EBOOK

Public vs Private vs Hybrid Cloud Checklist_

Introduction_

It's no longer a case of whether or not businesses need to use the cloud, it's about which cloud solution (or solutions) to use. When it comes to ensuring your business has the most efficient, effective and secure IT infrastructure, choosing the right cloud solutions is not an easy decision. Before deciding which solutions provider and implementation partner to go with, you need to understand what cloud model is best suited to your business operations and requirements - public, private or hybrid cloud.

For businesses in the Financial Services and Crypto space, reducing latency and minimising the risk of downtime are key reasons to implement a robust cloud infrastructure project and top considerations when choosing the right model and solutions. Every second counts in trading.

There's no one-size-fits-all cloud computing solution. Instead, you have a range of options available to meet the fast-changing IT needs of a variety of business types and sizes, and evolving office dynamics. Remote working has been accelerated and necessitated by the global pandemic, which has put increasing pressure on firms to rethink their IT infrastructure and reassess their cloud computing needs.

The checklist below offers an overview of each cloud model and outlines the pros and cons, use cases and key considerations for judging their suitability for your organisation.

About BSO_

Founded in 2004, BSO is a global pioneering infrastructure and connectivity provider, serving more than 600 data-intensive businesses across diverse markets such as financial services, technology, energy, ecommerce, media and more. The company owns and provides mission-critical infrastructure, including network connectivity, cloud solutions, managed services and hosting, that are specific and dedicated to each customer served.

Its team of experts work closely with customers to create solutions that meet the detailed and specific needs of their business, providing the latency, resilience and security they need regardless of location.

Public Cloud_

OVERVIEW

Public cloud is the most popular cloud computing model, as it's the most accessible and universal. IT services are delivered via the internet and you access them and manage your account on your web browser. The hardware, software and other supporting infrastructure are owned and operated by third-party cloud service providers.

On the surface, the public cloud is your cheaper and scalable option, which minimises the in-house IT resources required and removes the burden of maintenance responsibilities. But there is a trade-off in the level of customisation and control you have at your disposal.

Public cloud services are offered by a large range of service providers, including big tech names like Microsoft, Amazon and Google, plus other dedicated public cloud providers. And you can choose from IaaS (Infrastructure as a service), SaaS (Software as a Service) and PaaS (Platform as a Service).

Key advantages_

Affordability

One of the main incentives with public cloud is the lack of set-up fees and upfront costs. Pricing plans vary and you can choose a pricing option that suits your needs, organisation size and operational requirements. And you pay for what you use. It's an affordable option for gaining access to cloud-based IT resources, where businesses don't need to worry about purchasing expensive hardware or software packages.

Easy to manage & no maintenance

A big plus with public cloud is the lack of maintenance costs and resources for your organisation, as the cloud service provider deals with all maintenance responsibilities. Significant investment in the deployment and management of IT infrastructure is therefore avoided, whilst you don't need in-house IT teams to maintain your cloud network

Scalability and agility

As the public cloud offers services on-demand, you can scale up and down according to your needs and growth journey. This is ideal for businesses operating in an agile way, allowing for peaks in demand. With public cloud solutions, businesses can be lean and efficient as they grow, to allocate capital elsewhere.

Less pressure on in-house IT resources
The need for complex IT infrastructure and internal expertise is alleviated with public cloud options, as your provider will take care of infrastructure management, leaving your teams to focus on core business goals and growth projects

Reliability
Public cloud solutions are highly reliable, with minimal risks of failure or downtime thanks to the large network of distributed servers involved.

Disadvantages_

Security
As the public cloud is a shared IT infrastructure, it's fundamentally less secure than the private cloud. Even though you're protected by highly sophisticated security tools, protocols and fail-safes, there are risks. Although public cloud solutions are secure for general business purposes, for extremely sensitive applications and data, the public cloud is not best suited.

Control
Essentially you don't own public cloud infrastructure and with the infrastructure being managed by your cloud service provider, you understandably have less control and visibility. This can lead to issues if your processes are not aligned, such as compliance concerns, as you're relying on the policies and practices of third-party providers.

Potential total cost of ownership (TCO)
Despite the lack of upfront costs, businesses must be aware of the expenditure over time. As your costs are based on usage (and will rise as your business grows and workload demand increases), you need to work out how these monthly costs will add up and forecast for potential rising costs as you grow

Access speeds subject to impact
The nature of the public cloud being a shared infrastructure means that your access speed can be impacted by high demand and usage. Latency issues are a major drawback of public clouds, although there are ways to reduce latency.

Common use cases & suitability_

Public cloud solutions are largely used to meet non-complex IT requirements. Think communications services, online office applications and shared storage for collaboration, project work and assets and archiving purposes.

Fast-growing businesses benefit from the ability to scale in line with demand without large outlays on infrastructure that's not yet required. As your business grows, you can upgrade subscriptions and move to a different tier when additional storage and resources are required. Another common use of the public cloud is testing and development environments for software.

Private Cloud_

OVERVIEW

Choosing a private cloud option means having cloud computing resources that are exclusive to your business, not shared with other organisations or customers. Private cloud solutions can be hosted by a third-party provider, which doesn't require in-house investment for maintenance. Or they can be built and located on-site. It may depend on your internal IT resources.

The private cloud model gives you greater control and flexibility over your IT infrastructure, as the services and infrastructure are dedicated to your organisation and maintained on a private network. This enables more customisation capabilities to tailor these cloud resources to your specific business needs. Popular private cloud providers include Dell, Cisco, VMware and RedHat, whilst Amazon and Microsoft are also in the private cloud space.

The dedicated hardware used for private cloud solutions improves data security and delivers high-performance guarantees and enhanced reliability, but it requires investment upfront and doesn't give you the dynamic scaling that the public cloud model allows.

Key advantages_

Flexibility
One of the big advantages of going with the private cloud option is the flexibility it offers, helping you to handle more unpredictable demands. You can customise your cloud environment to meet your specific (and ever-changing) operational needs and IT requirements.

Exclusivity
The clue is in the name, but private cloud solutions give businesses a dedicated cloud environment that cannot be accessed by people outside of your organisation.

Greater control
as your cloud resources are not shared with others, this means businesses can enjoy greater control for management, privacy and visibility

Enhanced security
For organisations working with highly sensitive data and workloads, or under intense scrutiny and regulatory obligations, private cloud solutions enable a greater level of security and configuration to account for unique compliance requirements.

Performance guarantees & lower latency
The private cloud offers access speed, efficiency and other performance guarantees that can't be reached with public cloud solutions, such as low latency connectivity, which is especially vital for financial businesses and trading activity.

Customisability
As mentioned, in having your own dedicated private cloud build, you have the scope to customise your cloud environment to suit your needs.

Disadvantages_

Cost/pricing
With the increased efficiency, flexibility and customisation capabilities on offer, private cloud solutions are significantly more expensive than public cloud alternatives. So, you need to clearly define your business needs to understand the long-term cost of both options.

Scalability limitations
With private clouds you can't just quickly ramp up like you can with the public cloud model. You need to invest in additional capacity in advance and before it's required. Scaling a private cloud is more akin to scaling traditional IT storage. Although, scaling is easier with hosted private cloud solutions, as opposed to on-premise infrastructure.

Mobile user issues
A bugbear with private cloud solutions is the difficulty you can experience with access for mobile users. The enhanced security of private clouds can mean mobile users have limited access.

Common use cases & suitability_

Organisations in highly regulated industries, such as Financial Services, or government agencies are more suited to private cloud solutions. They need a level of security and control over their IT environment that the public cloud can't offer. Medium to large-sized enterprises that require or can afford advanced security and performance for business-critical operations often invest in private cloud networks. Private clouds can be used for single tenancy or multi-tenancy. The latter enables organisations to ring-fence access by department or location.

Businesses with more consistent IT workloads are also well suited to the private cloud model, as unpredictable demands often require the scalability capabilities offered by public clouds.

Hybrid Cloud_

OVERVIEW

Hybrid cloud is a combination of public and private cloud models. Applications and data can be shared between the clouds, based on your policies and business needs. Organisations can enjoy the control, exclusivity and customisation that the private cloud allows while having the scalability and cost-efficiencies for elements more suited to public cloud use.

Choosing a hybrid cloud set-up allows for seamless use of public and private cloud resources by single applications, and across the business. You can scale up on-premises infrastructure to the public cloud where demand requires, rather than making big investments to handle fluctuation and for resources that only require temporary use. Where enhanced security is needed, you can utilise a private cloud. For data that you don't want to be managed by third parties (maybe for regulatory reasons), you can maintain that on your own data centre.

The hybrid cloud model is an integrated environment, which enables data to be shared between public and private clouds. It's increasingly viewed as the optimal model for successful IT strategies. AWS, IBM, Azure and HPE are leading providers and the hybrid cloud market is expected to reach nearly $100billion by 2023. [Source: Markets and Markets]

Key advantages_

Cost control and flexibility

Businesses can utilise the public cloud for regular workloads and easily accommodate spikes in demand, paying for extra computing power and resources only when needed. For sensitive assets or workloads that require low latency, you can maintain a private cloud infrastructure.

Ease

The transition to the cloud is much easier with the hybrid model, as you can migrate workloads to the cloud in a gradual, phased approach.

Scalability

Choosing a hybrid cloud gives businesses the scalability they require that public clouds offer whilst not limiting their cloud capabilities for the business as a whole.

Security
The private cloud elements of your hybrid cloud solution give you the security guarantees required for certain data, with sensitive IT workloads running on dedicated resources in private clouds.

Policy-driven deployment
With a hybrid cloud approach, the deployment of services and resources to the cloud can be driven and more accurately aligned with your policies. Businesses can distribute workloads across data centres, utilising both public and private clouds, according to what's most suitable in each use case, based on security, control and performance needs, and cost-efficiency considerations.

Disadvantages_

Complexity
Despite the flexibility and the advantages mentioned above, a hybrid cloud approach can be complex. Implementing and managing a mixture of private and public cloud architecture can be technically challenging, with IT teams required to configure, plan, deploy and maintain your hybrid environment. And adapting in-house systems to work effectively with third-party ones can be tricky.

Potential cost wastage
Although having the scalability benefits of the public cloud, there is a possibility of wasteful expenditure if the hybrid cloud approach is not carefully managed and closely monitored. It's important to be clear on what you're paying for and the value of your hybrid cloud services.

Integrations
If choosing the hybrid cloud model, you need to be aware of the integration work required. Integrations to enable hybrid cloud solutions can cause organisations logistical and compatibility challenges.

Overall security
Although you can segment sensitive data and workloads to a private cloud for enhanced security, ensuring security is watertight across the hybrid infrastructure is a challenge, due to the nature of IT resources being spread across public and private clouds. Strong protocols must be implemented.

Common use cases & suitability_

The versatility of hybrid cloud means a wide variety of use cases can benefit from the model, thanks to the combined advantages of public and private cloud solutions. Businesses with an agile approach or ambitious growth plans may look to the hybrid model to enhance their customisation capabilities for intricate operational needs whilst having the ease of scaling for increasing workload demands. Also, for organisations with lots of data that are accessed infrequently, the hybrid model can be more cost-efficient than just using public clouds.

The hybrid approach is also ideal for large organisations or those serving multiple verticals with intricate security, performance and regulatory requirements. In highly regulated industries, certain datasets may need to be kept on-premises while others can reside in a public cloud.

Don’t forget about Multi-Cloud...

We’ve talked about the differences between public, private and hybrid cloud solutions, but what about multi-cloud? It’s not to be confused with hybrid cloud. Multi-cloud is the use of multiple public cloud environments rather than a combination of public and private clouds. Multi-cloud solutions use several public clouds, often with different service providers, and the trend is on the rise.

An IDC report forecasted that by 2022, 90% of enterprises globally will be using multiple clouds. [Source: IDC]

So, why would you choose multiple public clouds? Well, you could use a multi-cloud environment to deal with different functions of the business that you feel would be managed better in separate public clouds. While there are other advantages of using different public cloud providers, such as:

Avoiding vendor lock-in

If you’re tied to one host, it can limit your ambitions, restrict your capabilities and make you overdependent on the technology

TITLE PENDING

Gaining the advantages that different providers offer, rather than having to compromise

Drawbacks of multi-cloud_

The problem with a multi-cloud environment is that it can be detrimental to your efforts in streamlining your IT operations and increasing efficiencies. If you're having to manage multiple providers, this can result in more complications and risks. **Cloud solutions should be easily integrated into your existing processes**, with minimal disruption or downtime.

Having a hybrid cloud infrastructure represents a fully integrated system, but with multiple public cloud providers, the relationship is more complex and requires additional management considerations.

Deciding on which cloud solution is right for your business_

Our checklist for comparing cloud infrastructure models, and their key differentiators, pros and cons and use cases, should help you to decide which option is best suited to your business requirements and growth ambitions.

There are so many nuances to how different organisations operate and choosing your cloud computing solution may come down to an analysis of best fit. If there seem to be too many compromises when weighing up whether public or private cloud is the most suitable, it's likely the hybrid model is your best approach, to ensure you can segment certain workloads and resources to either cloud within your overall IT environment.

We recommend defining your key requirements across the business and mapping them to the capabilities of the different cloud computing models and the solution providers on the market.

Getting support from an experienced cloud solutions partner_

Partnering with an experienced cloud infrastructure and managed services provider will help you to make the right decisions for your business, choose cloud solutions best suited to your specific requirements, deliver a successful implementation and maximise the value of your investment.

Whichever cloud solution you choose, this partner can help you navigate the complexities of infrastructure migration and integrations to ensure you optimise your cloud environment. And it's a good idea to work with a partner that has experience in delivering managed services and support for businesses in your industry. For example, an infrastructure specialist that has experience implementing cloud transformation projects for companies operating the Financial Markets can ensure their solutions deliver optimal connectivity to empower their trading needs

How BSO can support your cloud journey_

BSO is a full-scope cloud solutions provider offering a range of cloud services and support. We provide custom private cloud solutions, designed to support mission-critical workloads, partner with leading public cloud providers and offer hybrid cloud solutions for businesses after an integrated and sophisticated cloud environment.

bso cloud

Virtual machine and serverless computing services designed for easy scaling and high availability.

Whatever your business' IT needs, we can match you with the right solutions. BSO offers an extensive range of services from IaaS, dedicated and shared infrastructure to virtual private infrastructure, cloud backup, firewalling, load balancing, object storage and IP transit.

Cloud projects don't need to be overwhelming. BSO Cloud simplifies your journey to an optimised cloud environment. When it comes to managed cloud services, you can choose the level of management you need, depending on your specific requirements. Our collaborative approach to building and maintaining your services ensures you have the right cloud solutions.

BSO is also a market leader in low latency connectivity, which is so crucial for financial firms. **We connect to all major trading venues across Europe, Asia-Pacific, the Middle East and Americas**, reaching 33 countries and over 240 data centre locations with bespoke financial connectivity that's secure, scalable and adaptive.

We were recently named the **best network provider of low latency services** in the prestigious Waters Rankings 2021. And we have services dedicated to the Crypto space, boasting ultra-low latency capabilities.

Crypto Connect is the simplest and most comprehensive low latency crypto trading solution on the market - no other providers can match the quality or reach of BSO's network.

Why BSO for your cloud journey?

Quality infrastructure
Every cloud region uses infrastructure of the highest grade - fast, reliable, robust. We utilise SSD and NVMe for storage - high IOPs guaranteed.

Transparent pricing
Clear cost breakdowns, no hidden fees (100% predictable) and pricing that is easy to understand.

Our team approach
Unlike others, we treat every cloud customer equally, large or small, with our uncontested consulting-led approach.

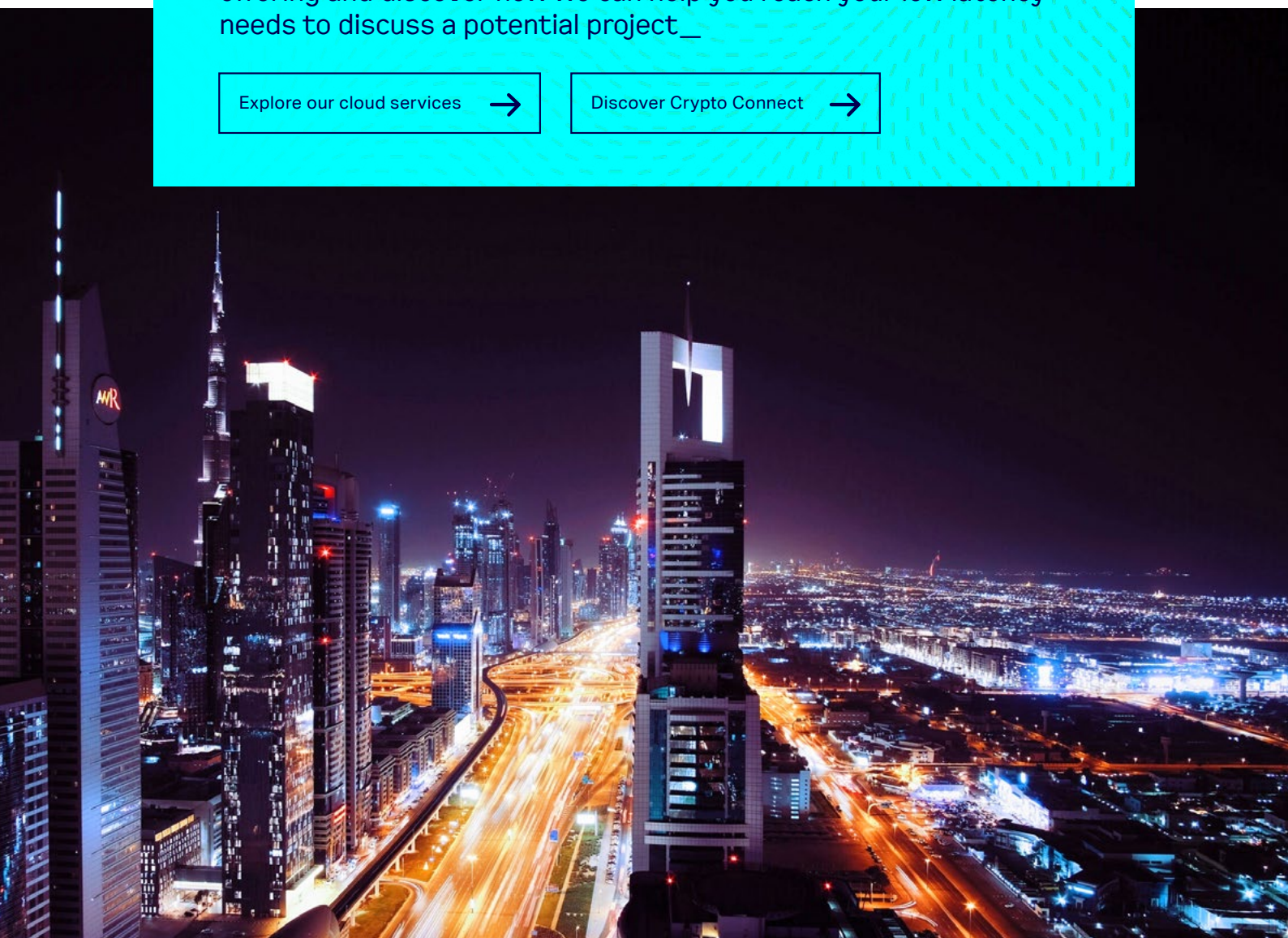
We understand the importance of a properly designed cloud environment. When built correctly, costs become predictable, applications dependable, data secure and infrastructure scalability seamless. Plus, once your environment is live we provide ongoing management and support.

DISCOVER MORE

Learn more about our cloud solutions and our Crypto Connect offering and discover how we can help you reach your low latency needs to discuss a potential project_

Explore our cloud services →

Discover Crypto Connect →



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