microsolve

The Cloud

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WHAT IS 'THE CLOUD,' AND WHAT ARE THE TYPES OF CLOUDS?

The term 'Cloud' covers various scenarios depending on where your infrastructure and/or data is located.

The Cloud has been associated with obscurity or vagueness in Information Technology for some time. Often depicted in diagrams as a fluffy cloud, the public internet has been equated with this imagery, leading to the notion that it represents a location in the unknown.

The concept of cloud computing denotes storing your applications and/or data in an external environment or infrastructure instead of within your own.

The term 'Cloud' is ambiguous. There is, however, the agreement that there are different types of clouds - and no, none of them are "thunderclouds"!

TYPES OF CLOUDS

With the term 'Cloud' covering an ambiguous range of scenarios, a very clear and easy distinction can be drawn using an "ownership" distinction - this gives us the first cut of defining clouds - private, public, and hybrid!

PRIVATE CLOUD

A private Cloud is where your data and/or infrastructure is maintained or managed by you (or someone else on your behalf!) on equipment dedicated to your organisation. Examples could be hosting your data and applications in a 3rd party data centre or on dedicated servers sourced from a hosting provider such as Amazon or Microsoft Azure.

Access to data and applications in a private Cloud is managed through private networks, i.e., information flowing between your systems does not traverse the public internet.

Private Clouds offer far more control over your infrastructure, data, and services and, as such, are especially suited to applications where data security is one of the prime requirements. The private cloud is also an excellent option where your application is unavailable as Software as a Service (SaaS) in the public cloud.

PUBLIC CLOUD

Public Cloud is generally hosted on shared servers and accessed via the public internet. Applications such as Office 365 and Xero accounting software are deployed using Public cloud services. With a Public Cloud, management and maintenance of the servers and storage is undertaken by the provider of 'the Cloud' service rather than your IT people.

A public Cloud may appear more cost-effective than a private one since many operational costs are shared amongst multiple customers. When comparing public and private cloud costs, it is important to consider service levels, as public cloud offerings often need to include level 1 or 2 support. You should factor in these additional support costs as well.

Another important consideration with the public cloud is your data backups. Many public cloud offerings backup up their entire infrastructure to allow for recovery in a major system failure. However, these backups do not allow you to restore individual data components. This is critical in situations where someone has accidentally deleted or changed the contents of a file. These infrastructure-level backups also do not provide for recovery of files locked or modified by Malware such as crypto locker. To protect against these risks, you may need to purchase additional backup functionality to restore individual files from your backup.

Public Cloud offers more redundancy by running your data and applications on servers in different physical locations at significantly less cost than doing the same thing in a private Cloud. Consideration needs to be given to how public cloud redundancy is provided, i.e., where are redundant copies of your data stored. Often, public cloud providers deliver redundancy through infrastructure located offshore, which may have privacy and other implications for your business.

Data security is the most commonly raised concern with public cloud operations.

HYBRID CLOUD

A hybrid Cloud is, as the name suggests, a mix of both private and public Clouds. For example, you may use Office 365 for your email (public Cloud) and a privately hosted environment for your line of business applications containing sensitive data.

A hybrid model allows you to mix and match to take advantage of the strong points of both private and public Cloud.

HOW IS ‘THE CLOUD’ DELIVERED TO YOU?

Understand the advantages and benefits of cloud computing over traditional physical on-site infrastructure.

There are generally four models of Cloud-based delivery of applications and data:

- Software as a Service – known as SaaS;
- Desktop as a Service – known as DaaS;
- Infrastructure as a Service – known as IaaS; and
- Platform as a Service – known as PaaS.

SOFTWARE AS A SERVICE (SAAS)

The most widely recognised forms of Cloud-based solutions are Software as a Service (SaaS).
SaaS encompasses products like Microsoft Office 365, Google Apps, Xero Accounting, and Adobe.

When using SaaS, you purchase a service, typically on a rental-type basis that may also include licensing. Usually, you only require a web browser to connect to the SaaS application; the service provider manages everything else.

An important consideration with SaaS is that patches, updates, and upgrades are generally applied to all customers simultaneously. You may be unable to "opt-out" of changes that may negatively impact your business. Additionally, many SaaS offerings must provide the facility or opportunity to conduct testing of updates and upgrades before implementation.

DESKTOP AS A SERVICE (DAAS)

Desktop as a Service moves your users' desktops into 'the Cloud' and can deliver the desktop experience anywhere and on almost any device.

Most smartphones, tablets, and other devices can act as a client for DaaS allowing users to have their desktop move through the day and as they travel. Imagine for a moment your staff being able to start the day at home logged onto their desktop, meet a client in a café for coffee and still have access to the same desktop exactly as they left it. They could even fly across the country, or indeed the world, and later that night access their desktop from their hotel room and again have the same experience as they had at each location during the day.

INFRASTRUCTURE AS A SERVICE (IAAS)

Infrastructure as a Service delivers storage and computing power that you configure and manage to build your infrastructure as much as you would with on-site physical servers.

IaaS frees you from the hardware maintenance and purchasing cycle as the IaaS provider performs this function. IaaS also makes performance upgrades especially easy as you request increased memory, CPU, or disk space from the provider without physically upgrading hardware.

Additionally, many IaaS platforms take advantage of technologies that allow for high availability where running machines can be moved from one physical server to another in case of high load or hardware failure with minimal impact on the user experience.

PLATFORM AS A SERVICE (PAAS)

Platform as a Service (PaaS) usually provides a development platform on which you can build your applications and services. It is sometimes considered by people to be a mix of IaaS and SaaS.

Examples of PaaS are web development platforms such as Microsoft Azure Web Applications.

ACCESSING 'THE CLOUD'

Depending on the type of Cloud model you have chosen (public, private, or hybrid), you will access your applications, services, and data through several different means.

TYPES OF NETWORKS:

Private Networks
Private networks are direct physical interconnections between one or more sites. One of these sites is generally where your applications and data are hosted, and the other sites are your locations or branch offices, etc.
Private networks are generally more expensive to establish and maintain but provide the highest level of security for your data.

Private Clouds are normally accessed via a private network.

Virtual Private Networks (VPN)

A VPN is a private network created by "tunnelling" through the public internet. Even though the data is carried across the public internet, the VPN ensures your data's security and privacy while traversing the public internet.

VPNs offer the flexibility of having the security of a private network generally at a lower establishment cost than a private physical network as public/shared infrastructure is used.

VPNs can also offer the advantage of being accessed from anywhere, assuming the user has the correct access technology and security credentials to access the VPN. This allows your users to access private infrastructure potentially from anywhere in the world. However, ensuring sufficient security to keep the network secure when access is allowed from anywhere is important.

Public Internet

Some public Cloud services are accessed directly via the public internet. You can access these applications from anywhere using a standard Web browser.

Current web browsers contain Secure Sockets Layer (SSL) technology that uses encryption and publicly registered certificates. This allows them to establish a secure connection from your device to an application or service in the public Cloud.

WHY GO TO ‘THE CLOUD’?

Understand the advantages and benefits of cloud computing over traditional physical on-site infrastructure.

Cloud computing offers several advantages and benefits over traditional physical infrastructure located on-site.

Some of these benefits include:

ACCESS ANYWHERE AND ON ANY DEVICE

Having your infrastructure in 'the Cloud offers the flexibility to work from anywhere in the world and even on almost any device.

You or your employees could be accessing your systems and data from home. At the same time, seeing clients personally can have considerable benefits for your organization.

Microsolve and our technology partners can create a solution allowing you to work from almost any device, including laptops, tablets, and mobile phones.

REDUCING YOUR IT SPEND

Cloud-based computing can bring several cost savings to your business, depending on the type of Cloud you implement. For example, moving to a hosted public cloud application removes the need to maintain and operate your servers and carries the costs of supporting these applications. This may lead to reduced capital and staff costs.

The responsibility to upgrade systems and infrastructure also generally moves to the service provider, so you pay a monthly cost and no longer need to budget for capital expenditure.

Increased uptime and reliability – because service providers share their equipment with many customers, they can have more system redundancy levels. For this reason, they may provide higher levels of availability than can be achieved with your systems at a significantly lower cost.

INCREASED OPPORTUNITIES FOR COLLABORATION

Having your applications and data in 'the Cloud' allows increased opportunities for collaboration – employees in different physical offices can easily work together on projects when the data is in 'the Cloud.'

The opportunity extends to partners and customers collaborating directly with your staff on projects, as you can selectively give them access to Cloud-based applications and data.

SCALABILITY

When operating and maintaining your physical systems, you need to ensure you have sufficient speed and capability to meet the peak needs of your organisation. For example, a pay run or end-of-month reporting might be the busiest time for your accounting systems. With applications hosted in 'the Cloud,' the service provider has to ensure that they have sufficient capacity to meet the needs of their customers at peak times.

Even if you are running your own private Cloud, some new hosted server offerings allow you to automatically turn on and off servers as demand increases and decreases. These services are usually billed hourly, so you pay for the increased capacity you need only when needed.

Some organisations are even finding they can significantly scale back their capacity once outside of normal business hours when fewer employees are attempting to access systems.

ADAPTING TO CHANGE

Imagine if the worst were to happen and some kind of disaster, natural or otherwise, was to prevent your employees from accessing their primary location for work. Having your data and applications in 'the Cloud' allows them to continue working from home or even a temporary location until normal operations are restored. This may not be possible using on-site, physical servers.

Due to the redundancy built into good Cloud service provider offerings, equipment failures such as disks and servers have little impact on Cloud-based servers.

FREQUENTLY ASKED QUESTIONS TO ASK ABOUT ‘THE CLOUD’

With these key questions, you will understand the cloud's security and data protection implications.

When considering locating some or all of your data and applications in 'the Cloud,' there are several questions you should ask of any particular provider or solution.

SECURITY AND DATA PROTECTION

It would be best to consider how and where your data will be stored when you move to 'the Cloud.' Some of the questions you need to be asking are:

- Where, geographically, is my data located?
- Is it stored entirely within Australia?
- Who will have access to my data? Some US companies, for example, may be legally required to provide access to your data even when stored in Australia.
- What is their privacy policy?
- Do they have a breach reporting policy?
- What kind and what levels of data redundancy do they provide?
- How is my data backed up, and how do I access those backups?

SERVICE LEVEL AGREEMENTS (SLAS)

Service providers should provide you with a Service Level Agreement backed by financial penalties for them if they fail to meet the requirements of the SLA.

Ask for a copy of the SLA and pay attention to things like:

- What is their guaranteed uptime? How is uptime calculated? A provider offering 99.95% uptime can still have services unavailable (not including maintenance) for 22 minutes per month without breaching the SLA.
- What are the penalties, and what is the SLA claim process?
- What kinds of events are excluded from SLAs?

ACCESSING SUPPORT

- What are the hours of support offered by the service provider?
- How do you access support? E.g., telephone, email, web form, etc.
- What are their response and restoration times?
- Do they have a documented escalation process if you are not satisfied with the support you receive?

LEGISLATIVE REQUIREMENTS

You also need to consider your responsibilities under Australian legislation in areas like privacy, archiving, and perhaps even taxation.

Some types of organisations have legal requirements around the location of data depending on their classification under the Privacy Act.

Also, consider that some service providers, especially foreign-owned ones, may have legislative requirements imposed on them by their governments that may impact the security and privacy of your data.

MICROSOLVE IS HERE TO HELP YOU

Microsolve has many years of experience delivering secure and highly available hosted services across Australia to a wide range of customers. Additionally, we have helped several organisations to understand their requirements for successfully moving to 'the Cloud.'

Microsolve is Australian owned and operated; our facilities and support teams are all located here in Australia, so we can address many of the concerns that you may have.

We would love the opportunity to meet with you and discuss how we can help you on your cloud journey – whether you are just starting or are well established in 'the Cloud,' we know we can offer value to your organisation and help you on this exciting path.

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