

DNS-Domain Naming System- Port 53

DNS can be thought of as a phonebook that gets queried and resolves names to services or IP addresses, allowing users to locate internal resources (domain controllers, file servers) and external websites. Engineers commonly edit DNS records, including TXT records used for verification and security controls.

DNS Record Types and the Queries They Respond To

- . **A / AAAA**- Give me the IPv4 / IPv6 address for this hostname
 - . **SRV**- Give me the servers providing this service and the ports they run on
 - . **MX**- Give me the mail servers responsible for this domain
 - . **CNAME**- What is the canonical hostname for this alias?
 - . **PTR**- Which hostname belongs to this IP address?
 - . **NS**- Who is authoritative for this DNS zone?
 - . **TXT**- Give me textual information associated with this domain
 - . **SOA**- Start of Authority- Defines zone-level rules for how DNS records are managed and synchronised across authoritative servers.
-

DNS Resolution Path- 1- Client checks cache, 2- client sends recursive query, 3- resolver queries authoritative servers, 4- response returned and cached

Server Types

Authoritative- A DNS server that hosts a zone and provides final answers for queries related to that zone.

Primary (Master)-The authoritative DNS server that holds the writeable copy of a zone where records are created and updated.

Secondary (Replica)- An authoritative DNS server that holds a read-only copy of a zone, replicated from the primary for redundancy.