**NAT**

NAT stands for network address translation. The main important and easy definition of nat is, it is used to translate the ip address i.e public ip address into private ip address and private ip address to public ip address. Public ip address are publicly registered on the internet. They must have public ip address to excess the internet. Private ip are not publicly registered they cannot directly excess the internet.

The device that we use in our daily life has the private ip , but when we want to excess the internet the NAT translate your private ip into public ip address then only we can excess the internet, this is done to avoid the shortage of public ip . Because of these reason new generation of ip address was developed called as ipv6. In ipv6 every device will have it’s own public ip .

**VLAN**

**Vlan** stand for virtual local area network. Vlan can logically create several virtual network to separate the network broadcast traffic. Vlan creates the logical partition of the switch. We can also easily assign the designated port of the switch as a vlan. By doing this we can separate the network traffic between the different department .one of the main reason of creating the vlan is the traffic management. When the local network area grow and many devices are added the it is difficult the maintain and network gets more congested but by creating the vlan which divide the network into the smaller broadcast domain.

The main advantage of vlan is cost deduction and better performance.

**DNS**

**DNS**  stand for Domain Name System. For example we identify the person by their names but the computer can be identify by the numbers which is known as IP address. Dns resolves name to the numbers. It is very difficult to remember the IP address of each of the website. So dns makes us easy . if we type the domain name of the website , the DNS will convert the name to the ip address for us because the computer only knows the numbers not name.

**DHCP**

**DHCP** stands for dynamic host configuration protocol. Every devices on the network must have an IP address for communication purpose. There are 2 ways that the computer can assign the IP address . when there are lots of computer that are connected to the internet , it to difficult to assign the ip address to each of the pc so, to solve the problem DHCP was introduced which automatically assign the IP address to each of the devices. DHCP server automatically assign the IP address, sebnet mask and default gateway.