

DNS Glossary



Alias (CNAME) An Alias resource record is also sometimes called CNAME (canonical name) resource record. With these records, you can use more than one name to point to a single host, which makes it easy to do such things as host both a File Transfer Protocol (FTP) server and a Web server on the same computer. The most common or popular use of an alias (CNAME) resource record is to provide a permanent DNS aliased domain name for generic name resolution of a service-based name, such as <code>www.tailspintoys.com</code> , to more than one computer or one IP address on a Web server.
Authoritative DNS Server A DNS server is considered authoritative for a name if it loads the zone authoritative for that name.
Authoritative DNS Zone A DNS zone is considered authoritative for a name if the name belongs to the DNS sub-tree, delegated to that zone.
AXFR Type of zone file replication. AXFR replicates the entire zone. (See also IXFR.)
DNS Dynamic Update An update to the DNS standard that permits DNS clients to dynamically register and update their resource records in the zones of the primary server.
DNS server A server that maintains a database of mappings of FQDNs to various types of data, such as IP addresses.
Domain Any branch of the DNS namespace.
Domain Name System (DNS) A hierarchical, distributed database that contains mappings of DNS domain names to various types of data, such as IP addresses. DNS enables the location of computers and services by user-friendly names and the discovery of other information stored in the database.
Forward Lookup A DNS query that maps an FQDN to an IP address.
Forwarder A DNS server designated by other internal DNS servers to be used to forward queries for resolving external or offsite DNS domain names, such as those used on the Internet.
FQDN (fully qualified domain name) A DNS name that has been stated to indicate its absolute location in the domain namespace tree. An FQDN has a trailing period (.) to qualify its position relative to the root of the namespace. An example is <code>host.example.microsoft.com</code> .

<p>Host (A) Record</p> <p>A host (also known as “A”) resource record in a zone is used to associate DNS domain names of computers (or hosts) to their IP addresses.</p>
<p>Host Name</p> <p>The DNS name of a host or interface on a network. For one computer to find another, the name of the computer to locate must either appear in the Hosts file on the computer that is looking, or the name must be known by a DNS server. For most Windows-based computers, the host name and the computer name are the same.</p>
<p>Host Name Resolution</p> <p>The process of resolving a host name to a destination IP address.</p>
<p>Hosts File</p> <p>A local text file in the same format as the 4.3 BSD release of UNIX /etc/hosts file. This file maps host names to IP addresses, and it is stored in the <i>systemroot\System32\Drivers\Etc</i> folder.</p>
<p>Iterative Query</p> <p>A query made to a DNS server for the best answer the server can provide.</p>
<p>IXFR</p> <p>Type of zone file replication. IXFR, incremental zone transfer, replicates only the changed records of the zone file.</p>
<p>MX (Mail Exchanger) Record</p> <p>E-mail applications use the mail exchanger (MX) resource record to locate a mail server based on a DNS domain name in the destination address for the e-mail recipient of a message. The mail exchanger (MX) resource record shows the DNS domain name for the computer or computers that process mail for a domain.</p>
<p>Master and Slave DNS Servers</p> <p>Two DNS servers are called Master and Slave if they contain the copies of the same zone, one of which is directly replicated from another. The source of replication is called Master server, the destination of replication is called Slave server. Every Master may have one or more Slaves and vice versa, every Slave may have one or more Masters. The same DNS server may be the Master and Slave at the same time.</p>
<p>Master Server</p> <p>A DNS server that is authoritative for a zone and that is also a source of zone information for other secondary servers. A master server can be either a primary or secondary master server, depending on how the server obtains its zone data.</p>
<p>Pointer (PTR) Record</p> <p>A pointer (PTR) resource record supports the reverse lookup process, based on zones that are created and rooted in the in-addr.arpa domain. These records locate a computer by its IP address and resolve this information to the DNS domain name for that computer.</p>
<p>Primary and Secondary Zones</p> <p>The same zone may be represented by primary and secondary copies. The primary is the zone/copy that allows direct updates of its resource records. The secondary is the one that receives all the updates from primaries or secondary zones through the zone transfer mechanism only. Only the DS integrated zones may have multiple primaries. Multiple secondaries are allowed in either scenario.</p>
<p>Primary Server</p> <p>A DNS server that is authoritative for a zone and that can be used as a point of update for</p>

<p>the zone. Only primary servers can be updated directly to process zone updates, which include adding, removing, or modifying resource records that are stored as zone data.</p>
<p>Recursive Query A query made to a DNS server in which the requester asks the server to assume the full workload and responsibility for providing a complete answer to the query. The DNS server will then use separate iterative queries to other DNS servers on behalf of the requester to assist in completing an answer for the recursive query.</p>
<p>Resource Record Atomic unit of the DNS database. All resource records have the same format that includes NAME, TYPE, CLASS, TTL, RLENGTH and RDATA that depends on TYPE and CLASS of the resource record. A set of resource records builds up a DNS zone.</p>
<p>Reverse Lookup A DNS query that maps an IP address to an FQDN.</p>
<p>Root Domain The beginning of the DNS namespace.</p>
<p>Root Server DNS server that contains a root zone is called a root server.</p>
<p>Root Zone A zone that contains the DNS root domain is called the root zone.</p>
<p>Secondary Server A DNS server that is authoritative for a zone and that obtains its zone information from a master server.</p>
<p>Second-level Domain A DNS domain name that is rooted hierarchically at the second tier of the domain namespace, directly beneath the top-level domain names. Top-level domain names include .com and .org. When DNS is used on the Internet, second-level domains are names that are registered and delegated to individual organizations and businesses.</p>
<p>Service location (SRV) Record Service location (SRV) resource records are required for location of Active Directory domain controllers. Typically, you can avoid manual administration of service location (SRV) resource records when you install Active Directory Domain Services (AD DS). In the future, the service location (SRV) resource record may also be used to register and look up other well-known TCP/IP services on your network if applications implement and support DNS name queries that specify this record type.</p>
<p>Start of Authority (SOA) Record A start of authority (SOA) record specifies the following values for a zone: a primary server, zone administrator's e-mail address, secondary zone expiration values, and minimum default TTL values for zone resource records.</p>
<p>Subdomain A DNS domain located directly beneath another domain (the parent domain) in the namespace tree. For example, example.microsoft.com would be a subdomain of the domain microsoft.com.</p>
<p>Top-Level Domains Domain names that are rooted hierarchically at the first tier of the domain namespace</p>

directly beneath the root (.) of the DNS namespace. On the Internet, top-level domain names such as .com and .org are used to classify and assign second-level domain names (such as microsoft.com) to individual organizations and businesses according to their organizational purpose.

TTL (Time-To-Live)

TTL is duration of time when a specific resource record could be cached.

UCS-2

Also known as Unicode is a character encoding protocol.

UTF-8

A character encoding protocol specified in RFC 2044.

WINS (Windows Internet Name System)

WINS is the pre-DNS name system. It is still supported in the Windows 2000 and later servers in order to maintain interoperability between the different generations of Windows computers.

Zone

A manageable unit of the DNS database that is administered by a DNS server. A zone stores the domain names and data of the domain with a corresponding name, except for domain names stored in delegated subdomains.

Zone Transfer

The synchronization of authoritative DNS data between DNS servers. A DNS server configured with a secondary zone periodically queries its master server to synchronize its zone data.

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