

Singtel Business

Product Brochure  
Hybrid Cloud



How hybrids have  
finally made cloud  
viable for businesses

Singtel

# Overview

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Cloud-based computing is not new. For years, it has been promoted as the next big thing in business technology. Yet the adoption rate for cloud services has not lived up to expectations.

This discrepancy can be attributed to the fact that early cloud services were mainly in the form of private and public clouds, each with their own barriers to entry.

Private clouds required companies to invest in hardware and maintenance to support their own clouds. Despite companies having the relevant know-how and IT support to implement an internal cloud system, scaling cloud support remained difficult and required an additional investment of resources.

Public clouds, while seemingly easier and more affordable to implement, came with their own challenges. Companies used to traditional systems were uncomfortable storing confidential data in public clouds. The ease of cloud access also required more supervision to control usage and maintain cost-effective deployment.

While these barriers may have existed in the past, advances in cloud-based offerings have led to the emergence of a new model – hybrid cloud. These offer a combination of both private (on-premise) and public cloud systems, with advantages that include:



**A better use of resources**



**Scalability and flexibility**



**Competitiveness against tech-savvy market entrants and rivals**

As integration of cloud computing into the business environment is becoming crucial to staying competitive, more and more businesses are seeing hybrid clouds as a viable model. According to a recent report by Tech Pro Research<sup>1</sup>, 70% of global companies are currently using or evaluating a hybrid cloud facility.

For companies that have resisted upgrading to cloud services or having experienced the challenges of private or public clouds, the hybrid model is the solution that finally delivers what the cloud has always promised.

<sup>1</sup>Hybrid Cloud: Benefits, roadblocks, favoured vendor, Tech Pro Research's May 2014 survey.

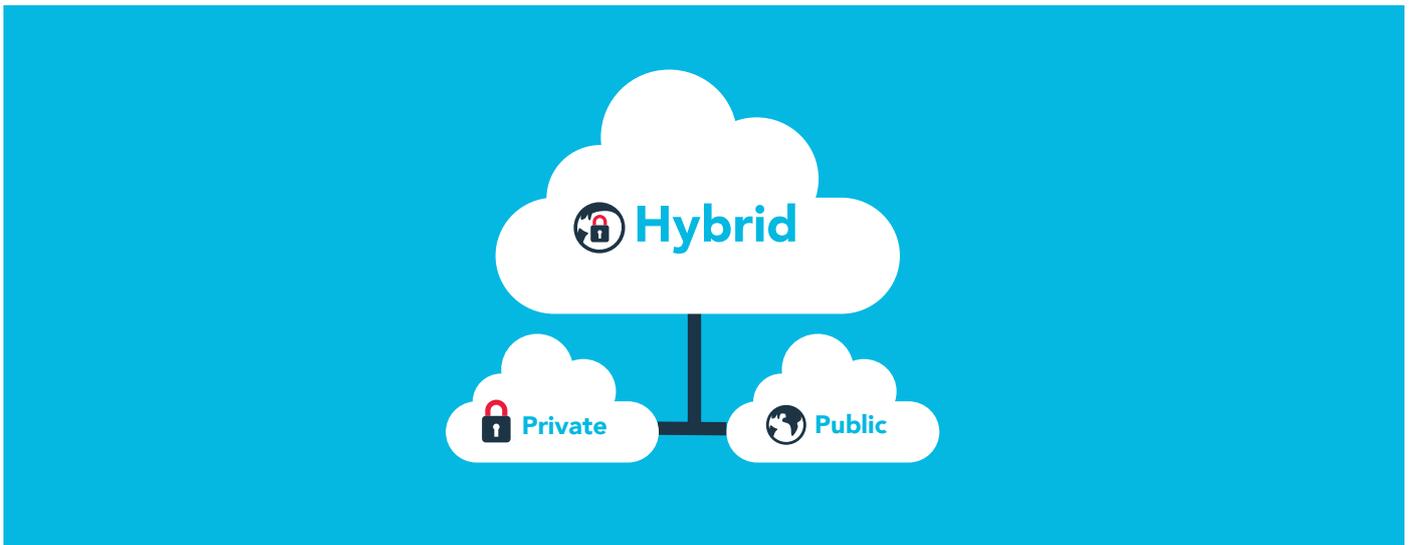
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# What exactly is a hybrid cloud?

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As its name suggests, a hybrid cloud can combine the best of both private and public clouds, offering businesses the option of maintaining their data-sensitive applications within their on-premise private cloud while exploring the opportunity to shift and tweak some of these within a public cloud infrastructure. As such, the establishment of a hybrid cloud offers businesses the practical option of easing into a new IT strategy.

The rigidity of a private cloud and the plasticity of a public cloud can be bridged with a hybrid cloud model depending on how willing a business is to restructure their applications in order to take advantage of both. Once an enterprise achieves successful orchestration and interoperability across the hybrid cloud, it will have the option to place applications in either infrastructure according to what makes the most business sense. Additionally, hybrid clouds also provide enterprises the possibility of maintaining primary data on their private cloud, while utilising the public cloud as a scalable form of back-up storage.

Private, public and hybrid clouds vary in their features and benefits and offer either contrasting, or complimentary functions as explained in the Cloud Comparison Chart below.

Product	Private Cloud	Public Cloud	Private & Public Cloud combined [Hybrid Cloud]
<b>Faster deployment and productivity</b>	Requires production level tests before going live apart from deployment time, even if you consider using plug and play appliances.	Offer instant ability to start with your cloud service.	You may start with public cloud and move some computing resources back to private cloud over time. This way you build private cloud effectively but security and compliance requirement may restrict your model of deployment.
<b>Network Security</b>	High Degree of Security- Most secure as all storage is on – premise.	Standardized Security Model Good, but depends on the security measures of the service provider. In this case, Azure, AWS or Aliyun.	Security Linked In through the pairing of Private cloud with public cloud resources, it is possible to maintain protected data. In addition, sensitive data can be stored on the Private cloud set up away from other information to assist with security and compliance concerns.
<b>Shared resources</b>	On premise: Private shared computing resources.	Multi-tenant: Public shared computing resources.	Mix: public and private shared computing resources.
<b>Availability</b>	99.95%	No SLA to 99.95%	No SLA to 99.95%
<b>Cost</b>	Pay as you go model with monthly charges	Flexible charges based on upfront or Pay as you go model	Pay as you go model

# Demystifying misconceptions

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With a large number of articles and reports analysing the pros and cons of moving to the cloud, conflicting accounts can make it difficult for a business owner considering all the options. They should, however, be aware that certain common views about the cloud are myths.



## Myth 1: Keeping data on-premise is safer than the cloud

While the on-premise systems of companies may or may not present security issues, IT leaders do often opt to rely on a team of experts from a cloud service provider who are able to offer options to protecting business data, as these experts possess the skills and scale to thwart security breaches. Notably, on-premise systems – including access and restrictions to data – are managed solely by the enterprise's IT team, so the business' interest is always safeguarded.



## Myth 2: Moving to cloud is an all-or-nothing scenario

Most businesses do not need to move all their computing processes to the cloud. In fact, many find it simpler and more cost-effective to integrate cloud computing with a hybrid approach, retaining their on-site data hosting option as they migrate in stages onto a public cloud.



## Myth 3: Clouds are simply a cost-saving solution

While it is true that moving to the cloud might lower ongoing operational costs, there are many more benefits that can be strategically important for organisations. Additional advantages include: growth through leveraging the agility of cloud scalability, adapting user interfaces to be intuitive and productive, and enhancing performance auditing and measurability.

When it comes to the big picture, cost-saving is merely one of the many advantages of cloud computing.



## Myth 4: Control is lost in the cloud

For companies that are used to managing their entire operation in-house, moving to the cloud may seem like a loss of control. A more appropriate interpretation would be to see it as a redirection of resources. Letting go of simple underlying technologies on which applications run would free up IT to channel efforts on new initiatives.

And while a company does not have proprietary rights to the technology it uses in the cloud, using a trusted and reliable provider ensures that the basic infrastructure is continually supported and kept up-to-date.



## Myth 5: Cloud migration is too troublesome

The process of introducing a new system into a business is not be easy, but business owners can engage a managed cloud service provider to provide information and advice on different hybrid configurations and how to get your team to assimilate cloud usage quickly.

Ultimately, business owners should keep in mind several factors when exploring the different cloud deployment models, regardless of whether they are leaning towards a managed private, public or hybrid cloud for their enterprises. Deciding on which cloud infrastructure suits a company best will be heavily dependent on its key business needs and overall IT strategy.

# Making the case for hybrid clouds

Some of the benefits of incorporating a hybrid cloud structure can be best exemplified in these scenarios:

## Hybrid cloud usage case 1 - Scaling up on resources



A healthcare organisation utilising a private data centre requires extra resources to process a sudden surge in new data. Instead of investing and building new infrastructure, the organisation could opt for a pay-as-you-use public cloud service, link that to their private cloud, and put together a hybrid environment that fits their needs.

As such, they retain the necessary on-premise infrastructure to support their average workload while being able to tap on the public cloud when additional computational power is needed.

## Hybrid cloud usage case 2 - Business continuity



It is crucial for an online merchant to have backups of its data. They could invest heavily in backup hardware to create their own redundancy system, but a better solution would be to use cloud storage to supplement their own platform.

The cloud then provides them with long-term data security services for information important to keep their business operating in any unforeseen circumstances.

## Hybrid cloud usage case 3 - Development and testing



A hybrid cloud environment is ideally suited to developers who seek a flexible and dynamic range of environments for testing software applications.

These test environments can be set up quickly and easily via latest tools from the public cloud service provider, without competition for internal production resources, and the resultant outcomes can be easily cloned and ported back to the private cloud for storage.

# What to look for in a cloud service provider

Once the decision has been made to engage in cloud services to support a business, one should know what to look for in a service provider. Just as there are many types of clouds, there are also many organisations that offer cloud services. When it comes to essential data services and storage, who you choose to use is as important as what you choose.

## Expertise & experience



What are the provider's credentials? Have you heard of them? Do they have a trusted reputation and track record in the industry? Many start-ups were formed when cloud services were in their infancy. Now as they move from niche solutions to mass mainstream adoption, qualified providers will have established track records at delivering enterprise level solutions.

Singtel is a trusted cloud advisor to governments and large enterprises. It provided the first private cloud infrastructure developed for all government bodies in Singapore, known as the Government Cloud (G-Cloud), and IT support for major national events. With a dedicated team that focuses solely on architecting cloud infrastructure, Singtel has a commitment to deliver nothing but the industry's best - backed by deep expertise, technical know-how and industry knowledge garnered through years of experience.

## Strong security and support infrastructure

A good cloud service provider needs to provide 24x7x365 security and support. That's why Singtel has an Advanced Security Operation Centre (ASOC) that monitors, detects threats and protects your data with up to 150 security professionals on watch.



The ASOC provides round-the-clock monitoring, analysis and containment of Advanced Persistent Threats (APTs) and malware. Its security, operational processes and procedures are built around industry best practices/standards covering:

- ✓ ISO-27001 standards
- ✓ ITIL best practices
- ✓ Threat analysis procedure
- ✓ Incident handling and escalation process
- ✓ Threat scenarios and rules development

# About Singtel

Singtel is Asia's leading communications group providing a portfolio of services including voice and data solutions over fixed, wireless and Internet platforms as well as infocomm technology and pay TV. The Group has presence in Asia, Australia and Africa with over 610 million mobile customers in 24 countries, including India, Indonesia, the Philippines and Thailand. It also has a vast network of offices throughout Asia Pacific, Europe and the United States.

## Singtel Cloud Awards

### Asia Communication Awards

Best Enterprise Service - Connectivity as a Service (2013)  
Best Cloud Service (2011 & 2012)  
Project of the Year - G-Cloud (2014)

### Cloud & DevOps Awards 2016

Best Cloud Computing Adoption Project (G-Cloud)

### Computerworld SG Readers' Choice Awards

Best Data Centre and Hosting Services Provider  
(2007 & 2009 - 2013)  
Best Managed Connectivity Services Provider (2006 - 2013)

### Computerworld Singapore Customer Care Award

Cloud Services (2012 - 2013)

### Frost & Sullivan Asia Pacific ICT Awards

Telecom Cloud Service Provider of the Year (2012, 2016)

### IDC MarketScape in Asia Pacific 2013

A Leader for Datacenter and Hosted Cloud Services\*

### NetworkWorld Asia Readers' Choice Product Excellence Awards (2013)

Managed Infrastructure Services  
Cloud Infrastructure Provider

### Telco Cloud Forum Awards 2016

Telco Cloud of the Year