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11/10/2021

Cpre 489 – Lab 7 Report

Lab 7 Report

Summary:

This lab was interesting to me because I've used many of the tools already since I work in the network communications branch of Information Technology Services here on campus. This lab really showed me how in depth you can make your network. I also learned about some of the commands available in the configuration mode that let you alter the connection status of each port any way you would like.

Exercises:

Task 1a:

```
co2061-9300-03#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gi1/0/3, Gi1/0/4, Gi1/0/5
                                                Gi1/0/6, Gi1/0/7, Gi1/0/8
                                                Gi1/0/9, Gi1/0/10, Gi1/0/11
                                                Gi1/0/12, Gi1/0/13, Gi1/0/14
                                                Gi1/0/15, Gi1/0/16, Gi1/0/17
                                                Gi1/0/18, Gi1/0/19, Gi1/0/20
                                                Gi1/0/21, Gi1/0/22, Gi1/0/23
                                                Gi1/0/24, Ap1/0/1
50   lab7                             active
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID        MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ----------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001      1500  -      -      -        -    -        0      0
50   enet  100050      1500  -      -      -        -    -        0      0
1002 fddi  101002      1500  -      -      -        -    -        0      0
1003 tr    101003      1500  -      -      -        -    -        0      0

VLAN Type  SAID        MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ----------- ----- ------ ------ -------- ---- -------- ------ ------
1004 fdnet 101004      1500  -      -      -        ieee -        0      0
1005 trnet 101005      1500  -      -      -        ibm  -        0      0

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


Primary Secondary Type              Ports
------- --------- ----------------- ------------------------------------------

co2061-9300-03#show run
Building configuration...

Current configuration : 9862 bytes
!
! Last configuration change at 18:10:05 UTC Wed Nov 10 2021 by admin
!
version 16.12
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
service call-home
no platform punt-keepalive disable-kernel-core
!
hostname co2061-9300-03
!
!
vrf definition Mgmt-vrf
 !
 address-family ipv4
 exit-address-family
 !
 address-family ipv6
 exit-address-family
 --More-- 
```

Task 1b:

```
interface Vlan1
 no ip address
 shutdown
!
interface Vlan50
 ip address 10.0.50.1 255.255.255.0
!
ip default-gateway 192.168.254.254
ip forward-protocol nd
ip http server
ip http authentication local
ip http secure-server
ip ssh authentication-retries 2
ip ssh version 2
!
!
'
```

Task 2:

```
Building configuration...

Current configuration : 9883 bytes
!
! Last configuration change at 18:21:26 UTC Wed Nov 10 2021 by admin
!
version 16.12
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
service call-home
no platform punt-keepalive disable-kernel-core
!
hostname co2061-9300-03
!
!
vrf definition Mgmt-vrf
 !
 address-family ipv4
 exit-address-family
 !
 address-family ipv6
 exit-address-family
!
!
aaa new-model
!
!
aaa authorization exec default local
aaa authorization network default local
!
!
!
!
!
!
aaa session-id common
switch 1 provision c9300-24t
!
!
!
!
call-home
 ! If contact email address in call-home is configured as sch-smart-licensing@cisco.com
 ! the email address configured in Cisco Smart License Portal will be used as contact email address to send SCH notifications.
 contact-email-addr sch-smart-licensing@cisco.com
 profile "CiscoTAC-1"
  active
  destination transport-method http
  no destination transport-method email
!
!
!
!
!
ip domain name ece.iastate.edu
!
!
!
login on-success log
!
!
!
!
!
!
!
no device-tracking logging theft
!
crypto pki trustpoint TP-self-signed-2942035203
 enrollment selfsigned
 subject-name cn=IOS-Self-Signed-Certificate-2942035203
 revocation-check none
 rsakeypair TP-self-signed-2942035203
!
crypto pki trustpoint SLA-TrustPoint
 enrollment pkcs12
 revocation-check crl
!
!
```

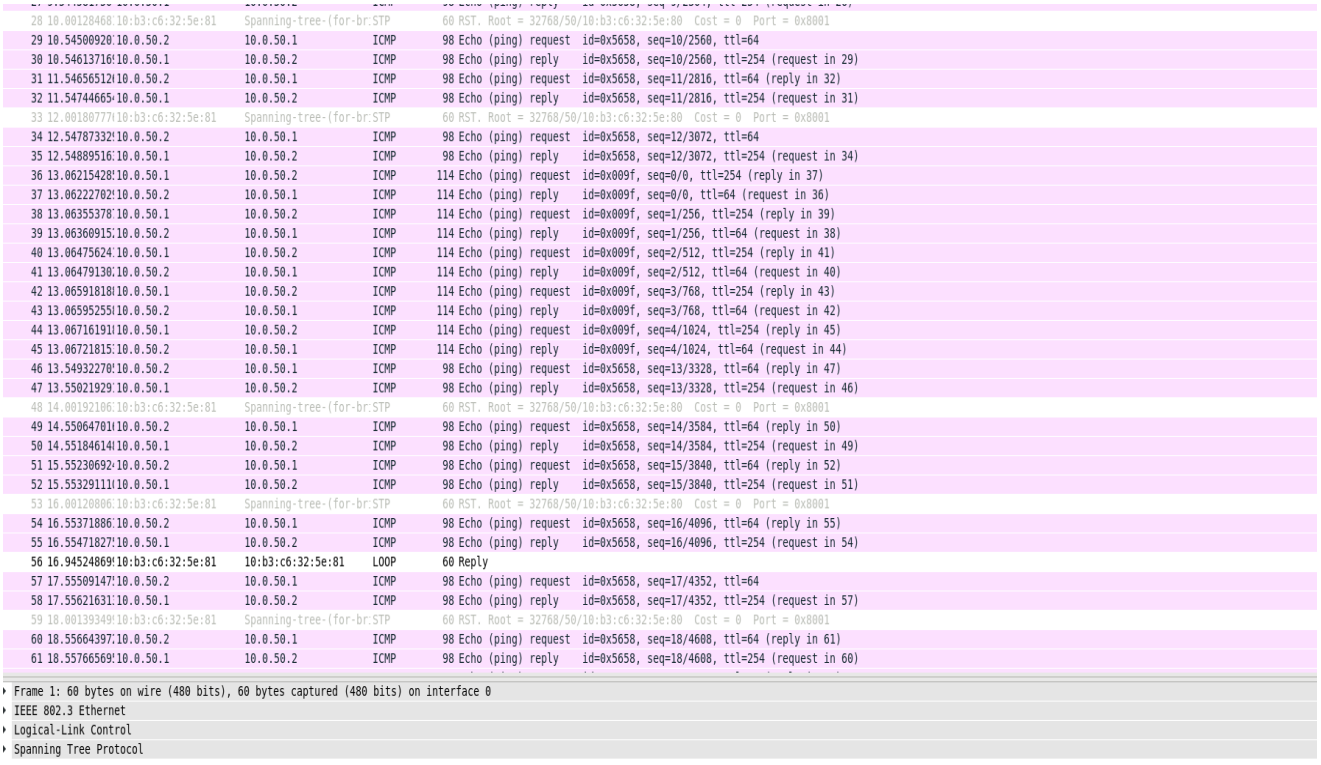
```
co2061-9300-03#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gi1/0/3, Gi1/0/4, Gi1/0/5
                                                Gi1/0/6, Gi1/0/7, Gi1/0/8
                                                Gi1/0/9, Gi1/0/10, Gi1/0/11
                                                Gi1/0/12, Gi1/0/13, Gi1/0/14
                                                Gi1/0/15, Gi1/0/16, Gi1/0/17
                                                Gi1/0/18, Gi1/0/19, Gi1/0/20
                                                Gi1/0/21, Gi1/0/22, Gi1/0/23
                                                Gi1/0/24, Ap1/0/1
50   lab7                             active    Gi1/0/1
1002 fddi-default                     act/unsup
1003 token-ring-default               act/unsup
1004 fddinet-default                  act/unsup
1005 trnet-default                    act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
50   enet  100050     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

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


Primary Secondary Type              Ports
------- --------- ----------------- ------------------------------------------

co2061-9300-03#
```

Task 3:

```
[489labuser@co2061-06 ~]$ ping 10.0.50.1
PING 10.0.50.1 (10.0.50.1) 56(84) bytes of data.
64 bytes from 10.0.50.1: icmp_seq=2 ttl=254 time=1.00 ms
64 bytes from 10.0.50.1: icmp_seq=3 ttl=254 time=1.00 ms
64 bytes from 10.0.50.1: icmp_seq=4 ttl=254 time=1.05 ms
64 bytes from 10.0.50.1: icmp_seq=5 ttl=254 time=1.19 ms
64 bytes from 10.0.50.1: icmp_seq=6 ttl=254 time=1.11 ms
64 bytes from 10.0.50.1: icmp_seq=7 ttl=254 time=1.07 ms
64 bytes from 10.0.50.1: icmp_seq=8 ttl=254 time=1.09 ms
64 bytes from 10.0.50.1: icmp_seq=9 ttl=254 time=1.00 ms
64 bytes from 10.0.50.1: icmp_seq=10 ttl=254 time=0.860 ms
64 bytes from 10.0.50.1: icmp_seq=11 ttl=254 time=1.10 ms
64 bytes from 10.0.50.1: icmp_seq=12 ttl=254 time=1.14 ms
64 bytes from 10.0.50.1: icmp_seq=13 ttl=254 time=1.13 ms
64 bytes from 10.0.50.1: icmp_seq=14 ttl=254 time=1.24 ms
64 bytes from 10.0.50.1: icmp_seq=15 ttl=254 time=1.04 ms
64 bytes from 10.0.50.1: icmp_seq=16 ttl=254 time=1.22 ms
^C
--- 10.0.50.1 ping statistics ---
16 packets transmitted, 15 received, 6% packet loss, time 15018ms
rtt min/avg/max/mdev = 0.860/1.086/1.243/0.102 ms
[489labuser@co2061-06 ~]$
```

Each device was able to reach each other. The switch also sends packets much quicker than the PC.

Task 4: There doesn't appear to be a difference.



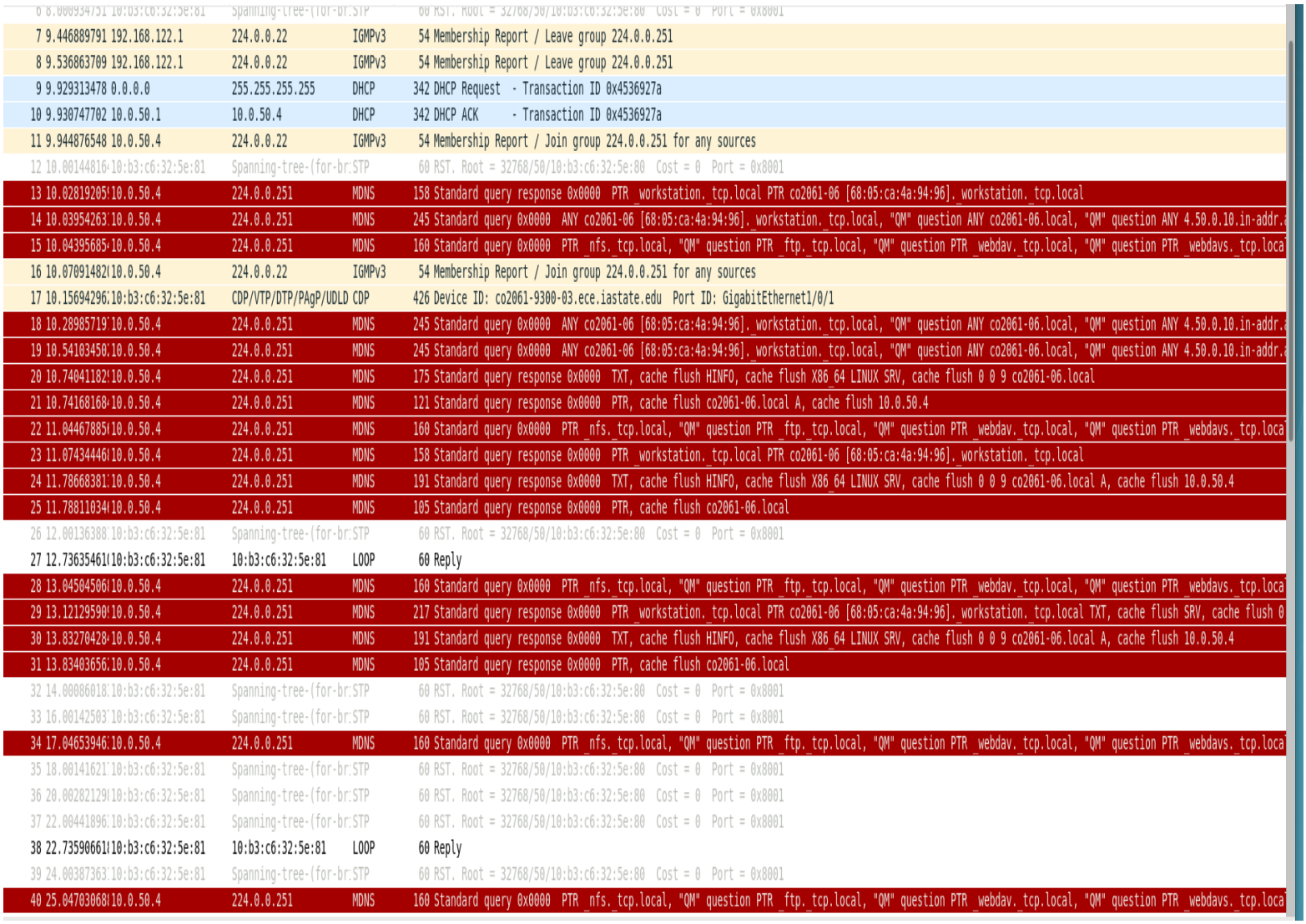
Task 5:

```
ip domain name ece.iastate.edu
ip dhcp excluded-address 10.0.50.1
ip dhcp excluded-address 10.0.50.1 10.0.50.3
!
ip dhcp pool VLAN50
 network 10.0.50.0 255.255.255.0
 default-router 10.0.50.1
 dns-server 4.8.9.50
 lease 0 2
```

Task 6:

```
[489labuser@co2061-06 ~]$ sudo /sbin/ifconfig p1p1 dynamic
[sudo] password for 489labuser:
[489labuser@co2061-06 ~]$ nmtui
[489labuser@co2061-06 ~]$ sudo /etc/init.d/network restart
Restarting network (via systemctl):                        [  OK  ]
[489labuser@co2061-06 ~]$ sudo /sbin/ifdown p1p1
Device 'p1p1' successfully disconnected.
[489labuser@co2061-06 ~]$ sudo /sbin/ifup p1p1
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/8)
[489labuser@co2061-06 ~]$ /sbin/ifconfig
enp0s31f6: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.254.6  netmask 255.255.255.0  broadcast 192.168.254.255
        ether 50:9a:4c:47:63:2b  txqueuelen 1000  (Ethernet)
        RX packets 348022  bytes 407682078 (388.7 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 232153  bytes 212165395 (202.3 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 16  memory 0xef200000-ef220000

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 366  bytes 31110 (30.3 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 366  bytes 31110 (30.3 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

p1p1: flags=-28605<UP,BROADCAST,RUNNING,MULTICAST,DYNAMIC>  mtu 1500
        inet 10.0.50.4  netmask 255.255.255.0  broadcast 10.0.50.255
        ether 68:05:ca:4a:94:96  txqueuelen 1000  (Ethernet)
        RX packets 77  bytes 8314 (8.1 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 168  bytes 23483 (22.9 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 16  memory 0xef1c0000-ef1e0000

virbr0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.122.1  netmask 255.255.255.0  broadcast 192.168.122.255
        ether 52:54:00:db:5b:c6  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

[489labuser@co2061-06 ~]$
```

Task 7: My capture didn’t show all 4 DHCP packets. The two shown were DHCP Request and DHCP ACK. Request tells the computer to choose an IP address based on the rules that the switch as created. And ACK tells the switch what IP address the even PC chose.



7	9.446889791	192.168.122.1	224.0.0.22	IGMPv3	54 Membership Report / Leave group 224.0.0.251
8	9.536863709	192.168.122.1	224.0.0.22	IGMPv3	54 Membership Report / Leave group 224.0.0.251
9	9.929313478	0.0.0.0	255.255.255.255	DHCP	342 DHCP Request - Transaction ID 0x4536927a
10	9.930747702	10.0.50.1	10.0.50.4	DHCP	342 DHCP ACK - Transaction ID 0x4536927a
11	9.944876548	10.0.50.4	224.0.0.22	IGMPv3	54 Membership Report / Join group 224.0.0.251 for any sources
12	10.00144816	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
13	10.02819205	10.0.50.4	224.0.0.251	MDNS	158 Standard query response 0x0000 PTR _workstation._tcp.local PTR co2061-06 [68:05:ca:4a:94:96]._workstation._tcp.local
14	10.03954263	10.0.50.4	224.0.0.251	MDNS	245 Standard query 0x0000 ANY co2061-06 [68:05:ca:4a:94:96]._workstation._tcp.local, "QM" question ANY co2061-06.local, "QM" question ANY 4.50.0.10.in-addr.
15	10.04395685	10.0.50.4	224.0.0.251	MDNS	160 Standard query 0x0000 PTR _nfs._tcp.local, "QM" question PTR _ftp._tcp.local, "QM" question PTR _webdav._tcp.local, "QM" question PTR _webdavs._tcp.loca
16	10.07091482	10.0.50.4	224.0.0.22	IGMPv3	54 Membership Report / Join group 224.0.0.251 for any sources
17	10.15694296	10:b3:c6:32:5e:81	CDP/VTP/DTP/PAgP/UDLD	CDP	426 Device ID: co2061-9300-03.ece.iastate.edu Port ID: GigabitEthernet1/0/1
18	10.28985719	10.0.50.4	224.0.0.251	MDNS	245 Standard query 0x0000 ANY co2061-06 [68:05:ca:4a:94:96]._workstation._tcp.local, "QM" question ANY co2061-06.local, "QM" question ANY 4.50.0.10.in-addr.
19	10.54103450	10.0.50.4	224.0.0.251	MDNS	245 Standard query 0x0000 ANY co2061-06 [68:05:ca:4a:94:96]._workstation._tcp.local, "QM" question ANY co2061-06.local, "QM" question ANY 4.50.0.10.in-addr.
20	10.74041182	10.0.50.4	224.0.0.251	MDNS	175 Standard query response 0x0000 TXT, cache flush HINFO, cache flush X86_64 LINUX SRV, cache flush 0 0 9 co2061-06.local
21	10.74168168	10.0.50.4	224.0.0.251	MDNS	121 Standard query response 0x0000 PTR, cache flush co2061-06.local A, cache flush 10.0.50.4
22	11.04467885	10.0.50.4	224.0.0.251	MDNS	160 Standard query 0x0000 PTR _nfs._tcp.local, "QM" question PTR _ftp._tcp.local, "QM" question PTR _webdav._tcp.local, "QM" question PTR _webdavs._tcp.loca
23	11.07434446	10.0.50.4	224.0.0.251	MDNS	158 Standard query response 0x0000 PTR _workstation._tcp.local PTR co2061-06 [68:05:ca:4a:94:96]._workstation._tcp.local
24	11.78668381	10.0.50.4	224.0.0.251	MDNS	191 Standard query response 0x0000 TXT, cache flush HINFO, cache flush X86_64 LINUX SRV, cache flush 0 0 9 co2061-06.local A, cache flush 10.0.50.4
25	11.78811034	10.0.50.4	224.0.0.251	MDNS	105 Standard query response 0x0000 PTR, cache flush co2061-06.local
26	12.00136388	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
27	12.73635461	10:b3:c6:32:5e:81	10:b3:c6:32:5e:81	LOOP	60 Reply
28	13.04504506	10.0.50.4	224.0.0.251	MDNS	160 Standard query 0x0000 PTR _nfs._tcp.local, "QM" question PTR _ftp._tcp.local, "QM" question PTR _webdav._tcp.local, "QM" question PTR _webdavs._tcp.loca
29	13.12129590	10.0.50.4	224.0.0.251	MDNS	217 Standard query response 0x0000 PTR _workstation._tcp.local PTR co2061-06 [68:05:ca:4a:94:96]._workstation._tcp.local TXT, cache flush SRV, cache flush 0
30	13.83270428	10.0.50.4	224.0.0.251	MDNS	191 Standard query response 0x0000 TXT, cache flush HINFO, cache flush X86_64 LINUX SRV, cache flush 0 0 9 co2061-06.local A, cache flush 10.0.50.4
31	13.83483656	10.0.50.4	224.0.0.251	MDNS	105 Standard query response 0x0000 PTR, cache flush co2061-06.local
32	14.00086018	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
33	16.00142503	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
34	17.04653946	10.0.50.4	224.0.0.251	MDNS	160 Standard query 0x0000 PTR _nfs._tcp.local, "QM" question PTR _ftp._tcp.local, "QM" question PTR _webdav._tcp.local, "QM" question PTR _webdavs._tcp.loca
35	18.00141621	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
36	20.00282129	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
37	22.00441896	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
38	22.73590661	10:b3:c6:32:5e:81	10:b3:c6:32:5e:81	LOOP	60 Reply
39	24.00387363	10:b3:c6:32:5e:81	Spanning-tree-(for-br	STP	60 RST. Root = 32768/50/10:b3:c6:32:5e:80 Cost = 0 Port = 0x8001
40	25.04703068	10.0.50.4	224.0.0.251	MDNS	160 Standard query 0x0000 PTR _nfs._tcp.local, "QM" question PTR _ftp._tcp.local, "QM" question PTR _webdav._tcp.local, "QM" question PTR _webdavs._tcp.loca

Task 8:

Shutdown

No ip dchp pool VLAN50

debug ip dhcp server events

no ip dhcp excluded-address 10.0.50.1 10.0.50.3