CITO Research

Advancing the craft of technology leadership

Hybrid Cloud Myths

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Contents

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Introduction

Enterprises grapple with a host of challenges that are spurring the creation of hybrid clouds: collections of computing infrastructure spread across multiple data centers and multiple cloud providers. This new concept often provokes uncertainty, which must be addressed head on.

As more applications and computing resources move to the cloud, enterprises will become more dependent on cloud vendors, whether the issue is access, hosting, management, or any number of other services. Cloud consumers want to avoid vendor lock-in—having only one cloud provider. They want to know that they will have visibility into data and systems across multiple platforms and providers. They want to be able to move servers and storage around without a negative impact on application availability.

The good news is that more solutions become available every day, but with a learning curve and numerous management challenges and considerations.

This CITO Research paper provides advice for managers about how to counter myths and misconceptions that have held back some organizations from hybrid cloud adoption.

Myth: "You can use the public cloud for everything."

Not true. The public cloud supports a range of applications, with service level agreements (SLAs) targeted to the specific customer base of each provider. Any cloud provider's SLA must meet your production requirements. There is a wide range of SLA scales based on the workload and services each solution is meant to support.

A public cloud provider such as Amazon Web Services (AWS) operates on the general assumption that the applications they host are written to run on the cloud, that is, they're not hardwired to a particular server. These applications can be a good match for the public cloud.

Conversely, an Enterprise Resource Planning (ERP) system that needs to be on one large server will require infrastructure designed for higher performance with a stronger SLA than most public-cloud operators can provide.

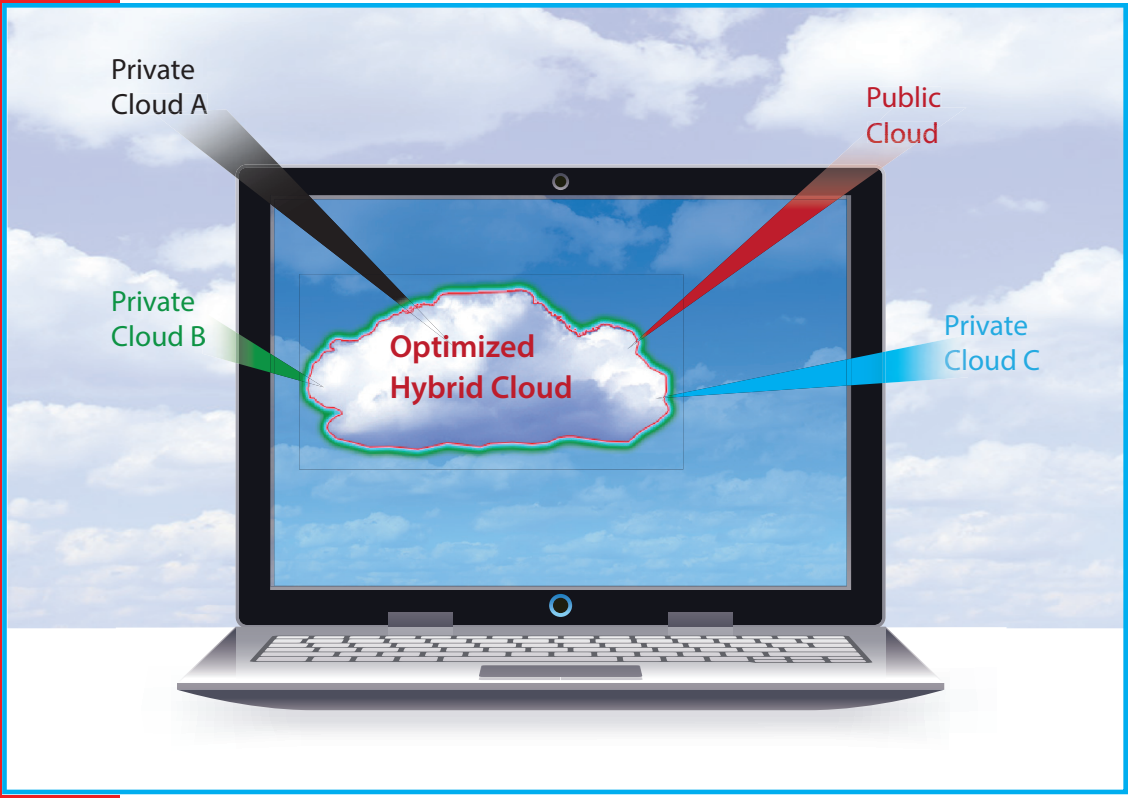
Tip: Investigate Cloud Management Software

Commercial platforms such as RightScale provide an alternative to homegrown, improvised systems. RightScale is a cloud management platform that provides a single pane of glass across all of the enterprise's clouds, allowing them to interoperate, self-heal during interruptions, and adapt.

Enterprises can design clouds with industry-standard components but with the level of customization required to support their application portfolio. Adopting one framework and toolset allows IT to deploy and manage cloud resources across multiple providers. It gives IT managers the flexibility to move workloads or change vendors, as well as the visibility needed to make informed decisions.

SLAs can be supported without being locked in to any one vendor.

Take advantage of a Hybrid Cloud with Single Pane of Glass Management



Myth: "You can't be secure in the cloud."

Not true. You can be as secure as you want to be. For example, through AWS Direct Connect, it's possible to place physical security appliances at interconnections between databases, application servers, and web servers, establishing a level of security comparable to a private network.

Many providers offer custom solutions tailored to meet the security requirements and standards of industries such as healthcare (HIPAA) and credit cards (PCI). It's critical to ask questions such as "Where is my data at rest?", "What happens when I move it?" and "Does it make sense to separate storage and application servers given my security requirements?"

Myth: "The cloud is not reliable."

Not true. The cloud lets you manage your workloads and gain access to as many resources as you need. Because of the enormous amount of capacity in the cloud and the economies of scale it offers, the cloud can be a very economical and reliable option for provisioning your service.

The rapid provisioning capability in many cloud offerings improves the economics of operating by lowering the baseline hardware requirement for a given service with variable demand. If you can add a server instantaneously, you don't have to permanently over-provision to support peak workloads.

Tip: Determine the level of support that will be available with each solution

Not all cloud services are alike; some lack robust disaster recovery and failover schemas. Some areas in public clouds are set to shut down to favor higher value customers, so it's worth investigating which area you're in.

Even if you're in an area with a better SLA, management tools can sometimes fail if a large number of customers use them at once. Further, some cloud providers offer very little information when there is a problem. Cloud provider selection should hinge heavily on this evaluation.

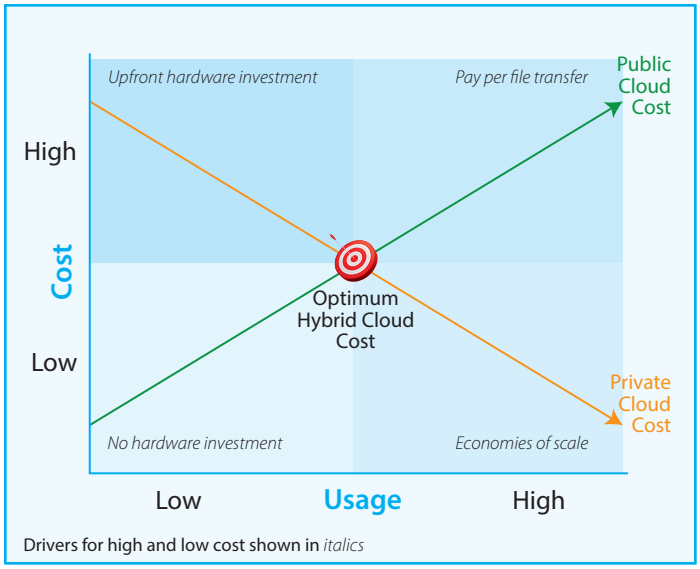
Myth: "The public cloud will always be cheaper."

Not necessarily. As we mentioned in our first white paper in this series, "Why the Hybrid Cloud Makes Sense," when companies are spending tens of thousands of dollars per month on the public cloud, it's like renting a car for three years—at some point it's cheaper to buy. Companies paying around $20,000 a month on public cloud services can achieve ROI in about four months by purchasing their own equipment and moving to private clouds enabled by Redapt, OpenStack, Cloud.com, or RightScale.

Tip: Keep an eye on prices

The economics of public and private clouds are a moving target. Enterprise IT needs to monitor the economic threshold for switching from public to private clouds. Amazon dropped its pricing 15 times in 2 years, and as the inflection point moves, it may be reasonable to stay in the public cloud.

Hybrid cloud blends public and private cloud usage to save dollars



Myth: "You can't get enough bandwidth in the cloud."

Applications that rely on the performance of Ethernet connections between components in the data center are now moving to the cloud and may be separated by great distances.

Not true. Applications that rely on the performance of Ethernet connections between components in the data center are now moving to the cloud and may be separated by great distances. Equinix and AWS Direct Connect have partnered to make the apparent distance between machines much smaller. In so doing, the network imitates an Ethernet connection so a server does not recognize it has been moved from one physical location to another but behaves as if it is still on a local WAN. This capability lets enterprises move servers to their most efficient locations, without disrupting the applications they support.

Because of their investments in high-capacity interconnections in data centers and partnerships with vendors providing direct connections into the public cloud, data center providers such as Equinix are able to offer scalable bandwidth options. Here are some examples:

- A large financial firm moves several hundred terabytes of data per day on the Equinix network and makes decisions based on the export of that data, which informs its Monte Carlo simulations. This would be impossible without significant throughput capability
- When thousands of people want to play a Zynga game online, network latency cannot be an obstacle to spinning up and spinning down servers to accommodate demand. Zynga uses a high-bandwidth connected hybrid cloud solution to manage customer demand

Myth: "You can't move large amounts of data in the cloud."

You can, if you have the right architecture. Direct links to cloud providers via Direct Connect and optical fiber interconnections in data centers such as Equinix IBX provide dozens of choices for moving substantial payloads across Gigabit or 10 Gigabit links. Here are a few examples:

- Nasuni, an enterprise storage provider, moves terabytes among three major cloud providers. The company has publicly reported on the time it takes to move 12 terabytes, which varies from four hours to 40 hours depending on the provider
- Equinix customers are now using their own WANs to move large datasets between AWS points of access, instead of within AWS, affording better return on investment (ROI) and management control

Myth: "You lose control of data in the cloud."

Not true. There are many options for preserving control of data. Choose a provider that will let you keep your data on-premise and access it via high-speed connections, which will make it that much easier to move all or some of the data into the cloud later.

Tip: Investigate Direct Connection Services

By using AWS Direct Connect, enterprises can move data without the constraints and costs of bandwidth they'd otherwise incur. Most providers charge for inbound and outbound connections. With AWS Direct Connect, a private inbound connection is free, and outbound pricing is substantially cheaper—customers can save up to 10 times the data transfer costs of conventional Internet connections to AWS.

Myth: "We can wait—nobody got fired for not moving to the cloud."

There is too much economic pressure to run computing efficiently to ignore the cloud any longer.

Not true. Last year, this argument might have held water, but not now. There is too much economic pressure to run computing efficiently to ignore the cloud any longer.

The frequency of price changes is also increasing; if you ran the numbers six months ago, it's worth running them again. Meanwhile, the hybrid cloud is becoming more compelling all the time. New capabilities are constantly coming online, increasing the range of applications and workloads that it handles. The applications left behind in the first round of cloud adoption might be ready in round two.

Myth: "You can't get regulatory compliance in the cloud."

Not necessarily true. You can if you deploy a private cloud. If you have a private cloud with management capabilities and appropriate service levels, you have more choices about how to comply with corporate policies, national data laws, and industry standards. If data needs to stay in specific locations, it should be able to be accessed quickly and securely from those locations.

Conclusion

The economic advantages of cloud hubs have made the hybrid cloud all the more attractive.

There are many myths about the hybrid cloud, but they are just that: myths. Reading the papers in this series will help you become more informed about the full range of cloud options. The flexibility and economy of scale in the cloud continue to improve, and the offerings of commercial cloud providers have removed the biggest management challenges, so the case for the hybrid cloud has never been stronger.

A lack of SLAs and sufficient bandwidth are no longer barriers to cloud adoption. The economic advantages of cloud hubs, which reduce latency by ensuring proximity to network backbones, have made the hybrid cloud all the more attractive.

Of course, serious thinking about the design of existing applications, storage needs, and portability of hardware in your organization are required before making significant moves. Dispelling the primary cloud myths helps to make a convincing case for moving enterprise workloads to the cloud and reaping the benefits.

All the papers in this series serve one overarching goal: to use the power of the cloud to deliver the best application performance in the most economical, efficient, and scalable way. In the next paper, "Application Acceleration and Scaling," we'll look specifically at design approaches and a cloud strategy for accelerating and scaling applications for a global, mobile audience.

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