Internet Domain And Domain Name System

Presented by :Rupak Poudyal

Internet Domain

- Identification string that defines a realm of administrative autonomy, authority, or control on the Internet
- Formed by the rules and procedures of the Domain Name System (DNS).
- Represents an Internet Protocol (IP) resource

Levels of Domain Name

- Organized in subordinate levels (subdomains) of the DNS root domain

i. Top-Level Domain
ii. Second-Level Domain
iii. Third-Level Domain

Top-Level Domain

- Domains at the highest level in the hierarchical Domain Name System
- Installed in the root zone of the name space
- Last part of the domain name

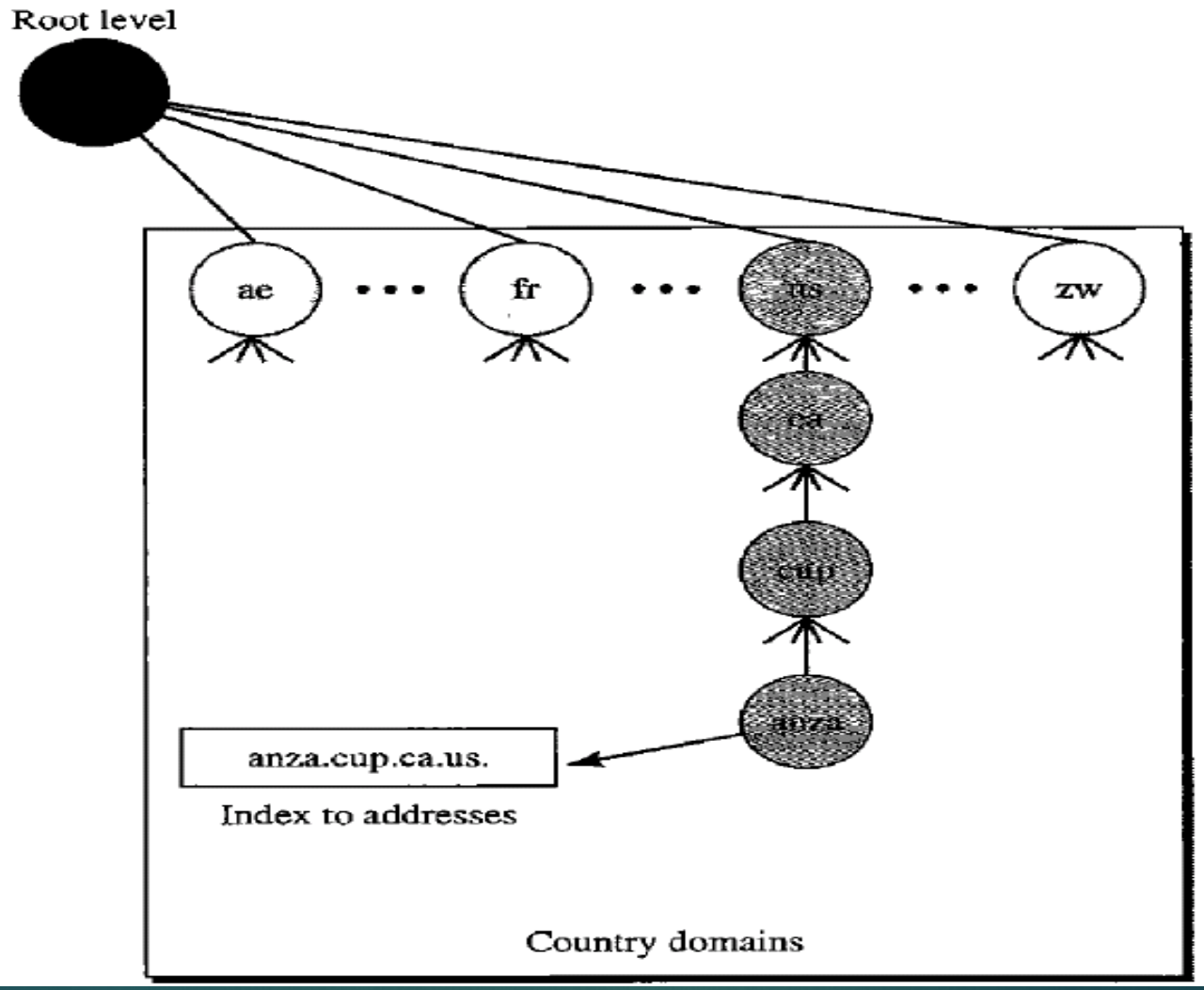
Types:

i. Country code top-level domains (ccTLD)
ii. Generic top-level domain (gTLD)

Country code top-level domains (ccTLD)

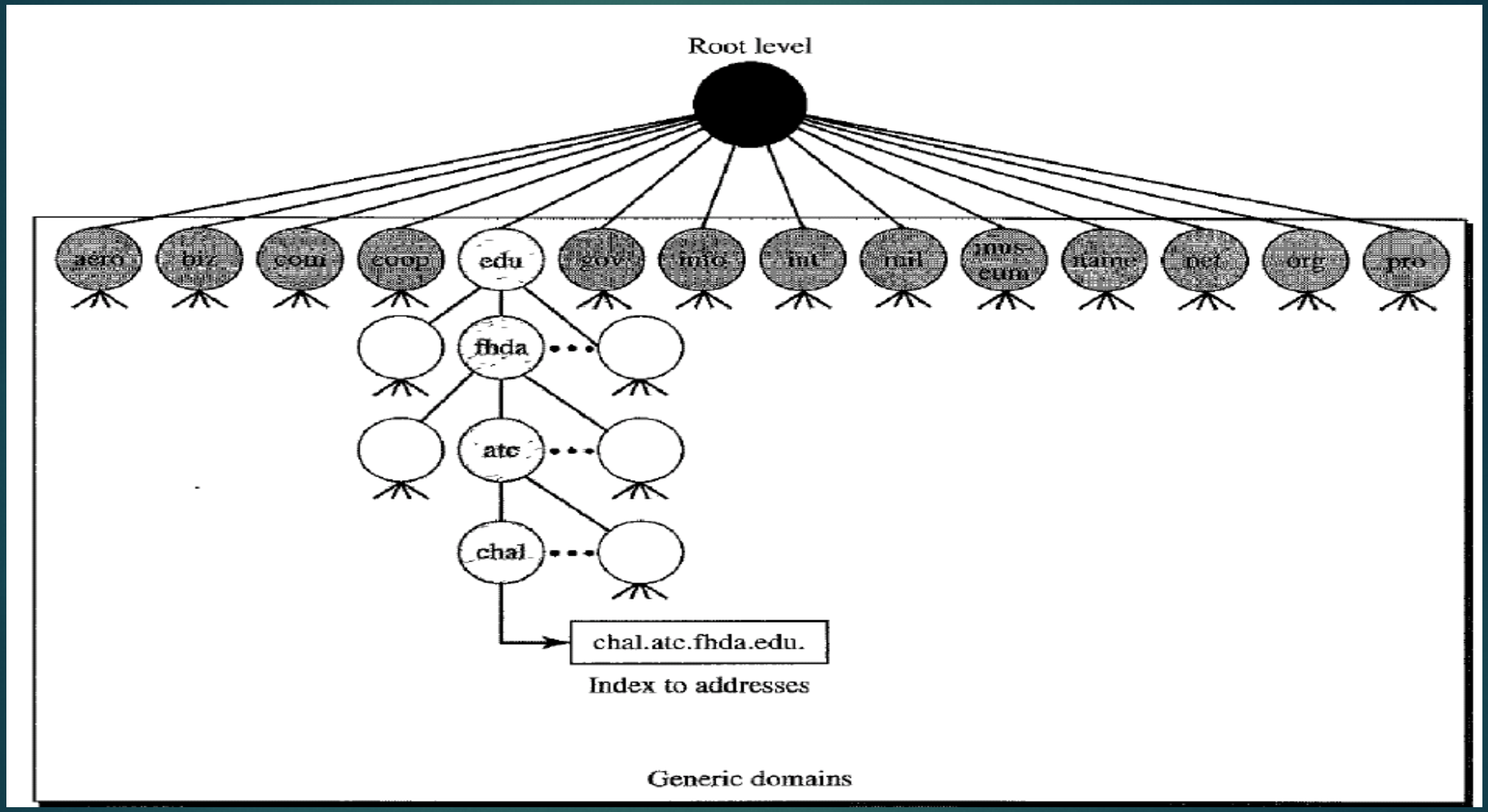
- Reserved for a country, sovereign state, or dependent territory identified with a country code.
- Extension based on the ISO 3166-1 alpha-2 country codes

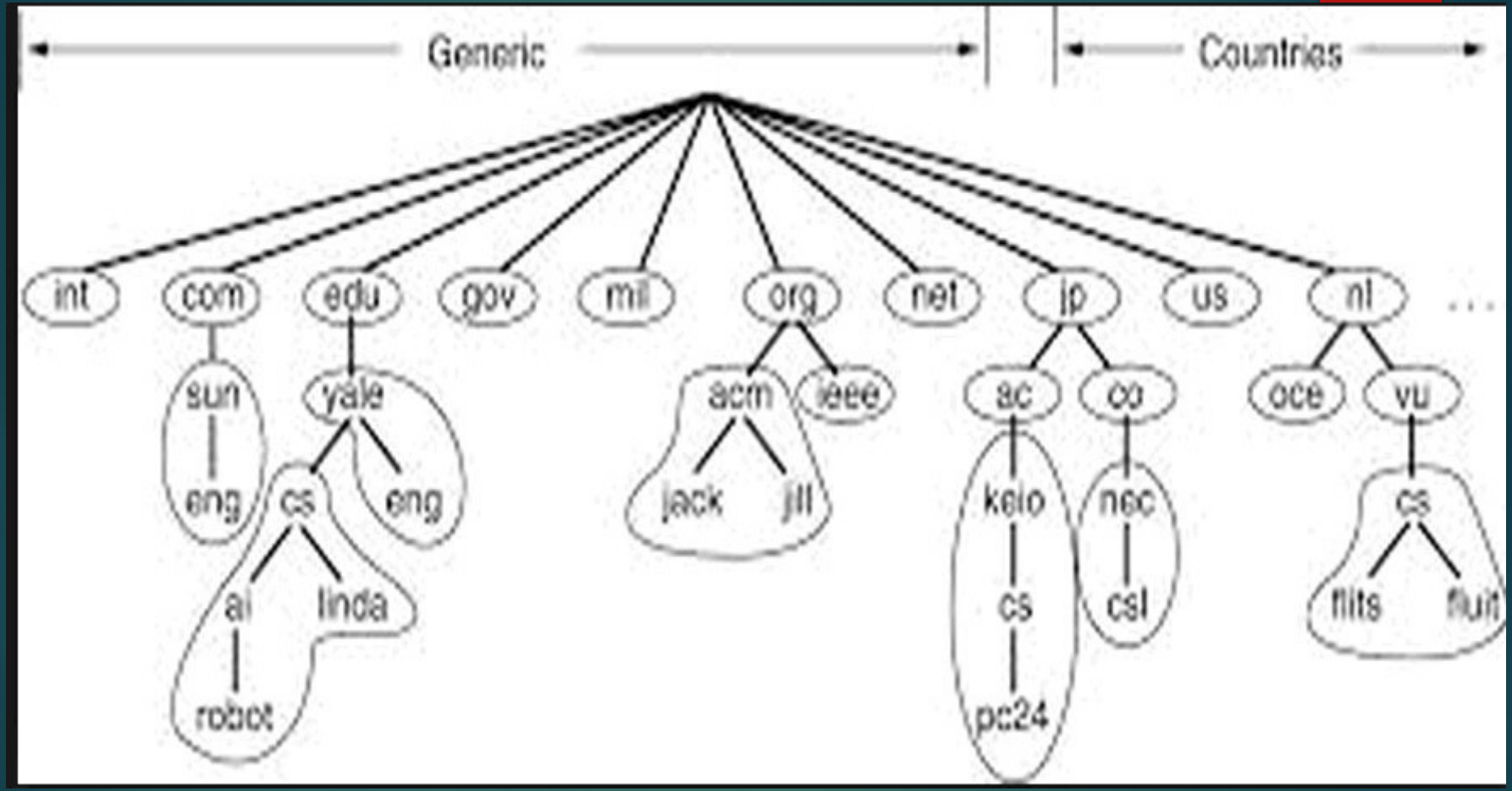
Country domains



Generic top-level domains (gTLD)

- Identifies TLD generically as associated with some domain class
- Define registered hosts according to their generic behavior.


Root level
aero
biz
com
coop
edu
gov
info
int
mil
mus-eum
name
net
org
pro
fhda
atc
chal
chal.atc.fhda.edu.
Index to addresses
Generic domains


Generic
Countries
int
com
edu
gov
mil
org
net
jp
us
nl
...
sun
eng
yale
cs
eng
ai
linda
robot
acm
ieee
jack
jill
ac
co
kelo
cs
pc24
nec
csl
oce
vu
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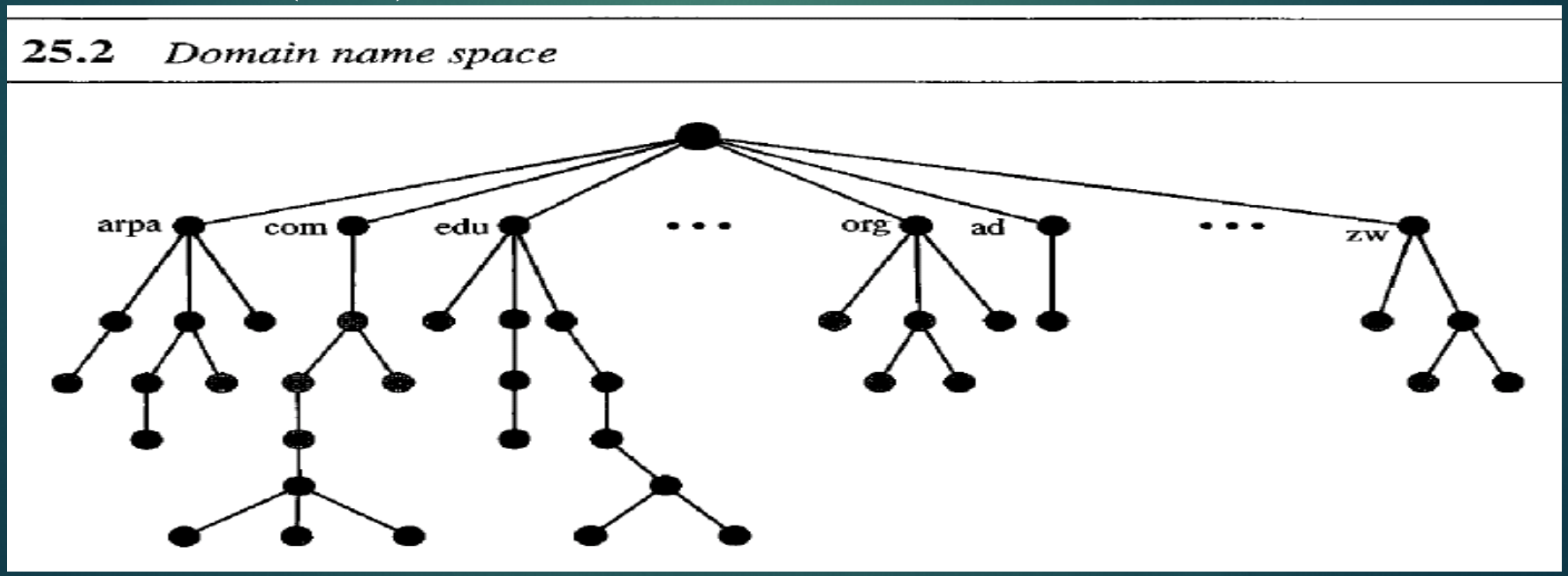
Domain Name Space

- When we have hierarchical name space, a domain name space to be designed.
- In that tree names are defined in an inverted-tree with one root at the top.
- The tree can have only 128 levels.
- Level 0(root) to level127



Label

- Each node in the tree has a label, which is a string with a maximum of 63 characters.
- The root label is a null string(empty).

Domain Name System

- Follow the client/server paradigm.
- A hierarchical, domain-based naming scheme and a distributed database system for implementing this naming scheme
- Resolves queries for these names into IP addresses
- Each domain has unique IP addresses

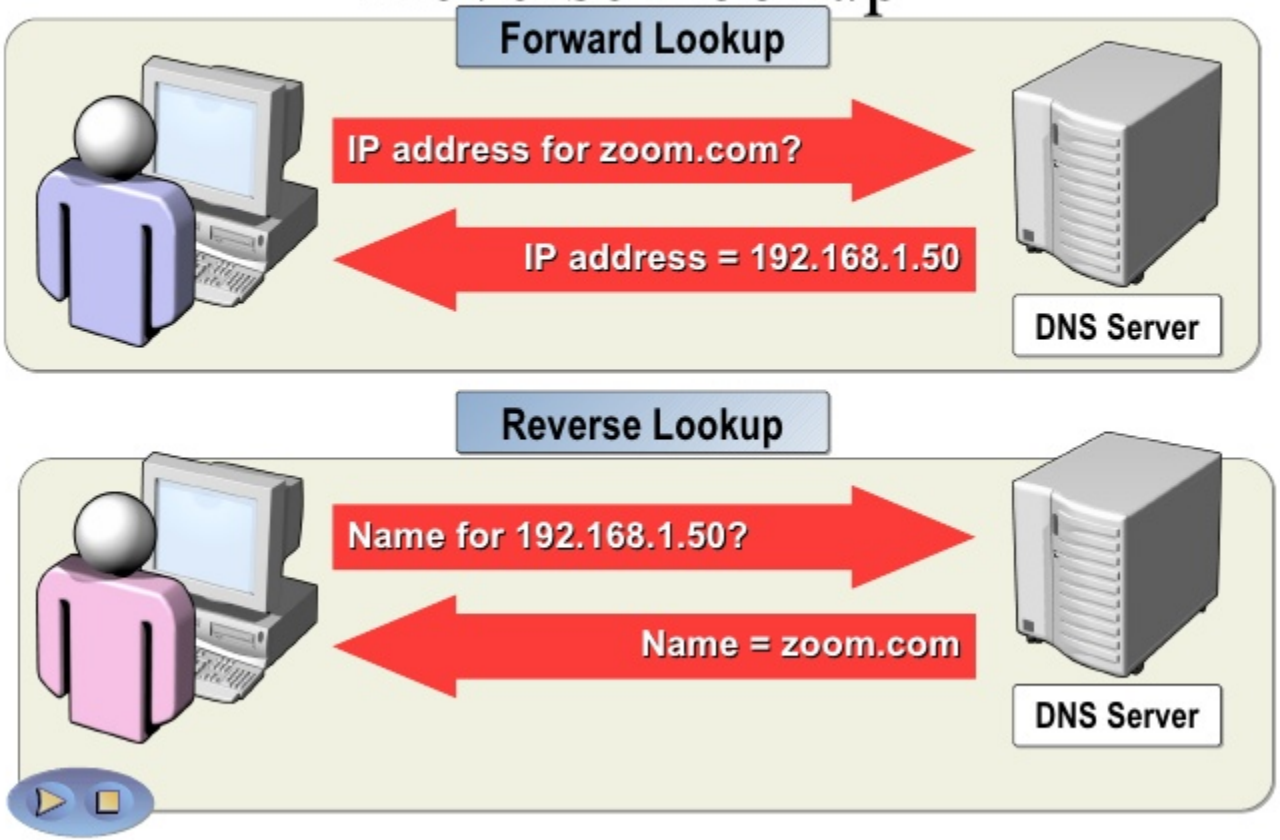
Forward Lookup

- Using an Internet domain name to find an ip address
- More common lookup

Reverse Lookup

- Determine the domain name associated with an IP address
- Uses PTR records
- Involves searching domain name registry and registrar tables

DNS Zone Types: Forward and Reverse Lookup



Thank You