Domain Name Servers: The Basics

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Technically, domain names aren't necessary to access a website. Â This is because with or without them, all websites can be accessed by their corresponding IP address. Â What is an IP address? Â It is a 32-bit numerical identifier that indicates what machine a website is on. Â The only problem is that for a human these numbers, (which come in a series of 4 octets), can be extremely hard to remember. Â This is why domain names were created. Â With a domain name a person can access a website through a word or phrase, which offers much more convenience than decimated octets. Â In order for domain names to work, they must use domain name servers, (also known as DNS). Â These are special computers that store data pertaining to domain names and the IP addresses they point to. Â Â It does this through a process known as reverse mapping. Â What happens is after a domain name is entered, the domain name server will look up its corresponding IP address in a directory service. Â It will also correspond with other domain name services to see if they have 'knowledge' of the IP address. Â This process is known as a distributed database, since no 'official' entity is responsible for updating information on other domain name servers.

How can a computer be turned into a domain name server? Â It has to run DNS software. Â The most common DNS software is BIND, (which stands for Berkeley Internet Name Domain). Â This, (along with other types of DNS software), works in a hierarchal fashion. Â The beginning of the hierarchy contains the character ''. Â It is called the system's root. Â Underneath the root there are the domain extension such as .com, .org, .net or .biz. Â

A domain name server must also have client computers to help conduct its operation. Â These client computers are called nameservers and resolvers. Â Nameservers are responsible for locating a domain name's IP address. Â The resolvers, on the other hand, stores a list of all other nameservers on the Internet. Â This list is used to help contact these nameservers should a domain name's IP address not be stored in the initial domain name server.

Should a web hosting company bother in investing in a domain name server? Â It depends on how large their operation is. Â Smaller-scale web hosting companies probably won't get much from such an investment. Â However, if a company wants to attain the type of status that sites like Godaddy.com have attained, it may want to consider spending the money. Â Companies can get domain name servers from enterprises that sell regular servers. Â

In conclusion, the domain name server can be considered the heart of domain name functioning. Â Without them there would be no way a domain name would be associated with an IP address, which is what is really responsible for identifying computers on a network. Â This does not mean it's essential for a web hosting company to invest in one, especially since there are so many cheap domain name services they could use instead. Â Yet, if they do get a domain name server, they would have the ability to sell web hosting as well as domain names to their customers.