

What is a Data Centre?

You've probably already used one hundreds of times today.

Why does it matter to you?

Data centres are fundamental to the services we rely on every day. From scrolling on social media to sending emails and checking the train times or making a doctor's appointment - everything that happens on the internet, happens in a data centre. Whether as individuals, businesses, or organisations, we interact with data centres hundreds of times each day.

What's inside?

Behind the walls of a data centre are rows of racks filled with servers - powerful computers that store files, run websites and applications, and process the information that keeps digital services running smoothly. These sit in large, warehouse-style rooms, built and maintained specifically for that purpose, meaning that data centres are the most efficient way to house computers.

Not a new idea

Data centres aren't new. Businesses have relied on dedicated computer rooms since the 1960s. What's changed now is that most are now housed in shared, purpose-built facilities instead of running a server cupboard inside a business' offices. Added to this, demand has grown steadily for three decades through expansion of the internet, smartphones, cloud computing and now AI. All of the digital services we rely on every single day require data centres to stay online.

That's what data centres do - quietly, in the background, keeping everyday digital life running. So what actually is one, and how does it work?

Why do we need more data centres now?



As a society, we're creating and accessing vast amounts of data, increasing all the time. Large data centres are required to process this information and keep us connected with the many online touchpoints we all have.

The main functions of a data centre are simple:

Cooling



Maintaining a temperature suitable for powerful computers.

Data centres are full of computers, also known as servers, which generate heat. One of a data centre's primary functions is to maintain these servers at an optimal temperature. At VIRTUS, we use a combination of air and liquid cooling, prioritising a closed-loop system, to support high-performance computing (HPC) and AI workloads.

Power



Keeping you and the digital world online, always.

The servers inside a data centre support services people rely on constantly - therefore it's crucial that data centres never power down. Using a combination of batteries, generators and uninterrupted power supplies to protect against this risk. Data centres typically connect via high-voltage infrastructure rather than the local networks that supply homes, so they don't draw from the same supply as households. Some operators, including VIRTUS, run entirely on renewable electricity energy, sourced through direct agreements.

Security



Protecting all of our data.

Every time you check your bank balance, log into a healthcare service, or send a message, that information is stored and processed somewhere - and data centres are built to keep it safe. Multiple layers of physical security are standard: perimeter fencing, access controls, monitoring, and trained personnel, protecting the same data you'd expect any bank or hospital to guard carefully.

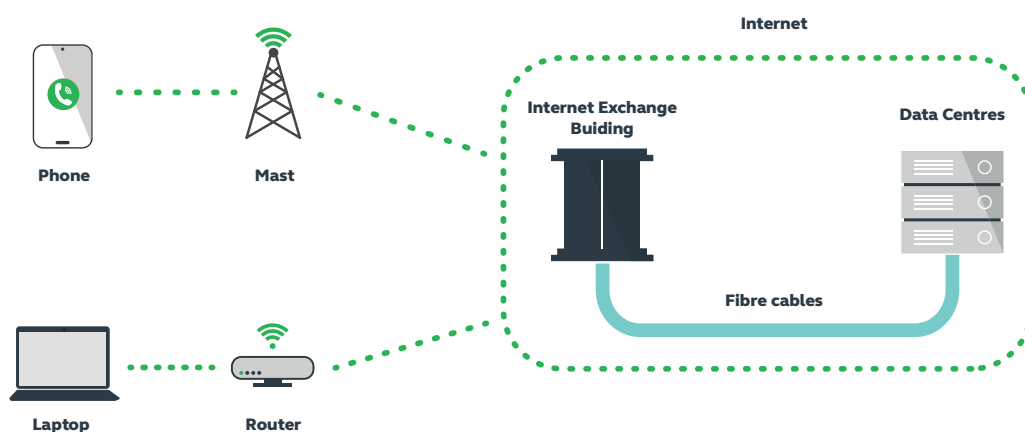
Keeping us connected

Fast access to information is essential in today's digital world, and connectivity makes this possible.

Data centres are linked to the wider world through thousands of miles of fibre optic cables, many of which run across countries and beneath oceans, connecting people, businesses, and services around the globe.

High-speed connectivity allows information to travel in a fraction of a second, helping you access your files, join online calls, and use apps wherever you are.

In under a fraction of a second.



How do we use a data centre?

If you're viewing this document online, it's hosted in a data centre!



Email and
Social Media



Streaming
a movie online



Healthcare
storage of your
medical records



Education



Cloud



AI Technology

Data centres aren't new -
what's new is how much we all
rely on them.

VIRTUS
Data Centres