What's In A Name?

Domain Naming System Adapts To Changes

The Web address, or **URL** (**universal resource locator**), is vitally important to many businesses, organizations, and even individuals (just ask the celebrities currently in dispute with Web site owners that use their names). A URL embodies one's identity on the Internet. People will use it to find you and exchange information or do business. The URL you select is important because when it is easy to remember and relevant to your business or organization, others are more likely to use it.

A **domain name** refers to the latter part of a URL. For example, if your URL is http://www.yourname.com, then the "yourname.com" part of the URL is officially called its domain name.

The "http://" portion of the URL refers to Hypertext Transfer Protocol, the standard for how computers exchange information over the Internet. The "www" indicates that the site is part of the World Wide Web, yet unlike "http://," not every URL has "www" as part of its Internet address. Essentially, in computer language, all these parts merge into one URL that translates into the numeric code that tells your Web browser where you want to go on the Internet's network of computers.

The only characters that can make up a domain name are letters, numbers, and a hyphen. You can't use special characters (such as &) or spaces in a domain name. Domain names can be up to 26 characters long. Four of those 26 characters are the domain extensions at the end of the name. These domain extensions are called **TLDs** (**top-level domains**). So, in the domain name "yourname.com," yourname is the **SLD** (**second-level domain**) and .com is the TLD. TLDs signify what kind of company, organization, or country your domain name originates from.

There are two types of TLDs: country code and generic. Two-letter country code TLDs (ccTLD), such as .uk for United Kingdom, were created for use by various countries. There are about 250 ccTLDs, and each county's government manages its own. For a complete list of ccTLDs and their administrators, go to http://www.iana.org/cctld/cctld-whois.htm.

The three-letter generic TLDs (gTLD) are for public use and represent the intended function of its related site. The few, but widely recognized, gTLDs currently in existence include .com (commercial), .net (gateway or host), .org (non-profit organization), .gov (government agencies), .edu (educational institutions), .mil (military), and .int (international organizations). The first three gTLDs—.com, .net, and .org—are unrestricted, which means anyone in the world can register for these despite their descriptions. The other gTLDs are restricted and require approval from the organization managing that gTLD. (More information on these organization is available from the Internet Assigned Numbers Authority at http://www.iana.org/gtld/gtld.htm.)

With the explosion of the Internet over the last few years, demand for domain names has soared, but the choices for TLDs have barely changed. Many users and organizations would like to see more gTLDs offered to provide more options and better choices to domain name holders. The organizations that administer Internet names have themselves been overhauled in the last few years and now are finally ready to address domain naming conventions. However, progress does not stand still; the private sector has come up with a few creative solutions to address the Internet's changing landscape.

More Names Needed. The lack of options for gTLDs is presenting a few problems. First, fewer domain names are available under the three, unrestricted gTLDs that exist. There is dispute over just how serious this shortage is, but the fact remains, fewer names are available. As more domain names are used, it will become more challenging for an organization to get a relevant domain name.

For instance, a recreation center looking for a URL might find that "recreationcenter.com" is taken by a video arcade, "reccenter.com" is taken by a record store, and "reccenter.org" is taken by a recycling center. As a result, the recreation center must be more creative in its name selection and choose a name similar to: letsplay.com. That will work, but now the name is not as intuitive and not as easy for users to remember or guess. Businesses and organizations often opt to use a completely irrelevant word because it is short and memorable. Some businesses even consider altering their name altogether if their business is dependent on the Internet.

Virtual Internet, a London-based Internet firm, reports that more than 20 million domain names have now been registered worldwide, with nearly a quarter of a million new names being registered each week and nearly 80% assigned to the .com gTLD.

Secondly, more differentiation among gTLDs can alleviate some other issues with the Internet, such as restricting access to minors and name infringements. For instance, if all adult-content sites were forced to use a domain name like ".xxx," screening access to these sites would be easier (although those site's owners wouldn't care for this). Or, by using a gTLD such as ".name" for personal sites would prevent cyberpirates from registering a site under a famous person's name, publishing unsavory Web pages, and releasing ownership of the domain name only for a large sum of money.

More gTLDs would provide more naming choices, make sites easier for users to find, and allow more control over how sites are accessed and used. Those opposed to new names argue that there is more possibility for consumer confusion and more opportunity of increased trademark infringement. They argue that it will be more technically complex to manage the domain name system and its registries with a larger number of TLDs and frequent additions. Plus, it will be more difficult for trademark holders to protect their trademarks if they have to police a large number of TLDs. Despite the arguments, the preference among Internet users, experts, and authorities is for adding more TLDs to the domain name mix.

How To Get A Domain Name

The first step is to see if the name you want is available. You can find this out from any accredited registrar such as Network Solutions (http://www.nsi.com) or Register.com (http://www.register.com). For a list of the currently operating accredited registrars, go to the InterNIC site (http://www.internic.net/alpha.html) or The Internet Corporation for Assigned Names and Numbers (ICANN; http://www.icann.org/registrars/accredited-list.html).

Many registrars have a search function where you can type in the name you want and the registrar lets you know if it is available. If the name you want is available, sign up for it at the registrar's site. The fee to register a domain name is $35 per year.

You'll need to provide address information for an administrative contact (the person who owns the domain name), a billing contact (for renewal), and a technical contact (the person who maintains the actual server). The technical contact will probably be someone at your ISP (Internet service provider), so you'll need to get this information from them before registering. In addition, some ISPs may also charge you setup fees.

Or, you can skip all the work and ask your ISP if it will register a name for you. Many ISPs will do everything needed to set up a domain name for their customers. Just make sure you are the one in control of the domain name by using the WHOIS Lookup feature at http://www.nsi.com and making sure you know the domain password. □

Masters Of The Domain. The regulation of the Internet has gone through several changes in the past two years. Network Solutions Inc. (NSI; http://www.nsi.com) was once the sole registrar of domain names and maintained the sole registry of these names. Under contract from the Department of Commerce, NSI helped create InterNIC, which was the integrated network information center developed to keep a list of domain names (the registry) and dole out domain names (as a registrar) to companies and individuals who requested them.

The other major regulator was the Internet Assigned Numbers Authority (IANA; http://www.iana.org). Also contracted by the government, IANA provided technical management of the Internet's address system by allocating blocks of numerical addresses (that are eventually linked to domain names) and assigning values for protocols that perform various Internet functions such as e-mail.

In response to the growing outcry for more gTLDs, an Internet Ad Hoc Committee (IAHC) proposed six new gTLDs: .store, .web, .arts, .rec, .info, and .nom. These domains were supposed to be put into service in 1998, but before that could happen, the Department of Commerce dissolved the IAHC and made other organizational changes as a more encompassing solution to Internet management.

In 1997, as part of the "Framework for Global Electronic Commerce," President Clinton directed the Department of Commerce to privatize the management of certain aspects of the domain name system (commonly called DNS) to increase competition and facilitate international participation. After several studies and much public input, the Department of Commerce created the Internet Corporation for Assigned Names and Numbers (ICANN; http://www.icann.org).

This non-profit, private-sector corporation is run by a board selected from the Internet population at large and exists to coordinate the stable operation of the Internet's server system. The Department of Commerce transferred much of the Internet administration to ICANN in October 1998, and now ICANN oversees policy governing the assignment of Internet domain names, IP (Internet Protocol) addresses, and the IP protocols—responsibilities previously held by IANA.

Plus, ICANN has the authority to accredit more companies as registrars who assign domain names, eliminating NSI's position as the sole registrar and requiring it to share its master registry with other registrars. NSI has also had to phase out its use of the name InterNIC, a service mark of the Department of Commerce, and now operates only as a private company.

ICANN has several propositions on the table for modifications to the domain name system, as well as monitoring innovations instituted by private businesses on the Internet.

New Developments. ICANN wanted to come up with new TLDs in "a measured and responsible manner," as mandated by the Department of Commerce. In July 2000, ICANN decided that the best method was to open the process up to the public. During September 2000, ICANN took proposals for recommended new generic TLDs.

Successful applicants would not only create, but also operate the gTLD, so proposals could only be submitted by a select few with the resources for this type of endeavor. The lengthy proposal had to detail how the company would organize and run a registry to issue domain names and how its gTLD proposal would broaden choices available to Internet users. To further prove their sincerity, applicants had to submit a $50,000 fee.

A two-week public comment period took place in October, followed by a review by the ICANN Board of Directors. The Board's decisions are scheduled to be announced in mid-November 2000. Afterward, the Board plans to negotiate agreements with the new sponsors by the end of December 2000.

Another interesting note is: Among those submitting a bid for a new gTLD is a consortium of Internet registrars that includes the number one and number two Internet registrars, NSI and Register.com. NSI has long been criticized for the amount of control it has had over domain name registration, but another member of the consortium feels its members have a vested interest in assuring that the registry providing the new gTLD will be well designed.

ICANN did not say how many gTLDs it will choose or how they will be used. It has expressed an interest in approving several different kinds of new gTLDs in order to create commercial, noncommercial, restricted, and unrestricted online communities. However, the short application period and controversial $50,000 application fee limited the number of applications submitted.

Where To Stay Up To Date

This area of the Internet is constantly evolving to keep up with needs, trends, and demand. At the time we went to press, a few major changes for domain names were in the works. The following is a list of Web sites that provide updated information on the changes to domain naming conventions and regulatory bodies.

DomainIQ.com
http://www.domainiq.com

dotcom.com
http://www.dotcom.com

ICANN Watch
http://www.icannwatch.org

i-DNS.net International
http://www.i-dns.net

Internet Assigned Numbers Authority (IANA)
http://www.iana.org

The Internet Corporation for Assigned Names and Numbers (ICANN)
http://www.icann.org

The Official United States Domain Registry
http://www.nic.us

The ".us" ccTLD. The ccTLD of ".us" is used for organizations in the United States where location is a significant part of their identity. The recipients of this ccTLD tend to be branches of state and local governments and other public services such as school districts and libraries. The ".us" ccTLD is further divided into a hierarchy based on localities, as in: los-angeles.ca.us. The Information Sciences Institute of the University of Southern California (ISI-USC) administers the ".us" ccTLD registry (http://www.nic.us).

Businesses and individuals also can register to use ".us." Some in the Internet community have suggested actively promoting the use of the ".us" ccTLD to relieve some pressure for new gTLDs and resolve conflicts between companies vying for the same domain name. But some commercial users and trademark holders find the current locality-based system too cumbersome and complicated for commercial use. In response, ICANN is currently investigating the best method for broadening the use of ".us" with the least confusion and the widest range of benefit. Suggested uses have included moving ".gov" and ".mil" TLDs into ".us" and incorporating street addresses into ".us" TLD addresses.

At the time this went to press, ICANN was accepting public input on the issue in order to draft a document on proposed methods for management and administration of the ".us" ccTLD.

Two-digit gTLDs. While waiting for Internet regulatory groups to add new gTLDs, another solution emerged. Top-level domain names such as ".ws," ".cc.," and ".tv" are available to the public because they're actually country codes (for Western Samoa, Cocos [Keeling] Islands, and Tuvlau, respectively). Some Internet registrars have made agreements with these countries to sell the TLDs to businesses and individuals anywhere, making them, in essence, unrestricted gTLDs. Some registrars are even going a step further by making an effort to brand the TLD for specific purposes, such as ".tv" for television-related sites or ".ac" for academic sites. These TLDs function the same way as any other gTLD and may be considered a viable alternative if the ".com," ".org" and ".net" versions of gTLDs are already taken.

Multilingual names. Arabic is difficult to translate into Web addresses, as is Japanese, Russian, and a dozen other languages that use characters that are not standard in English. URLs, however, currently only use characters available in English. Some non-English sites use numbers rather than letters in the URL to overcome language barriers, but the Internet is global and millions of pages serve content to users who communicate in other languages.

To address this deficiency, the registrar NSI announced in August 2000 that it would start allowing multilingual domain names. Its test program would allow the registration of domain names in 55 languages and character sets including Japanese, Chinese, Korean, Arabic, and Hebrew. i-DNS.net International, which developed a method for the Domain Name System to recognize non-ASCII characters, will supply the technology for the test. The test is set to start during the fourth quarter of 2000.

ICANN has promised to watch the progress of this implementation to make sure it does not jeopardize the stability of the Internet. However, it supports the principle of internationalizing domain names.

The Ultimate Impact Of Changes. Many Internet users, whether commercial entities, non-profit organizations, or individual users, have long expressed dissatisfaction with aspects of the current domain naming system. As the Internet grows exponentially, these problems are exacerbated. Several issues have been brought up repeatedly.

First, many want more TLDs to be made available. Competition is becoming fiercer for names as more entities register for new names.

Secondly, new solutions must look to address **cyberpiracy** (the registration of well-known names with the intent of getting revenue from the sale of another's branded property) and **cybersquatting** (the practice of stockpiling domain registrations in bulk for future resale to the general public). There is no standard and economical resolution process for conflicts between trademark holders and domain name holders. The proliferation of lawsuits may create more chaos as antitrust law and intellectual property law is applied differently in different jurisdictions. As commercial success is increasingly dependent on Internet presence, more companies want a stronger and more formal management structure. Domain names increasingly have value—it should not be acceptable to register domain names on a first-come first-serve basis to parties that are not held accountable to the Internet community.

Finally, more Internet users outside the United States want a larger voice in Internet coordination, including naming conventions. New methods for name administration need to be stable with the current system, increase competition among name providers to allow better choices, and be governed by a body that's representative of the Internet community instead of single government agencies.

Changes in available domain names will certainly give entities more options for names, make it more difficult for cybersquatters and cyberpirates to profit, and possibly even make it easier to remember Web addresses.

Changes in the administration of domain names will hopefully lead to more competition and better services among registrars, better methods of remediation for infringement issues, and continued stability. ICANN appears diligent in its work to better regulate the Internet, but it is in its infancy. Time will show how well it meets the challenge. LS

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