

10. Use Linux to view the MAC address table of a switch (if using a Linux-based network switch). Use the bridge or ip link commands to inspect the MAC table and demonstrate a basic switch's operation.

## 1. Using the bridge command

### 1) Creating a bridge & ip link show command :

```
pavan03@pavankalyan: ~  
pavan03@pavankalyan:~$ sudo ip link add name br0 type bridge  
[sudo] password for pavan03:  
pavan03@pavankalyan:~$ sudo ip link set dev br0 up  
pavan03@pavankalyan:~$ ip link show  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000  
    link/ether 08:00:27:a9:14:12 brd ff:ff:ff:ff:ff:ff  
3: br0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN mode DEFAULT group default qlen 1000  
    link/ether 26:a9:c2:7f:f3:04 brd ff:ff:ff:ff:ff:ff
```

### 2) Adding network interface to the bridge

```
pavan03@pavankalyan:~$ sudo ip link set enp0s3 master br0
```

### 3) Command to view the MAC address table:

```
pavan03@pavankalyan:~$ bridge fdb show  
52:55:0a:00:02:03 dev enp0s3 master br0  
52:56:00:00:00:03 dev enp0s3 master br0  
52:55:0a:00:02:02 dev enp0s3 master br0  
52:56:00:00:00:02 dev enp0s3 master br0  
08:00:27:a9:14:12 dev enp0s3 vlan 1 master br0 permanent  
08:00:27:a9:14:12 dev enp0s3 master br0 permanent  
01:00:5e:00:00:01 dev enp0s3 self permanent  
33:33:00:00:00:01 dev enp0s3 self permanent  
01:00:5e:00:00:fb dev enp0s3 self permanent  
33:33:ff:38:e9:6a dev enp0s3 self permanent  
33:33:ff:ea:42:00 dev enp0s3 self permanent  
33:33:ff:cc:d4:40 dev enp0s3 self permanent  
33:33:00:00:00:fb dev enp0s3 self permanent  
33:33:00:00:00:01 dev br0 self permanent  
01:00:5e:00:00:6a dev br0 self permanent  
33:33:00:00:00:6a dev br0 self permanent  
01:00:5e:00:00:01 dev br0 self permanent  
33:33:ff:7f:f3:04 dev br0 self permanent  
33:33:ff:90:3f:1e dev br0 self permanent  
33:33:00:00:00:fb dev br0 self permanent  
26:a9:c2:7f:f3:04 dev br0 vlan 1 master br0 permanent  
26:a9:c2:7f:f3:04 dev br0 master br0 permanent
```

### 4) Removing and deleting the Network Interface from the bridge

```
pavan03@pavankalyan:~$ sudo ip link set enp0s3 nomaster  
pavan03@pavankalyan:~$ sudo ip link set br0 down  
pavan03@pavankalyan:~$ sudo ip link del br0
```