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## Domain Name Basics: An Introduction

By [Lee Underwood](#)

It's amazing how we take things for granted. Take domain names, for instance. Most people know what they are but few understand all of the details involved. These usually do not become evident until a domain name is needed for a Web site.

A domain name is basically a Web site address. For example, "washingtonpost.com" is the address of the *Washington Post* Web site; it's also the site's domain name.

**Note:** The entire Web address, i.e., <http://www.washingtonpost.com>, is known as the [URL](#) (Uniform Resource Locator).

There are three "levels" of domain names. The first level, described in detail below, is the "extension" part of the name, i.e. ".com." The second level would be "washingtonpost.com." The third level would be "www.washingtonpost.com."

### Top-Level Domains

A domain name "extension" is called a "top-level domain (TLD)." These are divided into three different categories: generic top-level domains (gTLD), country code top-level domains (ccTLD) and infrastructure top-level domains.

Generic top-level domains are the ones most frequently seen on the Web:

- .com (originally intended for use by commercial organizations but is available to anyone).
- .net (originally intended for use by sites directly related to the Internet but is available to anyone).
- .org (originally intended for use by non-profit organizations but is available to anyone).
- .edu (used by educational organizations).
- .gov (reserved for agencies of the United States government).
- .mil (reserved for the United States military).
- .int (reserved for international organizations established by treaty. i.e. the European Union: <http://europa.eu.int>).
- .aero (reserved for members of the air transport industry).
- .biz (for use by businesses only).
- .coop (reserved for cooperative associations).



- .info.
- .museum (reserved for museums).
- .name (reserved for individuals).
- .pro (being developed for professionals and related entities).

The next top-level domains are the two letter country codes. These are used to designate a country or a dependent territory. For instance, in the URL *http://www.telegraph.co.uk*, the "uk" represents the United Kingdom. A listing of all country codes can be found on the [IANA Web site](#). IANA ([Internet Assigned Numbers Authority](#)) oversees the allocation of all TLD's.

The top-level domain infrastructure is limited to ".arpa" and is used exclusively for Internet-infrastructure purposes. The .arpa designation comes from the United States Department of Defense **A**dvanced **R**esearch **P**rojects Agency, the government agency which formulated the Internet.

## Formatting of Domain Names

Domain names must be at least two characters long and no more than 63 characters maximum, excluding the top level domain. The characters can include any combination of letters, numbers or hyphens. The first and last character cannot be a hyphen. Domain names are not case-sensitive. i.e. "washingtonpost.com" would be the same as "WashingtonPost.com."

## IP Addresses

In addition to the domain name, there is also another address for a Web site: the IP (**I**nternet **P**rotocol) number. This is the actual address computers use to connect to the site through the Internet. It is directly linked to the domain name and is regulated by the [Internet Corporation for Assigned Names and Numbers](#) (ICANN)

If you were going to visit the physical home office of the *Washington Post*, you would need to know its physical address. Yet the actual legal description for the property is a different number, similar to using an 800 vanity number. If you want to place a collect phone call, you can dial 1-800-CALL-ATT, which the telephone company's computer translates to 1-800-2255-288.

The domain name and the IP address act in the same way. Each computer connected to the Internet is assigned a unique number known as an IP address. Developed in the early 1970's, this number serves as the computer's Internet address. An IP address can be either [static \(permanent\) or dynamic \(temporary\)](#). Most home computers use a dynamic IP address while servers and many other computers use a static IP address. An IP address looks like this: 12.129.147.10. If you were to enter that number in the address bar of your Web browser, you would reach the Web site of the *Washington Post*.

When you enter "washingtonpost.com" into the address bar of your browser, the computer does a search of the domain name system (DNS), which is maintained by the Internet Corporation for Assigned Names and Numbers ([ICANN](#)). The domain name is then translated into the IP number and the computer connects with the Web site.

## Registering Domain Names

In order to use a domain name, it must be registered with a registry. ICANN maintains [a current directory of accredited registrars](#). The domain name is registered for a specified period of time. i.e. one year, up to a maximum of ten years, and is renewable on an ongoing basis. When you purchase a domain name, it only belongs to you for the specified time you stated, in this case, one year. As long as you continue to renew it in a timely fashion, it will belong to you. It is important to keep track of the renewal period because if the domain name is not renewed, it can be registered by anyone for their own use.

During the registration process you may be asked for information for different "contacts." i.e., technical, administrative. Your domain name record will be available to the public in what is called a "whois" database (a public database mandated by ICANN). The information is categorized under different areas in order for the proper contact information to be available in any given situation (technical difficulties, copyright infringement, etc.). The contact information can be the same for each position;

some registrars will have a check box to enable the duplication of the information in each section. As an example, here is the [whois record](#) for the *Washington Post*.

One caution about registering domain names: just because you register the name does not automatically mean that it's yours. Intellectual property law applies to domain names. For instance, you may not be able to register the domain name "macdonalds.com" just because your last name is MacDonald. Take [the case of Don Henley](#). His name is exactly like that of the rock musician from The Eagles. Mr. Henley wanted a Web site and so he registered the domain name "don-henley.com" and set one up. He even stated on his Web site that he was not the other Don Henley. The other Don Henley, it seems, had problems with it. There is a "donhenley.com" registered to the Henley from the Eagles. According to the [whois report](#), it was registered in 1999. It was [previously owned](#) by a "cybersquatter." The other domain, "don-henley.com," was [registered in 1997](#). To the best of my knowledge this situation is still unresolved.

## Domain Pointing

During the registration process you will be asked where you want the domain name to "point." This is the IP address of the server where your Web site will be located and there should be a primary and secondary server. You can obtain this information from your Web hosting company. There may also be a listing for other optional servers. The registrar may provide the IP addresses of at least two delegated name servers on their site. You can change this if you have your own. It can also be changed later if you change servers.

It should take 48-72 hours for your domain name to be set-up and available via the Web.

## Summary

A domain name is nothing more than an alias for the IP address of your Web site. It can also be an important tool in marketing your Web site. Usually your company name or some variation of it works best. Remember this is your Web address. Make it easy for your customers to find you.

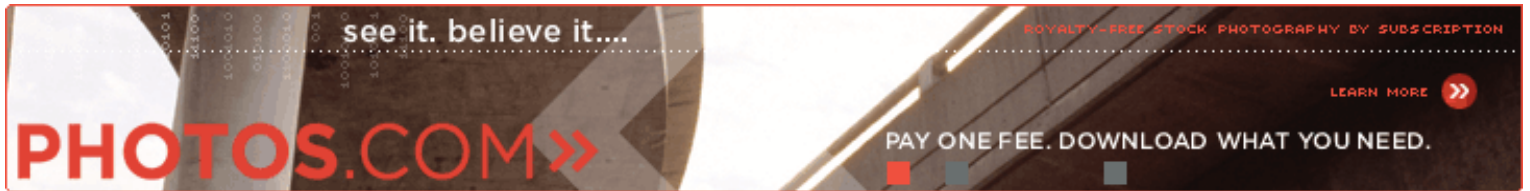
## Further Information

- [Country Codes](#)
- [Country Codes](#) A full-blown program [Freeware]
- [Country Codes](#) A small utility which can either give you the abbreviation for a country name or determine a country name from a two-letter abbreviation. [Freeware]
- [Internet Protocol](#)
- [Whois Source](#) (Domain name search lookup)
- [DNS Gateways](#)
- [WebDeveloper.com Domain Forum](#)
- [The List of Web Hosts](#)
- [The Essential Guide to Selecting a Domain Name](#)
- [How to Transfer Domain Ownership](#)
- [Preventing "Para-Sites" is Cheap and Easy](#) An excellent article about the perils of letting your domain name expire.
- [The Domain Name System](#)
- [ICANN Glossary](#)

## Organizations

- [ICANN](#)
- [ICANNWatch](#)
- [IANA](#)

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