Genesis Grant

CTEC 305

WEEK 6 ASSIGNMENT

DNS, short for Domain Name System, is a Server meant to find the correct IP address for queried domain name. Similar to in a phonebook, when you try to find someone, you will first know the name then look for the number (IP Address). When a user inputs a URL into a search engine, the DNS Server will check its cache and see if it can find it’s paired IP address. If it is not found in the DNS Server cache, then the DNS server will send it to the resolver server, root server or top-level domain server.

When domain names get to the root server, it will be compared with other caches to find its match. Root servers are a top tier in the DNS hierarchy, with 13 sets of root servers placed around the world. If the root server still cannot find the correct match, the data will be sent to the top level domain (TLD).

The top level domain server stores the address domain information for top level domains including “.com”, “.net”, “.org” and more. Once the target IP address is found it will be sent back to the resolver server (who will cache it for future reference) who will send it off to the client device.

DHCP , an acronym for Dynamic Host Configuration Protocol, servers work to automatically assign a computer an IP address, subnet mask, default gateway, etc. There are 2 types of ways a computer can be assigned an IP address, static IP or dynamic IP. Static IP is where the user will assign an IP address manually. Dynamic IP is allows a compute to get an IP address from a DHCP server.

The DHCP server will assign an IP address from its scope. A scope is the range of IP addresses that a DHCP server can hand out. This range can be customized dependent on the administrator preference.

DHCP servers assign IP addresses as a lease. A lease is the amount of time an IP address is assigned to a specific computer. It is meant to make sure the DHCP server does not run out of IP addresses. In the case that a device may be removed from the network, had it owned the IP address, then once the DHCP generated a new IP address there is a possibility it could repeat with the old device. This could cause issues when identifying devices. DHCP is a service that runs on a server or routers.