# NETX 439: Team Assignment #13

Jerome Nosa | NETX 439 | 11/23/2024

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# Overview

The project consists of <u>OSPF Multi Area, NAT, DHCP configuration along with 3 VLANs, 1 Extended ACL, and two Port-security on switches</u>

- Network devices I utilized for these configurations.
    - o  6 2811 Cisco Routers
    - o  4 3560-24PS Multi-layer Switches
    - o  10 Desktops

The goal within this project is to simulate my partner's goal of implementing a small network infrastructure for our future business in the food industry. My role for this project is Network Engineer, which is to implement a small network configuration using the given network devices and required configurations for the project. The routing protocol for this project is OSPF (Open Shortest Path First) for this small configuration because it is one of the efficient configurations on determining the shortest path to route traffic/data. The three routers are used for Wide Area Network in distinctive locations. Moreover, I implemented NAT configuration next to California router to mask private IP address and convert it into public IP address to hide its internal network for security hardening. Also, I added a DHCP configuration/server for Washington RO for efficiency and automation of assigning IP addresses to specific users connecting on the network. Lastly, I configured 3 VLANs for 3 designated WANs to isolate each department on its network.

# Network IP Scheme

CA – 1 Router, 1 Switch, 2 PCs

LA – 1 Router, 1 Switch, 2 PCs

WA – 1 Router, 1 Switch, 3 PCs

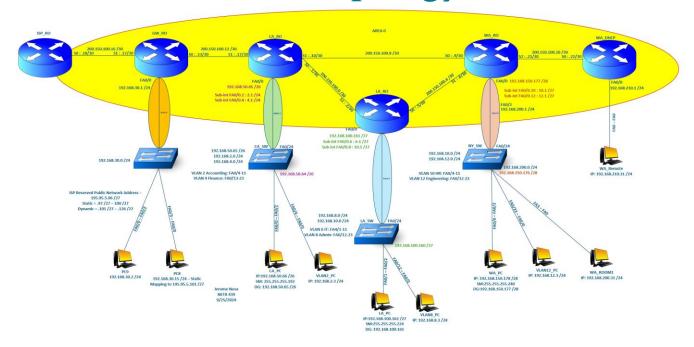GW – 2 Router, 1 Switch, 2 PCs

WA_DHCP – 1 Router, 1 PCs

VLANs

CA – VLAN 2 Accounting, VLAN 4 Finance

LA – VLAN 8 IT, VLAN 10 Admin

WA – VLAN 10 HR, VLAN 12 Engineering

# Network Topology:



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# Issues:

CA_RO
- Fa0/0 is shutdown (int fa0/0, then type: no shut)
- Fa0/0.4 doesn't have any IP address (int fa0/0.4, then configure 192.168.4.1 255.255.255.0)

CA_SW
- VLAN PC 2 has a wrong subnet mask configured. (It should be 255.255.255.0)

LA_RO
- Missing OSPF network configuration (network 192.168.100.160 0.0.0.31 area 2)

LA_SW
- Missing trunk configuration on interface fa0/24

WA_RO
- Missing OSPF network configuration for serial interfaces for WAN: network 200.150.100.4 0.0.0.3 area 0

WA_SW
- VLAN 10 is shutdown ( int vlan 10, then no shut)

# CA_RO# show running-config

```
hostname CA
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
license udi pid CISCO2811/K9 sn FTX1017O98I
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 description CA LAN
 ip address 192.168.50.65 255.255.255.192
 duplex auto
 speed auto
!
interface FastEthernet0/0.2
 description VLAN 2
 encapsulation dot1Q 2
 ip address 192.168.2.1 255.255.255.0
!
interface FastEthernet0/0.4
 description VLAN 4
 encapsulation dot1Q 4
 ip address 192.168.4.1 255.255.255.0
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 bandwidth 1000000
 ip address 200.150.100.1 255.255.255.252
 clock rate 64000
!
interface Serial0/1/0
 description WAN to WA_RO
 ip address 200.150.100.10 255.255.255.252
!
interface Serial0/3/0
 description WAN off GW_RO
 ip address 200.150.100.14 255.255.255.252
!
interface Vlan1
 no ip address
 shutdown
!
router ospf 1
 log-adjacency-changes
 network 192.168.50.64 0.0.0.63 area 1
 network 192.168.2.0 0.0.0.255 area 1
 network 192.168.4.0 0.0.0.255 area 1
 network 200.150.100.0 0.0.0.3 area 0
```

```
 network 200.150.100.0 0.0.0.3 area 0
 network 200.150.100.8 0.0.0.3 area 0
 network 200.150.100.12 0.0.0.3 area 0
!
ip classless
!
ip flow-export version 9
!
!
!
banner motd ^C Welcome to CA RO! ^C
!
!
!
!
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
line aux 0
!
line vty 0 4
 password jtz
 login
!
!
!
end

CA(config)#
```

# 2# show ip int brief

```
CA(config)#do show ip int brief
Interface              IP-Address      OK? Method Status                 Protocol
FastEthernet0/0        192.168.50.65   YES NVRAM  up                     up
FastEthernet0/0.2      192.168.2.1     YES manual up                     up
FastEthernet0/0.4      192.168.4.1     YES manual up                     up
FastEthernet0/1        unassigned      YES NVRAM  administratively down   down
Serial0/0/0            200.150.100.1   YES NVRAM  up                     up
Serial0/1/0            200.150.100.10  YES NVRAM  up                     up
Serial0/3/0            200.150.100.14  YES manual up                     up
Vlan1                  unassigned      YES unset  administratively down   down
```

# 3# show ip route

```
Gateway of last resort is not set

      192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.2.0/24 is directly connected, FastEthernet0/0.2
L        192.168.2.1/32 is directly connected, FastEthernet0/0.2
      192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.4.0/24 is directly connected, FastEthernet0/0.4
L        192.168.4.1/32 is directly connected, FastEthernet0/0.4
O IA 192.168.6.0/24 [110/2] via 200.150.100.2, 00:15:38, Serial0/0/0
O IA 192.168.8.0/24 [110/2] via 200.150.100.2, 00:15:38, Serial0/0/0
O IA 192.168.10.0/24 [110/65] via 200.150.100.9, 00:15:38, Serial0/1/0
O IA 192.168.12.0/24 [110/65] via 200.150.100.9, 00:15:38, Serial0/1/0
O IA 192.168.30.0/24 [110/65] via 200.150.100.13, 00:15:38, Serial0/3/0
      192.168.50.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.50.64/26 is directly connected, FastEthernet0/0
L        192.168.50.65/32 is directly connected, FastEthernet0/0
      192.168.100.0/27 is subnetted, 1 subnets
O IA    192.168.100.160/27 [110/2] via 200.150.100.2, 00:15:38, Serial0/0/0
      192.168.150.0/28 is subnetted, 1 subnets
O        192.168.150.176/28 [110/65] via 200.150.100.9, 00:15:38, Serial0/1/0
O    192.168.200.0/24 [110/65] via 200.150.100.9, 00:15:38, Serial0/1/0
O    192.168.210.0/24 [110/129] via 200.150.100.9, 00:15:38, Serial0/1/0
      195.95.5.0/27 is subnetted, 1 subnets
O E2    195.95.5.96/27 [110/20] via 200.150.100.13, 00:15:38, Serial0/3/0
      200.150.100.0/24 is variably subnetted, 9 subnets, 2 masks
C        200.150.100.0/30 is directly connected, Serial0/0/0
L        200.150.100.1/32 is directly connected, Serial0/0/0
O        200.150.100.4/30 [110/65] via 200.150.100.2, 00:15:38, Serial0/0/0
C        200.150.100.8/30 is directly connected, Serial0/1/0
L        200.150.100.10/32 is directly connected, Serial0/1/0
C        200.150.100.12/30 is directly connected, Serial0/3/0
L        200.150.100.14/32 is directly connected, Serial0/3/0
O        200.150.100.16/30 [110/128] via 200.150.100.13, 00:15:38, Serial0/3/0
O        200.150.100.20/30 [110/128] via 200.150.100.9, 00:15:38, Serial0/1/0
```

# LA_RO# show running-config

```
hostname LA
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
license udi pid CISCO2811/K9 sn FTX1017ZGJ7-
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
 description LA LAN
 ip address 192.168.100.161 255.255.255.224
 duplex auto
 speed auto
!
interface FastEthernet0/0.6
 description VLAN 6
 encapsulation dot1Q 6
 ip address 192.168.6.1 255.255.255.0
!
interface FastEthernet0/0.8
 description VLAN 8
 encapsulation dot1Q 8
 ip address 192.168.8.1 255.255.255.0
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 description WAN to WA_RO
 ip address 200.150.100.5 255.255.255.252
 clock rate 2000000
!
interface Serial0/1/0
 description WAN to CA_RO
 ip address 200.150.100.2 255.255.255.252
!
interface Vlan1
 no ip address
 shutdown
!
router ospf 1
 log-adjacency-changes
 network 192.168.100.160 0.0.0.31 area 2
 network 200.150.100.0 0.0.0.3 area 0
 network 200.150.100.4 0.0.0.3 area 0
 network 192.168.6.0 0.0.0.255 area 1
 network 192.168.8.0 0.0.0.255 area 1
!
ip classless
```

```
.
banner motd ^C Welcome to LA RO! ^C
!
!
!
!
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
line aux 0
!
line vty 0 4
 password jtz
 login
!
!
!
end


LA(config)#
```

# 2# show ip int brief

```
LA(config)#do show ip int brief
Interface              IP-Address      OK? Method Status                 Protocol
FastEthernet0/0        192.168.100.161 YES manual up                     up
FastEthernet0/0.6      192.168.6.1     YES manual up                     up
FastEthernet0/0.8      192.168.8.1     YES manual up                     up
FastEthernet0/1        unassigned      YES unset  administratively down down
Serial0/0/0            200.150.100.5   YES manual up                     up
Serial0/1/0            200.150.100.2   YES manual up                     up
Vlan1                  unassigned      YES unset  administratively down down
```

# 3# ip route

```
O IA 192.168.2.0/24 [110/65] via 200.150.100.1, 00:20:26, Serial0/1/0
O IA 192.168.4.0/24 [110/65] via 200.150.100.1, 00:20:26, Serial0/1/0
     192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.6.0/24 is directly connected, FastEthernet0/0.6
L       192.168.6.1/32 is directly connected, FastEthernet0/0.6
     192.168.8.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.8.0/24 is directly connected, FastEthernet0/0.8
L       192.168.8.1/32 is directly connected, FastEthernet0/0.8
O IA 192.168.10.0/24 [110/65] via 200.150.100.6, 00:20:26, Serial0/0/0
O IA 192.168.12.0/24 [110/65] via 200.150.100.6, 00:20:26, Serial0/0/0
O IA 192.168.30.0/24 [110/129] via 200.150.100.1, 00:20:16, Serial0/1/0
     192.168.50.0/26 is subnetted, 1 subnets
O IA    192.168.50.64/26 [110/65] via 200.150.100.1, 00:20:26, Serial0/1/0
     192.168.100.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.100.160/27 is directly connected, FastEthernet0/0
L       192.168.100.161/32 is directly connected, FastEthernet0/0
     192.168.150.0/28 is subnetted, 1 subnets
O       192.168.150.176/28 [110/65] via 200.150.100.6, 00:20:26, Serial0/0/0
O    192.168.200.0/24 [110/65] via 200.150.100.6, 00:20:26, Serial0/0/0
O    192.168.210.0/24 [110/129] via 200.150.100.6, 00:20:26, Serial0/0/0
     195.95.5.0/27 is subnetted, 1 subnets
O E2    195.95.5.96/27 [110/20] via 200.150.100.1, 00:20:16, Serial0/1/0
     200.150.100.0/24 is variably subnetted, 8 subnets, 2 masks
C       200.150.100.0/30 is directly connected, Serial0/1/0
L       200.150.100.2/32 is directly connected, Serial0/1/0
C       200.150.100.4/30 is directly connected, Serial0/0/0
L       200.150.100.5/32 is directly connected, Serial0/0/0
O       200.150.100.8/30 [110/128] via 200.150.100.6, 00:20:26, Serial0/0/0
                         [110/128] via 200.150.100.1, 00:20:26, Serial0/1/0
O       200.150.100.12/30 [110/128] via 200.150.100.1, 00:20:26, Serial0/1/0
O       200.150.100.16/30 [110/192] via 200.150.100.1, 00:20:16, Serial0/1/0
O       200.150.100.20/30 [110/128] via 200.150.100.6, 00:20:26, Serial0/0/0
```

# WA_RO # show running-config

```
hostname WA
!
!
!
!
ip dhcp excluded-address 192.168.200.1 192.168.200.30
ip dhcp excluded-address 192.168.210.1 192.168.210.35
!
ip dhcp pool WA_Room1
 network 192.168.200.0 255.255.255.0
 default-router 192.168.200.1
 dns-server 192.168.200.2
 domain-name jtzpro.com
ip dhcp pool WA_Remote
 network 192.168.210.0 255.255.255.0
 default-router 192.168.210.1
 dns-server 192.168.200.2
 domain-name jtzpro.com
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
license udi pid CISCO2811/K9 sn FTX1017XHAX-
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 description WA LAN
 ip address 192.168.150.177 255.255.255.240
 duplex auto
 speed auto
!
interface FastEthernet0/0.10
 description VLAN 10
 encapsulation dot1Q 10
 ip address 192.168.10.1 255.255.255.0
!
interface FastEthernet0/0.12
 description VLAN 12
 encapsulation dot1Q 12
 ip address 192.168.12.1 255.255.255.0
!
interface FastEthernet0/1
 description WA_DHCP
 ip address 192.168.200.1 255.255.255.0
 duplex auto
 speed auto
!
interface Serial0/0/0
 description WAN to CA_RO
 ip address 200.150.100.9 255.255.255.252
 clock rate 2000000
!
interface Serial0/1/0
 description WAN to LA_RO
 ip address 200.150.100.6 255.255.255.252
!
interface Serial0/2/0
 description WA DHCP to REMOTE
```

```
interface Vlan1
 no ip address
 shutdown
!
router ospf 1
 log-adjacency-changes
 network 200.150.100.4 0.0.0.3 area 0
 network 200.150.100.8 0.0.0.3 area 0
 network 200.150.100.20 0.0.0.3 area 0
 network 192.168.200.0 0.0.0.255 area 0
 network 192.168.150.176 0.0.0.15 area 0
 network 192.168.10.0 0.0.0.255 area 1
 network 192.168.12.0 0.0.0.255 area 1
!
ip classless
!
ip flow-export version 9
!
!
access-list 100 deny ip 192.168.30.0 0.0.0.255 192.168.150.176 0.0.0.15
!
banner motd ^C Welcome to WA RO! ^C
!
!
!
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
line aux 0
!
line vty 0 4
 password jtz
 login
!
!
!
end

WA(config)#
```

# 2# show ip int brief

```
WA(config)#do show ip int brief
Interface               IP-Address      OK? Method Status                 Protocol
FastEthernet0/0         192.168.150.177 YES NVRAM  up                     up
FastEthernet0/0.10      192.168.10.1    YES manual up                     up
FastEthernet0/0.12      192.168.12.1    YES manual up                     up
FastEthernet0/1         192.168.200.1   YES manual up                     up
Serial0/0/0             200.150.100.9   YES NVRAM  up                     up
Serial0/1/0             200.150.100.6   YES NVRAM  up                     up
Serial0/2/0             200.150.100.21  YES manual up                     up
Vlan1                   unassigned      YES unset  administratively down down
WA(config)#
```

# 3# show ip route

```
O IA 192.168.2.0/24 [110/65] via 200.150.100.10, 00:25:21, Serial0/0/0
O IA 192.168.4.0/24 [110/65] via 200.150.100.10, 00:25:21, Serial0/0/0
O IA 192.168.6.0/24 [110/65] via 200.150.100.5, 00:25:11, Serial0/1/0
O IA 192.168.8.0/24 [110/65] via 200.150.100.5, 00:25:11, Serial0/1/0
     192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.10.0/24 is directly connected, FastEthernet0/0.10
L        192.168.10.1/32 is directly connected, FastEthernet0/0.10
     192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.12.0/24 is directly connected, FastEthernet0/0.12
L        192.168.12.1/32 is directly connected, FastEthernet0/0.12
O IA 192.168.30.0/24 [110/129] via 200.150.100.10, 00:25:11, Serial0/0/0
     192.168.50.0/26 is subnetted, 1 subnets
O IA     192.168.50.64/26 [110/65] via 200.150.100.10, 00:25:21, Serial0/0/0
     192.168.100.0/27 is subnetted, 1 subnets
O IA     192.168.100.160/27 [110/65] via 200.150.100.5, 00:25:11, Serial0/1/0
     192.168.150.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.150.176/28 is directly connected, FastEthernet0/0
L        192.168.150.177/32 is directly connected, FastEthernet0/0
     192.168.200.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.200.0/24 is directly connected, FastEthernet0/1
L        192.168.200.1/32 is directly connected, FastEthernet0/1
O        192.168.210.0/24 [110/65] via 200.150.100.22, 00:25:21, Serial0/2/0
     195.95.5.0/27 is subnetted, 1 subnets
O E2     195.95.5.96/27 [110/20] via 200.150.100.10, 00:25:11, Serial0/0/0
     200.150.100.0/24 is variably subnetted, 9 subnets, 2 masks
O        200.150.100.0/30 [110/65] via 200.150.100.10, 00:25:21, Serial0/0/0
C        200.150.100.4/30 is directly connected, Serial0/1/0
L        200.150.100.6/32 is directly connected, Serial0/1/0
C        200.150.100.8/30 is directly connected, Serial0/0/0
L        200.150.100.9/32 is directly connected, Serial0/0/0
O        200.150.100.12/30 [110/128] via 200.150.100.10, 00:25:21, Serial0/0/0
O        200.150.100.16/30 [110/192] via 200.150.100.10, 00:25:11, Serial0/0/0
C        200.150.100.20/30 is directly connected, Serial0/2/0
L        200.150.100.21/32 is directly connected, Serial0/2/0
```

# CA_GW_RO# show running-config

```
hostname GW_RO
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
license udi pid CISCO2811/K9 sn FTX1017Z2X7-
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 description GW_LAN
 ip address 192.168.30.1 255.255.255.0
 ip nat inside
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 description WAN off CA_RO
 ip address 200.150.100.13 255.255.255.252
 clock rate 2000000
!
interface Serial0/1/0
 description WAN OFF ISP
 ip address 200.150.100.17 255.255.255.252
 ip nat outside
 clock rate 2000000
!
interface Vlan1
 no ip address
 shutdown
!
router ospf 1
 log-adjacency-changes
 redistribute static subnets
 network 200.150.100.12 0.0.0.3 area 0
 network 200.150.100.16 0.0.0.3 area 0
 network 192.168.30.0 0.0.0.255 area 3
!
ip nat pool public_ip 195.95.5.101 195.95.5.126 netmask 255.255.255.224
ip nat inside source list 1 pool public_ip
ip nat inside source static 192.168.30.15 195.95.5.97
ip classless
ip route 0.0.0.0 0.0.0.0 200.150.100.18
!
ip flow-export version 9
!
!
```

# CA_GW_RO# show ip int brief

```
GW_RO(config)#do show ip int brief
Interface              IP-Address      OK? Method Status                 Protocol
FastEthernet0/0        192.168.30.1    YES manual up                     up
FastEthernet0/1        unassigned      YES unset  administratively down  down
Serial0/0/0            200.150.100.13  YES manual up                     up
Serial0/1/0            200.150.100.17  YES manual up                     up
Vlan1                  unassigned      YES unset  administratively down  down
```

# CA_GW_RO# show ip route

```
Gateway of last resort is 200.150.100.18 to network 0.0.0.0

O IA 192.168.2.0/24 [110/65] via 200.150.100.14, 00:09:39, Serial0/0/0
O IA 192.168.4.0/24 [110/65] via 200.150.100.14, 00:09:39, Serial0/0/0
O IA 192.168.6.0/24 [110/66] via 200.150.100.14, 00:09:39, Serial0/0/0
O IA 192.168.8.0/24 [110/66] via 200.150.100.14, 00:09:39, Serial0/0/0
O IA 192.168.10.0/24 [110/129] via 200.150.100.14, 00:09:39, Serial0/0/0
O IA 192.168.12.0/24 [110/129] via 200.150.100.14, 00:09:39, Serial0/0/0
     192.168.30.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.30.0/24 is directly connected, FastEthernet0/0
L       192.168.30.1/32 is directly connected, FastEthernet0/0
     192.168.50.0/26 is subnetted, 1 subnets
O IA    192.168.50.64/26 [110/65] via 200.150.100.14, 00:09:39, Serial0/0/0
     192.168.100.0/27 is subnetted, 1 subnets
O IA    192.168.100.160/27 [110/66] via 200.150.100.14, 00:09:39, Serial0/0/0
     192.168.150.0/28 is subnetted, 1 subnets
O       192.168.150.176/28 [110/129] via 200.150.100.14, 00:09:39, Serial0/0/0
O    192.168.200.0/24 [110/129] via 200.150.100.14, 00:09:39, Serial0/0/0
O    192.168.210.0/24 [110/193] via 200.150.100.14, 00:09:39, Serial0/0/0
     195.95.5.0/27 is subnetted, 1 subnets
O E2    195.95.5.96/27 [110/20] via 200.150.100.18, 00:09:39, Serial0/1/0
     200.150.100.0/24 is variably subnetted, 8 subnets, 2 masks
O       200.150.100.0/30 [110/65] via 200.150.100.14, 00:09:39, Serial0/0/0
O       200.150.100.4/30 [110/129] via 200.150.100.14, 00:09:39, Serial0/0/0
O       200.150.100.8/30 [110/128] via 200.150.100.14, 00:09:39, Serial0/0/0
C       200.150.100.12/30 is directly connected, Serial0/0/0
L       200.150.100.13/32 is directly connected, Serial0/0/0
C       200.150.100.16/30 is directly connected, Serial0/1/0
L       200.150.100.17/32 is directly connected, Serial0/1/0
O       200.150.100.20/30 [110/192] via 200.150.100.14, 00:09:39, Serial0/0/0
```

# CA_GW_RO# ip nat translations

```
GW_RO(config)#do show ip nat translations
Pro  Inside global     Inside local      Outside local     Outside global
icmp 195.95.5.101:1    192.168.30.2:1    172.16.1.1:1      172.16.1.1:1
icmp 195.95.5.101:2    192.168.30.2:2    172.16.1.1:2      172.16.1.1:2
icmp 195.95.5.101:3    192.168.30.2:3    172.16.1.1:3      172.16.1.1:3
icmp 195.95.5.101:4    192.168.30.2:4    172.16.1.1:4      172.16.1.1:4
icmp 195.95.5.97:1     192.168.30.15:1   172.16.1.1:1      172.16.1.1:1
icmp 195.95.5.97:2     192.168.30.15:2   172.16.1.1:2      172.16.1.1:2
icmp 195.95.5.97:3     192.168.30.15:3   172.16.1.1:3      172.16.1.1:3
icmp 195.95.5.97:4     192.168.30.15:4   172.16.1.1:4      172.16.1.1:4
---  195.95.5.97       192.168.30.15     ---               ---
```

# CA_SW show running-config

```
hostname CA_SW
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
!
interface FastEthernet0/1
 switchport mode access
!
interface FastEthernet0/2
 switchport mode access
!
interface FastEthernet0/3
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/4
 description Accounting
 switchport access vlan 2
 switchport mode access
 switchport port-security
 switchport port-security maximum 2
 switchport port-security mac-address 00D0.D3BD.5282
!
interface FastEthernet0/5
 description Accounting
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/6
 description Accounting
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/7
 description Accounting
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/8
 description Accounting
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/9
 description Accounting
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/10
 description Accounting
 switchport access vlan 2
 switchport mode access
!
interface FastEthernet0/11
 description Accounting
```

```
interface FastEthernet0/13
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/14
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/15
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/16
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/17
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/18
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/19
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/20
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/21
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/22
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/23
 description Finance
 switchport access vlan 4
 switchport mode access
!
interface FastEthernet0/24
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
 no ip address
 shutdown
!
interface Vlan2
 mac-address 0002.16de.0301
 ip address 192.168.2.2 255.255.255.0
!
interface Vlan4
 mac-address 0002.16de.0302
 ip address 192.168.4.2 255.255.255.0
!
ip classless
!
ip flow-export version 9
```

# CA_SW show int status

```
CA_SW(config)#do show int status
Port       Name            Status       Vlan      Duplex  Speed Type
Fa0/1                      notconnect   1         auto    auto  10/100BaseTX
Fa0/2                      connected    1         auto    auto  10/100BaseTX
Fa0/3                      notconnect   2         auto    auto  10/100BaseTX
Fa0/4      Accounting      connected    2         auto    auto  10/100BaseTX
Fa0/5      Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/6      Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/7      Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/8      Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/9      Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/10     Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/11     Accounting      notconnect   2         auto    auto  10/100BaseTX
Fa0/12     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/13     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/14     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/15     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/16     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/17     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/18     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/19     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/20     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/21     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/22     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/23     Finance         notconnect   4         auto    auto  10/100BaseTX
Fa0/24                     connected    trunk     auto    auto  10/100BaseTX
Gig0/1                     notconnect   1         auto    auto  10/100BaseTX
Gig0/2                     notconnect   1         auto    auto  10/100BaseTX
```

# CA_SW show vlan

```
CA_SW(config)# do show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Gig0/1, Gig0/2
2    VLAN0002                         active    Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                Fa0/11
4    Finance                          active    Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                Fa0/20, Fa0/21, Fa0/22, Fa0/23
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
2    enet  100002     1500  -      -      -        -    -        0      0
4    enet  100004     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
```

# LA_SW show running-config

```
hostname LA_SW
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/5
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/6
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/7
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/8
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/9
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/10
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/11
 description IT_Dept
 switchport access vlan 6
 switchport mode access
!
interface FastEthernet0/12
 description Admin
 switchport access vlan 8
 switchport mode access
```

```
 switchport mode access
!
interface FastEthernet0/14
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/15
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/16
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/17
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/18
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/19
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/20
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/21
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/22
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/23
 description Admin
 switchport access vlan 8
 switchport mode access
!
interface FastEthernet0/24
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
 no ip address
 shutdown
!
interface Vlan6
 description IT_Dept
 mac-address 0090.21c8.e701
 ip address 192.168.6.2 255.255.255.0
!
interface Vlan8
 description Admin
 mac-address 0090.21c8.e702
 ip address 192.168.8.2 255.255.255.0
!
ip classless
!
ip flow-export version 9
!
!
```

# LA_SW show int status

```
LA_SW(config)#do show int status
Port       Name              Status        Vlan      Duplex  Speed Type
Fa0/1                        notconnect    1         auto    auto  10/100BaseTX
Fa0/2                        connected     1         auto    auto  10/100BaseTX
Fa0/3                        notconnect    1         auto    auto  10/100BaseTX
Fa0/4      IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/5      IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/6      IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/7      IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/8      IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/9      IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/10     IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/11     IT_Dept           notconnect    6         auto    auto  10/100BaseTX
Fa0/12     Admin             connected     8         auto    auto  10/100BaseTX
Fa0/13     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/14     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/15     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/16     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/17     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/18     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/19     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/20     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/21     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/22     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/23     Admin             notconnect    8         auto    auto  10/100BaseTX
Fa0/24                       connected     trunk     auto    auto  10/100BaseTX
Gig0/1                       notconnect    1         auto    auto  10/100BaseTX
Gig0/2                       notconnect    1         auto    auto  10/100BaseTX
```

# LA_SW show vlan

```
LA_SW(config)#do show vlan

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

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
6    enet  100006     1500  -      -      -        -    -        0      0
8    enet  100008     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
```

# WA_SW show running-config

```
hostname WA_SW
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/5
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/6
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/7
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/8
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/9
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/10
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/11
 description HR
 switchport access vlan 10
 switchport mode access
!
interface FastEthernet0/12
 description Engineering
 switchport access vlan 12
 switchport mode access
```

```
interface FastEthernet0/13
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/14
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/15
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/16
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/17
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/18
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/19
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/20
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/21
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/22
 description Engineering
 switchport access vlan 12
 switchport mode access
!
interface FastEthernet0/23
 description Engineering
 switchport access vlan 12
 switchport mode access
 switchport port-security
 switchport port-security mac-address sticky
 switchport port-security violation protect
!
interface FastEthernet0/24
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
 no ip address
 shutdown
!
interface Vlan10
 description HR
 mac-address 00d0.977d.3d01
 ip address 192.168.10.2 255.255.255.0
!
interface Vlan12
 description Engineering
 mac-address 00d0.977d.3d02
 ip address 192.168.12.2 255.255.255.0
```

# WA_SW show int Status

```
WA_SW(config)#do show int status
Port         Name             Status        Vlan       Duplex  Speed Type
Fa0/1                         connected     1          auto    auto  10/100BaseTX
Fa0/2                         connected     1          auto    auto  10/100BaseTX
Fa0/3                         connected     1          auto    auto  10/100BaseTX
Fa0/4        HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/5        HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/6        HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/7        HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/8        HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/9        HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/10       HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/11       HR               notconnect    10         auto    auto  10/100BaseTX
Fa0/12       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/13       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/14       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/15       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/16       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/17       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/18       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/19       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/20       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/21       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/22       Engineering      notconnect    12         auto    auto  10/100BaseTX
Fa0/23       Engineering      connected     12         auto    auto  10/100BaseTX
Fa0/24                        connected     trunk      auto    auto  10/100BaseTX
Gig0/1                        notconnect    1          auto    auto  10/100BaseTX
Gig0/2                        notconnect    1          auto    auto  10/100BaseTX
```

# WA_SW show vlan

```
WA_SW(config)#do show vlan

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

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
12   enet  100012     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------

Remote SPAN VLANs
------------------------------------------------------------------------------
```

# IPCONFIG /ALL

CA_PC1

```
FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address................: 0001.643E.26A3
   Link-local IPv6 Address.........: FE80::201:64FF:FE3E:26A3
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.50.66
   Subnet Mask.....................: 255.255.255.192
   Default Gateway.................: ::
                                     192.168.50.65
   DHCP Servers....................: 0.0.0.0
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-63-07-DB-9C-00-01-64-3E-26-A3
   DNS Servers.....................: ::
                                     0.0.0.0
```

VLAN PC 2

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address................: 00D0.D3BD.5282
   Link-local IPv6 Address.........: FE80::2D0:D3FF:FEBD:5282
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.2.3
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.2.1
   DHCP Servers....................: 0.0.0.0
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-25-A7-14-10-00-D0-D3-BD-52-82
   DNS Servers.....................: ::
```

LA_PC3

```
FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address.................: 0003.E421.104B
   Link-local IPv6 Address..........: FE80::203:E4FF:FE21:104B
   IPv6 Address.....................: ::
   IPv4 Address.....................: 192.168.100.162
   Subnet Mask......................: 255.255.255.224
   Default Gateway..................: ::
                                      192.168.100.161
   DHCP Servers.....................: 0.0.0.0
   DHCPv6 IAID......................:
   DHCPv6 Client DUID...............: 00-01-00-01-63-07-DB-9C-00-03-E4-21-10-4B
   DNS Servers......................: ::
                                      0.0.0.0
```

VLAN PC 4

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address.................: 0002.17C7.46E9
   Link-local IPv6 Address..........: FE80::202:17FF:FEC7:46E9
   IPv6 Address.....................: ::
   IPv4 Address.....................: 192.168.8.3
   Subnet Mask......................: 255.255.255.0
   Default Gateway..................: ::
                                      192.168.8.1
   DHCP Servers.....................: 0.0.0.0
   DHCPv6 IAID......................:
   DHCPv6 Client DUID...............: 00-01-00-01-05-A5-9A-30-00-02-17-C7-46-E9
   DNS Servers......................: ::
                                      0.0.0.0
```

LA PC 5

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address.................: 00D0.BC4C.9AC0
   Link-local IPv6 Address..........: FE80::2D0:BCFF:FE4C:9AC0
   IPv6 Address.....................: ::
   IPv4 Address.....................: 192.168.150.178
   Subnet Mask......................: 255.255.255.240
   Default Gateway..................: ::
                                      192.168.150.177
   DHCP Servers.....................: 0.0.0.0
   DHCPv6 IAID......................:
   DHCPv6 Client DUID...............: 00-01-00-01-63-07-DB-9C-00-D0-BC-4C-9A-C0
   DNS Servers......................: ::
                                      0.0.0.0
```

VLAN  12 PC 6

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address................: 000A.F3E5.D179
   Link-local IPv6 Address.........: FE80::20A:F3FF:FEE5:D179
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.12.3
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.12.1
   DHCP Servers....................: 0.0.0.0
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-C1-E9-75-41-00-0A-F3-E5-D1-79
   DNS Servers.....................: ::
                                     0.0.0.0
```

WA DHCP_HOST PC 7

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..: jtzpro.com
   Physical Address................: 0001.64CE.7100
   Link-local IPv6 Address.........: FE80::201:64FF:FECE:7100
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.200.31
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.200.1
   DHCP Servers....................: 192.168.200.1
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-B3-48-EC-2A-00-01-64-CE-71-00
   DNS Servers.....................: ::
                                     192.168.200.2
```

WA DHCP_REMOTE PC 8

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..: jtzpro.com
   Physical Address................: 00E0.A353.62EB
   Link-local IPv6 Address.........: FE80::2E0:A3FF:FE53:62EB
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.210.36
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.210.1
   DHCP Servers....................: 200.150.100.21
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-08-41-8E-04-00-E0-A3-53-62-EB
   DNS Servers.....................: ::
                                     192.168.200.2
```

CA NAT_DYNAMIC PC 9

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address................: 0001.9644.8068
   Link-local IPv6 Address.........: FE80::201:96FF:FE44:8068
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.30.2
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.30.1
   DHCP Servers....................: 0.0.0.0
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-13-
D6-58-4E-00-01-96-44-80-68
   DNS Servers.....................: ::
                                     0.0.0.0
```

CA NAT_Static PC 10

```
C:\>ipconfig /all

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Physical Address................: 0001.C978.8802
   Link-local IPv6 Address.........: FE80::201:C9FF:FE78:8802
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.30.15
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     192.168.30.1
   DHCP Servers....................: 0.0.0.0
   DHCPv6 IAID.....................:
   DHCPv6 Client DUID..............: 00-01-00-01-13-D6-58-4E-00-01-C9-78-88-02
   DNS Servers.....................: ::
                                     0.0.0.0
```

# PING/Test Connection

PC 1 can ping its DG, PC 2 from LA and PC 3 of LA network.

```
C:\>ping 192.168.50.65

Pinging 192.168.50.65 with 32 bytes of data:

Reply from 192.168.50.65: bytes=32 time=2ms TTL=255
Reply from 192.168.50.65: bytes=32 time<1ms TTL=255
Reply from 192.168.50.65: bytes=32 time<1ms TTL=255
Reply from 192.168.50.65: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.50.65:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>ping 192.168.100.162

Pinging 192.168.100.162 with 32 bytes of data:

Reply from 192.168.100.162: bytes=32 time=9ms TTL=126
Reply from 192.168.100.162: bytes=32 time=5ms TTL=126
Reply from 192.168.100.162: bytes=32 time=7ms TTL=126
Reply from 192.168.100.162: bytes=32 time=7ms TTL=126

Ping statistics for 192.168.100.162:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 9ms, Average = 7ms

C:\>ping 192.168.150.178

Pinging 192.168.150.178 with 32 bytes of data:

Request timed out.
Reply from 192.168.150.178: bytes=32 time=7ms TTL=126
Reply from 192.168.150.178: bytes=32 time=8ms TTL=126
Reply from 192.168.150.178: bytes=32 time=25ms TTL=126

Ping statistics for 192.168.150.178:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 7ms, Maximum = 25ms, Average = 13ms
```

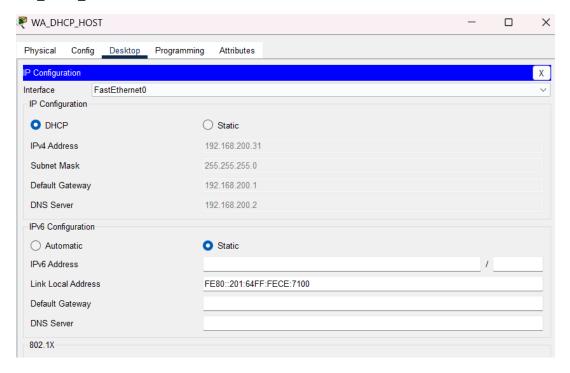PC 2 can ping its DG, PC1 from CA and PC3 of WA network.

```
C:\>ping 192.168.100.161

Pinging 192.168.100.161 with 32 bytes of data:

Reply from 192.168.100.161: bytes=32 time<1ms TTL=255
Reply from 192.168.100.161: bytes=32 time<1ms TTL=255
Reply from 192.168.100.161: bytes=32 time<1ms TTL=255
Reply from 192.168.100.161: bytes=32 time=5ms TTL=255

Ping statistics for 192.168.100.161:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\>ping 192.168.50.66

Pinging 192.168.50.66 with 32 bytes of data:

Reply from 192.168.50.66: bytes=32 time=10ms TTL=126
Reply from 192.168.50.66: bytes=32 time=6ms TTL=126
Reply from 192.168.50.66: bytes=32 time=2ms TTL=126
Reply from 192.168.50.66: bytes=32 time=2ms TTL=126

Ping statistics for 192.168.50.66:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 10ms, Average = 5ms

C:\>ping 192.168.150.178

Pinging 192.168.150.178 with 32 bytes of data:

Reply from 192.168.150.178: bytes=32 time=10ms TTL=126
Reply from 192.168.150.178: bytes=32 time=14ms TTL=126
Reply from 192.168.150.178: bytes=32 time=15ms TTL=126
Reply from 192.168.150.178: bytes=32 time=40ms TTL=126

Ping statistics for 192.168.150.178:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 40ms, Average = 19ms
```

PC 3 can ping its DG, PC1 from CA and PC2 of LA network.

```
C:\>ping 192.168.150.177

Pinging 192.168.150.177 with 32 bytes of data:

Reply from 192.168.150.177: bytes=32 time<1ms TTL=255
Reply from 192.168.150.177: bytes=32 time=6ms TTL=255
Reply from 192.168.150.177: bytes=32 time<1ms TTL=255
Reply from 192.168.150.177: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.150.177:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 6ms, Average = 1ms

C:\>ping 192.168.50.66

Pinging 192.168.50.66 with 32 bytes of data:

Reply from 192.168.50.66: bytes=32 time=8ms TTL=126
Reply from 192.168.50.66: bytes=32 time=17ms TTL=126
Reply from 192.168.50.66: bytes=32 time=8ms TTL=126
Reply from 192.168.50.66: bytes=32 time=8ms TTL=126

Ping statistics for 192.168.50.66:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 17ms, Average = 10ms

C:\>ping 192.168.100.162

Pinging 192.168.100.162 with 32 bytes of data:

Reply from 192.168.100.162: bytes=32 time=22ms TTL=126
Reply from 192.168.100.162: bytes=32 time=18ms TTL=126
Reply from 192.168.100.162: bytes=32 time=12ms TTL=126
Reply from 192.168.100.162: bytes=32 time=8ms TTL=126

Ping statistics for 192.168.100.162:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 8ms, Maximum = 22ms, Average = 15ms
```

# DHCP

WA_DHCP_PC

WA_DHCP_HOST — □ ✕

| Physical | Config | Desktop | Programming | Attributes |

**IP Configuration** X

Interface  FastEthernet0

IP Configuration

- ● DHCP        ○ Static

IPv4 Address        192.168.200.31

Subnet Mask        255.255.255.0

Default Gateway        192.168.200.1

DNS Server        192.168.200.2

IPv6 Configuration

- ○ Automatic        ● Static

IPv6 Address        /

Link Local Address        FE80::201:64FF:FECE:7100

Default Gateway

DNS Server

802.1X

WA_DHCP_REMOTEPC

WA_REMOTE — □ ✕

| Physical | Config | Desktop | Programming | Attributes |

**IP Configuration** X

Interface  FastEthernet0

IP Configuration

- ● DHCP        ○ Static

IPv4 Address        192.168.210.36

Subnet Mask        255.255.255.0

Default Gateway        192.168.210.1

DNS Server        192.168.200.2

IPv6 Configuration

- ○ Automatic        ● Static

IPv6 Address        /

Link Local Address        FE80::2E0:A3FF:FE53:62EB

# END