



Your **Cloud** Experts

WHAT IS CLOUD HOSTING?

A deep dive into all things cloud



Cloud hosting is a process of hosting sites and applications on virtual servers that pull their resources from one or more physical servers. This is in contrast to traditional on-premise hosting, where sites and applications are hosted on one or more physical servers stored on site. In this article, we take a deep dive on all things cloud, answering your most commonly asked questions.



What is the cloud?

The term “the cloud” is a popular, yet vague, concept that is often thrown around. But what does it actually mean?

Over recent years, the cloud has become ever-present in our daily lives. If you draft documents in Google Docs, watch films on Netflix, use Siri or Alexa, or backup your phone photos online, you’re using the cloud.

Put simply, the cloud refers to any type of software or service that isn’t physically located on your device, but instead runs on the internet. There is a common misconception that the cloud is fully virtual and does not use physical hardware, but any cloud hosting platforms will be located on a physical server in a data centre. Any files that you save on cloud services, and any content you stream online, are actually stored on these servers, which you can access from anywhere.

How does cloud hosting work?

Before the cloud existed, traditional websites and applications were hosted on single servers or shared servers in a data centre or on-site (i.e. in your office). However, since the early 2000s, businesses have been slowly waking up to the many benefits of moving data into the cloud.

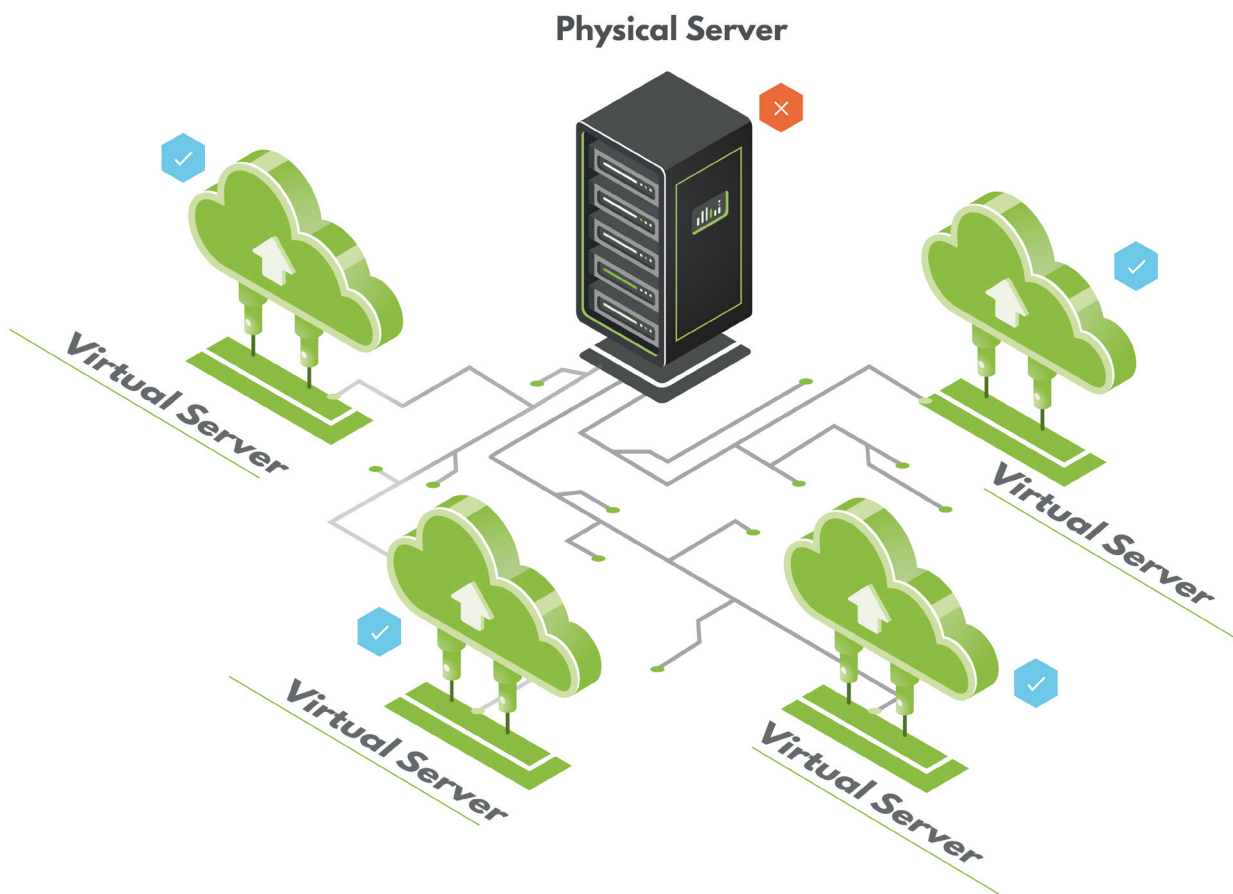
Instead of having your website, application or data on a single physical server, cloud hosting uses a ‘cluster’ of multiple virtual servers, also called virtual machines (VMs). A cloud hosting solution can vary in size, from a single VM on one physical server, to multiple VMs on interconnected physical servers in data centres worldwide.

In essence, cloud hosting is a network of virtual servers, storage and networking made available on-demand, with potentially endless processing power. Clouds can also be networked together and be hosted in data centres all over the world.

What is a hypervisor?

The separating of a physical server into multiple virtual servers is known as virtualisation, and uses software called a hypervisor.

A hypervisor is a type of lightweight operating system that is installed on the server to allow multiple VMs to run. Hypervisors make cloud-based applications available to users across a virtual environment while still allowing control over the infrastructure, applications and sensitive data.



Virtual machines are not physical objects; they only exist virtually. The network of virtual servers tap into an underlying network of physical infrastructure in data centres and are all connected and accessible via the internet.

What is a cloud service provider?

A cloud service provider is a company that offers cloud hosting services, usually in a utility model where you use the provider's infrastructure and pay for the resources you use.

A cloud service provider can offer many varieties of cloud hosting, including Private Cloud, Public Cloud, or Hybrid Cloud. Their hosting options may be unmanaged, where the customer rents access to the provider's infrastructure, but is entirely responsible for running the cloud, or managed, where the provider is either partially or fully responsible for running the cloud platform.

Who should use cloud hosting?

As cloud hosting is so wide reaching, it can be used by any sized business in any sector in some form. There are specific types of businesses that can particularly benefit from cloud hosting.

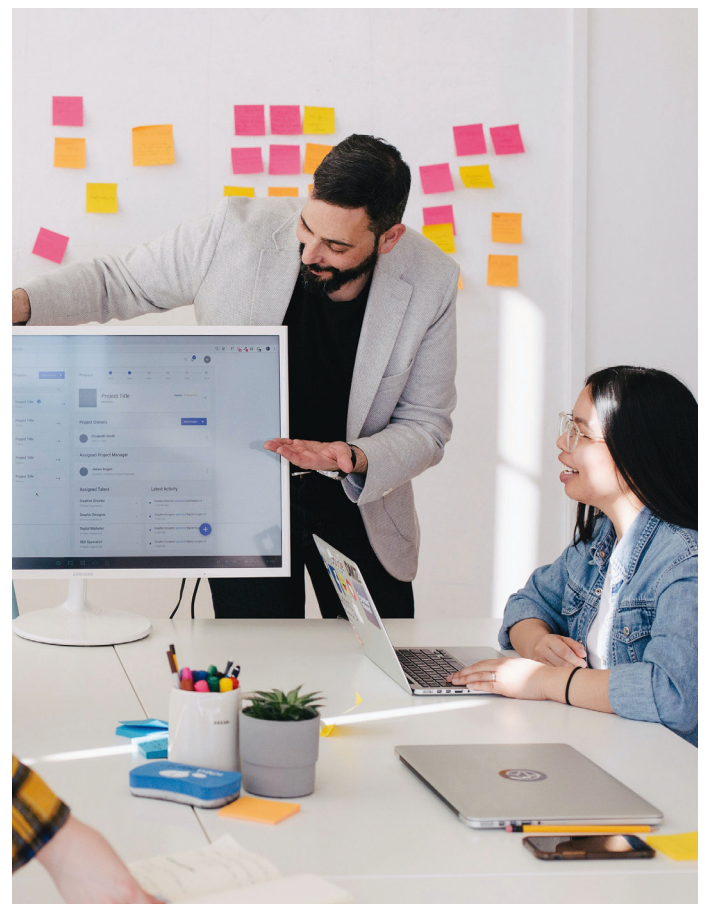
IT professionals and business owners should think about cloud hosting when looking to have business access anywhere, improve business agility and accommodate the demand for planned growth in a cost-effective way.

If a website is mission-critical, meaning that the company cannot function without it, then cloud hosting is a good idea. For example, imagine you needed to create a website for a new food delivery business. The data (transactions, delivery addresses, financial information etc.) and computing power to keep the website up and running has to be physically stored somewhere. Cloud hosting removes the need for you to purchase a server, install the right software, learn how to manage your server and ensure your website is secure and accessible at all times. You can simply pay a hosting provider to house your data and ensure it is safe and available to your customers at all times, without the headache of running the infrastructure yourself.

As cloud hosting makes it easy to scale, it makes it appealing to news outlets and ticketing websites who

expect traffic surges or large numbers of clicks on their posts. Streaming giant Netflix has to meet huge spikes in demand as well as times of lower activity, so cloud hosting enables it to scale up or down as and when it needs. Similarly, social networking sites such as Facebook and Instagram rely on cloud hosting to adjust to constantly varying levels of traffic.

You can find examples of businesses who have benefitted from cloud hosting by browsing our **Success Stories**.



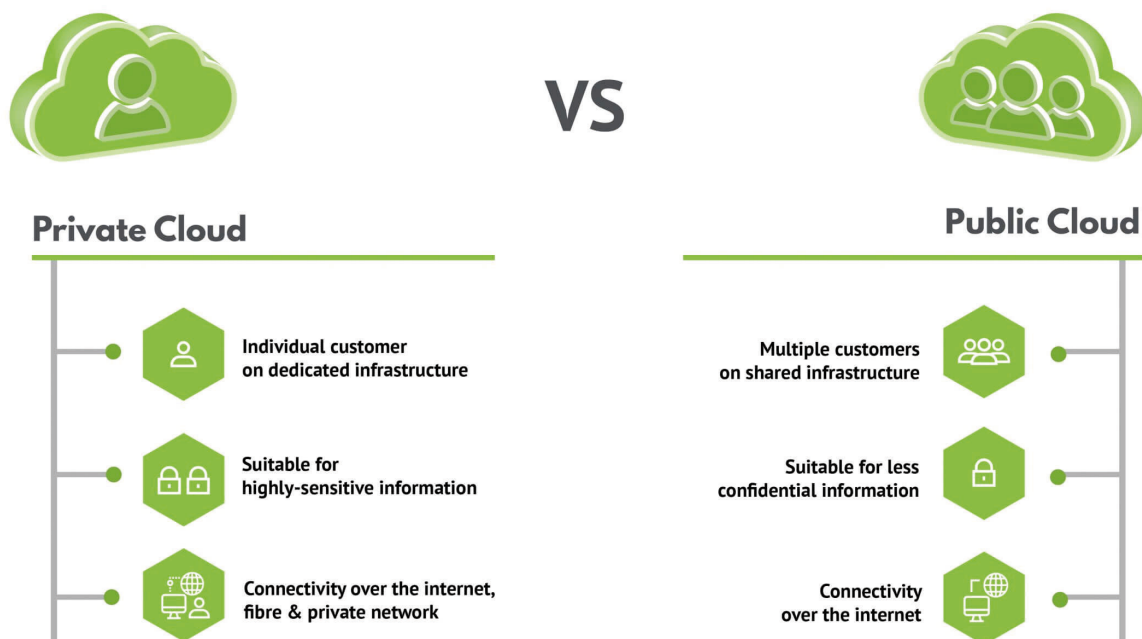
What are the types of cloud hosting?

Before the cloud, when you hosted your website or application on a single server, you had the choice of a shared server (sharing the machine with others) or a dedicated server (an individual machine specifically for you). Cloud hosting operates in a similar way.

Public cloud is the equivalent of a shared server, where the hardware and resources (CPU, RAM etc) are shared with several other virtualised sites, meaning the cost is also lower. This is a form of multi-tenant hosting. Unlike traditional shared servers, you do not share disk space, processing power, or anything else with anyone else – you simply share the racks in the data centres.

Private cloud, however, is a single-tenant solution, meaning you don't share infrastructure or resources with anyone else. This gives you complete control over the configuration and security of the platform. With no hardware shared and the entire virtualized resource sitting behind your own firewall, private cloud is well suited to those who consider data security important.

Hybrid and multi-cloud are both forms of infrastructure combining multiple hosting environments. Hybrid cloud involves an on-premise or private cloud environment combined with a public cloud platform, whereas multi-cloud uses multiple cloud platforms, which can be private or public.



What are the benefits of the cloud?

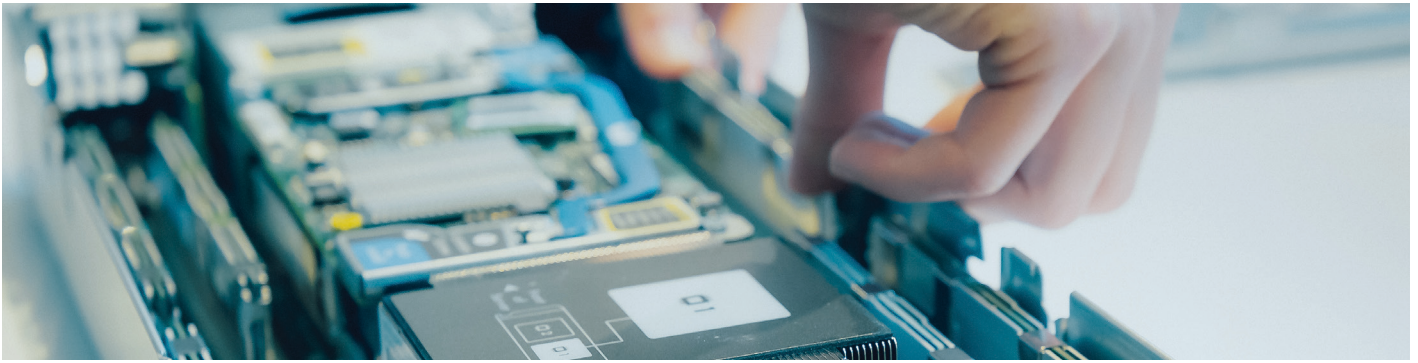
Reliability If all of the data and compute of your website are stored on one machine in your office and a disaster happens such as a fire or theft, your site will vanish. With cloud hosting, high uptime is built into its structure – if your site is shared between a network of interconnected machines, then when one goes offline, the others can pick up the slack and keep your site online.

Security Cloud data centres are highly secure buildings with multiple security measures in place, including 24-hour monitoring, fingerprint locks, and ID card scanners. Cloud providers take cybersecurity seriously, constantly updating security measures including patching, firewalls, web application firewalls, DDoS defence systems, VPNs, vulnerability scanning. In addition, data stored in the cloud is usually encrypted, making it very difficult for hackers to gain access to, or make any sense of your information.

Scalability The beauty of cloud hosting is that it can be responsive to demand, meaning you only pay for the resources you use. Such resources can be easily scaled up or down depending on your needs; if you are expecting extra traffic, you can scale up your resources to cater for the spike (e.g. eCommerce over the Black Friday weekend). This ability to increase and decrease resources is known as scalability – find out more in our insight, ‘What is Cloud Scalability’.

Versatility Cloud hosting is incredibly versatile, with the option to build a platform entirely bespoke to the specific needs of the customer. You are able to specify the exact space, architecture, processing power, operating system and security that you need for your cloud set-up.

Performance Cloud hosting allows for easier load balancing between multiple server environments, which puts much less strain on a single server’s resources. This results in lightning-fast speeds and increased traffic capacity.



What is a hyperscaler

With a combined market share of 66% (study from Synergy Research Group), it is no secret that the cloud market is heavily dominated by three big players in the industry – Amazon, Microsoft, and Google.

Due to the significant scale of their infrastructure, these providers are referred to as 'Hyperscalers'.

Their model uses a huge network of servers to cope with high levels of throughput, performance and spikes in demand.

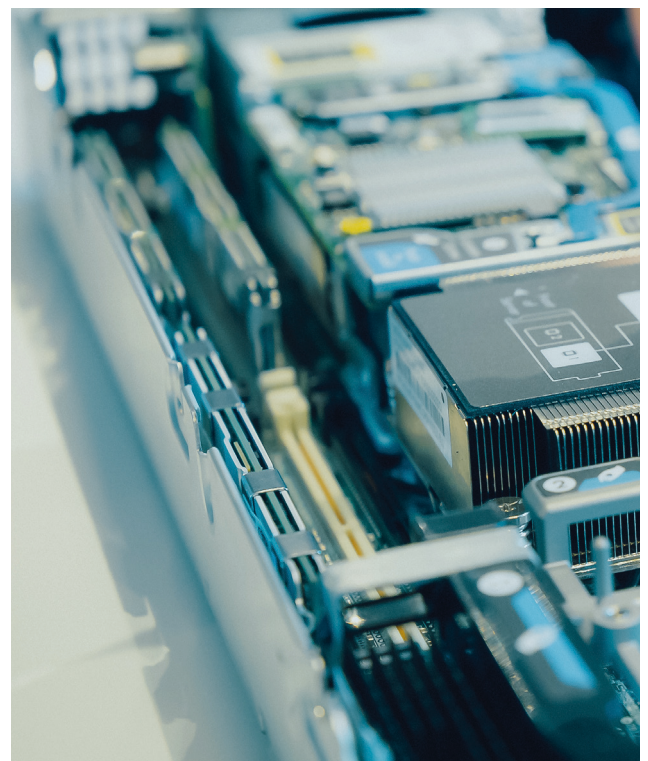
Advances in Artificial Intelligence (AI) and Machine Learning have accelerated the growth of the hyperscale cloud market, with huge pressure on businesses to keep up with ever-growing demands for complex computing tasks.

However, many organisations will often start with the false premise that they can simply 'lift and shift' their on-premises infrastructure and move it over to a public cloud with a hyperscaler. The reality is that cloud migration and ongoing management are complex tasks, so unless you have a team of technical experts in-house, managed cloud hosting could be beneficial.

What is managed cloud hosting?

As cloud platforms continue to become more complex, many companies are left wondering where to begin. Rather than managing your cloud platform in-house, you can opt for managed cloud hosting, where the provider partially or fully manages the platform. In a fully managed cloud solution, management of security, infrastructure and maintenance falls with the provider, leaving you the time and resources to focus on your business.

A managed service provider such as Hyve can work with you all the way through your journey to the cloud – understanding your business challenges, selecting the right



cloud solution, and architecting, deploying and managing the setup. Hyve not only offer this on our own fully managed cloud platforms, but we also act as a partner to provide management on public clouds such as AWS and Azure.

The future of cloud hosting

Cloud has produced a completely new world of jobs, services and applications, with almost every significant innovation such as artificial intelligence, AR/VR and IoT heavily relying on it.

With many industries now depending on this technology to innovate and grow – from storing digital health records to analysing the earth's tectonic plate movements – cloud computing is becoming the backbone of modern society.

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