DNS

> *Converting IP numbers to and from human readable host names.*

server.hostname.org-domain is a DNS name, read from right to left
DNS resolution starts from right to left.

Every primary DNS server has host name assignments in zone files. Secondary DNS gets zone files from primary DNS.

Primary DNS doesnt give its info to the outside world (like intranet sites). Only restricted to local network. But DNS doesnt stop direct access with ip address. Firewalls stop this.

Entire mapping takes time. So keep a DNS cache, that caches highly used ip addresses.

`whois` tells you owner and primary DNS servers associated with a domain. `nslookup` and `host`.

DNS query packets are formed at app layer. They can use wither UDP/IP or TCP/IP. It uses UDP by default. If the message is big, it uses TCP.

DNS Components

1. **Name Space**: Specifications for a structured name space and data associated with the names.
2. **Resolvers**: Client programs that extract information from Name Servers.
3. **Name Servers**: Server programs which hold information about the structure and the names.

Name Server

Primary sevrers are authoritative, other servers cache the mappings. If the mapping is not in the cache lookup the primary server. Also populate the cache with known and most used mappings.

Static IP address

perm ip address. Because this is the one that is populated in global dns servers. If its dynamic, it adds overhead, because the mapping keeps changing. If the machine changes, you need to make sure the static ip address remains the same, otherwise overhead is incurred.

Linux Hostnames /etc/

You can fill it with mappings
