

Lab 11

MAC address Table

Lab Objective:

Learn how a switch populates its MAC table in order to quickly forward frames out of the correct interface.

Lab Purpose:

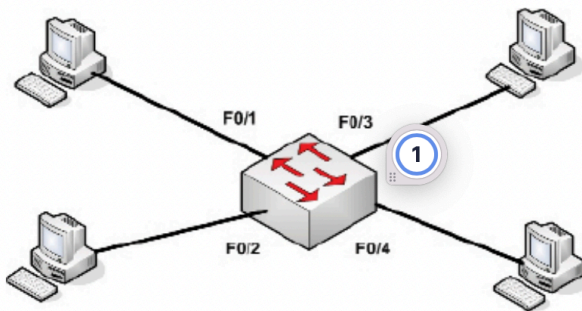
When switches boot, they have no directory of which MAC addresses are connected to which interface. As traffic enters the port, the switch adds the source MAC address to a MAC address table so it doesn't have to broadcast for the address next time.

Lab Tool:

Packet Tracer

Lab Topology:

Please use the following topology to complete this lab exercise:



Lab Walkthrough:

Task 1:

Connect four hosts to a Cisco switch using straight-through cables.

Task 2:

Check the MAC address table on the switch. It should be empty at the moment:

```
Switch#show mac-address-table
```

```
Mac Address Table
```

```
-----
```

```
Vlan Mac Address Type Ports
```

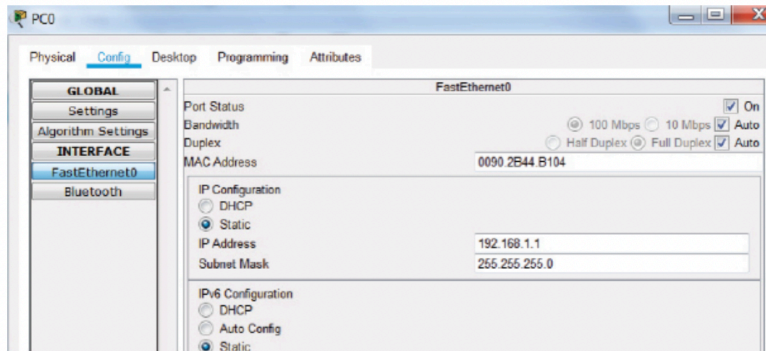
```
-----
```

```
Switch#
```

Task 3:

Allocate IP addresses to the hosts from within the subnet 192.168.1.0.

Here is how I did it on the first PC. You can use 192.168.1.1, then 192.168.1.2, and so on.



Task 4:

From one of the PCs ping the other three. Below, I am on host 192.168.1.1, and ping hosts .2, .3, and then .4

```
Physical Config Desktop Programming Attributes
Command Prompt

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
```

Task 5:
Check the MAC address table on the switch once more.

```
Switch#show mac-address-table
```

Mac Address Table

Vlan Mac Address Type Ports

```
-----  
  
1 0001.641d.579c DYNAMIC Fa0/3  
1 0050.0fd5.d238 DYNAMIC Fa0/4  
1 0060.5c7b.6cbd DYNAMIC Fa0/2  
1 0090.2b44.b104 DYNAMIC Fa0/1
```

```
Switch#
```

You can go ahead and check the MAC address on your host to ensure the one in the switch MAC address table is correct.

