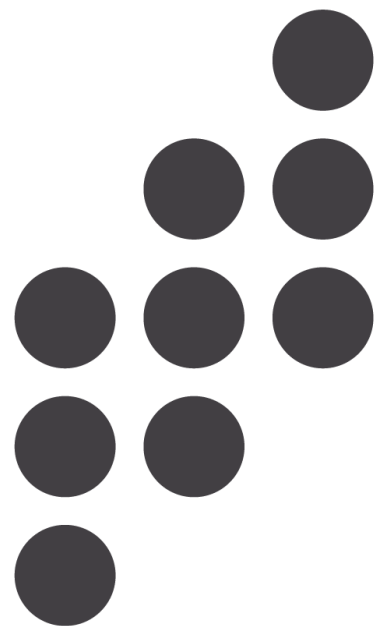




## Cloud Computing

Knowledge Piece

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## What is Cloud Computing?

Simply put, cloud computing is computing based on the internet.

In the past applications and programs ran from software downloaded onto a physical computer or server within a building, where as cloud computing allows users to access it remotely through the internet.

### It's heritage

Cloud computing has arguably been around since the 1960's with the notion of network-based computing, but it's believed that the first use of 'cloud computing' in its modern context occurred in 2006, when Google's CEO Eric Schmidt introduced the term at an industry conference.

Today, we all use cloud computing in our day to day lives without even realising. Whether it be checking your bank balance online, posting updates on social media applications, booking a holiday, managing your pension, or online shopping.

### True Cloud v Hosted

Just because an application is accessible through the internet, it doesn't necessarily mean that its cloud based. It could be that the application is hosted on a server in a data centre which is very similar to having a server in house, or 'on premise' as it's known.

Generally, most of today's online applications are not designed to be hosted and doing so can come with several challenges. One of which is requiring upgrades, which need to be carried out manually by the vendor. This could result in down time of the application and being unable to use it, or even worse, locked into an outdated or malfunctioning version until they are able to upgrade it.

True cloud applications are designed and deployed specifically for cloud environments, hosted in a true cloud infrastructure and delivered in a software-as-a-service (SaaS) nature. SaaS systems are designed to take advantage of the main benefits of true cloud applications, such as:

- Faster implementation times, which are typically much shorter due to no additional hardware or software installations, allowing you to access the application almost instantaneously.
- Automatic updates – the beauty of true cloud computing is that updates just happen, so there's no worry of wasting time maintaining the system or needing to be involved in the update process.

### Advantages of Cloud Computing

**Capital Expenditure Free** – Cloud computing cuts out the high cost of hardware by offering a simple pay-as-you-go subscription-based model that is kind to cash flow with no one off purchase fees.

**Scalable** – True cloud applications are easily scalable. As more users utilise multiple functions of an application, the infrastructure simply expands alongside the flow of traffic without compromising the performance.

**Time Savings** – Time and costs can be reapportioned elsewhere in the business, as the task of managing internal servers is reduced.

**Work from Anywhere** – Unlike on-premise products that require complicated solutions in order to gain access, cloud computing allows users to seamlessly connect anywhere with an internet connection.

### Security

One of the biggest concerns about cloud computing is security, and this often begs the question of whether cloud computing or an on-premise infrastructure is more secure. While some degree of caution is prudent, data is typically safer in the cloud than in an on-premise data centre.

**Here are 5 reasons why:**

#### 1. Built-In Technical Expertise

Unless a company is already in the business of IT security, spending time and effort on securing on-premise data can distract from core functions. Most organisations don't have a robust, experienced

team of cybersecurity professionals at their disposal to protect their on-premise data, making cloud computing an established best practice.

## 2. Physical Separation

Concerns about cloud security often overlook one of the most significant vectors of attack on IT resources – physical access. Having physical access to a computer system makes it significantly easier for a malicious actor to launch a successful attack.

Cloud computing eliminates the need for data centres, which are usually located within or close to the enterprise itself. The network is therefore not at risk of physical access by unauthorised users and insider threats.

Data in the cloud may be stored on a server located anywhere in the world, making a physical attack much less likely. What's more, top public cloud providers will protect their servers with much higher security precautions in place, such as fences, guards, biometric devices, and security cameras.

## 3. Fewer Vulnerabilities

For many businesses, storing data on-premise feels safer because the information is physically closer to their location. However, this is largely a quirk of human psychology that doesn't apply well to the realities of cybersecurity. When it comes to protecting enterprise data, the physical location matters less than the means of access, or who can view and use information stored on the server. This means that an attackers' main goal is to find and capitalise on existing vulnerabilities.

Malicious actors have many ways of exploiting flaws in on-premise systems, from unpatched security holes, to phishing emails that seek to collect employees' passwords. The top public cloud providers are quick to fix these issues to keep data protected. They may even have 'white hat' hackers on their payroll whose job is to find vulnerabilities before the attackers do.

## 4. Better Resilience

Disasters such as fires, floods and other extreme weather conditions illustrate just how fragile data can be when backed up on-premise. Keeping information in a nearby physical location means that backups are much less effective, if at all.

Cybersecurity ensures that data is available and protected as much as possible. Using a public cloud provider to back up information makes it more likely to rebound from an unexpected catastrophe should it occur. For example, between 2015 and 2017 Amazon Web Services experienced a total of only 7.5 hours of downtime.

Can your business guarantee that your IT systems will have less than 7.5 hours of downtime next month, let alone for the next two years?

## 5. Newer Technologies

Because they've been built up over time, many on-premise data centres are a hodgepodge of aging legacy technology. This makes them harder to maintain and secure due to the difficulties of reconciling all the disparate systems, some of which may no longer be supported or updated.

The top public cloud providers avail themselves of the latest technology in order to give their customers more computing resources. This makes it easier for cloud data centres to support, maintain, and patch issues.