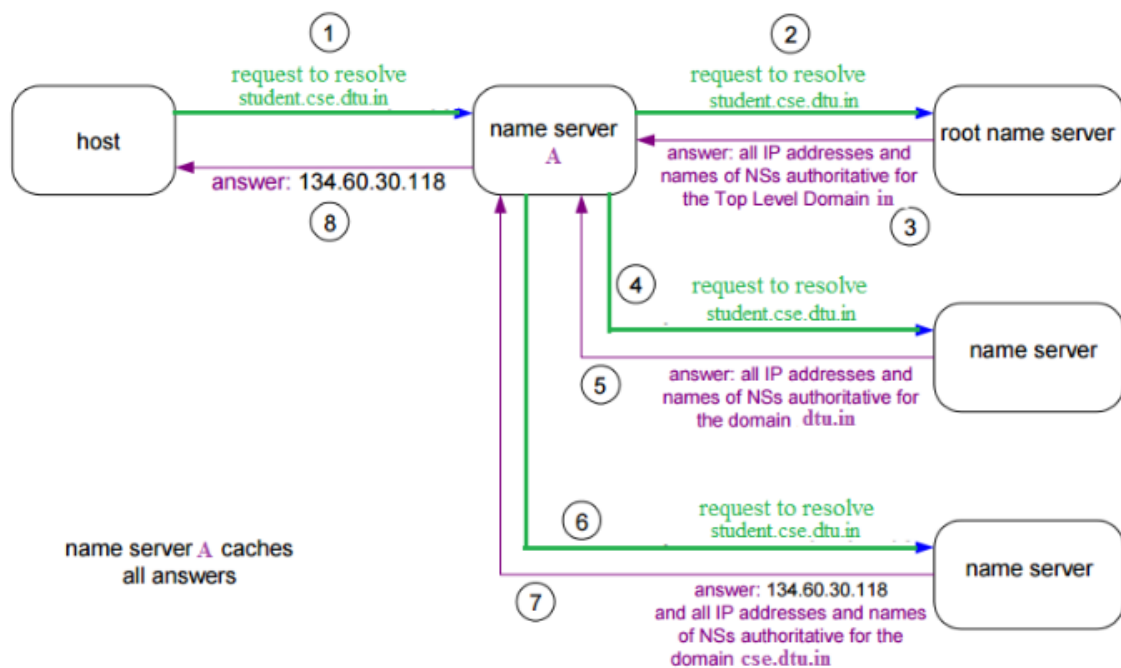


Domain Name Server

The client machine sends a request to the local name server, which, if the root does not find the address in its database, sends a request to the root name server, which in turn, will route the query to a top-level domain (TLD) or authoritative name server. The root name server can also contain some hostName to IP address mappings. The Top-level domain (TLD) server always knows who the authoritative name server is. So finally the IP address is returned to the local name server which in turn returns the IP address to the host.



The working of DNS starts with converting a hostname into an IP Address. A domain name serves as a distinctive identification for a website. It is used in place of an IP address to make it simpler for consumers to visit websites. Domain Name System works by executing the database whose work is to store the name of hosts which are available on the Internet. The top-level domain server stores address information for top-level domains such as .com and .net, .org, and so on. If the Client sends the request, then the DNS resolver sends a request to DNS Server to fetch the IP Address. In case, when it does not contain that particular IP Address with a hostname, it forwards the request to another DNS Server. When IP Address has arrived at the resolver, it completes the request over Internet Protocol.

Authoritative DNS Server Vs Recursive DNS Resolver

Parameters	Authoritative DNS Server	Recursive DNS Resolver
Function	Holds the official DNS records for a domain	Resolves DNS queries on behalf of clients
Role	Provides answers to specific DNS queries	Actively looks up information for clients
Query Handling	Responds with authoritative DNS data	Queries other DNS servers for DNS data
Client Interaction	Doesn't directly interact with end-users	Serves end-users or client applications
Data Source	Stores the DNS records for specific domains	Looks up data from other DNS servers
Caching	Generally, doesn't perform caching	Caches DNS responses for faster lookups
Hierarchical Resolution	Does not participate in the recursive resolution	Actively performs recursive name resolution
IP Address	Has a fixed, known IP address	IP address may vary depending on ISP
Zone Authority	Manages a specific DNS zone (domain)	Does not manage any specific DNS zone