Lab 7

Joseph Schmidt

```
co2061-9300-11(config)#exit
co2061-9300-11#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gi1/0/1, 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
```

show vlan

```
ip dhcp excluded-address 10.0.50.2
ip dhcp excluded-address 10.0.50.3
ip dhcp excluded-address 10.0.50.254
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
!
!
!
login on-success log
```

Show run

```
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
```

Show vlan after adding even computer

```
!
interface Vlan50
 ip address 10.0.50.1 255.255.255.0
!
router ospf 102
```

```
!
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
!
```

Show run after adding even computer

```
co2061-9300-11#
co2061-9300-11#ping 10.0.50.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.50.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
co2061-9300-11#
```

Ping from switch to even-numbered computer

```
[489labuser@co2061-22 Desktop]$ 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=0.935 ms
64 bytes from 10.0.50.1: icmp_seq=3 ttl=254 time=0.860 ms
64 bytes from 10.0.50.1: icmp_seq=4 ttl=254 time=0.942 ms
64 bytes from 10.0.50.1: icmp_seq=5 ttl=254 time=0.839 ms
^C
--- 10.0.50.1 ping statistics ---
5 packets transmitted, 4 received, 20% packet loss, time 4113ms
rtt min/avg/max/mdev = 0.839/0.894/0.942/0.045 ms
[489labuser@co2061-22 Desktop]$
```

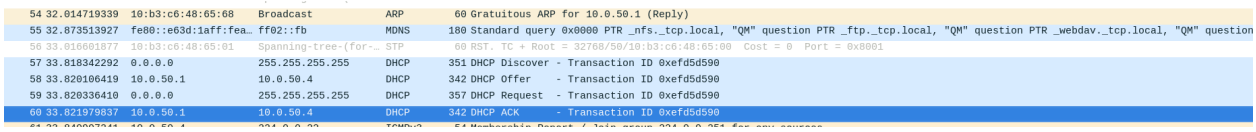
Ping from even-numbered computer to vlan

3	3.999758411	10:b3:c6:48:65:01	Spanning-tree-(for-…	STP	60	RST. Root = 32768/50/10:b3:c6:48:65:00 Cost = 0 Port = 0x8001
4	5.871920514	10:b3:c6:48:65:01	CDP/VTP/DTP/PAgP/UD…	CDP	426	Device ID: co2061-9300-11.ece.iastate.edu Port ID: GigabitEthernet1/0/1
5	5.890182300	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=1/256, ttl=64 (reply in 6)
6	5.891114300	10.0.50.1	10.0.50.2	ICMP	98	Echo (ping) reply id=0x0012, seq=1/256, ttl=254 (request in 5)
7	5.999699864	10:b3:c6:48:65:01	Spanning-tree-(for-…	STP	60	RST. Root = 32768/50/10:b3:c6:48:65:00 Cost = 0 Port = 0x8001
8	6.561461220	10:b3:c6:48:65:01	10:b3:c6:48:65:01	LOOP	60	Reply
9	6.891517024	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=2/512, ttl=64 (reply in 10)
10	6.892339154	10.0.50.1	10.0.50.2	ICMP	98	Echo (ping) reply id=0x0012, seq=2/512, ttl=254 (request in 9)
11	7.892758206	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=3/768, ttl=64 (reply in 12)
12	7.893861442	10.0.50.1	10.0.50.2	ICMP	98	Echo (ping) reply id=0x0012, seq=3/768, ttl=254 (request in 11)
13	8.000227461	10:b3:c6:48:65:01	Spanning-tree-(for-…	STP	60	RST. Root = 32768/50/10:b3:c6:48:65:00 Cost = 0 Port = 0x8001
14	8.894221847	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=4/1024, ttl=64 (reply in 15)
15	8.894973738	10.0.50.1	10.0.50.2	ICMP	98	Echo (ping) reply id=0x0012, seq=4/1024, ttl=254 (request in 14)
16	9.955935567	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=5/1280, ttl=64 (reply in 17)
17	9.956920448	10.0.50.1	10.0.50.2	ICMP	98	Echo (ping) reply id=0x0012, seq=5/1280, ttl=254 (request in 16)
18	10.002082840	10:b3:c6:48:65:01	Spanning-tree-(for-…	STP	60	RST. Root = 32768/50/10:b3:c6:48:65:00 Cost = 0 Port = 0x8001
19	10.956836407	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=6/1536, ttl=64 (reply in 20)
20	10.957738129	10.0.50.1	10.0.50.2	ICMP	98	Echo (ping) reply id=0x0012, seq=6/1536, ttl=254 (request in 19)
21	11.171884958	e4:3d:1a:a0:31:b7	10:b3:c6:48:65:68	ARP	42	Who has 10.0.50.1? Tell 10.0.50.2
22	11.172648251	10:b3:c6:48:65:68	e4:3d:1a:a0:31:b7	ARP	60	10.0.50.1 is at 10:b3:c6:48:65:68
23	11.958123257	10.0.50.2	10.0.50.1	ICMP	98	Echo (ping) request id=0x0012, seq=7/1792, ttl=64 (reply in 24)

Wire shark captured our vlan, you can see the PORT ID: GigabitEthernet1/0/1.

```
!
ip domain name ece.iastate.edu
ip dhcp excluded-address 10.0.50.1
ip dhcp excluded-address 10.0.50.2
ip dhcp excluded-address 10.0.50.3
ip dhcp excluded-address 10.0.50.254
ip dhcp excluded-address 10.0.50.1 10.0.50.3
ip dhcp excluded-address 10.0.50.1 10.0.50.254
!
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
!
!
!
```

Show run (had to redo this because I accidentally excluded from .1 - .254 so I had no available ips, I ran no ip dhcp excluded-address 10.0.50.1 10.0.50.254 to clear this filter)



4-way handshake, can see Discover, Offer, Request, and ACK

```
PING 10.0.50.1 (10.0.50.1) 56(84) bytes of data.
64 bytes from 10.0.50.1: icmp_seq=1 ttl=254 time=1.36 ms
64 bytes from 10.0.50.1: icmp_seq=2 ttl=254 time=0.879 ms
64 bytes from 10.0.50.1: icmp_seq=3 ttl=254 time=0.931 ms
64 bytes from 10.0.50.1: icmp_seq=4 ttl=254 time=0.903 ms
64 bytes from 10.0.50.1: icmp_seq=5 ttl=254 time=0.866 ms
^C
--- 10.0.50.1 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 0.866/0.988/1.364/0.192 ms
[489labuser@co2061-22 Desktop]$ ifconfig
enp0s31f6: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether 74:86:e2:28:37:37  txqueuelen 1000  (Ethernet)
```

Pinging vlan

```
enp3s0f1: flags=-28605<UP,BROADCAST,RUNNING,MULTICAST,DYNAMIC>  mtu 1500
        inet 10.0.50.4  netmask 255.255.255.0  broadcast 10.0.50.255
        inet6 fe80::e63d:1aff:fea0:31b7  prefixlen 64  scopeid 0x20<link>
        ether e4:3d:1a:a0:31:b7  txqueuelen 1000  (Ethernet)
        RX packets 38085  bytes 5290660 (5.0 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 26652  bytes 4905806 (4.6 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 17
```

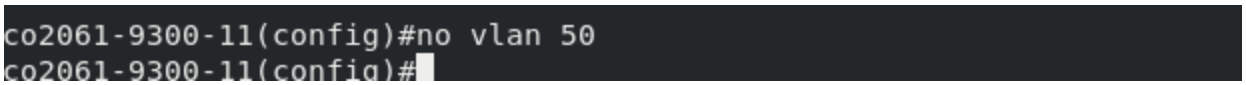
Ip of 10.0.50.4 from pool

```
co2061-9300-11#ping 10.0.50.4
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.50.4, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
co2061-9300-11#
```

Vlan pinging client pc

```
co2061-9300-11(config)#no ip dhcp pool VLAN50
co2061-9300-11(config)#^Z
```

```
co2061-9300-11(config)#no ip dhcp excluded-address 10.0.50.1 10.0.50.3
co2061-9300-11(config)#no ip dhcp excluded-address 10.0.50.1
co2061-9300-11(config)#no ip dhcp excluded-address 10.0.50.2
co2061-9300-11(config)#no ip dhcp excluded-address 10.0.50.3
co2061-9300-11(config)#no ip dhcp excluded-address 10.0.50.254
co2061-9300-11(config)#^Z
```



Closing Vlan

Summary:
I learned about vlans and subnetting. I learned about CISCO switches and how to configure them. I learned about the 4 modes you can use for configuring the switch: Privileged EXEC mode, User EXEC Mode, GLobal Configuration Mode, and Interface Configuration Mode. For Privilleged EXEC Mode it is similar to root privileges on a UNIX machine. From here you can proceed from Privileged EXEC Mode to the Global or Interface Configuration Modes. With User Mode you have a limited number of commands and no configuration parameters can be read or modified. For Global Config mode, global system parameters can be modified. And lastly, Interface config mode parameters of a specific interface can be modified. I also learned about setting up a static ip between a pc and a vlan. I also learned about dynamic addresses on a vlan. I saw how you can exclude addresses and create a pool for users to join on. Overall, I learned a lot about networking and configuring a vlan through this lab.