

# Staking your claim

## Mastering domains, part two



The argument could be made that registering a domain name in 1994 was the equivalent of being at Sutter's Mill in 1849 and just hauling off boulders of gold. In the fall of 1994, most people were more concerned with commercialization of the Net as such than with how to capitalize on the coming revolution. Domain names seemed like technical trappings, rather than status symbols or part of the branding of a product. Some of our earliest clients were able to get "faucet," "recipe," "film," and "out" plus ".com."

By August 1994, only 18,403 commercial (.com) domains had been registered. But by January 1996, that number had climbed to 170,892; the count in mid-July of this year was

419,360. At the same time, many domains have transferred hands for sums from hundreds to tens of thousands of dollars. Gold fever has struck hard.

In the first part of this series of two [[Issue #11, September 1, 1996](#)], I explained the system that uses domain names to link to resources; it's a sophisticated, distributed information scheme that allows local administrators full control of the domains assigned to them. This part explains how an organization gets that assignment, and who put the group that's responsible in charge.

### **Take me to your leader**

The National Science Foundation (NSF) has overseen the development of the Internet since the Department of Defense stopped being the funding source—about the last ten years, as the Net emerged as an organism separate from ARPAnet (its formal and technical parent) and BITNET (its spiritual forebearer). Until April 1995, the NSF funded a data network that acted as a backbone, connecting the various research institutions, universities, and governmental entities that comprised the primary usership of the Net until the early nineties.

Domain names had been around prior to the Internet, but the full, distributed structure that made them work so well only developed as a result of the growth of the Net, even before commercial groups were involved. This structure has been pretty stable since the late eighties.

The growth of the commercial side of the Internet prompted the NSF to create the InterNIC (the Internet Network Information Center) in January 1993 to provide administrative services to the Internet. The InterNIC was originally broken into three parts: registration services (mostly registering domain names), database services (providing indexes to resources), and information services, although the last part proved disappointing and was scratched.

While registration services manages the process of domain registration, they also help coordinate other bits and pieces, like assigning IP (Internet Protocol) network ranges and assembling records of where information is based for all the top-level domains for which they handle registration.

The InterNIC is not responsible for domain names for the entire Internet; they've been assigned responsibility for their particular area (more below on

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what that means) by the Internet Assigned Numbers Authority (IANA), a group that itself has been given authority by higher-level groups that represent the companies and governmental entities that make up the Internet. Yup, it gets a little strange when you reach the top (see <http://www.isi.edu/div7/iana/overview.html> for more about this relationship).

### Top levels

When someone talks about a domain name, they're really thinking of just the last part of an Internet address, like the "adobe.com" part of "http://www.adobe.com". The first part, "adobe," is the registered name; the second part, ".com," denotes the hierarchy to which the name belongs.

Eight domains on the top level of that hierarchy serve the United States. Six of these—commercial (.com), educational (.edu), network devices (.net), loosely defined non- and not-for-profit and trade organizations (.org), government (.gov), and ARPA (.arpa), a repurposed relic of the early days—are run by the National Science Foundation (NSF)—authorized InterNIC. Military (.mil)

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domains are run by the armed forces. Another hierarchy, United States (.us), is run by the University of Southern California's Information Sciences Institute (ISI), which operates the IANA as well.

The InterNIC top-level U.S. domains are divided loosely by subject. Most companies get ".com," though a few attempt ".net." ("Net" designations are now limited to organizations that are actually running operations that involve the Internet's networking infrastructure itself, but there are thousands of grandfathered domains from before that rule was strictly enforced.)

The ".us" hierarchy is geographic, with at least the state, and often the city, as part of the domain name. Domains in Seattle, for example, all end in "seattle.wa.us." This is fine for resources that don't move, like schools or libraries; it's a little more problematic for a business. If you were based in Seattle and moved south to Kent, would you keep "acme.seattle.wa.us" or move to "acme.kent.wa.us"—and how would you inform people of the change? According to a recent column by Stephen Manes in the *New York Times*, the question is up in the air.

## Why the fuss?

In an earlier WebSpy, I discussed the concept of “branding” [ [Issue #8, July 15, 1996](#) ]—that is, the idea that your Internet and Web presence should have a clear mark or brand to keep its identity fresh in the minds of your visitors.

A domain name is part of that mark, and that’s partly why there’s so much to-do about these names. Domain names clearly evolved as mnemonic devices to make it easier to access information and systems without memorizing lists of numbers. This was still their primary purpose up until the last few years.

When commercial organizations were first allowed on the Net, back around 1991, they could easily get the domain names they wanted, because so few had been assigned. You could just take your company name and add “.com” to it.

As the growth has become exponential, however, fewer unique names are available. From the initial half-dozen domains registered in 1991, the Net is now approaching half a million. Many of these names aren’t in active use, but have been “registered” by interested parties to preserve them.



The larger companies started getting the religion in 1995, and you saw a spate of well-publicized inanities, with Procter and Gamble, to take an extreme, registering “headache.com” and “diarrhea.com.” (I beg of them not to use clickable images if they ever put a site up there.)

These corporations understand branding all too well, and spend tens and hundreds of millions yearly to promote and extend brand identity. But some of them are way behind the learning curve in understanding names on the Internet.

### **What's in a name?**

The famous and widely cited example is mcdonalds.com. A reporter for *Wired* magazine, Joshua Quittner, was doing a piece on the subject of domain names, and contacted McDonalds to find out why the company hadn't registered mcdonalds.com. Quittner couldn't find anyone at the corporation who understood the issue, so he registered the name himself.

McDonalds later figured out what a domain name was and discovered Quittner's actions, and the writer negotiated a deal to sell the name to them

and donate the proceeds to charity. (An excellent summary of the past and current litigation on the subject is at <http://www.law.georgetown.edu/lc/internic/domain1.html>.)

The InterNIC and several groups who have registered, or are trying to register, domain names with the center have become embroiled in lawsuits in the last year; ever more conflicts are emerging as the “namespace” (the number of names in use) gets bigger and bigger.

There’s no clear case law on the subject, despite the number of suits. The InterNIC’s current policy requires that you warrant that you have the right to use a name when you register it. If there’s a conflict over the name between two parties, the one that has a registered trademark for the name wins automatically. If both parties have a trademark, or if neither of them does, it’s unclear what happens. (Trademarks are unique in the “sphere” of business they relate to, so more than one company may hold a trademark to the same name in different industries.)

When you’re hunting for names, you’ll find that most short English words have already been registered, as well as many phrases. Nowadays, you often



have to settle for “reallylongdomainname.com.” InterNIC increased the maximum length of domain names from 12 to 24 characters partly because of the demands on the system.

### **Making your mark**

So much for background. How do you actually *register* your domain name? You meet one test: you are running two “nameservers” or have access to a group that can include your information in their nameservers. This is the only technical requirement.

If you’re running your own servers and have DNS (Domain Naming System software) running on two of them, you should be able to accomplish this yourself. In Yahoo’s DNS section, you can find a listing of free and commercial DNS software. Most UNIX boxes run BIND, which was originally written by the University of California at Berkeley and is now supported by an independent software coalition. Server software for Windows 95 and NT and for the Macintosh OS also abounds.

If you don't run DNS, whoever you get your Internet feed from—whether it's a small, local dial-up Internet Service Provider or a national network feeding you T1 bandwidth—can provide the nameservice for your domain, often for \$50 or \$100.

Domains registered in the “.com,” “.org,” and “.net” hierarchies cost \$100, payable to InterNIC. This covers two years of registration; existing domains are being billed \$50 a year on their registration anniversary.

The templates to register a name, plus the search service to find out what names are taken, are at <http://rs.internic.net/rs-internic.html>. The Web-based template walks you through the process step by step. If you run your own DNS software or can get the host names and IP numbers of your provider's nameservers, you could fill out the form and submit it by yourself. Otherwise, your provider can take the information you give them and complete the form. (One note: you have to have the domain name set up in your own or your provider's nameserver before completing the Web template.)

The registration for “.us” domains is free, and you can find the tem-

plates and related information at <http://www.isi.edu/in-notes/usdnr/>.

## Defining space

You might think the whole Wild West of the Internet has been tamed, and there's little homesteading territory left. But there's one area left to expand on: the top level. Some organizations have complained about IANA's control of top-level designations, like ".com" and ".us," and the InterNIC's virtual monopoly on registration given IANA's restrictions. These organizations want ".biz" and ".Web" and ".sex" as top levels—and IANA, at this writing, is saying it might open dozens—or even more—new top-level domains. Meanwhile, at least three companies have started their own hierarchies outside the assigned authorities; these are reachable only by nameservers that have been specially reconfigured to "see" the new hierarchies.

Right now, IANA and NSF help control and define the anarchy that is the Net. The groups wanting other hierarchies may collectively become Pandora. ●