



Internet Domain And Domain Name System

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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:

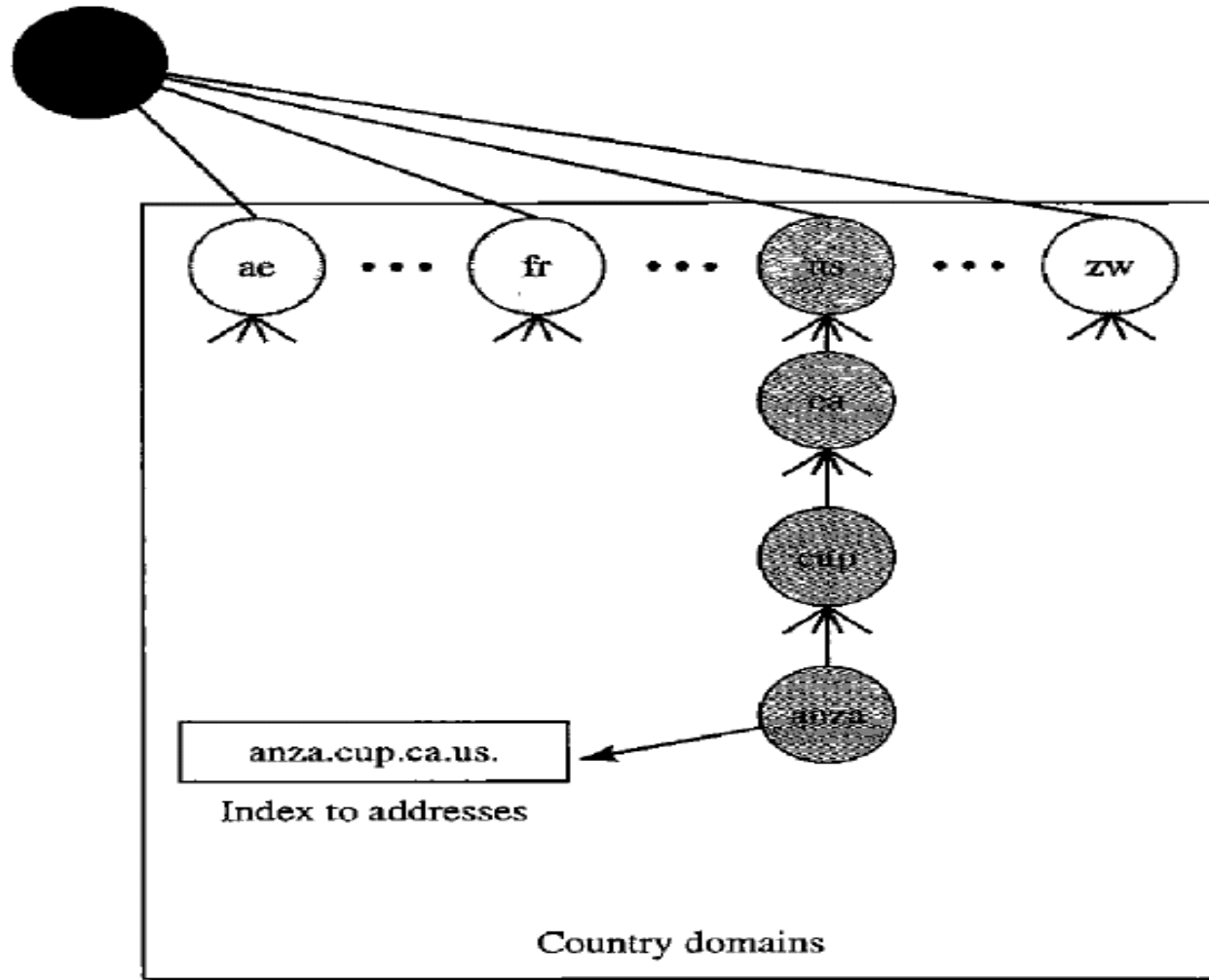
- i. Country code top-level domains (ccTLD)
- ii. Generic top-level domain (gTLD)

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

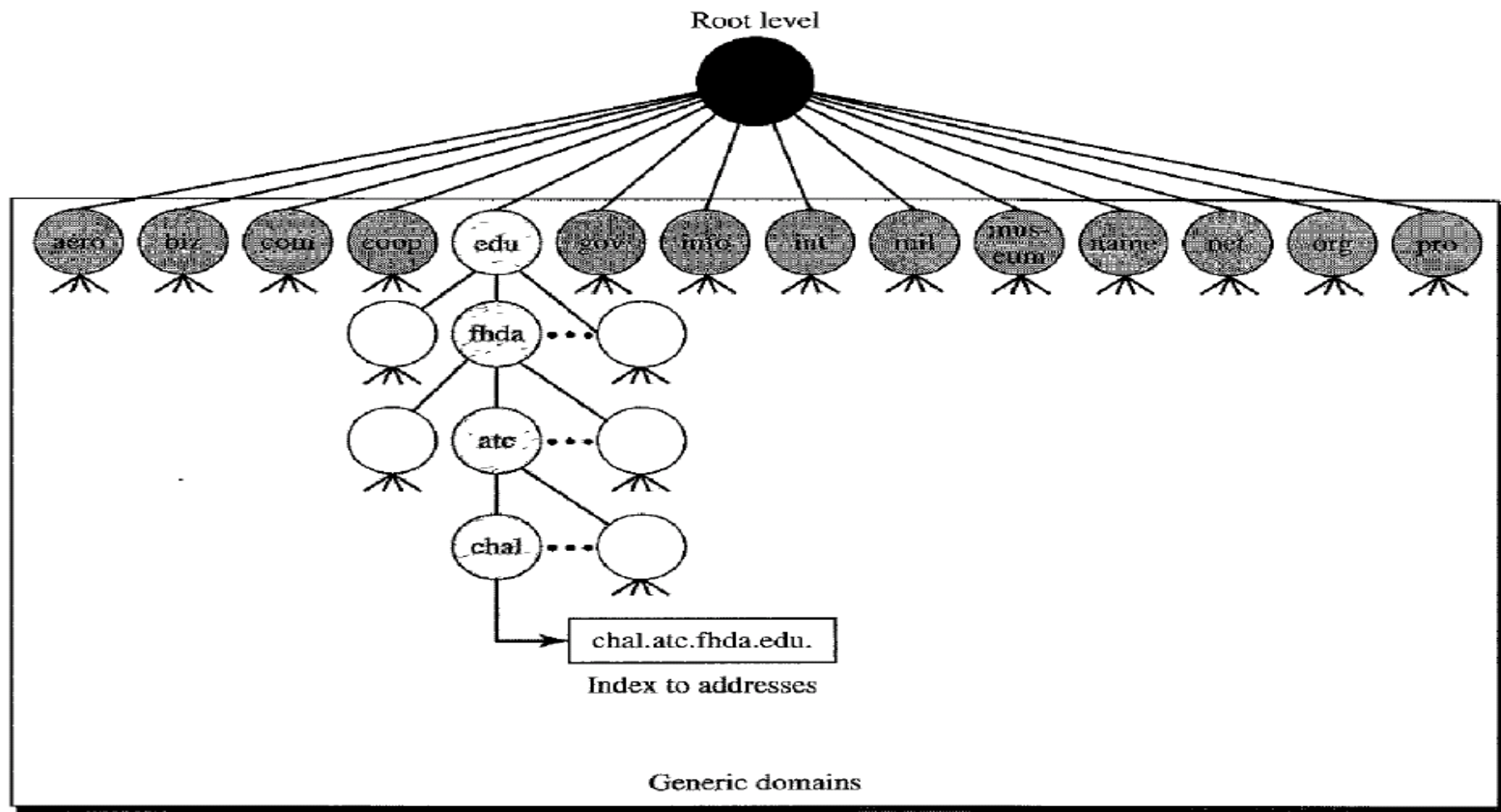
Country domains

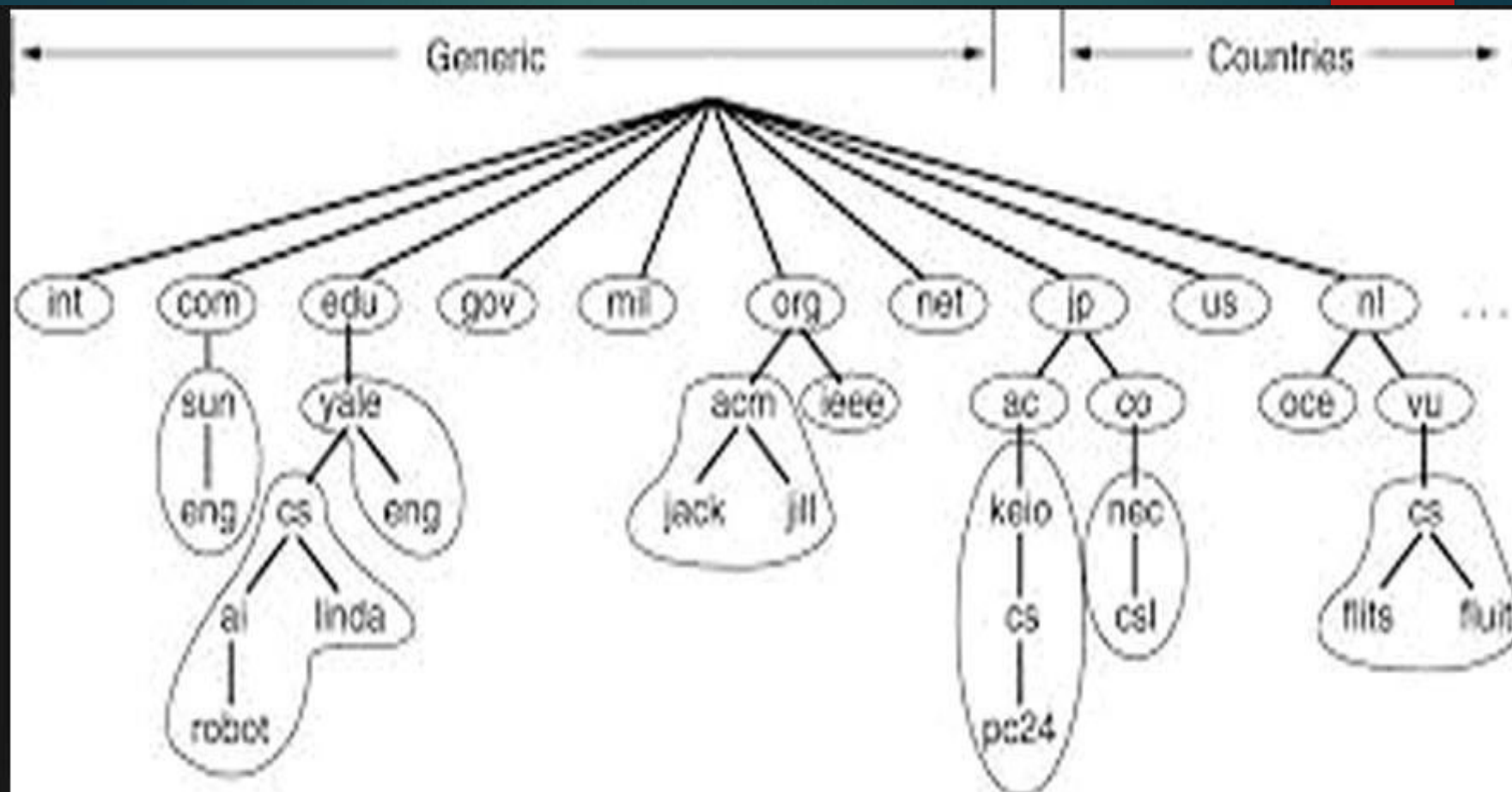
Root level



Generic top-level domains (gTLD)

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

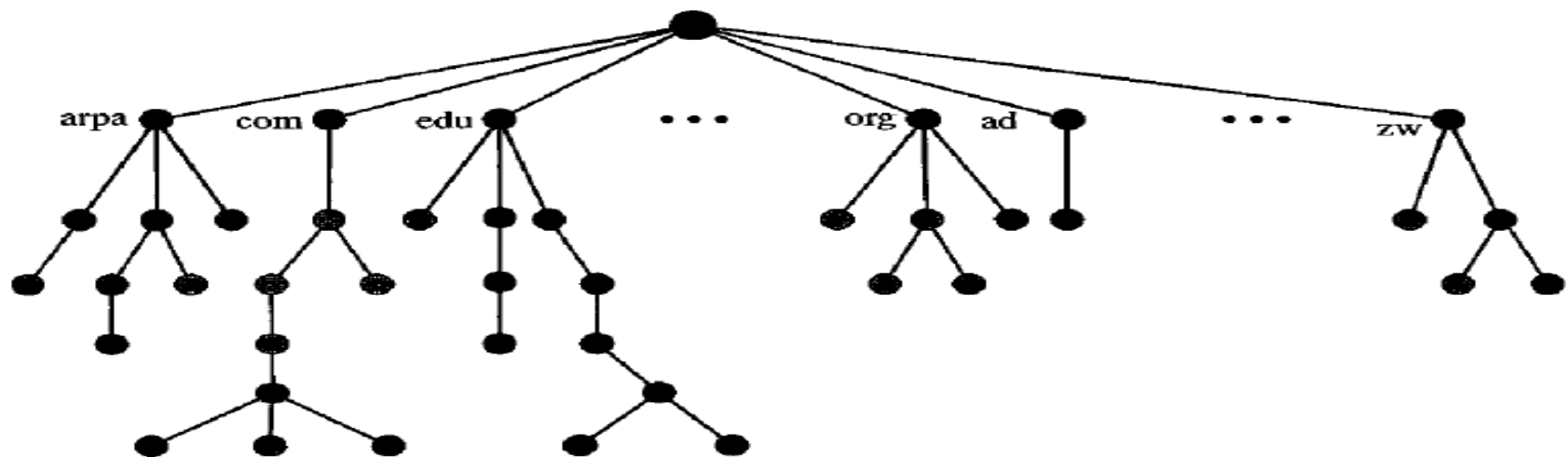




Domain Name Space

- 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

25.2 Domain name space



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

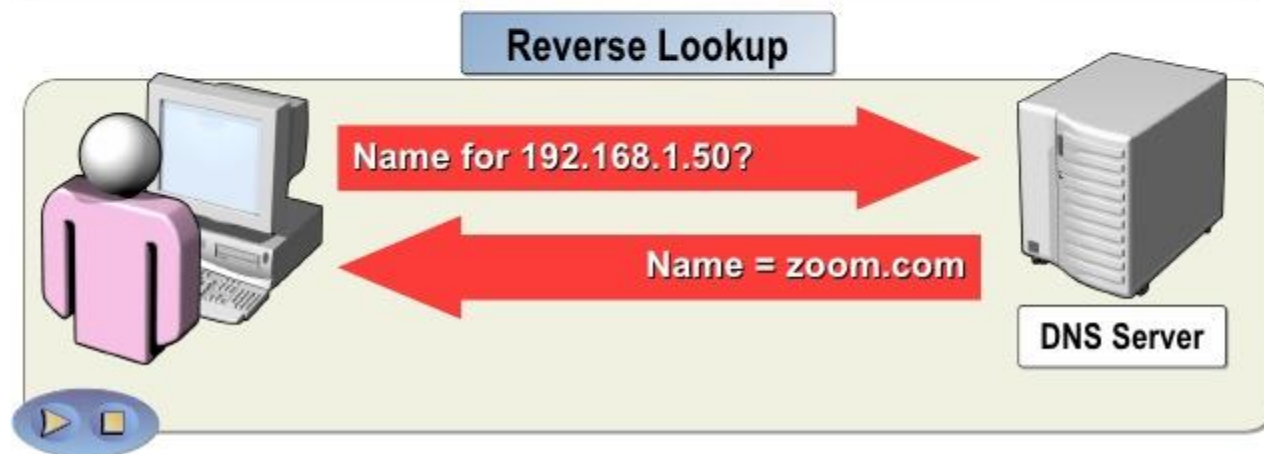
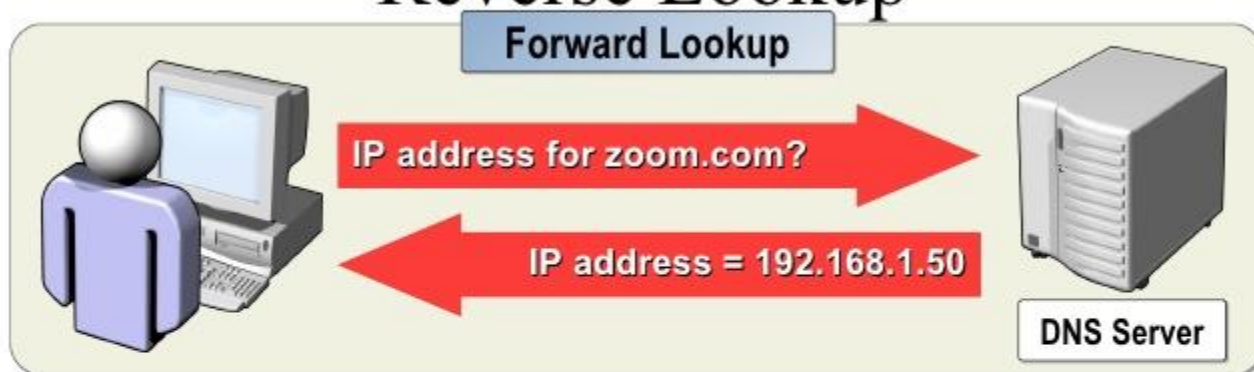
Forward Lookup

- 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