THE OF Rise Hybrid Cloud

The roadmap to future ready infrastructure - guiding your data centre strategy to success

NEXTDC

In late 2009, around the time when the world was recovering from the Global Financial Crisis, a new phrase began to appear in the IT lexicon:

'Hybrid Cloud'.

Today, the Hybrid Cloud is the most widely recognised way to structure and optimise IT architecture, with

82%[1]

of enterprises describing their cloud strategy as hybrid.

The market is expected to grow to

$128 billion[2]

in enterprise IT spending by 2025. Yet, achieving success in hybrid cloud computing hinges on optimisation across performance, security, and cost considerations.

What is Hybrid Cloud, how does it work, and why are so many organisations restructuring their architecture to align with it?

In order to remove some of that obscurity, this report intends to break down each of the components of Hybrid Cloud and explore them in more detail.

1   https://explodingtopics.com/blog/cloud-computing-stats
2   https://www.mordorintelligence.com/industry-reports/hybrid-cloud-market

What is hybrid cloud?

Hybrid Cloud is a type of IT architecture, with a big factor being the cloud. That's 80% of the definition. Put simply, Hybrid cloud refers to a mixed computing, storage, and services environment made up of on-premises infrastructure, private cloud services, and a public cloud such as AWS, Microsoft and Google. By using a combination of public clouds, on-premises computing, and private clouds in your IT environment means that you operate a Hybrid Cloud infrastructure.

Public cloud

Cloud computing via public cloud providers is available to anyone. They can be accessed via the public Internet or via direct connections that are accessed directly within Hyperscale cloud data centres. The leading public cloud platforms include AWS, Microsoft, Google, Oracle and IBM.

Private cloud

Although private cloud shares the same traits as public cloud, private clouds are created for and controlled by a single organisation. Also known as internal or corporate clouds, private cloud services are available to users within that organisation, opposed to a service that is publicly available.

Both public and private clouds offer the same customer advantages such as on-demand services, storage, processing power, platforms and applications all consumed as an operationalised service (often referred to as-a-Service or consumption plans), opposed to capital overheads.

Workloads:
A Critical Cloud Concept

Hybrid Cloud — or any cloud environment — is just that: an IT environment or
IT architecture. Workloads are the resources deployed and running across that
environment, and they represent how most organisations use their clouds.
These resources can be:

Virtual machines

Databases

Servers

Applications

Workloads in the cloud can be different, they serve their own unique purpose, which may
come with different needs: some might be CPU intensive, others memory intensive, while
other workloads could be optimised for database storage. Sometimes the workload may
be a large-scale service made up of hundreds of micro-services, it may be a smaller,
individual service or it could simply be a test environment for staging and testing
purposes.

While workloads aren't exclusively used in
Hybrid Clouds, the advantage of this model
is that workloads can be shifted between
public and private clouds to suit demand, cost,
performance, security or other factors.

What benefits does hybrid cloud bring?

Cloud computing is largely known for driving cost savings, however its inherent value lies in supporting a fast-moving digital business transformation. The primary benefit of Hybrid Cloud is agility. The need to adapt and change direction quickly is the key success criteria of a digital business.

Cost

The rise of public cloud providers like AWS, Microsoft and Google has allowed virtually anyone to make use of them at a fraction of the cost of the more traditional, privately owned in-house IT infrastructure. By migrating part of their technology into public cloud computing while keeping them integrated with private systems, organisations often find large savings around capital and labour costs.

Agility

Since its advent, cloud has been the go-to option for organisations to rapidly scale and diversify their IT services when needed. One example is e-commerce websites who deal with major traffic fluctuations based on sales and seasonal events: they can rapidly spin up temporary servers on public clouds to support private infrastructure. Zynga CTO Allan Leinwand summed up this approach perfectly: "own the base, rent the spike". Another example are DevOps organisations with agile development practices. Cloud enables DevOps teams to spin up new cloud instances in real time to support rapid build, test and deploy practices – then blow them away when they're no longer needed.

Risk

There are two elements to risk management and Hybrid Cloud. First, it allows organisations to dip their toe in the water of cloud computing — with a smaller investment and effort — before deciding whether to migrate to a more cloud heavy environment. Second, it can be a way to mitigate risk of being caught out by a public cloud provider changing its rules with little notice.

Security

Trusting a third party with valuable data is enough to make any CIO a little nervous. While debate continues around whether public or private clouds are more secure, organisations have full right to decide where and how they secure their data. With Hybrid Cloud, they can keep their data in a private cloud environment, or they can host it onsite at a specialised hyperscale cloud data centre, while continuing to reap the benefits that public cloud offers.

Control

Like security, a Hybrid Cloud solution can be a way for organisations to retain control of the important parts of their IT infrastructure. They can customise and configure their in-house IT infrastructure as they see fit, without the limitations or restrictions of public cloud infrastructure.

How is hybrid cloud used?

Internet of Things

In the Internet of Things (IoT) landscape, the hybrid cloud is a valuable solution for data processing. IoT devices generate vast amounts of data, and a hybrid cloud approach enables organizations to process data either on-premises or in the cloud based on factors like sensitivity and processing power needs.

High Performance Computing (HPC)

For High-Performance Computing (HPC), a hybrid cloud strategy is beneficial. Organizations can use their private cloud for routine workloads and tap into the public cloud when extra power is needed for complex tasks like financial modeling or biomedical simulations.

Cloud bursting

The earlier example of e-commerce sites dealing with traffic spikes is a situation where cloud bursting may be used with a Hybrid Cloud. Typical demand can be managed by a private cloud environment, but when surges in demand occur, it spills over to a public cloud that handles extra load.

Disaster recovery

Cloud has been long touted as a critical part of disaster recovery and business continuity plans. It vastly reduces the cost and effort to set up redundant environments. With Hybrid Cloud, an organisation can maintain its production environment in a private cloud, while keeping an easily accessible recovery environment in a public cloud.

Leaving legacy in place

Many organisations have legacy in-house systems that would require an exorbitant effort to migrate to a new platform, cloud or otherwise. Using Hybrid Cloud to interconnect and integrate legacy systems like mainframes that still play an important role for the business, in a modular fashion into the wider IT stack buys organisations time to make a transition or extend the life of the system. Organisations can also augment legacy capability with add-ons such as analytics in a more cost-effective way than developing an in-house solution.

Reducing IT expense

Organisations are increasingly adopting Hybrid Cloud architecture, enticed not only by its capacity for cost savings but also by the flexibility it offers in resource allocation. This approach allows them to tailor resources to the specific needs of applications, optimising costs by leveraging cloud services for variable workloads. The ability to scale back their data centre footprint is complemented by the capacity to expand as needed, all achieved with minimal expense.

How is hybrid cloud managed?

The dynamic nature of cloud operations differs to traditional, on-site IT activities. Hybrid Cloud management is no different. There are dozens of questions and issues IT leaders need to understand before they begin managing a Hybrid Cloud environment.

While planning a Hybrid Cloud strategy is a huge task, these questions will help you start thinking about what needs to be addressed.

- Which cloud providers do/will we use?
- What SLAs will we need with cloud provider/s?
- What apps, services and workloads will be needed?
- Who needs access to what?
- What kind of loads are being handled by the cloud, and when do peak times occur?
- What data and apps will be stored where (private or public)?
- How will our data be secured?
- How will cloud performance be monitored and optimised?
- How much physical IT infrastructure still lives on-premise/in our own data centre?
- Where is the best location for our physical infrastructure to be housed in proximity to where our clouds are hosted?
- What policies and processes need to be in place for Hybrid Cloud management?
- What part will cloud play with DR and BC planning?

Hybrid mono-cloud vs hybrid multi-cloud

With the smorgasbord of technology choices today, organisations planning a Hybrid Cloud strategy have to make a key decision: do they work with one cloud provider or several?

Hybrid mono-cloud

is a cloud that runs on a single provider's technology. This means simpler, more easily integrated architecture, and is often an ideal way to "start small" when moving towards cloud-based infrastructure.

A 2022 study revealed that

90%

of large enterpirses surveyed had adopted a Multi-Cloud strategy for their business.

Hybrid multi-cloud

brings cloud services from several cloud providers together under one cloud architecture umbrella. Whilst a more complex approach, Multi-Cloud enables organisations to customise their cloud environment, choosing the components of each cloud platform that meet their exact requirements. The advantages include avoiding vendor lock-in, mitigating risk of failure, minimising downtime should it occur and significantly improving productivity via a cloud platform that has been designed specifically to support your business and enable your transformation goals. A 2018 study revealed that 81% of enterprises surveyed had adopted a Multi-Cloud strategy for their business.

Is hybrid cloud right for your organisation?

When it comes to cloud it's important to remember there is no one-size-fits-all solution. Forward thinking organisations will choose a hybrid mix of services approach based on their individual needs. Hybrid Clouds offers the benefits of both public and private clouds and enables you to take advantage of existing infrastructure in hyperscale cloud data centres.

Taking a hybrid approach to your IT allows applications and infrastructure components to interoperate across distributed environments (such as cloud versus on-premises), between cloud instances, and even between architectures (such as traditional versus modern digital). The same level of distribution and access flexibility is also required for data. Whether you're moving workloads or data sets, it's important you're future planning for things that need to move around as your needs evolve.

Your Hybrid Cloud architecture will include the following characteristics:

☑️ Your on-premises data centre, private and public cloud solutions, and workloads are interconnected and interoperable under the same IT management framework.

☑️ You can add existing systems running on traditional architectures that run business-critical applications or contain sensitive data that might not be suited for the public cloud.

Successful Hybrid Cloud environments are underpinned by a diverse and robust interconnectivity strategy, which should use a combination of direct cloud interconnections, Cross Connects and private virtual connections.

How does hybrid cloud fit into the stack?

As cloud technology matures and the market grows, Hybrid Cloud has become THE option for businesses who are looking to unlock greater operational flexibility and create enhanced customer value from their technology investments.

That said, Hybrid Cloud isn't for every organisation. It isn't a set and forget strategy and as such requires consideration of the individual components of your environment and the overall direction of your transformation strategy.

There is no doubt however that Hybrid Cloud enables more scalability, agility and flexibility.

If you wish to discuss how Hybrid Cloud fits in with your technology plans and understand how it can help your business, speak to one of our experts.

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