

Domain name servers are an important part of the DNS system, handling queries regarding domain names so that internet users can locate websites. When someone types a domain name into their browser, their computer contacts the domain's nameservers, which send back the corresponding IP address in response.

This same process works for anything that functions in the DNS, including:

- Web browsers
- Email
- Chat
- Connected appliances, and more

Your DNS server handles queries to your domain. Once your site is set up for business, and you're attracting visitors, you want to make sure it's available to them. Most domain registrars include a free DNS, which covers a host of basic functions. Paid premium services offer guarantees regarding site security and uptime.

Domain name servers might not be something you've considered before, but any site owner should be informed on how these servers affect their website. Your choice of name server can greatly affect your website performance and most importantly, your visitors' user experience.

This article covers everything you need to know regarding how the DNS system impacts your site and if a premium approach is appropriate for your needs. We answer the fundamental questions, including whether websites benefit from paying for a service that's available for free.

Read on to assess if, like many powerful websites, you could also benefit from a paid DNS service.

What is a Domain Name Server

You might be wondering what DNS is, let alone why you should care about the ins and outs of it. In short, the domain name system, more commonly known as DNS, translates human-readable information (the domain name, website and any other internet resources) into the addressing protocols (IP addresses) used by computers to navigate and locate information online.

It's far easier to remember words and phrases, such as Netflix and Google, over *84.21.044.1*, for example. This sounds complex, but the basics of DNS queries are actually quite straightforward.

Each website has a corresponding nameserver. To view a specific website, you must connect to its nameserver to retrieve its IP address and any related files. For example, when someone types Techradar.com into their browser bar, their browser will seek to translate the domain name Techradar to an IP address. This process involves asking (or querying) the DNS to locate Techradar's domain nameserver. If Techradar's nameserver is not accessible, the visitor's browser won't be able to find the IP address to display the website.

In the case that you have a domain without a domain nameserver, when people search for your site they will get a 'site can't be reached' error because there is no host to your website.

Setting up DNS

Nameservers point your domain to whoever is in control of its DNS settings. This is usually the same company that you registered the domain name with. For example, a domain name registrar such as Namecheap can also host the website and take care of the domain's nameservers. If preferred, it's entirely possible for your domain to can take hosting from one company and point it's nameservers to another.

Most DNS providers assign a minimum of two DNS servers per domain. Once a domain is pointed to the nameservers, the website will be live within a matter of hours. For more information about your domain's name pointing and nameservers, it's recommended that you contact your hosting provider.

How Nameservers Affect Domains

Domain name servers are important for online businesses because they affect speed, redundancy, and security:

- **Speed of Queries** - Slow websites are irritating to web users, and slow site speed can affect search engine rankings (DNS makes up a massive part of load times).
- **Redundancy** - This relates to uptime, meaning how readily your website is available to visitors. Using a redundant system means that if one DNS fails, another is available.
- **Security** - A secure DNS greatly reduces the severity of attacks on your resources.

The degree of speed, redundancy, and security guaranteed by a nameserver depends on the service level agreement (SLA) offered. The SLA outlines the levels of service that can be expected between client and provider.

Let's take a closer look at the typical services offered by a domain nameserver:



Speed

Speed plays a huge role when it comes to choosing the right DNS provider. Fast DNS hosting providers offer a minimal delay between the DNS lookup and time to first byte, indicating how responsive a web server is.

Optimal DNS hosting is when a provider has multiple servers in various geographic locations so that they are more likely to be closer to a visitor. When DNS queries travel a shorter distance lookup times and web address resolution speeds are faster.

Performance is a huge factor when running a website. For this reason, the best DNS providers invest significant time and go to great expense to set up global networks of servers. This setup allows quicker response to DNS queries regardless of an Internet user's location.



Redundancy

When people browse the internet and open a URL only to encounter a 'website not found' error, many users will naturally assume that the site no longer exists. However, 30% of the time, the problem with accessing the site is related to a DNS issue where the nameserver has failed. If you are running a business, you should avoid a situation where you have a single point of failure.

This is where secondary nameservers are helpful. DNS hosting providers let you configure secondary nameservers. It's just like storing a backup of your computer files on an external hard drive on the cloud. If your computer is damaged along with your files, you can quickly get them back.

Similarly, it can also be beneficial to use multiple DNS providers. The most common method is to configure separate providers for your primary and secondary DNS. In this instance if your primary server fails, your computer will immediately query the secondary server until the correct IP address is returned. If your primary DNS provider fails and your website doesn't have a secondary DNS, your website will be unavailable.



Security

The levels of security included with DNS servers vary between providers. It's important to be aware of the risks connected with insecure nameservers before choosing. An insecure DNS makes your website vulnerable to attack from hackers, specifically DDoS attacks.

Distributed Denial of Service (DDoS), attacks occur frequently, targeting websites all over the world. A successful DDoS attack on your website means that you will be unavailable for business online, or, even worse, visitors could be pointed to a malicious IP address where they may hand out information they otherwise wouldn't have.

Protecting your DNS is one way you can make it harder for hackers to launch an attack on your website. This is why having multiple DNS providers is essential.

Types of DNS Servers

Most, but not all, domain name registrars offer nameserver services when you register a new domain. Domain owners have the choice of which hosting they prefer. The specifications and limitations vary between the various types.



Self-hosting

DNS can be self-hosted by running DNS software on generic Internet hosting services.



Shared hosting

is when a number of hosting accounts are located on one server, with some sharing the same IP address. These types of plans have limited features and resources, and are not recommended for sites with high resource consumption.



Managed DNS

this is a service that organizations use to outsource DNS to a third-party provider for reasons of simplicity. Another company sets up and maintains their DNS servers.



Virtual Private Server (VPS)

Is where one server acts like a dedicated server. However, a physical server is partitioned into multiple servers, each with their own operating system. VPS users have more control over their nameservers. Each receives a specified share of the resources of the physical server, and are completely isolated from each other, meaning they do not affect each other if they experience problems. Webmasters implement VPS to cut the cost of a dedicated server.



Dedicated DNS

Dedicated hosting providers tend to be the most powerful option, they are faster and more reliable because they are designed for hosting DNS query traffic and nothing else.



Free DNS

Covers the basic DNS requirements for most websites.



Premium DNS

Includes premium features to keep your site secure with guaranteed uptime, better support and more.

Free DNS

If you've got a tiny personal website for something like holiday photos to share with friends and family, and you don't expect it to grow and don't care about uptime, free hosting is the right choice for you. There's no shortage of free DNS hosting providers to choose from, and each has a variety of different features.

Some come equipped with firewall policies, filtering, and rate limiting and blocking to help prevent DDoS attacks. The majority of free services include facilities to manage the records of your domain zone and typically offer Dynamic DNS.

If yours is a casual site or simply something you are doing for fun and it's not the end of the world if the site is down for a couple of days, free DNS services should work for you. On the other hand, if it's a commercial site that is driving your whole business, then you should choose a service that will safeguard your site with better support and uptime. These are the key differences between opting for free DNS and going for a premium service.

Premium DNS

Every commercial website should use premium DNS to guarantee they are both safe and available to their customers. There are distinct advantages of paying for a DNS: improved site availability, faster performance, and minimal security gaps.

Premium DNS involves pointing your domain to premium nameservers and setting up your records on these nameservers.

These are the typical features you should expect from premium DNS services:

Many premium DNS service providers offer **Dynamic DNS** (DDNS). DDNS automatically maps internet domain names to IP addresses, allowing you to access your home computer from anywhere in the world. Unlike standard DNS, which only works with static DNS, DDNS is designed to work with changing IP addresses, which is a good fit for home networks.

Management interface - A well-configured DNS dashboard lets you manage and make updates to your DNS easily online, instead of going through customer services to redirect your DNS using different record types, for example.

Reporting - Advanced reporting is available with premium services, including analytics that report the source country and record type for queried hostnames.

Administrative Control - Admin controls let you delegate administrator privileges with ease.

Two-way authentication - Protect your domain with two-factor login authentication.

DNS templates - Save time by applying DNS templates to the domain names in your Premium DNS Dashboard. This is useful if you are managing multiple websites.

Fast Performance - Redundancy - Guaranteed service level agreement for DNS resolution between 99-100% with paid DNS plans.

Queries per month - Premium DNS services guarantee domain resolution on millions of queries per month.

Close security gaps - Hackers can use your IP address to point to a malicious IP address to trick users into divulging important information and sometimes even money. Premium DNS hosting provides an **additional layer of security** for your website and thus additional protection from hackers.

DNSSEC support - Increase your domain name security with managed DNSSEC. Premium nameservers provide support and security for top level domains to protect them from attacks. Hackers have been known to infiltrate the DNS lookup process, directing users to deceptive sites for password and account collection, for example. DNSSEC is employed to protect domains from any vulnerabilities in the DNS system.

First-class **customer service**. DNS can get a bit tricky, so having professional support as and when you need it is invaluable to a smooth running website.

It is **easy to use**. Experts and beginners will find the interface for managing their nameservers simple to navigate.

Paid DNS services offer advanced features to manage your DNS, combined with a higher level of support and faster loading times. If you want super-fast IP address resolution, you need a premium nameserver.

The fact of the matter is, extremely quick websites leave a good impression. People are impatient online. If you can shave a few milliseconds off the time it takes for people to discover your site via DNS, you might see some marginal gains.

Fast speeds aren't only to impress your site visitors; you'll want to impress Google with your site's loading and availability. If your site loading times aren't up to scratch, your search engine rankings and subsequent click rates could take a hit (DNS capabilities make up a huge part of site load times).

Paid DNS Considerations

The argument goes that if your site is relatively small and you don't expect it to grow, there's no reason to use a premium DNS service these days. Several of the high-end providers will offer a free tier anyway.

Consider this; the value of going premium can be likened to the value of the site/domain you are running. Even if you don't have a high-traffic website, you've got a website. It's likely that you want to make sure it's safe and always online.

Most site owners think premium is only necessary for large corporations that need the performance and security enhancement premium services offer. Because hackers target everyone these days, it's worth considering a paid DNS that fits your budget to avoid the hassle.

Another huge benefit of premium nameserver services is the scope for configuration. You might want more control over your nameserver setup and don't want to have to email support because you don't have full access to your nameservers. Premium allows you to make basic and advanced configurations yourself, with superior assistance, if required.

How to Choose a Premium DNS Provider

All well-known premium DNS service providers will offer comprehensive solutions to your DNS needs. However, we've noticed some areas they all fall short on. Some so-called premium service providers offer little by way of premium features aside from reporting, which doesn't make a fully premium service.

We can't speak for every DNS provider but can guarantee that Namecheap offers a complete array of premium features. We're best known for domain registration services, but we also offer free and **premium DNS hosting**, featuring Dynamic DNS to use as your primary DNS service or as a backup.

In 2016, we introduced a 100% uptime service that guarantee websites are available 100% of the time.

Multiple DNS Providers

It's entirely possible to have multiple DNS providers to eliminate the possibility of a single point of failure. This is commonplace with powerful websites because if one server is taken down by a malicious attack, they can always resort to the secondary server. This saves face in an online service community based on security and reliability.

How Much Does Paid DNS Cost?

The overall cost of DNS services depends on a few factors: the size of your website; resources required; the type of traffic the hosting would respond to; which security measures are needed; and so on. The good news is, premium DNS is generally very affordable, with packages ranging from a few dollars to around \$160 per year.

The price point my services offers with a Premium DNS makes a great argument for even the smallest of businesses to deploy this level of service. For a few dollars a year, a **Premium DNS** comes at a price any small business or individuals can afford, at markedly better value than the rest of the competition.

Switching to Premium DNS

You can always try free DNS hosting and then decide whether you need premium. If you do decide that premium DNS is the best option for your domain, it takes only a few simple steps to switch your services from the unpaid version. Once you've decided your domain could benefit from premium servers, think about your future needs to assess which plans match up with your requirements.

Just make sure that you check the SLA and examine the specifications of each plan, as well as comparing the specs to the needs you anticipate for your domain. You want to make sure your bases are covered!

It's also entirely possible to use premium DNS from a third-party, as in, not your domain name host. To use premium DNS services from elsewhere, you need to re-point the domain to the required servers.

Churchfield Services is a DNS hosting consultant. We resell services offered by NameCheap and Ipower Web Hosting Services. We are a low cost middle-man contact and simple HTML-CSS web designer consultant/technician/IT.