# Experiment 6

**AIM:** To analyze and view the Network Device Mac Addresses

**Devices Used**: Switches, PCs, and Cables.

**Objectives:**

Part 1: Configure Devices and Verify Connectivity.

Part 2: Display, Describe, and Analyze Ethernet MAC Addresses

**Procedure:**

Part 1: Configure Devices and Verify Connectivity.

Step 1: Cable the network as shown in the topology.

Step 2: Configure the IPv4 address for the PC.

Step 3: Configure basic settings for the switch.

Part 2: Display, Describe, and Analyze Ethernet MAC Addresses

Step 1: Analyze the MAC address for the PC-A NIC.

Step 2: Analyze the MAC address for the S1 F0/6 interface.

Step 3: View the MAC addresses on the switch.

```
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname s1
s1(config)#no ip domain-lookup
s1(config)#interface vlan1
s1(config-if)#ip address 1492.168.1.2 255.255.255.0
                          ^
% Invalid input detected at '^' marker.

s1(config-if)#ip address 192.168.1.2 255.255.255.0
s1(config-if)#no shutdown

s1(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

s1(config-if)#end
s1#
%SYS-5-CONFIG_I: Configured from console by console
```

**Q.) Were the pings successful?**

Ans) Yes they were successful.

```
s1#show interface vlan 1
Vlan1 is up, line protocol is up
  Hardware is CPU Interface, address is 000b.be7e.62e7 (bia 000b.be7e.62e7)
  Internet address is 192.168.1.2/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     1682 packets input, 530955 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     563859 packets output, 0 bytes, 0 underruns
     0 output errors, 23 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

**Q.) What is the MAC address for VLAN 1 on S1?**
**Ans)** 000b.be7e.67e7

**Q.) What is the MAC serial number for VLAN 1 on S1?**
**Ans**) 001b.0c6d.8f40

Q.) **What is OUI for VLAN 1?**
**Ans**) 001.0c6d

**Q.) What does bia stand for?**
**Ans)** The MAC address is often referred to as a burned-in address (BIA) because, historically, this address is burned into ROM (Read-Only Memory) on the NIC.

```
s1#show arp
Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  192.168.1.2            -   000B.BE7E.62E7  ARPA   Vlan1
s1#
```

**Q.) What is the Layer 2 address displayed on S1?**
**Ans)** 192.168.1.2

**Result:** Mac address of network devices were viewed and verified.