecOps_Switch_A(config-if)#switchport access vlan 40

SecOps_Switch_A(config-if)#ex

SecOps_Switch_A(config)#int range f0/21-24

SecOps_Switch_A(config-if-range)#switchport mode trunk

SecOps_Switch_A(config-if-range)#channel-group 1 mode active

SecOps_Switch_A(config-if-range)#switchport trunk allowed vlan 50,60

SecOps_Switch_A(config-if-range)#switchport trunk native vlan 97

SecOps_Switch_A(config-if)#ex

SecOps Switch B

F 0/1	SecOps Printer (VLAN 60)
F 0/2	Security Camera (VLAN 60)
F 0/3	Security Camera (VLAN 60)
F 0/4	WLC (VLAN 60)
F 0/5	Central Router
F 0/6	SecOps Access Point
F 0/7	VLAN 60
F 0/8	VLAN 60
F 0/9	VLAN 60
F 0/10	VLAN 60
F 0/11	VLAN 60
F 0/12	VLAN 60
F 0/13	VLAN 60
F 0/14	VLAN 60
F 0/15	VLAN 60
F 0/16	VLAN 60
F 0/17	VLAN 60
F 0/18	VLAN 60
F 0/19	VLAN 60
F 0/20	VLAN 60
F 0/21	Etherchannel
F 0/22	Etherchannel
F 0/23	Etherchannel
F 0/24	Etherchannel

SecOps Switch B

Switch>en

Switch#host

Switch#conf t

Switch(config)#hostname SecOps_Switch_B

SecOps_Switch_B(config)#ip routing

SecOps_Switch_B(config)#vl 50

SecOps_Switch_B(config-vlan)#exit

SecOps_Switch_B(config)#vl 60

SecOps_Switch_B(config-vlan)#exit

SecOps_Switch_B(config)#int vl 50

SecOps_Switch_B(config-if)#ip address 192.168.1.190 255.255.255.192

SecOps_Switch_B(config-if)#ip ospf 1 area 0

SecOps_Switch_B(config-if)#exit

SecOps_Switch_B(config)#int vlan 60

SecOps_Switch_B(config-if)#ip address 192.168.1.238 255.255.255.240

SecOps_Switch_B(config-if)#ip ospf 1 area 0

SecOps_Switch_B(config-if)#exit

SecOps_Switch_B(config)#int range f0/1-3

SecOps_Switch_B(config-if)#switchport mode access

SecOps_Switch_B(config-if)#switchport access vlan 60

SecOps_Switch_B(config-if)#exit

SecOps_Switch_B(config)#int f0/4

SecOps_Switch_B(config-if)#switchport trunk encapsulation dot1q

SecOps_Switch_B(config-if)#switchport mode trunk

SecOps_Switch_B(config-if)#switchport trunk allowed vlan 50,60

SecOps_Switch_B(config)#int range f0/6-20

SecOps_Switch_B(config-if)#switchport mode access

SecOps_Switch_B(config-if)#switchport access vlan 60

SecOps_Switch_B(config-if)#exit

SecOps Switch B

SecOps_Switch_B>en

SecOps_Switch_B#conf t

SecOps_Switch_B(config)#int range f0/21-24

SecOps Switch B

SecOps_Switch_B(config-if)#switchport trunk encapsulation dot1q

SecOps_Switch_B(config-if-range)#switchport mode trunk

SecOps_Switch_B(config-if-range)#channel-group 1 mode active

SecOps_Switch_B(config-if-range)#switchport trunk allowed vlan 50,60

SecOps_Switch_B(config-if-range)#switchport trunk native vlan 97

SecOps_Switch_B>en
SecOps_Switch_B#conf t
SecOps_Switch_B(config)#int range f0/2-3
SecOps_Switch_B(config-if-range)#power inline auto
SecOps_Switch_B(config-if-range)#exit

SecOps_Switch_B>en
SecOps_Switch_B#conf t
SecOps_Switch_B(config)#int f0/5
SecOps_Switch_B(config)#no switchport
SecOps_Switch_B(config-if-range)#ip address 192.168.1.249 255.255.255.252
SecOps_Switch_B(config-if-range)#ip ospf 1 area 0
SecOps_Switch_B(config-if-range)#exit

Wireless Network

Engineering WLC and Access Points:

WLC Management - 192.168.1.205/28

Access Point - 192.168.1.204/28

NetOps WLC and Access Points:

WLC Management - 192.168.1.221/28

Access Point - 192.168.1.220/28

SecOps WLC and Access Points:

WLC Management - 192.168.1.237/28

Access Point - 192.168.1.236/28