Network services

DHCP: The DHCP service is responsible for assigning IP addresses to hosts on the network. When a client boots up, it sends a DHCP discover message, which is a broadcast message designed to locate a DHCP server. The DHCP server responds with a DHCP Offer, offering the client an IP address. The client then responds with a DHCP request message asking for the address before the server responds with a DHCP ACK to acknowledge that the address has been allocated to that client.Once an IP address is leased to the client,client will keep and contact DHCP server periodically to review it.If a conflict occurred,the IP address is removed from the pool and administrator must resolve the conflict

DNS: The DNS service is responsible for converting the Fully Qualified Domain Name, (FQDN) such as www.gleneclarke.com to an IP address.

NAT: Network Address Translation is responsible for converting the internal address to a public address that is used to access the Internet. NAT offers the benefit of being able to purchase only one public IP address and have a number of clients on the network use that one IP address for Internet access. NAT also offers the security benefit that the internal addresses are not used on the Internet — helping to keep the internal addresses unknown to the outside world. There are two types of NAT

- **Static NAT**: Static NAT is the mapping of one internal address to one public address. With static NAT, you will need multiple public addresses to allow internal clients to access the Internet.
- **NAT overloading**: A more popular form of NAT, NAT overloading is the concept that all internal address get translated to the one public address on the NAT device.

Web services:

- **POP3/IMAP4:** POP3 and IMAP4 are the Internet protocols for receiving email over the Internet.
- **SMTP:** SMTP is the Internet protocol for sending email over the Internet. SMTP servers are also known as email servers.
- **HTTP:** HTTP servers are also known as Web servers and are used to host Web sites. HTTP is a protocol that is used to send the Web page from the Web server to the Web client.
- **FTP:** FTP is an Internet protocol used to transfer files over the Internet. The files are hosted on FTP servers, which are then downloaded to any clients on the Internet.