Domain Names & Web Hosting

Webpage Design

What are domain names?

- The Domain Name System (DNS) serves as the "phone book" for the Internet by translating human-friendly computer hostnames into IP addresses. For example, *www.websitearchitecture.co.uk* translates to 79.170.44.39[1].

- Databases of domain names are stored on a distributed network of domain name servers and these databases are queried by web clients, giving domain names and receiving IP addresses in return.

- Each domain has an "authoritative" DNS server and domain information is copied from the authoritative DNS server to all other servers in the network.

- When the details of a domain name are changed (maybe a new IP address), the change is made to the authoritative DNS server and then "propagated" or distributed to all other DNS servers.

- This propagation can take up to 72 hours but is usually much quicker than that.

1 http://en.wikipedia.org/wiki/Domain_Name_System

Nameservers

- In practice, domain names are usually associated with "nameservers" (or "DNS Hosts") rather than IP addresses and it is the nameservers that resolve to IP addresses.

- This enables multiple domains to be hosted at a single physical IP address.

- Each web server has a unique IP address, not each domain name.

Domain Name: websitearchitecture.co.uk
Name Server: ecowebhosting.co.uk
IP Address: 79.170.44.39

Why 2 Nameservers?

- The domain name system requires that for full functionality, each domain must be served by at least 2 nameservers.

Nameserver configuration for websitearchitecture.co.uk at UKReg

Introduction to DNS

Nameservers

Change your nameservers to use a different hosting company for your website and email. The domain name registration control will remain here in your Fasthosts account.

> - It may take up to 72 hours for changes to your nameservers to take effect. You should ensure that your website and email are set up with your new provider before changing your nameservers, to avoid any service disruption.
> - To host your email and website with Fasthosts you need use our nameservers.

Enter the nameservers provided by your new hosting company.
Do **not** enter IP addresses. e.g. 213.171.192.52

You'll need to enter at least 2 nameservers (maximum of 10).

1st nameserver	ns1.curiousfish.co.uk
	(e.g. ns1.livedns.co.uk)
2nd nameserver	ns2.curiousfish.co.uk
	(e.g. ns2.livedns.co.uk)

Add an additional nameserver

Registering Domain Names

- Most people will register their domain name with their web host in an "all-in-one" hosting solution.

- While this is the simplest solution for most people, it is not always the best way to do it.

- If you are dealing with a lot of domains, it's better to register them independently of your host – this makes it easier to change hosts if that should become necessary.

Where to Register?

- Choose one of the big registrars in the UK such as UKReg or 123-reg.

- Both companies offer hosting too but you don't have to use it.

- You can use your control panel to point your domain to any nameserver, meaning that they can be hosted anywhere.

Is my domain name available?

- Simply entering a domain into the address bar of your browser won't tell you if it is already registered because not all registered domains point to active websites.

- The only definitive way is to use the domain checkers at your chosen domain registry.

Domain search		Available	Registration / transfer
coursestuff.biz		✓ available	☑ 2 years - £19.98
coursestuff.info		✓ available	☑ 2 years - £19.98
coursestuff.eu		✓ available	☑ 1 year - £0.97
coursestuff.com		✗ taken	☐ I own this - transfer it for £9.99
coursestuff.co.uk		✗ taken	☐ I own this - transfer it for FREE
coursestuff.uk.com		✓ available	☑ 2 years - £69.98
coursestuff.net		✓ available	☐ 2 years - £19.98
coursestuff.uk.net		✓ available	☐ 2 years - £69.98
coursestuff.org.uk		✓ available	☐ 2 years - £5.98
coursestuff.me.uk		✓ available	☐ 2 years - £5.98
coursestuff.org		✓ available	☐ 2 years - £19.98
coursestuff.tel	NEW!	✓ available	☐ 2 years - £19.98
coursestuff.mobi		✓ available	☐ 2 years - £19.98

add to basket

The result of a domain name search at 123-reg

What's in a name?

- Should your domain name be descriptive for SEO purposes or should it be catchy and easy to remember?
- There are different views on this and ideally it will be both SEO friendly and catchy, however, most useful domains are already registered.
- There are many examples of successful websites that use catchy names rather than descriptive ones (alistapart, six revisions etc.)
- Clearly, domain names are not as important as good content for SEO and perhaps a memorable name is better – after all, domain names are for people and not for computers.

Which TLD?

- TLD stands for Top Level Domain and refers to the bit at the end of the domain name (.com or .net).

- Your choice of TLD will be determined by the nature and geographic context of your site and perhaps the availability of the name.

- If your site is for UK use only, then a .co.uk domain might be best. If it's an international, non-profit site, .net might be best.

- If you have a brand name you need to protect, you may decide to register many TLDs.

Brand Protection

All the domains highlighted point to a single site at cadtutor.net

How long to register for?

- You can register domains on a yearly basis and most registry companies will renew automatically each year.

- Sometimes, the minimum registration period for new domains is 2 years.

- Google likes domains that are registered for a long time – they are given greater weight in search rankings.

- If you are confident that your site is going to be around for a while, you can register for up to 10 years.

| 🌐 **Domain registration** | cadtutor.net | Expires 05-Nov-2015 |

Who Owns That Domain?

- There are a number of ways to find out who owns a domain but they all use the WHOIS system to "lookup" domains.

- Services such as DomainTools can give you lots of information about domains, including their owner.

Who Owns That Domain?

Who Controls Domain Naming?

- International domains (.com, .net, .org...) are controlled and maintained by ICANN, the Internet Corporation for Assigned Names and Numbers.

- UK domains (.co.uk, .org.uk...) are controlled and maintained by Nominet.

- They say, "*We maintain the register of .uk domain names. We run the technology which locates a computer on the Internet hosting the web site or email system you're looking for when you type in a web address or send an email to an address that ends in .uk.*"

- There are similar organisations for other geographic areas.

- These organisations will rule on any disputes over names.

Wikipedia: ICANN, Nominet

nominet®

ICANN

What do Domain Names Cost?

- Domain name costs are a combination of 3 components:
1. The registration fee to ICANN/Nominet
2. The service charge by the registration service provider (UKReg, 123-reg etc.)
3. VAT (Value Added Tax)
- Typically, advertised prices do not include VAT and sometimes the registration fee is also omitted.
- This makes direct comparisons difficult. However, expect to pay around £5 per year for UK domains and £10 per year for international domains.
- Other domains can cost considerably more (e.g. .TV domains cost over £30 per year).

What are sub-domains?

- Sub-domains are a way of dividing a site into a number of logical parts (e.g. http://news.netcraft.com).

- The sub-domain is defined on the host server and is not part of the DNS.

- However, Google prefers folder names to sub-domains. For SEO, http://netcraft.com/news is more effective than a sub-domain.

What are parked domains?

- Parked domains are those that are used as aliases for a main domain.

- For brand protection you may have registered mysite.co.uk and mysite.com.

- Where mysite.com is the main site, mysite.co.uk can be parked on top of it.

- Both domain names will point to the same site; the .co.uk domain is an alias of the .com domain.

Web Hosting

Websites are hosted in large data centres. They are home to thousands of websites.

Each rack within the data centre holds a number of blade servers.

What types of hosting?

1. Web Hosting, often referred to as Shared Hosting.
2. Reseller Hosting.
3. Virtual Servers, often referred to as Virtual Private Servers or VPS Hosting.
4. Dedicated Servers.

Some hosts specialise in one particular type of hosting, while others, like Fasthosts provide a range of services.

What types of hosting?

- Typically, a web host will offer 4 different levels of hosting:

- Shared Hosting – the cheapest and most basic. Used to host a single website on a server that is shared with 100s or even 1000s of other websites.

- Reseller Hosting – provides the ability to host multiple domains/websites. Hosting services may be resold to other parties (good for web designers who want to offer an all-in-one design and hosting service). Reseller accounts will share a server with other reseller accounts.

What types of hosting?

- VPS Hosting – similar to reseller hosting except that the account does not use a shared server. Instead, a *Virtual Private Server* is used. This has guaranteed resources so performance is not affected by other accounts on the same server.

- Dedicated Server Hosting - one account has sole occupancy of a physical server. Great flexibility and power but most expensive. In most cases, the server is rented from the hosting company but some hosts offer a *colocation* service where an owned server can be installed in the data centre.

What does hosting cost?

- Cost will vary depending on hardware and software resources and level of service but typically:

- Shared hosting – around £5 per month.

- Reseller hosting – around £15 per month.

- VPS hosting – around £50 per month.

- Dedicated hosting – from around £100 per month but can be much more.

Windows or Linux?

- Some hosts offer the choice of Windows or Linux hosting.

- While it may seem sensible to stick with an operating system that you are familiar with, it's often not the best choice.

- Windows web hosting is always more expensive than Linux because Linux servers use open source software.

- For this reason alone, Linux is a better choice but there are other factors to consider...
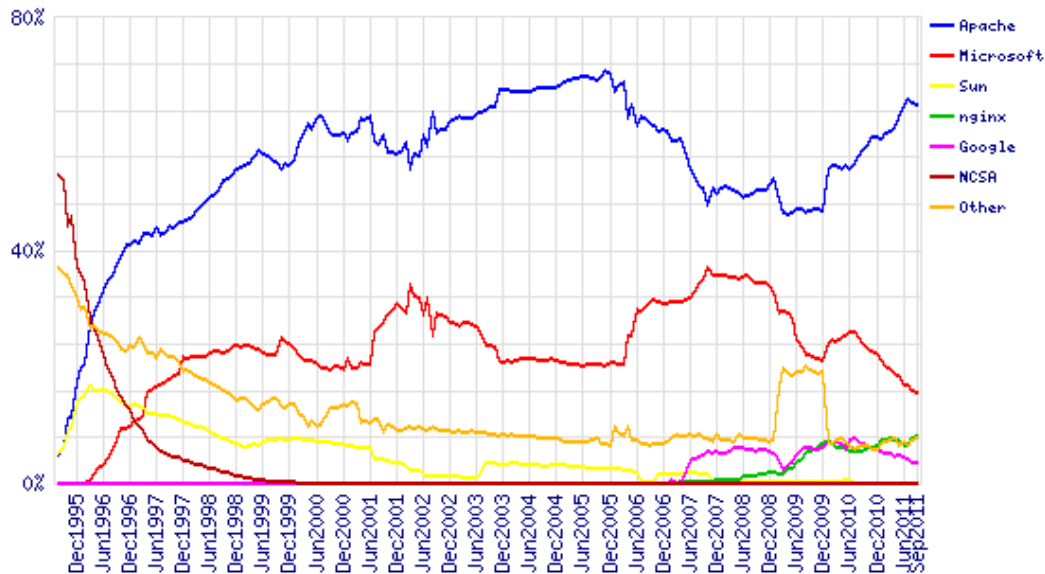
What is LAMP?

- LAMP is the short-hand name of a typical hosting platform that includes Linux, Apache, MySQL and PHP.
- All those 4 software elements are open source and by far the largest number of websites in the world use this platform.
- Linux is the type of operating system (often CentOS or Red Hat).
- Apache is the web server software.
- MySQL is a database and PHP a scripting language.

How popular is LAMP?

Market Share for Top Servers Across All Domains
August 1995 - September 2011

Developer	August 2011	Percent	September 2011	Percent	Change
Apache	301,771,518	65.18%	315,605,335	65.05%	-0.13
Microsoft	73,415,916	15.86%	76,323,018	15.73%	-0.13
nginx	35,533,439	7.67%	38,970,683	8.03%	0.36
Google	17,061,003	3.68%	17,265,308	3.56%	-0.13

What sort of web host to use?

- In general, there are two types of web host; the large corporate hosts (e.g. [Fasthosts](#)) and the small independent hosts (e.g. [Eco Web Hosting](#)).
- Your choice will depend on what type of relationship you prefer with your host and what level of service you need.
- Typically, you'll get a better level of service from small independent hosts but the cost may be higher.
- Larger hosts can cut costs because of volume but support and flexibility may be less good.
- Web hosts in the USA are often cheaper but you may not be able to contact them at a time that's convenient for you.

How do I know if a host is any good?

- The short answer is that you don't and you're unlikely to find out until things go wrong.

- There are sites that claim to rate web hosts but they are often sponsored by web hosts.

- Word of mouth is the best recommendation. Talk to others who have used hosting companies. Search online forums for advice and recommendations.

What sort of account do I need?

- Look for a host that offers a range of hosting options.

- Buy an account that gives you a little more that your minimum requirements.

- As your website grows, your host will be more than happy to upgrade your account to the next level.

What to look out for

- Bandwidth – limited or unlimited (fair use policy).
- Databases – limited or unlimited
- Server statistics – available or not
- Web space – do you need that much?
- Mailboxes – how many
- Security – backup and anti-virus
- Any specific requirements your website may have.

Trends in web hosting – "Eco"

- Some hosts are now offering carbon neutral hosting options.

- This takes various forms but some hosts pledge to plant trees to offset their consumption of CO_2.

Trends in web hosting – "Cloud"

- Cloud hosting options are becoming popular.
- Essentially, the "cloud" is a cluster of servers that provide scalable resources for any website and site owners just pay for what they use.
- This is referred to as hosting "as a service".
- It may well become the preferred model in the future because users are not tied in to a specific set of resources and it may be cheaper for larger sites, particularly those with fluctuating traffic.

www.theend.com