CS 456/656 - Computer Networks **Fall 2018**

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8.1 DNS

- DNS (Domain Name Server) is a distributed hierachical database that keeps record of HostNames and correspondng IP addresses.
- If the DNS goes down you won't be able to connect
- DNS is distrbuted to avoid downtime and ensure speedy search results
- Names are parsed Right to Left
- Root servers given a request route requests to DNS servers for the specific top-level domain
- Top-Level Servers will direct you to the DNS server for the specific site
- Authoritive server is the last DNS server in the chain
- Local DNS will have the location of the Root DNS server
- Local DNS is checked first for possible cached values which might have the Authoritive server location
- DNS is primarily UDP, but if no response is received, then your client will open a TCP connection
- TCP is used as a backup
- DNS Definitions
  - DNS : Distributed database storing resource records (RR)
  - RR format is (name, value, type, ttl)
- Types
  - Type = A
    - Name is the host name
    - Value is the IP address
  - Type = NS
    - Name is domain (i.e foo.com)
    - Value is host name of authoritative name server for this domain
  - Type = CNAME
    - Name is alias name for the real name
    - Value is canonical name (real name)
    - example : ibm.com is really backup2.ibm.com
  - Type = MX
    - Value is name of mailserver associated with name
- DNS Protocols