Configuration

Router 1

interface GigabitEthernet0/0/0

ip address 192.168.100.1 255.255.255.0

no sh

exit

interface GigabitEthernet0/0/1

ip address 192.168.200.1 255.255.255.0

no sh

exit

ip ospf 1 area 0  
exit

ip dhcp pool VLAN10

network 192.168.10.0 255.255.255.0

default-router 192.168.10.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN20

network 192.168.20.0 255.255.255.0

default-router 192.168.20.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN30

network 192.168.30.0 255.255.255.0

default-router 192.168.30.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN40

network 192.168.40.0 255.255.255.0

default-router 192.168.40.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN50

network 192.168.50.0 255.255.255.0

default-router 192.168.50.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN60

network 192.168.60.0 255.255.255.0

default-router 192.168.60.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN70

network 192.168.70.0 255.255.255.0

default-router 192.168.70.3

dns-server 8.8.8.8

exit

ip dhcp pool VLAN80

network 192.168.80.0 255.255.255.0

default-router 192.168.80.3

dns-server 8.8.8.8

exit  
R1(config)#int serial 0/1/0

R1(config-if)#ip ad

R1(config-if)#ip address 192.168.110.1 255.255.255.0

R1(config-if)#no sh

R1(config-if)#

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to up

R1(config-if)#int serial 0/1/0

R1(config-if)#ip os

R1(config-if)#ip ospf 1 area 0

R1(config-if)#ex

R1(config)#ro

R1(config)#router os

R1(config)#router ospf 1

R1(config-router)#pas

R1(config-router)#passive-interface se

R1(config-router)#passive-interface serial 0/1/0

R1(config-router)#ex

R1(config)#  
  
enable secret cisco123

line console 0

password cisco123

login

exit

line vty 0 4

password cisco123

login

exit

ip domain-name cisco.com

crypto key generate rsa

ip ssh version 2

username admin password cisco123

line vty 0 4

transport input ssh

login local

exit

Router 2

interface GigabitEthernet0/0/0

ip address 192.168.50.1 255.255.255.0

no sh

exit

interface GigabitEthernet0/0/1

ip address 192.168.150.1 255.255.255.0

no sh

exit

ISP Router

Router(config)#int serial 0/1/0

Router(config-if)#ip ad

Router(config-if)#ip address 192.168.110.2 255.255.255.0

Router(config-if)#no sh

Router(config-if)#

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

Router(config-if)#ex

Router(config)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to up

Router(config)#int se

Router(config)#int serial 0/1/1

Router(config-if)#ip address 192.168.120.2 255.255.255.0

Router(config-if)#no sh

Router(config-if)#

%LINK-5-CHANGED: Interface Serial0/1/1, changed state to up

Router(config-if)#ex

ML 1,2

channel-group 4 mode active

switchport mode trunk

Ip routing

channel-group 1,2,3 mode active

int fa0/1  
ip ospf 1 area 0  
exit  
int fa0/2  
ip ospf 1 area 0  
exit

int vlan 10

ip ospf 1 area 0  
  
ip helper 192.168.100.1

exit

int vlan 20

ip ospf 1 area 0

ip helper 192.168.100.1

exit

int vlan 30

ip ospf 1 area 0

ip helper 192.168.100.1

exit

int vlan 40

ip ospf 1 area 0  
ip helper 192.168.100.1

exit

int vlan 50

ip ospf 1 area 0

ip helper 192.168.100.1

exit

int vlan 60

ip ospf 1 area 0

ip helper 192.168.100.1

exit

int vlan 70

ip ospf 1 area 0  
ip helper 192.168.100.1

exit

int vlan 80

ip ospf 1 area 0

ip helper 192.168.100.1

exit

spanning-tree mode rapid-pvst

ML\_1(config)# spanning-tree vlan 10 root primary

ML\_1(config)# spanning-tree vlan 20 root primary

ML\_1(config)# spanning-tree vlan 30 root primary

ML\_1(config)# spanning-tree vlan 40 root primary

ML\_2(config)# spanning-tree vlan 10 root secondary

ML\_2(config)# spanning-tree vlan 20 root secondary

ML\_2(config)# spanning-tree vlan 30 root secondary

ML\_2(config)# spanning-tree vlan 40 root secondary

ML\_2(config)# spanning-tree vlan 50 root primary

ML\_2(config)# spanning-tree vlan 60 root primary

ML\_2(config)# spanning-tree vlan 70 root primary

ML\_2(config)# spanning-tree vlan 80 root primary

ML\_1(config)# spanning-tree vlan 50 root secondary

ML\_1(config)# spanning-tree vlan 60 root secondary

ML\_1(config)# spanning-tree vlan 70 root secondary

ML\_1(config)# spanning-tree vlan 80 root secondary

ML 1

interface vlan 10

ip address 192.168.10.1 255.255.255.0  
standby 1 ip 192.168.10.3  
standby 1 priority 110  
standby 1 preempt

exit

interface vlan 20

ip address 192.168.20.1 255.255.255.0  
standby 1 ip 192.168.20.3  
standby 1 priority 110  
standby 1 preempt

exit

interface vlan 30

ip address 192.168.30.1 255.255.255.0  
standby 1 ip 192.168.30.3  
standby 1 priority 110  
standby 1 preempt

exit

interface vlan 40

ip address 192.168.40.1 255.255.255.0  
standby 1 ip 192.168.40.3  
standby 1 priority 110  
standby 1 preempt

exit  
interface vlan 50

ip address 192.168.50.1 255.255.255.0  
standby 1 ip 192.168.50.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 60

ip address 192.168.60.1 255.255.255.0  
standby 1 ip 192.168.60.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 70

ip address 192.168.70.1 255.255.255.0  
standby 1 ip 192.168.70.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 80

ip address 192.168.80.1 255.255.255.0  
standby 1 ip 192.168.80.3  
standby 1 priority 100  
standby 1 preempt

exit

ML\_1(config)#router ospf 1

ML\_1(config-router)#net

ML\_1(config-router)#network 192.168.10.0 0.0.0.255 a

ML\_1(config-router)#network 192.168.10.0 0.0.0.255 area 0

ML\_1(config-router)#network 192.168.20.0 0.0.0.255 area 0

ML\_1(config-router)#network 192.168.30.0 0.0.0.255 area 0

ML\_1(config-router)#network 192.168.40.0 0.0.0.255 area 0

ML\_1(config-router)#do wr

Building configuration...

[OK]

ML\_1(config-router)#ex

ML\_1(config)#

ML 2

interface vlan 10

ip address 192.168.10.2 255.255.255.0  
standby 1 ip 192.168.10.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 20

ip address 192.168.20.2 255.255.255.0  
standby 1 ip 192.168.20.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 30

ip address 192.168.30.2 255.255.255.0  
standby 1 ip 192.168.30.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 40

ip address 192.168.40.2 255.255.255.0  
standby 1 ip 192.168.40.3  
standby 1 priority 100  
standby 1 preempt

exit

interface vlan 50

ip address 192.168.50.2 255.255.255.0  
standby 1 ip 192.168.50.3  
standby 1 priority 110  
standby 1 preempt

exit

interface vlan 60

ip address 192.168.60.2 255.255.255.0  
standby 1 ip 192.168.60.3  
standby 1 priority 110  
standby 1 preempt

exit

interface vlan 70

ip address 192.168.70.2 255.255.255.0  
standby 1 ip 192.168.70.3  
standby 1 priority 110  
standby 1 preempt

exit

interface vlan 80

ip address 192.168.80.2 255.255.255.0  
standby 1 ip 192.168.80.3  
standby 1 priority 110  
standby 1 preempt

exit

ML\_2(config)#router ospf 1

ML\_2(config-router)#net

ML\_2(config-router)#network 192.168.50.0 0.0.0.255 area 0

ML\_2(config-router)#network 192.168.60.0 0.0.0.255 area 0

ML\_2(config-router)#network 192.168.70.0 0.0.0.255 area 0

ML\_2(config-router)#network 192.168.80.0 0.0.0.255 area 0

ML\_2(config-router)#do wr

Building configuration...

[OK]

ML\_2(config-router)#ex

ML\_2(config)#

ML 3,4,5

interface vlan 10

ip address 192.168.10.1 255.255.255.0

exit

interface vlan 20

ip address 192.168.20.1 255.255.255.0

exit

interface vlan 30

ip address 192.168.30.1 255.255.255.0

exit

interface vlan 40

ip address 192.168.40.1 255.255.255.0

exit

interface vlan 50

ip address 192.168.50.1 255.255.255.0

exit

interface vlan 60

ip address 192.168.60.1 255.255.255.0

exit

interface vlan 70

ip address 192.168.70.1 255.255.255.0

exit

interface vlan 80

ip address 192.168.80.1 255.255.255.0

exit

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60,70,80

exit

channel-group 5,6 mode active

ip dhcp snooping

ip dhcp snooping vlan 10,20,30,40,50,60,70,80

ML\_3(config)#int range fa0/1 -4

ML\_3(config-if-range)#ip dhcp snooping trust

ML\_3(config-if-range)#ex

ML\_3(config)#int range fa0/5 -12

ML\_3(config-if-range)#ip dhcp snooping limit rate 10

ML\_3(config-if-range)#ex

spanning-tree mode rapid-pvst

ML 4

int range fa0/1 -2

channel-group 1 mode active

exit

int range fa0/3 -4

channel-group 2 mode active

exit

int range fa0/5 -6

channel-group 3 mode active

exit

int range fa0/7 -8

channel-group 4 mode active

exit

ML 3,5

int range fa0/5 -6

channel-group 1 mode active

exit

int range fa0/7 -8

channel-group 2 mode active

exit

int range fa0/9 -10

channel-group 3 mode active

exit

int range fa0/11 -12

channel-group 4 mode active

exit

SW 1

interface range fastEthernet 0/11 - 14

switchport mode access

switchport access vlan 20

exit

interface range fastEthernet 0/7 - 10

switchport mode access

switchport access vlan 10

exit  
  
int range fa0/1 -2

channel-group 2 mode active

exit

int range fa0/5 -6

channel-group 3 mode active

exit

int range fa0/3 -4

channel-group 4 mode active

exit

enable secret cisco123

line console 0

password cisco123

login

exit

line vty 0 4

password cisco123

login

exit

ip domain-name cisco.com

crypto key generate rsa

ip ssh version 2

username admin password cisco123

line vty 0 4

transport input ssh

login local

exit  
switchport mode access

switchport port-security

switchport port-security maximum 2

switchport port-security violation restrict

switchport port-security mac-address sticky

exit

spanning-tree mode rapid-pvst

spanning-tree portfast

spanning-tree bpduguard enable

ex

mls qos

interface range fastEthernet 0/7

mls qos trust dscp

SW 2

interface range fastEthernet 0/11 - 14

switchport mode access

switchport access vlan 30

exit

interface range fastEthernet 0/7 - 10

switchport mode access

switchport access vlan 40

exit

int range fa0/1 -2

channel-group 1 mode active

exit

int range fa0/5 -6

channel-group 3 mode active

exit

int range fa0/3 -4

channel-group 4 mode active

exit

enable secret cisco123

line console 0

password cisco123

login

exit

line vty 0 4

password cisco123

login

exit

ip domain-name cisco.com

crypto key generate rsa

ip ssh version 2

username admin password cisco123

line vty 0 4

transport input ssh

login local

exit

switchport mode access

switchport port-security

switchport port-security maximum 2

switchport port-security violation restrict

switchport port-security mac-address sticky

exit

spanning-tree mode rapid-pvst

spanning-tree portfast

spanning-tree bpduguard enable

ex

SW 3

interface range fastEthernet 0/11 - 14

switchport mode access

switchport access vlan 60

exit

interface range fastEthernet 0/7 - 10

switchport mode access

switchport access vlan 50

exit

int range fa0/1 -2

channel-group 1 mode active

exit

int range fa0/5 -6

channel-group 2 mode active

exit

int range fa0/3 -4

channel-group 4 mode active

exit

enable secret cisco123

line console 0

password cisco123

login

exit

line vty 0 4

password cisco123

login

exit

ip domain-name cisco.com

crypto key generate rsa

ip ssh version 2

username admin password cisco123

line vty 0 4

transport input ssh

login local

exit

switchport mode access

switchport port-security

switchport port-security maximum 2

switchport port-security violation restrict

switchport port-security mac-address sticky

exit

spanning-tree mode rapid-pvst

spanning-tree portfast

spanning-tree bpduguard enable

ex

SW 4

interface range fastEthernet 0/11 - 14

switchport mode access

switchport access vlan 80

exit

interface range fastEthernet 0/7 - 10

switchport mode access

switchport access vlan 70

exit

int range fa0/1 -2

channel-group 1 mode active

exit

int range fa0/5 -6

channel-group 2 mode active

exit

int range fa0/3 -4

channel-group 3 mode active

exit

enable secret cisco123

line console 0

password cisco123

login

exit

line vty 0 4

password cisco123

login

exit

ip domain-name cisco.com

crypto key generate rsa

ip ssh version 2

username admin password cisco123

line vty 0 4

transport input ssh

login local

exit

switchport mode access

switchport port-security

switchport port-security maximum 2

switchport port-security violation restrict

switchport port-security mac-address sticky

exit

spanning-tree mode rapid-pvst

spanning-tree portfast

spanning-tree bpduguard enable

ex

Vlan

VLAN 10: **Reception**

VLAN 20: **IT**

VLAN 30: **HR**

VLAN 40: **Management**

VLAN 50: **Marketing**

VLAN 60: **Sales**

VLAN 70: **Quality**

VLAN 80: **Finance**

vlan 10

name Reception

exit

vlan 20

name IT

exit

vlan 30

name HR

exit

vlan 40

name Management

exit

vlan 50

name Marketing

exit

vlan 60

name Sales

exit

vlan 70

name Quality

exit

vlan 80

name Finance

Exit