Domain Name System

Name Space

Flat Name Space

Hierarchical Name Space

Domain Name Space

Label

Domain Name

Figure **Domain name space**

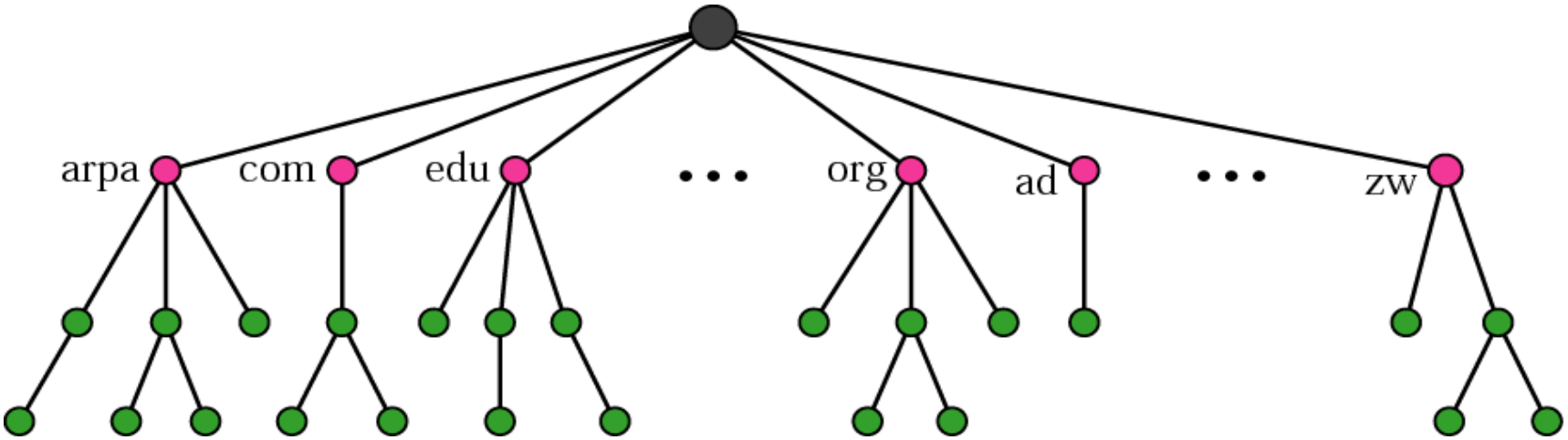
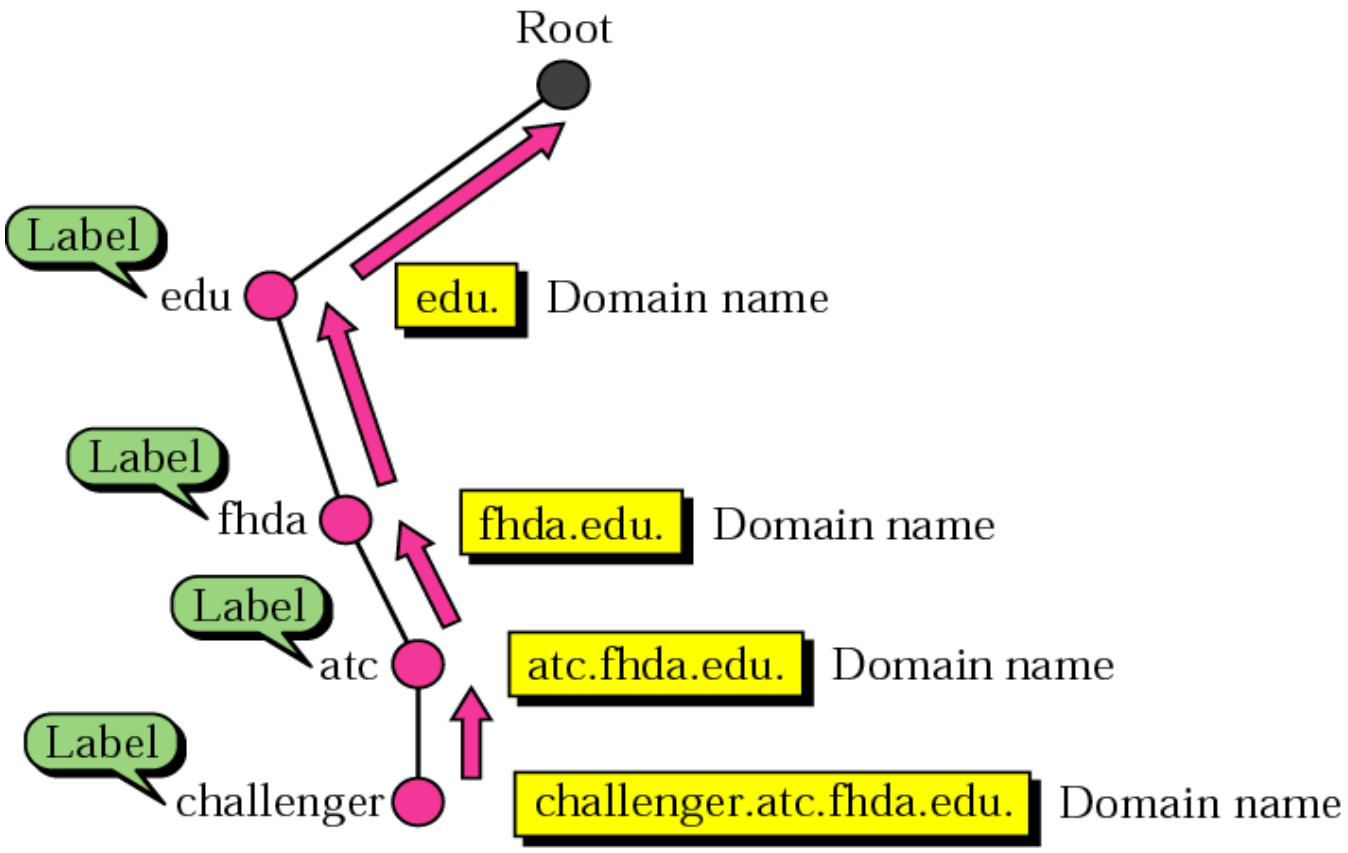


Figure **Domain names and labels**



DNS Messages

Header

Question Section

Answer Section

Authoritative Section

Additional Information Section

Figure FQDN and PQDN

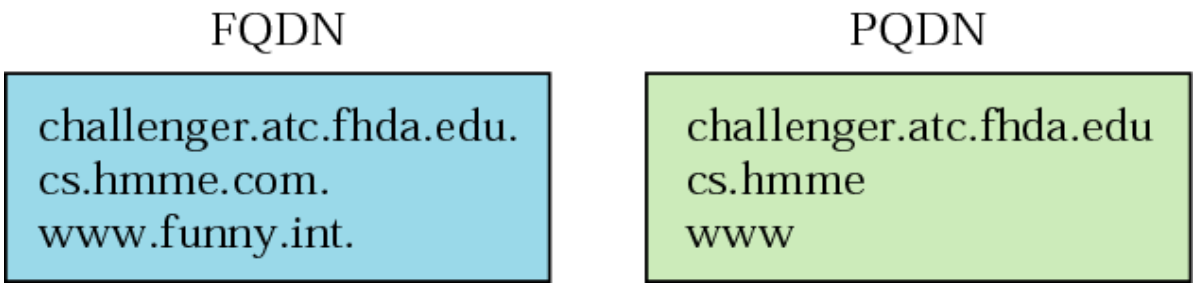
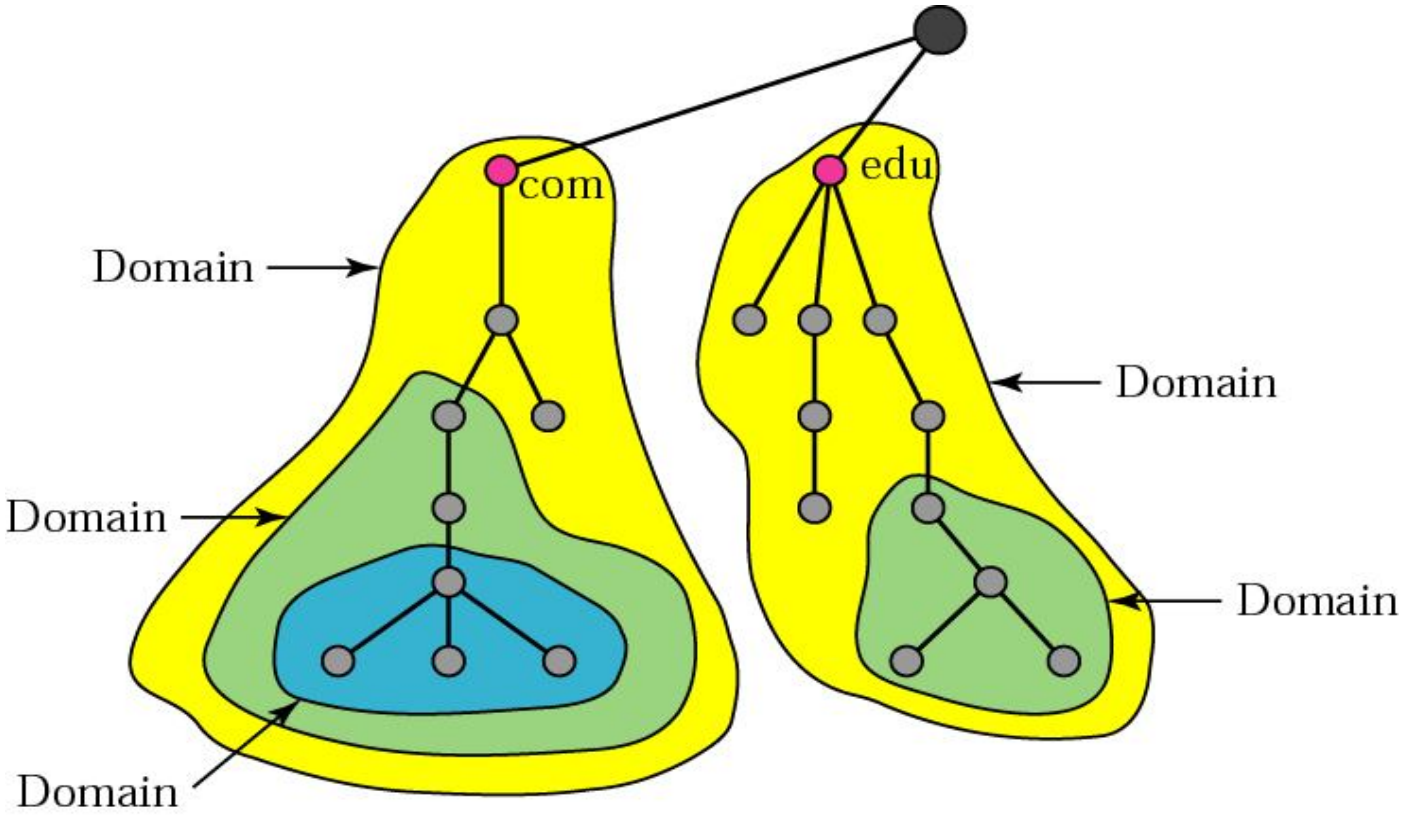


Figure Domains



Distribution of Name Spaces

Hierarchy of Name Servers

Zone

Root Server

Primary and Secondary Servers

Figure **Hierarchy of name servers**

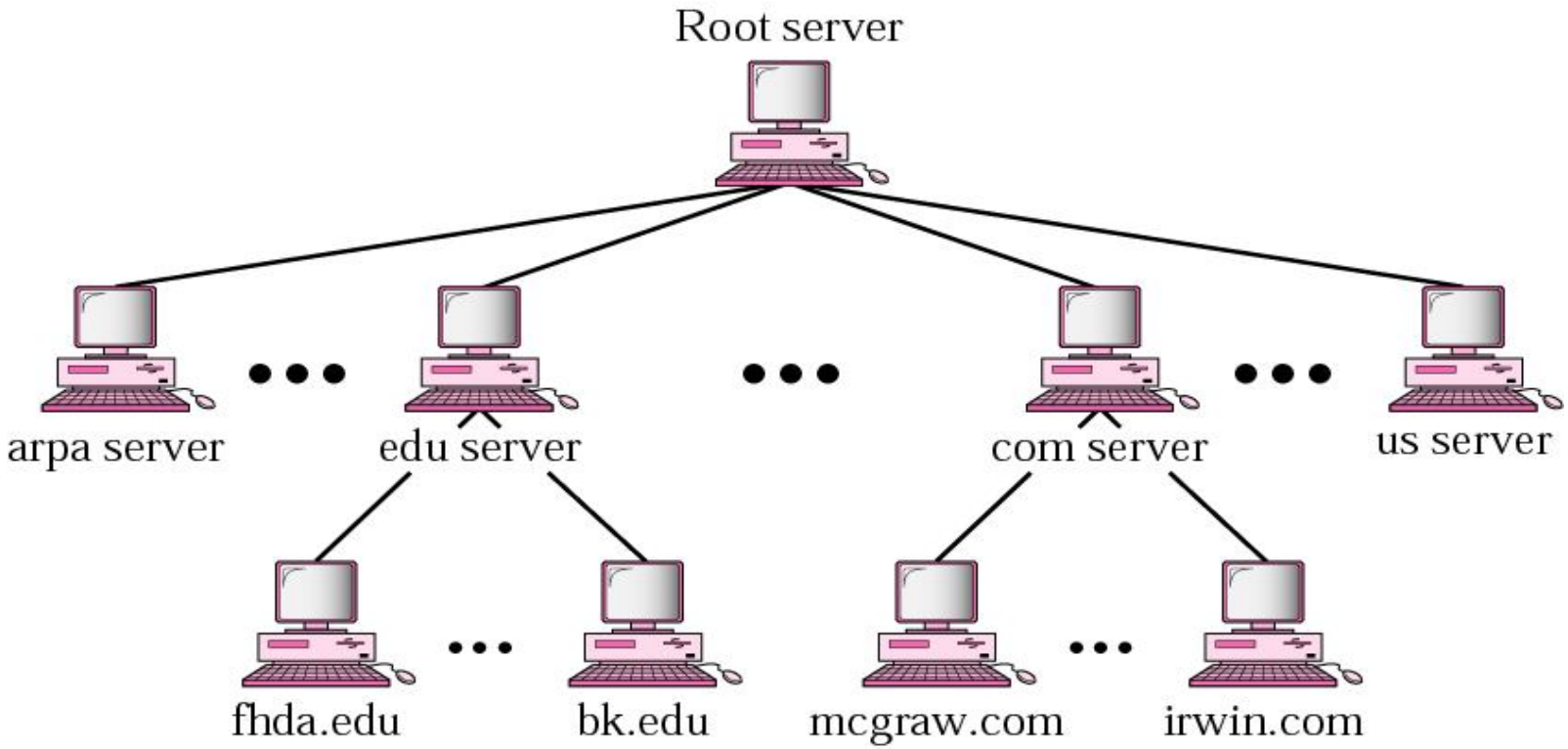
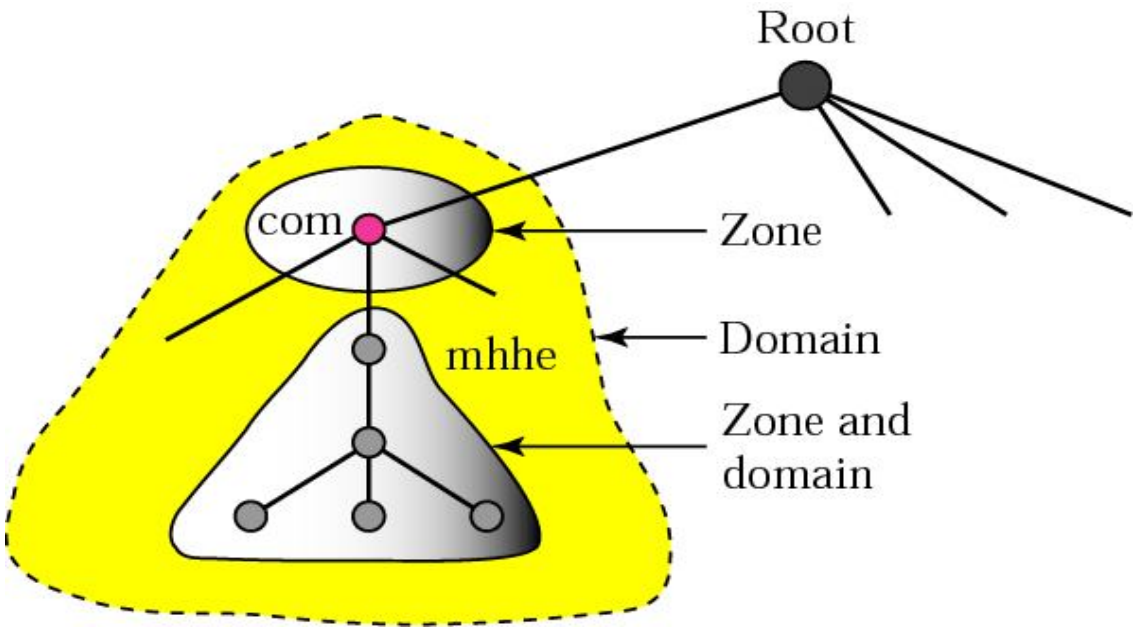


Figure **Zones and domains**



Note:

A primary server loads all information from the disk file; the secondary server loads all information from the primary server.

DNS In The Internet

Generic Domain

Country Domain

Inverse Domain

Figure DNS in the Internet

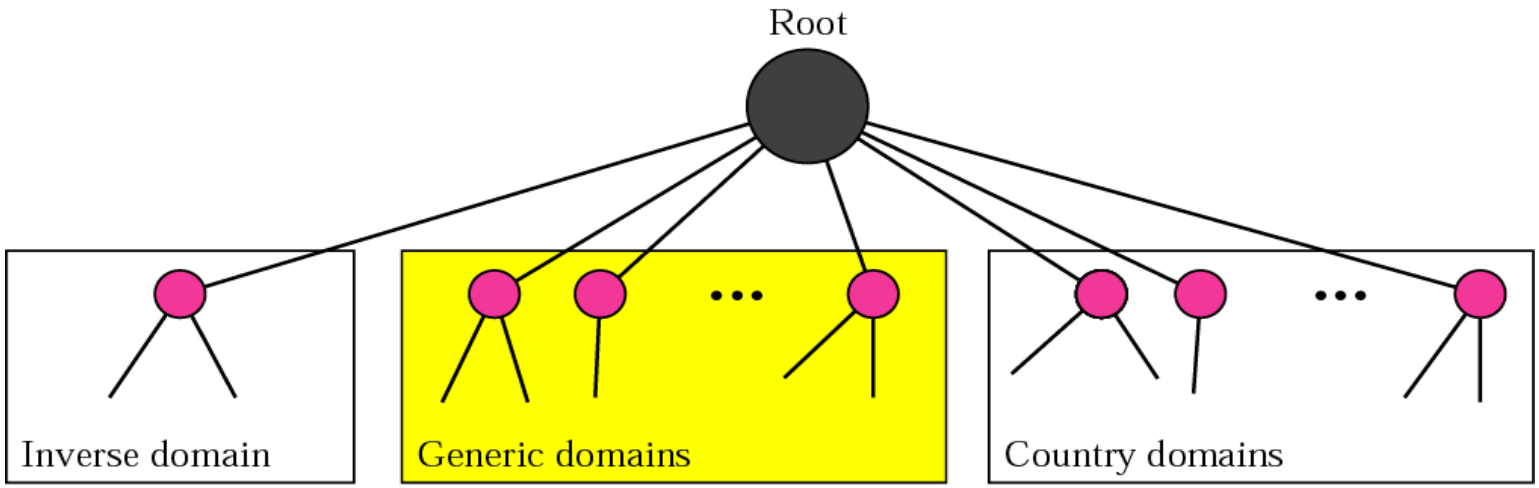


Figure Generic domains

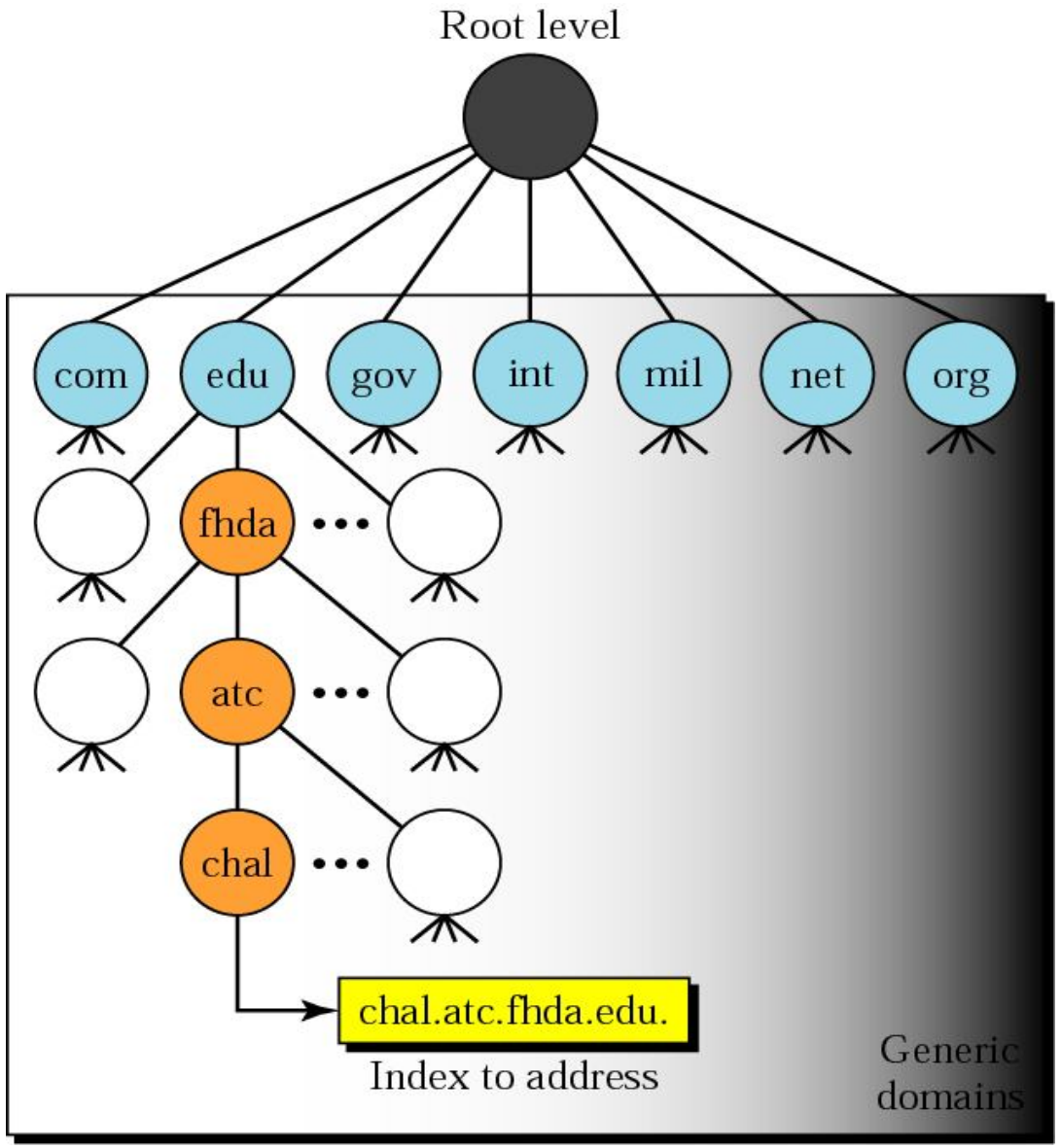


Table 25.1 Generic domain labels

Label	Description
com	Commercial organizations
edu	Educational institutions
gov	Government institutions
int	International organizations
mil	Military groups
net	Network support centers
org	Nonprofit organizations

Table 25.2 New generic domain labels

Label	Description
aero	Airlines and aerospace companies
biz	Businesses or firms (similar to com)
coop	Cooperative business organizations
info	Information service providers
museum	Museums and other nonprofit organizations
name	Personal names (individuals)
pro	Professional individual organizations

Figure Country domains

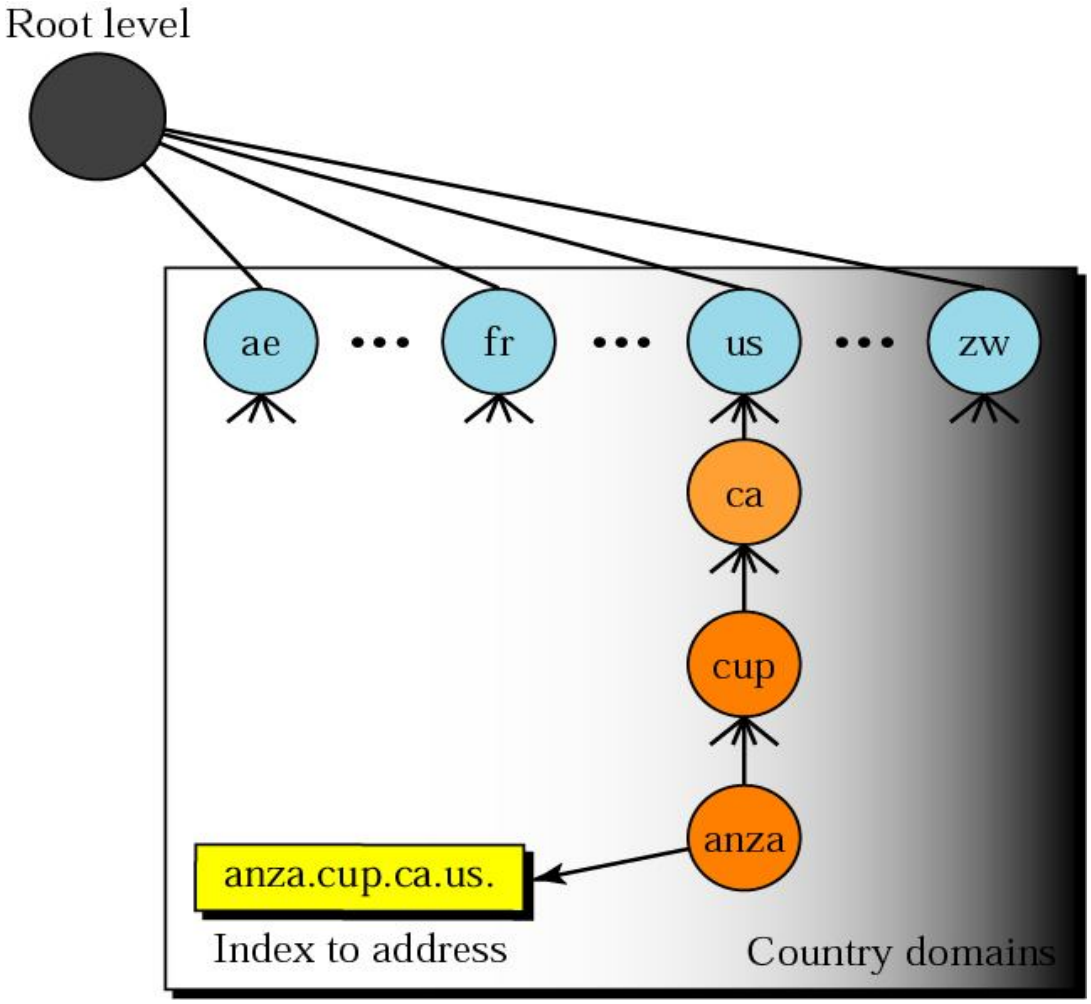
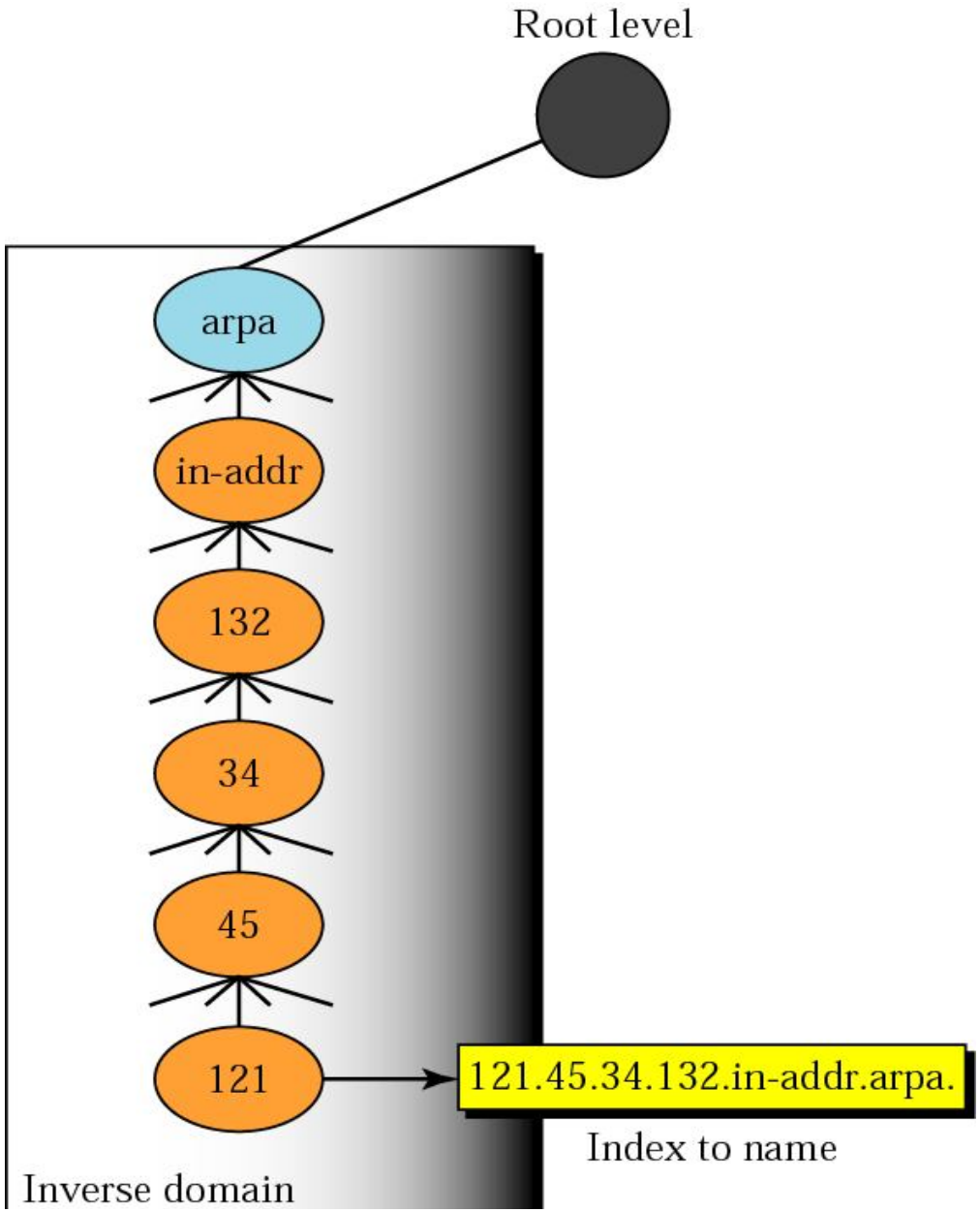


Figure **Inverse domain**



Resolution

Resolver

Mapping Names to Addresses

Mapping Addresses to Names

Recursive Resolution

Iterative Resolution

Caching

Figure Recursive resolution

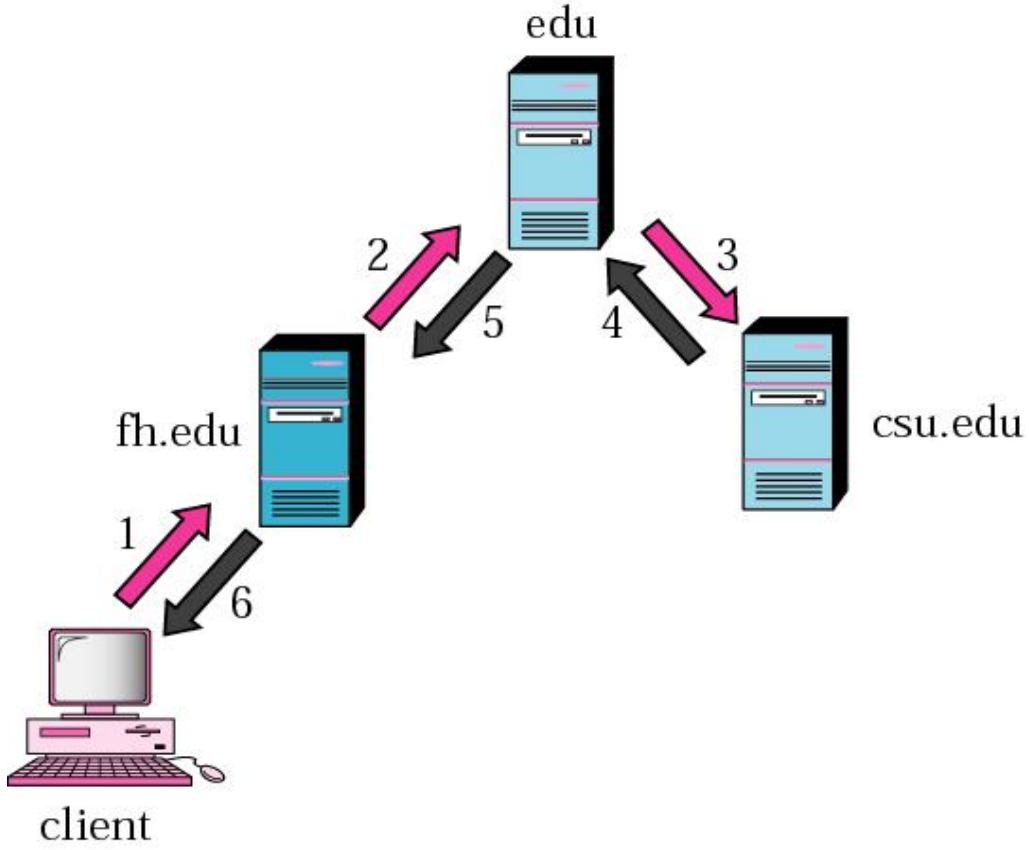


Figure Iterative resolution

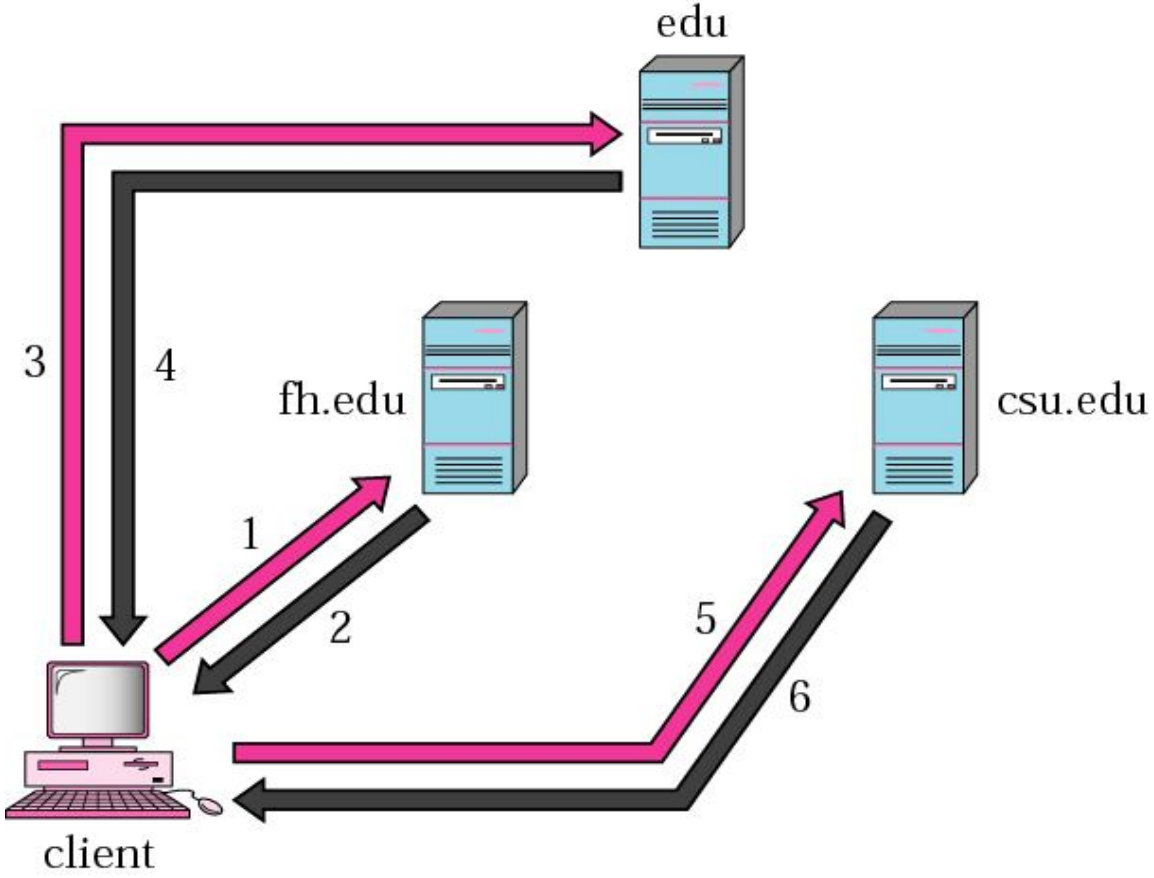


Figure **Query and response messages**

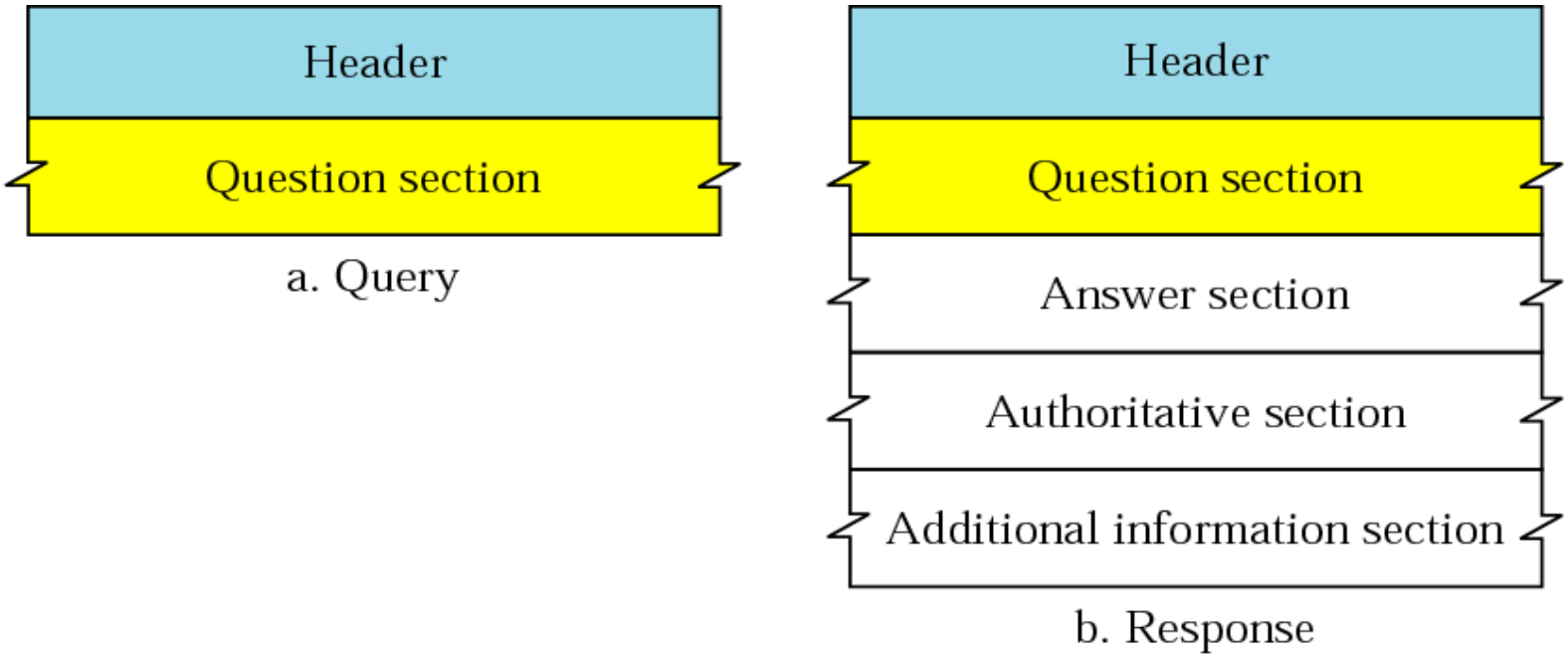
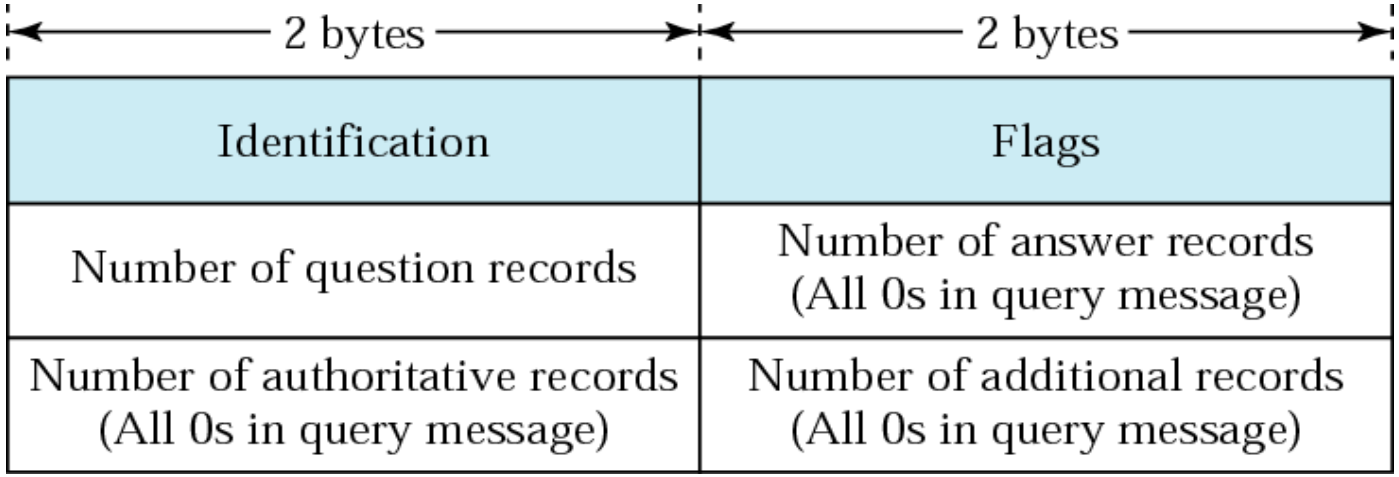


Figure **Header format**



Note:

DNS can use the services of UDP or TCP, using the well-known port 53.

ASSIGNMENT

Q1 Write the features of DNS
Q2 Write a short note on response and request messages