Prac_1_lphtum003

IFCONFIG

```
pi@raspberrypi:~ $ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.1.15  netmask 255.255.255.0  broadcast 192.168.1.255
        inet6 fe80::ba27:ebff:feaa:a2f8  prefixlen 64  scopeid 0x20<link>
        ether b8:27:eb:aa:a2:f8  txqueuelen 1000  (Ethernet)
        RX packets 4334  bytes 362072 (353.5 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 2985  bytes 865570 (845.2 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 9  bytes 524 (524.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 9  bytes 524 (524.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

pi@raspberrypi:~ $
```

LSCPU

```
pi@raspberrypi:~ $ lscpu
Architecture:          armv7l
Byte Order:            Little Endian
CPU(s):                4
On-line CPU(s) list:   0-3
Thread(s) per core:    1
Core(s) per socket:    4
Socket(s):             1
Model:                 4
Model name:            ARMv7 Processor rev 4 (v7l)
CPU max MHz:           1200.0000
CPU min MHz:           600.0000
BogoMIPS:              38.40
Flags:                 half thumb fastmult vfp edsp neon vfpv3 tls vfpv4 idiva idivt vfpd32 lpae evtstrm crc32
pi@raspberrypi:~ $
```

LS

```
pi@raspberrypi:~ $ ls lphtum003/
pi@raspberrypi:~ $
```

DEFINE A HEADLESS RPI

A headless device refers to a device which is accessed remotely over the local network (or internet) instead of being controlled by direct hardware input. Configuring the Raspberry Pi as a headless device allows user to control it via a terminal. To access a headless RPi, the Secure Socket Shell (SSH) tool is used to achieve an encrypted network connection that provides administrators with a secure way to access the remote device.

EXPLAIN THE MEANING OF IFACE, ETH0, INET, AND STATIC IN DETAIL.

Iface

A network interface is the point of interconnection between a computer and a private or public network. A network interface is generally a network interface card (NIC), but does not have to have a physical form. Instead, the network interface can be implemented in software. For example, the loopback interface (127.0.0.1 for IPv4 and ::1 for IPv6) is not a physical device but a piece of software simulating a network interface. The loopback interface is commonly used in test environments.

Eth0

eth0 is the first Ethernet interface. (Additional Ethernet interfaces would be named eth1, eth2, etc.) This type of interface is usually a NIC connected to the network by a category 5 cable.

Inet

An iNet is any network that uses the Internet Protocol (IP). Within AT&T, the word is used as a convenient "umbrella" term that includes the Internet, intranet, and extranet.

Static

A static Internet Protocol (IP) address (static IP address) is a permanent number assigned to a computer by an Internet service provider (ISP).

EXPLAIN THE DIFFERENCE BETWEEN THE SUBNET MASK 255.255.255.0 AND THE IP ADDRESS 192.168.1.15

Subnet mask

A subnet mask is a number that defines a range of IP addresses that can be used in a network. Subnet masks are used to designate subnetworks, or subnets, which are typically local networks LANs that are connected to the Internet. Systems within the same subnet can communicate directly with each other, while systems on different subnets must communicate through a router. Therefore, subnetworks can be used to partition multiple networks and limit the traffic between them.

A subnet mask hides, or "masks," the network part of a system's IP address and leaves only the host part as the machine identifier. Each section of the subnet mask can contain a number from 0 to 256, just like an IP address.

Ip address

An IP address, or simply an "IP," is a unique address that identifies a device on the Internet or a local network. It allows a system to be recognized by other systems connected via the Internet protocol. There are two primary types of IP address formats used today — IPv4 and IPv6.

IPv4

An IPv4 address consist of four sets of numbers from 0 to 255, separated by three dots.

IPv6

The IPv6 address format is much different than the IPv4 format. It contains eight sets of four hexadecimal digits and uses colons to separate each block. An example of an IPv6 address is: 2602:0445:0000:0000:a93e:5ca7:81e2:5f9d. There are 3.4 x 1038 or 340 undecillion) possible IPv6 addresses.

Differences between subnet mask 255.255.255.0 and IP Address 192.168.1.15

The subnet mask 255.255.255.0 represents the number of bytes which belong to the network whereas the IP Address 192.168.1.15 represents both the network address and the host address. The left most bytes represent the network address and the last address byte represents the host address within the network.

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