

Name Servers and DNS Records: What they mean and how they are used

Domain names are wonderful tools that are used to access specific servers from around the world. Essentially, domain names are the alphabetic, or alpha-numeric, interpretation of a server's IP address. This means you are actually accessing an IP address when you are using a domain name. IP addresses are generated from the location of a specific server. This means different states will have different IP addresses as well as different countries.

Servers are set up manually by an individual or by a hosting company that provides server space for your website to reside within.

In this document, we will be talking about how Name Servers and DNS Records function and interact with each other to allow for access to specific websites or email services or FTP access to specific servers.

DEFINITIONS:

- DNS - DNS stands for Domain Name System. This system is essentially the phone book of the Web that organizes and identifies domains. While a phone book translates a name like "Acme Pizza" into the correct phone number to call, the DNS translates a web address like "www.google.com" into the physical IP address—such as "74.125.19.147"—of the computer hosting that site.
- Name Servers - A nameserver is a computer that is permanently connected to the Internet and translates domain names into IP addresses (or vice versa), enabling you to enter www.example.com instead of 194.63.248.47. When registering a domain name, you will need (at least) two nameservers configured to handle requests for the domain name in question.
- A Record - An A or Address record (also known as a host record) links a domain to the physical IP address of a computer hosting that domain's services.
- CNAME Record - A CNAME or Canonical Name record links an alias name to another true or canonical domain name. For instance, www.example.com might link to example.com.
- TXT Record - A TXT record is a DNS record that provides text information to sources outside your domain, that can be used for a number of arbitrary purposes. The record's value can be either human- or machine-readable text. As an example, TXT records are used to verify domain ownership and to implement email security measures such as SPF, DKIM, and DMARC.
- MX Record - Mail Exchange (MX) records direct a domain's email to the servers hosting the domain's user accounts.
- ICANN - The Internet Corporation for Assigned Names and Numbers (ICANN) is a nonprofit organization that is responsible for coordinating the maintenance and methodologies of several databases, with unique identifiers, related to the namespaces of the Internet - and thereby, ensuring the network's stable and secure operation.

Name Servers and DNS Records:
What they mean and how they are used

EXAMPLES OF DNS CONFIGURATION:

Here are sample DNS settings for a domain used with Google for Work services.

Name / Host / Alias	Record Type	Priority	Value / Answer / Destination
Blank or @	A	NA	216.239.32.21
Blank or @	A	NA	216.239.34.21
Blank or @	A	NA	216.239.36.21
Blank or @	A	NA	216.239.38.21
Blank or @	MX	1	ASPMX.L.GOOGLE.COM.
Blank or @	MX	5	ALT1.ASPMX.L.GOOGLE.COM.
Blank or @	MX	5	ALT2.ASPMX.L.GOOGLE.COM.
Blank or @	MX	10	ASPMX2.GOOGLEMAIL.COM.
Blank or @	MX	10	ASPMX3.GOOGLEMAIL.COM.
mail	CNAME	NA	ghs.googlehosted.com.
Blank or @	TXT	NA	google-site-verification=6tTalZrBXBO4Gy9700TAbpg2QTKzGYEuZ_Ls69jle8
Blank or @	TXT	NA	v=spf1 include:_spf.google.com ~all
www	CNAME	NA	ghs.googlehosted.com.

* Note that you don't use the actual domain name in your DNS settings. Instead, you use the @ symbol to indicate the domain name.