Domains, DNS & Hosting

Today's to-do list
We will look at DNS and what all the records actually do, domain names and the various types and some hosting platforms. We also look at transfers and SSL.

Learning objectives:
By the end of this session, you will
Understand what the various DNS records do.
Understand the compliance regulations.
Know what platforms to use.

Domains
Ideally, we want to have our domain in place before doing any of the other stuff, we can't set up DNS or build a site without one.

What are they?
On a basic level, the domain name is there to make navigation to the right address more memorable. All a domain really does is represent the IP address of the server in an easy-to-remember, easy-to-use format. It's like your street address at home. You have a street name and a postcode; you wouldn't give Amazon the latitude and longitude to post your order. It's the same concept. Domains are unique and whilst you can get them similar with different extensions on them, no two are the same.

Domain names can help us accomplish three things:

- Create a memorable first impression: A domain name is potentially the first connection a customer will make with your site and it's maybe the first interaction with your brand. A unique or memorable domain name is more likely to stick in their head.
- Define your brand: A domain name can be used like a strapline for your brand, instantly purveying who you are and what you do.
- Optimise SEO: Search engine optimisation utilises keywords to help your rankings. Exact match domains are not essential, but it will help to use one that is a close match.

There are several components that make up a web address and once you understand how the structure works, it makes it easier to understand the function and how to choose the right one.

In our list of components, we have URL, Transfer Protocol, TLD, SLD and then our folders and directories where we store our site files and content.

URL – Uniform Resource Locator – the entire string of letters and symbols in the address
Transfer Protocol – http or https – this is all about how the data is transferred to your browser and we will look at SSL and the importance of https a little later on.

TLD's

Top Level Domains. If you go on to any registrar site to find your perfect domain, you will be endlessly scrolling through a list of extension options. Back in 1985, The Internet Assigned Numbers Authority (IANA) came up with six of what we now refer to as Top Level Domains. These were the basis of all the extensions to follow and represent the highest level in the hierarchy that is in place.

These six TLDs are:

.com: or commercial. It was the first top-level domain in common use. It's the most popular and commonly used extension for businesses, websites, and email.

.net: or network. Originally created for institutes that worked in network technologies such as an internet service provider or an infrastructure company.

.edu: or education. Made for education institutions. Although it was intended for universities everywhere, a lot of centres use it in conjunction with their country-level domain, which we will look at next.

.org: or organisation. It was created for non-profit organisations although like the others the use was never enforced, and it's widely used by businesses of all types.

.mil: or military, created expressly for U.S. military branches. Unlike the other different types of top-level domains, this restriction is still upheld. It is very unlikely that you will ever come across one in your list of options.

.gov: or government, .gov, like .mil, is restricted for governmental agencies and personnel use. These days .gov is used by governmental agencies, programs, cities, and counties. It's another one you won't come across in your list.

Next in our hierarchy, and still part of the top level, we have the Country Code or ccTLD. These were created to distinguish between countries and locations like .uk for Britain or .au for Australia. Although you can register these types of domains outside of their country, depending on the registrar ideally, we want to be sticking with the country code and only using these for their intended purpose.

Then we get gTLD – generic top-level domains. These are all the extras that we get in our extensions list. There are ones for general purposes like .info, and ones that can only be used for specific purposes like .mobi.

It's important to make sure you choose the right extension for the domain, especially if you are registering for someone else. Don't be tempted to just pick the closest match because the .co.uk and .com are already taken. There can be compliance and monetary implications. Some of the newer gTLDs available are extortionately expensive, like our example here. This is when we need to look at different options for wording!

SLD

The next level of the structure is the Second-level domain. These are often the business name or the product, this is the bit that is all about you. It's the bit before the .com or .co.uk nike.com, google.com etc.

Third-level domains

These are usually referred to as subdomains. They allow you to create additional sites or addresses all within the main address. For example, the company Bamber Sewing Machines have a domain name bambersew.com they use it for their main website and their emails. They have two additional websites that they want to keep under the umbrella of their domain but as they are completely different sites they need to point to different places. So, we have blog.bambersew.com and paybyfinance.bambersew.com which allow them to have different sites in different places.

Buying a domain name is fairly straightforward, a lot of the time the hardest part is getting the one you want. There are lots of sites you can buy your domain from. Before you go ahead and buy, think about what platform you are going to build your site in. If you are going to use Ionos or GoDaddy's own site builders, then it will be easier to buy your domain through them. If you are going to use WordPress or an off-the-shelf e-commerce site like Shopify, you want to use a registrar that has a nice easy system for pointing and forwarding domains. 123-Reg or GoDaddy are always a good solid choice and have an easy-to-follow system. Although you can register domains through the off the shelf platforms like Shopify, Wix and Squarespace, it's generally felt that keeping your domain and DNS separate is a better way to go. You have more control and flexibility. We can move providers and add records more easily too.

We are going to use GoDaddy as our example. They make it easy to choose a domain and give you options and ideas if the one you want is already registered. You want to make sure that you get a domain that includes your business name or the things you do. Think keywords. What are people going to type in to find you? Avoid mi-spellings, numbers and dashes. We want to make it as easy and as memorable as possible. Try to keep it concise. If your business name is Donna and David's Cupcake Emporium think about how that is going to look as a domain. Donnaanddavidscupcakeemporium.co.uk.

There is a lot going on there. Try and make it easy for people to remember and type. 80% of online shopping is done on a mobile, try typing all that lot in and getting it right the first time. How can we shorten it or make it easier to remember? ddcupcakes.co.uk maybe?

When you register your domain, you need to remember that this is a legally binding contract and there is a certain amount of compliance to it. ICANN and Nominet are the two governing bodies for domain registration, and they dictate what information you need to supply.

You will need to provide your contact info - full name, payment details, billing address, physical address, phone number, and email address. Different extensions will require different information and you may often be asked for agent details (the person dealing with

the registration) as well as the registrant (the person the domain is being registered for). If you are a designer or agency these two contacts will be different.

It is also worth noting that legally the Registrant's Name should be the company the domain is for. Once the domain is registered the Agent details can be changed but the Registrant is permanent. It was something that was brought in to stop agencies holding domains to 'ransom' buying them in their own name and refusing to release them if the customer ever wanted to move away.

Other things to be aware of, every couple of years Nominet will ask you to verify your registration details, if you don't acknowledge the request and check and approve the details your domain will be suspended which means your site and email won't work. My key piece of advice here from 25 years of dealing with clients and domain names – make sure if you are registering for a client, that you are the technical contact or the agent. I've never had a client yet that doesn't ignore the verification email and then complains that the website has stopped working. If you want something done – do it yourself!

When we are at the stage of buying our domain, the standard .com and co.uk are usually the cheapest, remember that the majority of people will type .co.uk or .com if they are looking for a site so try and get these first. If someone already has the .co.uk or .com registered do you need to rethink? We don't want to be spending £35 a year on a .co that someone might type in wrong and end up on a competitor's site.

When you have found the one you want, you can register it in increments of 1 to 10 years.

Task one

Scenario

Our new client wants to create a website for their latest kitchen appliance the "Stir Well". It's going to be an all-singing, all-dancing food mixer that they are promoting to the Great British Bake-off generation.

We will be creating landing pages for ad campaigns and sub-sections for technical and recipe sections. They haven't picked a domain yet, so I said we would give them some ideas. There's a budget of about £100 for whatever domains we need to buy.

Using the GoDaddy domain name search create a list of domain name ideas that would be suitable for this product. Think about appropriate extensions, subdomains, and keep track of the values to make sure you stay on budget. Screenshot your ideas and email them with your notes to dms4alltrainers@gmail.com
Time for this task 20 minutes

DNS

DNS stands for Domain Name System, it turns **domain names** into **IP addresses**, which browsers use to load internet pages. Every device connected to the internet has its own IP address, which in turn is used by other devices to locate that device.

Think of it as coordinates, if you look up a place on Google Maps you will be able to get a longitude and latitude for the location. DNS is the website version. The browser uses the IP address that's allocated to it to send you to the destination you want to get to. It's the reverse version of the domain name, we swapped the numbers for words with our domain, and DNS swaps it back for our devices.

If you are doing everything in the same place, buying your domain, hosting and building your site all out of the same platform like GoDaddy for example, then the DNS will all be set to the platform's defaults, and you won't need to touch anything. If you are like me and the majority of web designers that like to make their lives complicated and have separate platforms for their domains, mail and hosting then you will need to understand how to add records and point things in the right place. At some point, you will come across a client that is transferring bits of their services over to you, they register their own domain, they have Office 365 set up with their IT company and they just want you to host their website. You need to know which bits to change, change the wrong setting and the whole lot stops working.

An understanding of DNS will also help if you want to be able to add verification codes and tracking links from social media sites and platforms like Google Analytics. As a verification method, you can add a TXT record rather than embed code into your website which can slow your site down.

We have two main options in terms of settings, and they are usually shown on two different screens. We have Nameservers and we have Advanced DNS.

Nameservers are the top-level setting. They store all the settings. If you are pointing everything to one place, then you can just change the Nameservers, and they will organise all the DNS settings for you.

In our first example, we have a domain registered in GoDaddy but our email and website are going to be hosted on SiteGround. We need to tell GoDaddy to send anyone looking for that website or email where to go. So, our Nameservers are set to ns1.siteground.net. That will point any search in the right direction and then all the other settings will be the default for that platform, so we don't need to change any others.

In our second example, we have a domain registered with GoDaddy but our email is supplied by our IT company and the website is going to be hosted on SiteGround. Our Nameservers are set to the default GoDaddy settings, that way we can change individual records at the root. The MX records go off to Microsoft and the A Record goes to Siteground.

Hang on, Hang on, easy tiger, MX Records, A Records? Wha?
If you log in to an Advanced DNS screen, you will get something like this. We have different types of settings that do different things and in the main, you won't need to mess with most of them.

MX Record – Mail Exchanger – these manage your email records and point to your mail server or provider.

A Record – Specific IP records that point to your web server to show your website.

CNAME Record - Canonical Name records, these point a domain or subdomain to another domain. Mainly used for forwarding where we have multiple domains, but we want them all to point to the same website.

TXT – information-based records that you would add for verification and tracking on sites like Facebook and Google. They are usually long strings of random letters and numbers.

SPF Record – a type of TXT record used to help the deliverability of email.

As with anything tech, technology advances and platforms bring in new rules that create their own issues. Like Google's latest security protocols that means if you aren't a Gmail account sending to another Gmail account you are going to need an SPF record in your DNS settings to verify you are trustworthy or your emails will just get blocked and bounced back.

There are new records being created to try and help avoid some of these problems. One of the latest ones is a DMARC record which is another type of TXT record that contains instructions for mail servers for emails failing authentication and whether they should be rejected or quarantined.

Each hosting platform will have full instructions on how to change the records so always look them up first before you start.

In this example, we can see the A Record settings which point to a different location. We can tell that the website is hosted somewhere other than here because the IP addresses are completely different. The top set of IPs are all 213.171 whereas the actual site IP is 77.68.64.8. You can also see here that we have the web server IP in twice. We have it here as www and here as absolute. Depending on the host you may have it in a third time as @ too.

This is because technically with and without the www can be seen as two different places and we need to make sure that everything points to the same place.

In this example, we can see the CName Records. This is because various parts of the website go off to third-party systems. There is a booking system for the client to take appointment bookings through so the plugin that is installed in the site directs those pages off to a different place without disturbing the rest of the site.

We can also see the Autodiscover record here for the Office 365 Email accounts that are also run externally by a different provider. This works with the MX record that is set here to tell the mail server where to look for the mail.

This example shows TXT records for a domain. You can see we just have two, the top one is a Google Verification for connecting up to Search Console and the second one is an SPF record so stop Gmail rejecting emails.

You might notice in some of the examples that we have a little setting that says TTL and has a time against it. TTL is short for Time To Live. It's kind of a best-before-date for DNS records. It tells the server how long each record is valid for and as a result how long it takes to update. The longer the TTL the longer it takes to update the record by everyone, so if you are updating an A Record for example a TTL of 24 hours means it could take up to a day before you can see the site. A TTL of 1 hour means it will have been updated and the new site will be accessible in an hour.

Transferring Domains

Websites move around and so do domains. So it's important to know what you need to do when the situation occurs. As you would expect the different extensions work in slightly different ways. Every provider will have a full set of details of how to transfer in or out but in a nutshell.

.co.uk

These are probably the easiest to transfer, they certainly have the lowest number of steps in the process. To transfer a domain you will need to change the IPS tag. An IPS tag is your Internet Service Provider Tag. It's the name of the provider/registrar that the domain is moving to. Each registrar has their own unique tag so you will need to look this up to make sure it's correct.

Things to remember: Once the IPS Tag is changed you will lose control of that domain, it will drop from your account and you won't be able to make changes. If you a moving an existing website, it is always advisable to change the DNS first and change the A Record to the server it is going to be shown on then you will have less downtime between the tag being changed at one end and picked up at the other.

When the domain arrives at its new location, it should keep all the DNS settings from the previous provider so make sure that you check and update them if needed.

.com

These have a few more steps to transfer them. Whoever is transferring the domain out will need to unlock the domain and get the Auth Code. The person that is receiving will need to request the domain in their account and then paste in the Auth Code.

You may need to approve the transfer if it is leaving your account and some extensions will require extra information and steps. Transfers typically take 5-7 days to complete which is why it's advisable to change the A Record so you can access the site and be either working on it or it can be live during that period. You can't transfer a domain within 60 days of a new registration, it will be locked for the first couple of months and some providers don't let you transfer them if there are only a few weeks left on the registration period.

Task two

Scenario

Our client wants to move one of their websites over to us to host. They are going to carry on managing the domain themselves, so we just need to log in and update some records. Their

emails are going to stay with their IT provider. I don't know which you need so I have just got them to send me a list of everything.

Using the list of settings supplied, organise them into the appropriate records in your workbook. Make sure you pay attention to the brief, not all the settings are going to be changed. Anything you think will be left alone and *not* edited mark it as NO CHANGE.
Time for this activity: 15 mins

SSL
We need to protect our site (and its data) from hackers, bugs and other online threats. You will have seen the little padlock on the left-hand side of the browser bar, showing whether the site is secure or not. If it has a little padlock and is secure it has an SSL certificate.
It makes the URL https:// not http://

So, what is it?
An SSL Certificate - Secure Socket Layer (but no one calls it that) encrypts the data being exchanged. It shows us that the connection to the server is secure. Vitally important if we are putting in sensitive information like paying for products online.

It used to be just an extra that you should have, then it was something you only needed if you were buying online, but now it's essential. Most payment gateways won't run without HTTPS. Google doesn't like it either, SSL is part of Google's search ranking algorithm so although you can have a site without it, it won't rank well. Visitors might get a WARNING if they try to visit your site, and most will just leave if they feel insecure, so that's visitors lost.

Without SSL, your site visitors and customers are at higher risk of having their data compromised. Your site security is also at risk without the encryption that SSL provides. SSL protects websites from phishing scams, data breaches and other threats. Ultimately, it builds a secure environment for both you as the site owner and your visitors.

If data between a server and a web browser is sent as plain text, it can get exposed to malicious cyber-attacks. An SSL certificate establishes a safe connection when this data is being transferred to ensure privacy.

Just a final word on hosting. There are loads of companies out there that provide hosting services. The prices and the quality can vary massively. Don't be tempted to go with the cheapest. They are often harder to use, don't offer as much functionality as you need and can be slow which will affect your search results and site performance. I once created a great little site for a bookkeeper, she wanted to do her own hosting because she had found a platform that did it for 50p per month. Unfortunately, when we put the site live, the service was so basic that it wouldn't even allow a clickable link on the page. None of her animations worked, nor did the forms or even a basic email link.

There are always some good offers with the bigger suppliers. Hostinger always has good introductory offers. Siteground is a dedicated WordPress platform with its own plugin 'Central' that walks you through all the site setups if you are just starting out and want a bit of support until you find your way. Ionos is easy to use and always has some great deals.

If you are going to be managing your hosting yourself, then you want to make sure you pick a platform that has a good technical and customer service set-up, good loading speeds and an easy-to-work control panel.

[If there is time send them off to investigate some hosting platforms. What packages are available and what offers are on and what would be suitable for them? Ask them to take screenshots of what they find and send them to us using the uploader or Gmail.]

Don't forget

Make sure you complete and submit your workbooks. Once you do you will get a copy of your completed workbook and links to download a copy of today's notes and slides.
Today's session page in your learner dashboard has a useful links document that will cover all the tools, resources and articles we have discussed in the session and some useful guides and articles to take you further.
Make sure you revisit your FABs and set yourself some goals specific to today's session.

Extra help

If you need any help with anything from today's session, feel free to message me in the WhatsApp group. If you have any other issues or problems related to the course or the tools speak to Andrew and Irfana, they are here to help you.