Computer Network Assignment

On

Getting Familiar With Your Network

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July 2, 2024

1 My IP Address

```
ifconfig
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu
    1500
    options=6460<TSO4,TSO6,CHANNEL_IO,PARTIAL_CSUM,
        ZEROINVERT_CSUM>
    ether 6c:b1:33:9d:0f:ce
    inet6 fe80::186d:4661:98f0:c6d9%en0 prefixlen 64 secured
        scopeid 0xf
    inet 192.168.1.3 netmask 0xffffff00 broadcast 192.168.1.255
    inet6 2407:1400:aa4a:6468:14f3:5bdd:3c2c:16a8 prefixlen 64
        autoconf secured
    inet6 2407:1400:aa4a:6468:9575:c01:db9e:4a7e prefixlen 64
        autoconf temporary
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
```

From the above output, it is clear that my active network interface is en0. It has IP Address 192.168.1.3.

Parameter	Value
IP Address	192.168.1.3

2 Subnet Mask

From the terminal output, we can see the subnet mask for my network is `0xffffff00`. Now converting this subnet mask from hexadecimal format to the dot-decimal format.

```
0xff = 255 in decimal
0xffffff00 = 255.255.255.0
```

Thus, my subnet mask is `255.255.255.0`.

Parameter	Value
Subnet Mask	255.255.255.0

3 Network Address

To calculate the network address, we need to perform a bitwise AND operation between our IP address and your subnet mask.

The network address and subnet mask for my network are:

- **Network Address:** 192.168.1.3

- **Subnet Mask:** 255.255.255.0

Converting these dot values to binary and performing the AND operation we get:

```
11000000.10101000.00000001.00000011
AND
11111111.11111111.11111111.00000000
-----------------------------------
11000000.10101000.00000001.00000000
```

Converting it back to dot notation, we get 192.168.1.0.