

## Determining a Top Level Domain Name

We'll start by assuming that you want to establish a website and an email domain name either for yourself, your company, or an organization. After you come up with a name, (since we created this article we'll use visionquestit as our example name), you need to determine the Top Level Domain (TLD) you wish to use.

Every domain name has a minimum of two parts, the domain name and the TLD name. This combination is known as the Fully Qualified Domain Name (FQDM).

Domain Name	TLD Name
VISIONQUESTIT	.COM

The most common TLDs are:

### Unrestricted Domain Names

- .com** – Represents the word "commercial" and is the most widely used extension in the world. Most businesses prefer a .com domain name because it is a highly recognized symbol for having a business presence on the Internet.
- .net** – Represents the word "network" and is most commonly used by Internet service providers, Web hosting companies or other businesses that are directly involved in the infrastructure of the Internet.
- .org** – Represents the word "organization" and is primarily used by non-profits groups or trade associations.
- .info** – Represents the word "information" is intended for credible resource Web sites.

### Restricted Domain Names

- .biz** – Restricted to businesses and is operated by NeuLevel, Inc.
- .pro** – Restricted to credentialed professionals and related entities and is operated by RegistryPro. (Under development)
- .tv** – Restricted to rich content/multi-media Web sites, commonly used within the entertainment or media industry.

### Reserved Domain Names
















- .aero** – Reserved for members of the air-transport industry and is sponsored by Société Internationale de Télécommunications Aéronautiques (SITA).
- .coop** – Reserved for cooperative associations and is sponsored by Dot Cooperation LLC.
- .museum** – Reserved for museums and is sponsored by the Museum Domain Management Association.
- .name** – Reserved for individuals and is operated by Global Name Registry.

### Exclusive Domain Names

- .gov** – Reserved exclusively for the United States Government. It is operated by the US General Services Administration.
- .edu** – Reserved exclusively for postsecondary institutions accredited by an agency on the U.S. Department of Education's list of Nationally Recognized Accrediting Agencies and is registered only through Educause.
- .mil** – Reserved exclusively for the United States Military. It is operated by the US DoD Network Information Center.
- .int** – Reserved exclusively for registering organizations established by international treaties between governments. It is operated by the IANA.int Domain Registry.

## Verify Domain Name Availability

After you determine the TLD you wish to use, you need to ensure that the domain name you want is available. In this case we will use visionquestit.com. This is accomplished by searching a WHOIS database. All Domain Name Registrars provide a search feature to see if the name you want is available. Have a list of possible alternate names ready when you visit the site, the more unusual the name, the more likely it will be available. Most common or well-known corporate names are taken. You may use any Domain Name Registrar to search for and register your domain name. The top domain registrars are:

Top Domain Registrars by Total Domains				
Rank	Registrar	Country	Market Share	Total Domains
1	<a href="#">Network Solutions</a>		15.437%	6,850,576
2	<a href="#">Go Daddy</a>		11.904%	5,282,747
3	<a href="#">Tucows</a>		8.961%	3,976,998
4	<a href="#">eNom</a>		7.519%	3,337,005
5	<a href="#">Register.com</a>		6.024%	2,673,462
6	<a href="#">Melbourne IT</a>		5.130%	2,276,485
7	<a href="#">schlund+partner</a>		3.285%	1,458,020
8	<a href="#">BulkRegister</a>		2.839%	1,259,813
9	<a href="#">directNIC</a>		2.450%	1,087,498
10	<a href="#">Sipence</a>		2.028%	900,127
11	<a href="#">Wild West Domains</a>		2.001%	887,910
12	<a href="#">Dotster</a>		1.855%	823,201
13	<a href="#">DotRegistrar</a>		1.694%	751,621
14	<a href="#">OnlineNIC</a>		1.658%	735,851
15	<a href="#">DomainDiscover</a>		1.432%	635,368

Once you choose a registrar visit their website and enter the domain name you would like to register. If the name with your preferred TLD is already taken, try the name using a different TLD. If the name is taken using all TLDs you will need to try your alternate names until you find one that is still available. If the domain name is already taken and you desperately want it, you may contact the owner and offer to buy it.

Once you have found a name you like, register the domain name by paying the filing fee and follow the instructions on the web site. Keep in mind that all unrestricted Domain Names are owned by the general public. When you register a domain name, you are basically renting your domain name from the public for a finite amount of time. Vision Quest recommends that you register your domain name for as many years as your budget allows.

You will be notified when your domain name will expire but it is your responsibility to ensure that it is renewed and that pertinent contact information required by the registrar is kept current so that you can be notified. If your contact information changes and you do not update your registration, the registrar will not be able to contact you. If your domain expires, anyone may then acquire the domain name for themselves.

Once your domain name is registered, you will need to decide who will host and manage the following:

- **Your Domain Name System (DNS) Records**
- **Your Website**
- **Your Email**

Following is a brief overview of each of the services listed above.

## Domain Name System (DNS) Records

Information about a domain name is contained in a Domain Name System Zone file. The Domain Name System Zone file must reside on a server computer with a dedicated IP Address connected directly to the internet. This computer should be connected to the internet and running 24/7. If a connection to the DNS server is lost, no traffic can be directed to your website nor will you receive any inbound email.

The DNS Zone file contains several different types of Resource Records. These resource records include:

- Address Record (A)
- Mail Exchanger Record (MX)
- Name Server Record (NS)
- Canonical Name Record (CNAME)
- Host Info Record (HINFO)
- Naming Authority Pointer Record (NAPTR)
- Pointer Record (PTR) or Reverse Mapping
- Start of Authority Record (SOA)
- Text Record (TXT)

The two primary resource records are Address Records (A) and Mail Exchanger Records (MX).

### Address Records (A)

Every website on the internet has a numeric internet address known as an Internet Protocol Address, (IP Address). The domain name [visionquestit.com](http://visionquestit.com) resides at IP address 66.43.96.9. To see what this means, open your web browser and type the address <http://66.43.96.9>. When you hit the Enter key you should see the Vision Quest home page. Now type the address <http://www.visionquestit.com> and hit the Enter key. You should see the same home page.

The Address (A) record provides the name-to-address mapping for Host Names contained in a Domain Name Zone. The Host Name is the portion of the address in front of the dot before the domain name.

**Host Name**                      **Domain Name**                      **TLD Name**  
**WWW** . **VISIONQUESTIT** . **COM**

A Domain Name Zone can have many Host Names, and thus, may have many (A) records. Each Host Name maps to a single IP address. Each Host Name can be mapped to the same IP address or be mapped to a unique IP address. The most common host name is www. Other Host Name examples include:

- [parking.visionquestit.com](http://parking.visionquestit.com)
- [secure.visionquestit.com](http://secure.visionquestit.com)
- [mail.visionquestit.com](http://mail.visionquestit.com)

The possibilities are almost endless. The (A) record is the key to the map which allows a domain name to be routed to an IP Address. When you hit the Enter key, your browser requests a DNS server to map the host.domainname.TLD to the IP address associated with the (A) record of the Host Name and display the website in your browser. Vision Quest's DNS Zone (A) Records looks like this:

Host Name	Record Type	IP Address
@	A	66.43.96.9
Mail	A	66.43.96.6
Parking	A	66.43.96.10
www	A	66.43.96.9

Note that each Host Record is assigned an IP address.

## Mail Exchanger Records (MX)

The Mail Exchange (MX) record specifies where the email for a domain name should be delivered. An MX Record can be associated either with a Fully Qualified Domain Name or a specific IP address. For redundancy, you can have several MX records for a single domain name, ranked in order of preference (the lowest number being the highest preference). Each MX Record must be associated with a unique Fully Qualified Domain Name or a unique specific IP address. Vision Quest's DNS Zone MX Record looks like this:

Host Name	Record Type	Priority	Address
@	MX	10	mail.visionquestit.com

Notice that the Vision Quest MX Record maps to the FQDM mail.visionquestit.com. If you look back at the (A) Record for mail.visionquestit.com you will see the Host Record 'mail' maps to IP address 66.43.96.6. We could have used the IP address instead of the FQDM, however, if our mail server IP address changes, we would have to update two records instead of just one. Considering that Vision Quest host many domain names, this enables Vision Quest to update far fewer records than if we assigned an IP address to each MX Record.

Also notice that Vision Quest's web site FQDM [www.visionquestit.com](http://www.visionquestit.com) maps to IP address 66.43.96.9 while the Vision Quest Email MX address is 66.43.96.6. This demonstrates that a domain name can be mapped to many different physical addresses. This enables Vision Quest to host our client's website on our web servers while forwarding email to our client's own in-house email server if they choose not to have Vision Quest host their email.

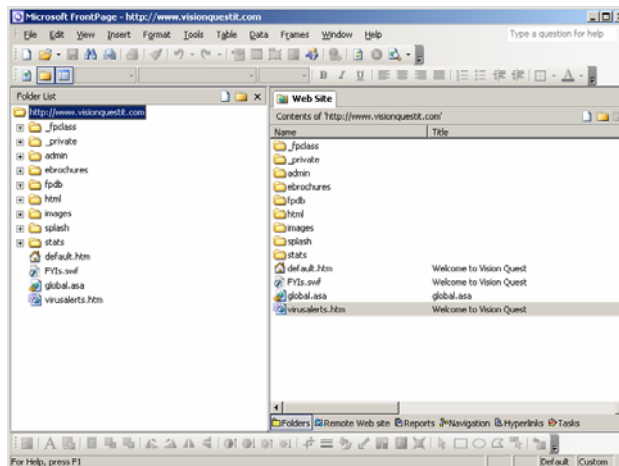
Note – See Appendix B for additional DNS Zone File Resource Records

# Websites



## A Website

A website is a collection of files and folders which are stored on a Web server. This image shows some files and folders for the Vision Quest company website.



Websites can be private and viewed only by people in your organization and is known as and Intranet Website. Most websites however, can be viewed by anyone with an internet connection and a web browser. These are known as Internet Web Sites.

An Internet Website must be hosted on a server that has a dedicated connection to the Internet. The server should be running 24/7 so that visitors anywhere in the world will be able to access the website at any time.

## Website Hosting

Website Hosting is like renting an apartment or leasing an office. When you rent an apartment or lease office space, you get an empty space in which you place the things you need for your home or business. This empty space is located at a specific street address which you can share with friends and customers so that they can come and visit you.

A Web Host provides empty space on a web server that has a dedicated connection to the internet. The space the web host provides should have a dedicated IP address so that you can map your DNS records to it in order to share your domain name with potential visitors to your website.

Most web hosting companies charge a monthly fee and provide some basic services. Vision Quest's hosting service includes:

- 200 MB of Hard Drive Space (Storage)
- 5 E-mail Accounts (can be forwarded to an E-mail account(s) of your choice)
- 2 GB Monthly Data Transfer (Traffic)

## Website Design

Website design is the actual creation of your website. Designing for the Web is not like designing for other media. Some key reasons for this are:

- **Interactivity** - The user actually manipulates your website, and goes wherever he or she wants to. Also, he or she can interact with a site through mail and online forms.
- **Fluidity** - Websites can be seen anywhere in the world, and text can be rewritten in different languages. Fonts can also be substituted with other fonts distorting the site and making it unreadable.
- **Variety** - There exist a variety of different computer operating systems, Internet browsers, and viewing options. Not to mention technology variations among people who use the Internet, like those with disabilities. No two computer video cards work the same and no two computer monitors display colors the same.
- **Immediacy** - As soon as a page is uploaded, it's globally published.
- **Hypertext** - Unlike traditional media, web pages can allow a user to go anywhere from anywhere, with no restrictions, and with ease.
- **Age** - The minute a page goes up, it starts to age. Web pages need to be designed so that they either do not need to be frequently updated or need to be easy to update.
- **Links** – If the site links to other sites, those links need to be checked periodically to make sure they still work. Broken links are annoying and reflect poorly on the site and the entity who owns it.
- **Multimedia** - Different kinds of media can be combined on a Web page, such as audio, video, and animation.

Web design is more difficult than print media design however it is more dynamic and more immediate. Key considerations for website design include:

- **Navigation Layout**
- **Visual Layout**
- **Visual Flow**
- **White Space**
- **Color**
- **Typography**
- **Grammar**

# Email

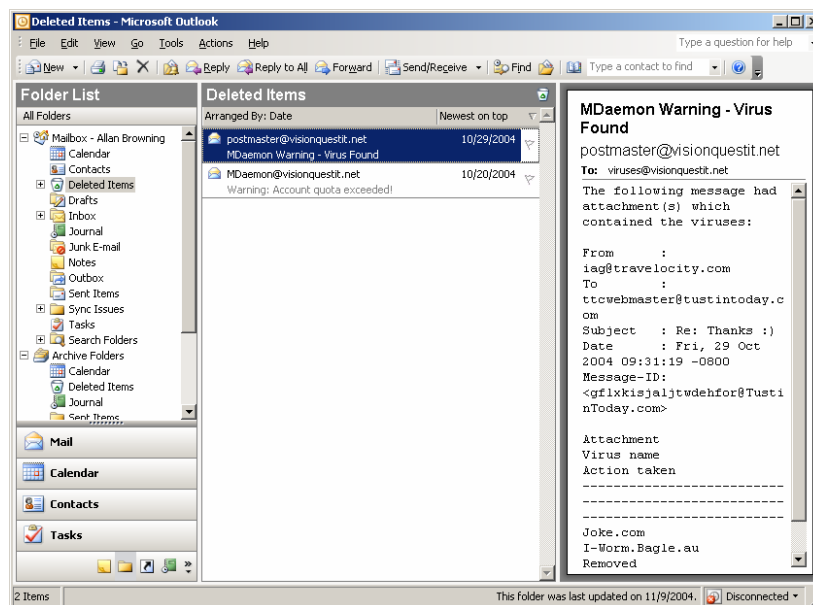
Email notes are a convenient and quick way of communicating with anyone who has an email address, and can be much more economical than making expensive phone calls or paying the postage on written letters. Email is basically an electronic message transmitted between two computers. There is a big range of software tools and account options available to enable you to actually send and receive email, but first let's look at how emails are physically sent over the internet.

Before you can send a message, you need a connection to the internet. After you have written a message and filled in the "From" text box containing your email address and the "To" box containing the destination address, you send your message. The message is sent over the internet to a special computer called a Mail Server. The mail server may be one that is owned by you or your company or it may belong to the company that hosts your Email Account.

Your email account includes a Mail Box, which is a bit like the mail box you may have at your house for hand written letters. When you send your message, it passes to your mailbox, which re-routes it on to the mail box on the recipient's mail server. The next time the recipient decides to check their mail, the message will be downloaded over the internet from their mailbox onto their own computer. Using the surface-mail analogy again, this method of transmitting messages can be compared to the way a hand written letter passes through a number of sorting and delivery offices before reaching its destination. The whole process - from you clicking "Send", to the message arriving in the recipient's mail box - may only take a few seconds, even if the destination is on the other side of the world.

The standard protocol used for sending email over the internet is called SMTP or Simple Mail Transfer Protocol. SMTP is used to send emails, but is not involved in the reading and receiving side of the process. The most common way of reading emails is by using POP (or Post Office Protocol) servers. When you send an email, your computer forwards it to your SMTP server, which checks the destination email address, and then re-routes it on to the recipient's mail server. This message will then sit in the mailbox on the destination mail server, until the recipient checks their email.

In addition to the mail server and an email account, you need an email client to send and receive email. One of the most popular is Microsoft Outlook.



All email clients work pretty much the same way. At a minimum all email clients have an In box, an Out box, a Deleted folder, and a Sent folder. Do not confuse your mail box, with your In box or Out box. Your mail box is the space on the mail server which holds your messages until you check them. The In box and Out box are the vessels in your email client application on your own computer which contain the messages you've received and written.

## Appendix A

### Countries of the World Top Level Domains

<b>AC</b> - Ascension Island	<b>EE</b> - Estonia	<b>LB</b> - Lebanon	<b>RU</b> - Russia
<b>AD</b> - Andorra	<b>EG</b> - Egypt	<b>LC</b> - Saint Lucia	<b>RW</b> - Rwanda
<b>AE</b> - United Arab Emirates	<b>ER</b> - Eritrea	<b>LI</b> - Liechtenstein	<b>SA</b> - Saudi Arabia
<b>AF</b> - Afghanistan	<b>ES</b> - Spain	<b>LK</b> - Sri Lanka	<b>SB</b> - Solomon Islands
<b>AG</b> - Antigua and Barbuda	<b>ET</b> - Ethiopia	<b>LR</b> - Liberia	<b>SC</b> - Seychelles
<b>AI</b> - Anguilla	<b>FI</b> - Finland	<b>LS</b> - Lesotho	<b>SD</b> - Sudan
<b>AL</b> - Albania	<b>FJ</b> - Fiji	<b>LT</b> - Lithuania	<b>SE</b> - Sweden
<b>AM</b> - Armenia	<b>FK</b> - Falkland Islands	<b>LU</b> - Luxembourg	<b>SG</b> - Singapore
<b>AN</b> - Netherlands Antilles	<b>FM</b> - Micronesia	<b>LV</b> - Latvia	<b>SH</b> - Saint Helena
<b>AO</b> - Angola	<b>FO</b> - Faroe Islands	<b>LY</b> - Libya	<b>SI</b> - Slovenia
<b>AQ</b> - Antarctica	<b>FR</b> - France	<b>MA</b> - Morocco	<b>SJ</b> - Svalbard / Jan Mayen Is.
<b>AR</b> - Argentina	<b>GA</b> - Gabon	<b>MC</b> - Monaco	<b>SK</b> - Slovakia
<b>AS</b> - American Samoa	<b>GB</b> - United Kingdom	<b>MD</b> - Moldova	<b>SL</b> - Sierra Leone
<b>AT</b> - Austria	<b>GD</b> - Grenada	<b>MG</b> - Madagascar	<b>SM</b> - San Marino
<b>AU</b> - Australia	<b>GE</b> - Georgia	<b>MH</b> - Marshall Islands	<b>SN</b> - Senegal
<b>AW</b> - Aruba	<b>GF</b> - French Guiana	<b>MK</b> - Yugoslav Rep. Maced.	<b>SO</b> - Somalia
<b>AZ</b> - Azerbaijan	<b>GG</b> - Guernsey	<b>ML</b> - Mali	<b>SR</b> - Suriname
<b>BA</b> - Bosnia and Herzegovina	<b>GH</b> - Ghana	<b>MM</b> - Myanmar	<b>ST</b> - Sao Tome and Principe
<b>BB</b> - Barbados	<b>GI</b> - Gibraltar	<b>MN</b> - Mongolia	<b>SU</b> - Soviet Union
<b>BD</b> - Bangladesh	<b>GL</b> - Greenland	<b>MO</b> - Macau	<b>SV</b> - El Salvador
<b>BE</b> - Belgium	<b>GM</b> - The Gambia	<b>MP</b> - Nor. Mariana Islands	<b>SY</b> - Syria
<b>BF</b> - Burkina Faso	<b>GN</b> - Guinea	<b>MQ</b> - Martinique	<b>SZ</b> - Swaziland
<b>BG</b> - Bulgaria	<b>GP</b> - Guadeloupe	<b>MR</b> - Mauritania	<b>TC</b> - Turks and Caicos Islands
<b>BH</b> - Bahrain	<b>GQ</b> - Equatorial Guinea	<b>MS</b> - Montserrat	<b>TD</b> - Chad
<b>BI</b> - Burundi	<b>GR</b> - Greece	<b>MT</b> - Malta	<b>TF</b> - French Southern
<b>BJ</b> - Benin	<b>GS</b> - South Georgia	<b>MU</b> - Mauritius	<b>TG</b> - Togo
<b>BM</b> - Bermuda	<b>GT</b> - Guatemala	<b>MV</b> - Maldives	<b>TH</b> - Thailand
<b>BN</b> - Brunei Darussalam	<b>GU</b> - Guam	<b>MW</b> - Malawi	<b>TJ</b> - Tajikistan
<b>BO</b> - Bolivia	<b>GW</b> - Guinea Bissau	<b>MX</b> - Mexico	<b>TK</b> - Tokelau
<b>BR</b> - Brazil	<b>GY</b> - Guyana	<b>MY</b> - Malaysia	<b>TM</b> - Turkmenistan
<b>BS</b> - Bahamas	<b>HK</b> - Hong Kong	<b>MZ</b> - Mozambique	<b>TN</b> - Tunisia
<b>BT</b> - Bhutan	<b>HM</b> - Heard Is / McDonald Is	<b>NA</b> - Namibia	<b>TO</b> - Tonga
<b>BV</b> - Bouvet Island	<b>HN</b> - Honduras	<b>NC</b> - New Caledonia	<b>TP</b> - East Timor
<b>BW</b> - Botswana	<b>HR</b> - Croatia	<b>NE</b> - Niger	<b>TR</b> - Turkey
<b>BY</b> - Belarus	<b>HT</b> - Haiti	<b>NF</b> - Norfolk Island	<b>TT</b> - Trinidad and Tobago
<b>BZ</b> - Belize	<b>HU</b> - Hungary	<b>NG</b> - Nigeria	<b>TV</b> - Tuvalu
<b>CA</b> - Canada	<b>ID</b> - Indonesia	<b>NI</b> - Nicaragua	<b>TW</b> - Taiwan
<b>CC</b> - Cocos Islands	<b>IE</b> - Ireland	<b>NL</b> - Netherlands	<b>TZ</b> - Tanzania
<b>CD</b> - Democratic Rep. Congo	<b>IL</b> - Israel	<b>NO</b> - Norway	<b>UA</b> - Ukraine
<b>CF</b> - Central African Republic	<b>IM</b> - Isle of Man	<b>NP</b> - Nepal	<b>UG</b> - Uganda
<b>CG</b> - Republic of the Congo	<b>IN</b> - India	<b>NR</b> - Nauru	<b>UK</b> - United Kingdom
<b>CH</b> - Switzerland	<b>IO</b> - British Indian Ocean Ter.	<b>NU</b> - Niue	<b>UM</b> - U.S. Outlying Isles
<b>CI</b> - Côte d'Ivoire	<b>IQ</b> - Iraq	<b>NZ</b> - New Zealand	<b>US</b> - United States of America
<b>CK</b> - Cook Islands	<b>IR</b> - Iran	<b>OM</b> - Oman	<b>UY</b> - Uruguay
<b>CL</b> - Chile	<b>IS</b> - Iceland	<b>PA</b> - Panama	<b>UZ</b> - Uzbekistan
<b>CM</b> - Cameroon	<b>IT</b> - Italy	<b>PE</b> - Peru	<b>VA</b> - Vatican City State
<b>CN</b> - China, mainland	<b>JE</b> - Jersey	<b>PF</b> - French Polynesia	<b>VC</b> - St. Vincent / Grenadines
<b>CO</b> - Colombia	<b>JM</b> - Jamaica	<b>PG</b> - Papua New Guinea	<b>VE</b> - Venezuela
<b>CR</b> - Costa Rica	<b>JO</b> - Jordan	<b>PH</b> - Philippines	<b>VG</b> - British Virgin Islands
<b>CU</b> - Cuba	<b>JP</b> - Japan	<b>PK</b> - Pakistan	<b>VI</b> - U.S. Virgin Islands
<b>CV</b> - Cape Verde	<b>KE</b> - Kenya	<b>PL</b> - Poland	<b>VN</b> - Vietnam
<b>CX</b> - Christmas Island	<b>KG</b> - Kyrgyzstan	<b>PM</b> - Saint Pierre / Miquelon	<b>VU</b> - Vanuatu
<b>CY</b> - Cyprus	<b>KH</b> - Cambodia	<b>PN</b> - Pitcairn Islands	<b>WF</b> - Wallis and Futuna
<b>CZ</b> - Czech Republic	<b>KI</b> - Kiribati	<b>PR</b> - Puerto Rico	<b>WS</b> - Samoa
<b>DE</b> - Germany	<b>KM</b> - Comoros	<b>PS</b> - Palestinian Territories	<b>YE</b> - Yemen
<b>DJ</b> - Djibouti	<b>KN</b> - Saint Kitts and Nevis	<b>PT</b> - Portugal	<b>YT</b> - Mayotte
<b>DK</b> - Denmark	<b>KR</b> - South Korea	<b>PW</b> - Palau	<b>YU</b> - Yugoslavia
<b>DM</b> - Dominica	<b>KW</b> - Kuwait	<b>PY</b> - Paraguay	<b>ZA</b> - South Africa
<b>DO</b> - Dominican Republic	<b>KY</b> - Cayman Islands	<b>QA</b> - Qatar	<b>ZM</b> - Zambia
<b>DZ</b> - Algeria	<b>KZ</b> - Kazakhstan	<b>RE</b> - Reunion	<b>ZW</b> - Zimbabwe
<b>EC</b> - Ecuador	<b>LA</b> - Laos	<b>RO</b> - Romania	

## Appendix B

### Additional DNS Zone File Resource Records

#### Canonical Name (CNAME)

The Canonical Name (CNAME) record is used for aliases or nicknames. The data portion is the official or canonical name. You cannot have any other resource records associated with a CNAME. Aliases are useful when you want the outside world to know a single, easily remembered name. You can also use aliases when a host changes its name. In that case, make sure that you have a CNAME pointer so that it always follows the true name which in turn must resolve to an IP address.

#### Host Info (HINFO)

The Host Info (HINFO) record provides information about a particular host. The data contains a description of the hardware and software. The hardware description contains the name of the manufacturer and the model number. The software description contains the name of the operating system.

#### Name Server (NS)

The Name Server (NS) record lists the name of the machine that provides domain service for the particular domain. Machines that provide name service do not have to reside in the named domain. For each domain you must have at least one NS record. NS records for a domain must exist in both the zone that delegates the domain and in the domain itself. You must also have a corresponding A record mapped to the host name specified in the data field. The name is the name of the zone (for example, myexample.com) and the data is the name of the host machine on which the name server is running. NS record names must have an equivalent A record (that is, they cannot point to an alias).

#### Naming Authority Pointer (NAPTR)

The Naming Authority Pointer (NAPTR) record specifies a regular expression based rewrite rule that, when applied to an existing string, produces a new domain label or Universal Resource Identifier (URI). This allows DNS to be used to look up services for a wide variety of resource names that are not in domain name syntax. For more information, see RFC 2915 and Internet draft-ietf-urn-naptr-rr-04.txt.

#### Pointer (PTR) or Reverse Mapping

The Pointer (PTR) record enables you to point to some other location in the domain tree. They are used for reverse mapping, specifically in the in-addr.arpa zones for translation of addresses to names. PTRs use official names not aliases. The name in a PTR record is the local IP address portion of the reverse name.

#### Start of Authority (SOA)

The Start of Authority (SOA) record designates the start of a zone. Every zone must have a single SOA record. The SOA record indicates the name of the machine with master data (the primary name server). The record also contains the e-mail address of the zone's administrator. It informs secondary name servers about the timing of zone transfers. This record contains:

- The name of the zone
- The name of the primary server
- The e-mail address of the person responsible for the zone
- The serial number of the zone file
- The secondary refresh time
- The secondary retry time
- The secondary expire time
- The minimum Time To Live (TTL)

#### Text (TXT)

The Text (TXT) record contains any string of less than or equal to 256 characters that can contain any type of information. The name is the host name (equivalent A record) and data.

3/18/09 - Rates and services subject to change.