3 Myths About Public Cloud

Key Takeaways

→ Public cloud may seem attractive to organizations looking to accelerate DevOps, but unanticipated surcharges and lack of in-house control should prompt exploration of other options.

→ To optimize public cloud implementations, companies need to put only appropriate applications in public cloud, understand their migration costs, and always maintain sufficient public cloud capacity.

→ Balancing public and private cloud in a hybrid cloud is the most cost-effective option to make sure you can deliver an agile cloud. Tintri delivers the best option with storage that controls each application automatically.

What is the Public Cloud?

The simplest definition of a public cloud is an IT service offering available to multiple 3rd-party clients over the Internet. These services typically comprise one or more of the following: Compute, storage, networking. Billing is usually on a pay-per-use basis without a term contract.

Where this gets more complex is the variety of capabilities offered under each of these categories. Storage can be selected in multiple tiers, redundancy levels, regional placements, availability levels, and degrees of integration with other services. It can also be specialized by storage application. Often, public cloud storage can reduce or eliminate the need for local backups and nearline archiving while improving RTO and RPO. Relatedly, it can significantly boost business continuity and disaster recovery, which can deliver huge operational and financial benefits.

Networking is a relatively recent addition to public cloud offerings and usually comprises site-to-site VPN and/or high-speed connectivity from customer site to cloud and across cloud compute and storage instances.

Compute is probably the most diverse and comprehensive category of IT services offered in a typical public cloud. The most basic is compute capability that offloads in-house infrastructure during spikes in demand. Another option is to run compatible apps in the public cloud as their primary instance to improve availability and ensure use of current versions. The final example, and perhaps the one growing the fastest, is to leverage the public cloud as a compute resource for application development and have data on premise as part of enterprise cloud.

Benefits of Public Cloud

The benefits of the public cloud have been widely covered, including flexibility, availability, and even security. The public cloud provides organizational agility to give infrastructure more resilience to shocks and changes in demand. Shifting from CapEx to OpEx also delivers financial flexibility to adjust to changing market conditions or needs of the organization. Finally, public cloud vendors have invested extensively to secure client data and processes, to the extent that for many organizations, their data in the public cloud is now more secure than the data they host themselves.

As an example, the public cloud has enabled organizations to accelerate DevOps by allowing for unlimited copies of the current infrastructure environment for test without disrupting production operations, and facilitate collaboration across globally diverse teams to enable 24/7 operations and development. It also provides extensive development tools, such as private Git repositories, delivery of application and infrastructure updates, source code compiler/test/package development, and streamlined or automated code deployment. All of this infrastructure accelerates project design, development, and deployment in a secure, HA, and extensible environment.

But the public cloud is not infrastructure nirvana by any means. Like any technology, it has benefits and drawbacks/risks and the key is to map out how to maximize the former and minimize the latter. This requires significant upfront and ongoing planning to adjust quickly as needs or offerings change.

Drawbacks of Public Cloud

Public cloud services were seen originally as a way to offload more mundane IT functions and as a path to reduce infrastructure costs using the metered payment strategy. It was also a path to changing IT from primarily a CapEx model to more of an OpEx model to inject flexibility and improve financials. For some use cases, these dreams are realized. For others, however, they can become a nightmare.

The biggest problem is, ironically, cost. While the public cloud offers metered, pay per use service with the expectation that costs will be lower than capital investment, depreciation, obsolescence/updates, and management, costs can and often are higher for a number of reasons:

› Cost per unit can be high depending on what is chosen. Cold storage is cheaper per GB than real-time storage but figuring out and monitoring what goes where can be challenging, resulting in higher costs than should be possible.

› There are often surcharges for capabilities that weren't anticipated but end up being needed. Again, using storage as an example, if you have data in cold storage and need it somewhat more quickly than the SLA, you can end up paying hefty fees that more than offset the cost advantage of that storage.

› If an organization can achieve high utilization of their private cloud infrastructure, it has the possibility of achieving efficiency levels that surpass those of the public cloud, resulting in lower cost.

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Balancing Private and Public Cloud

In order to find the optimal balance between public and private cloud, it is important to deeply understand your application requirements and infrastructure capabilities. Here are 3 key steps in successfully traversing this process.

1. Put the right applications in the public cloud

Unlike public clouds, private clouds provide extensive native support for more traditional/custom applications (that are not written or tuned for the public cloud), and direct user management. As such, a private cloud is best for non-cloud-native, mission-critical, and/or very complex workloads that demand strong uptime, minimal latency, and tight management.

In addition, while public and hybrid clouds offer a cost advantage for short-lived or new applications and infrastructures, private clouds can provide more compelling financial returns for longer-term workloads due to the ability to amortize up-front infrastructure and ongoing management costs over a longer time period, avoiding the higher marginal costs of public cloud subscriptions.

2. Understand TCO of moving applications to the public cloud

Migrating applications to the public cloud is not as straightforward as it might seem. There are many upfront infrastructure decisions, including what type of migration you plan: Lift and shift, lift and extend, re-architect, or replace with SaaS? Each of these have widely varying strategic implications and cost structures.

In addition to infrastructure and operational cost considerations, you need to factor in migration costs. This includes actual moving of data to the cloud, for which providers charge, and then integrating and testing the apps you move, which may be substantial if from older legacy systems. There may also be 3rd party fees if you decide to farm out some of the work.

Also price out the effort that will be required to resync apps data between on-premise systems and the cloud after migration is complete and include any costs for on-going administration and compliance. This will help minimize cost adders like zombie instances.

3. Maintain sufficient capacity in your private cloud

When moving apps to the public cloud, organizations may find that not all migrated applications work better in IaaS, due to performance, latency, or insufficient support services. Migrating those applications back to in-house infrastructure may be necessary. But insufficient local capacity may delay reverse migration, reducing performance and adding cost of additional infrastructure. Maintaining spare capacity as insurance until applications are vetted in the clout may make sense.

Tintri Enterprise Cloud

Operating a private cloud based on Tintri storage systems can avoid many of the costs of a public cloud while providing many of the benefits. Tintri enterprise cloud platform makes it simple to operate apps in your private cloud through automation, autonomous operation, self-service capabilities, and advanced analytics.

1. Automation

To achieve the true benefits of the cloud, storage overhead must be minimized without sacrificing reliability and performance. Building your storage and apps around a simple, comprehensive yet clean storage API automates much of the communication overhead.

Tintri's enterprise cloud solution provides the option to leverage its powerful yet simple API to automate much of the overhead tasks around both configuration of the storage itself plus all of the common VM configuration operations via one interface. This enables users to streamline optimization of their enterprise cloud infrastructure and simplify how they complete common VM-related operations.

2. Autonomic Operation and Orchestration

Tintri assigns every VM its own lane. This greatly simplifies and provides broad automation of resource allocation in your private cloud environment. With Tintri, there's no conflict over resources or policies and therefore, no noisy neighbors. The ability to automate storage tasks has long been central to Tintri's differentiation. Tintri allows customers to manage up to 480,000 VMs from one central console, using automated policies and Tintri software to substantially reduce management effort. Tintri also offers plugins such as VMware vRealize Orchestrator plugin, which automates many storage operations, such as snapshot, clone, replicate and copy data management at the VM-level. Customers can integrate vRealize Orchestrator into VMware cloud management and automation systems such as vRealize Automation and vCloud Director.

3. Self Service

Tintri VAS automatically abstracts away the complexities of cloud storage by providing a simple and intuitive interface that lets users take direct charge of meeting their storage needs (subject to administrative controls). This reduces IT staff intervention for basic tasks while giving greater agility to design teams, improving performance and shortening design cycles. Design teams can choose public or private cloud platforms for each app based on performance, cost, and service's needs.

4. Analytics

Tintri's analytics provides customers with cloud-based real time and predictable analytics to improve data center planning and operations. These analytics can crunch millions of data points from millions of VMs over several years. Tintri analytics enable a number of capabilities:

› Capacity planning: Analyze storage (capacity, performance) and compute (CPU and memory usage) to forecast needs for up to 18 months in advance.

› Resource usage: Model applications and understand how changes to your application set might impact storage and compute infrastructure.

› Growth: Understand the impact of organic usage growth and new projects are affecting capacity, performance, and throughput.

› Profile specific applications: Identify outliers among various types, e.g., desktops, SQL servers, databases, custom virtual applications.

› Scenario testing: Forecast impact of changes to your infrastructure, say over the next 18 months, would impact performance and meeting SLAs.

Conclusion

Optimizing costs across public and private clouds requires detailed understanding of needs and pricing structures and working around constraints on each system. Handling this manually is impossible for most organizations, resulting in lost productivity, higher costs, or both.

Tintri enterprise cloud was built to support and assist in multi cloud deployments. Once you understand cloud costs and organization needs, Tintri helps extract the maximum value from all cloud investments through capabilities that help you manage and optimize all of your cloud resources to deliver the most agility to your development efforts.

With Tintri, your cloud use is efficient, safe, and cost-effective.