

DNS (Domain Name System)

To resolve human readable names to IP addresses, DNS servers can be manually configured or learned using DHCP.

Command: nslookup <name> (Name Server lookup).

No DNS configurations are required on routers they just forward packets however Cisco routers can act as DNS servers or clients.

DNS 'A' record used to map names to IPV4 addresses, DNS 'AAAA' used to map names to IPV6 addresses.

Layer 4 protocol used is UDP for standard DNS queries and responses, TCP is used for DNS messages greater than 512 bytes.

DNS cache to save DNS server's responses locally. **Command: ipconfig /displaydns** to show DNS cache.

Command: ipconfig /flushdns to clear DNS cache.

CNAME (Canonical name): maps a name to another name.

Host files are alternatives to DNS can be used in a small network to list some hosts in the local network.

To configure a router as a DNS server use the **command ip dns server**, **command ip host <host name> <ip address>** to build a host table to the server

Command: ip name-server <ip> to configure a DNS server that router will query if requested record is not in host table.

Command: ip domain lookup to enable router to perform DNS queries (enabled by default).

Command: show hosts.

Command: ip domain name <domain name> to set a default domain name for entries with no domain name.