Finding the Right Fit:
A Cloud Infrastructure Overview

Few would argue the fact that we live in an increasingly software-driven universe. Within this vast and rapidly expanding space, cloud computing is accelerating software expansion, adoption and disruption in every industry.

While the term 'cloud computing' often conjures up images of SaaS and end-user services like Dropbox and iCloud, its star quality lies in a new operational model that maximizes the return on the transition of computing from an asset to a utility.

Today's viable cloud-computing solutions boast features like on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service. On-demand self-service allows users the freedom to provision and release resources as needed, effectively aligning costs with use. To truly unlock the business value of cloud, end-users, usually developers, serve themselves without opening a ticket through the service desk or contacting IT.

While there is a host of cloud computing options available, in the industry's relative infancy public cloud services have been garnering the lion's share of attention. Though many organizations and workloads are not effectively structured for public cloud at this early transitional stage, the perceived business value nonetheless remains high.

For some adopters, however, the public cloud's silver lining quickly became tarnished as associated security risks and loss of data control were discovered. The pendulum soon swung in the opposite direction to the private cloud: a model that offers unparalleled control, security, and privacy as it's integrated within the company's firewall while remaining under the watchful eye of the internal IT department.

But while often there is an impression of increased security with a private cloud solution, the reality is that internal IT teams are most frequently in fire-fighting mode and are not as secure as imagined. In addition, the robust and capital-laden procurement, planning, design, and implementation process means it can take up to a year for a business to start realizing any value from the solution. Add in the need for ongoing internal maintenance and monitoring, and the cost-value ratio becomes even more

delicate to balance. Finally, with a private cloud a customer is always over-provisioned or under-provisioned.

For companies that want the best of both worlds when looking to move their workloads to the cloud, what's the best solution? Enter virtual private or hybrid clouds: solutions that provide additional flexibility, security and scalable costing options.

Somewhat like a gated community, a virtual cloud exists within the multi-tenant cloud environment, offering strict control over segregation of data and customer environments while offering the economical advantages of a public cloud. Characterized by a closed perimeter of security walls, cloud.ca offers a virtual cloud solution that ticks the boxes of cost efficiency and on-demand capacity. The solution is unique in that it eliminates "noisy neighbors"—applications that place heavy demands on IT resources, which can negatively impact the performance of other applications that share those resources.

Reptiletech, a firm specialized in building interactive websites and multi-platform solutions, quickly discovered the benefits of the cloud.ca solution. With 15 years' experience in back-end servers and hosting over 150 websites, Reptiletech had previously explored the world of cloud model offerings. Although skeptical at first, Benoit Domingue, web strategist at Reptiletech, soon realized that cloud.ca wasn't just another cloud buzzword. "I work on the Internet all day, every day. I see cloud everywhere. At first, I didn't take cloud.ca seriously and thought it was just another virtual private server provider," says Domingue. "The big difference with cloud.ca is that I can get a virtual private server while still being able to manage the whole networking aspect of it. With most other providers I get immediate access to a server that is part of my provider's network. For example, if I create a new instance on a typical cloud server provider it is already hooked up to the Internet. The key difference with cloud.ca is when you create a new server instance it is inside this walled garden within your own virtual network. It's not automatically wired to the Internet. That's a big deal for security and scalability."

Workload suitability - is your application designed to fail?

There is much to consider when deciding which cloud best suits an organization's workload or application—factors like resilience, performance and connectivity—and some companies may feel that a cost-effective transition for complex applications not designed with the cloud in mind is little more than a pipe dream. Other companies are pushing applications to the public cloud without realizing significant differences between how traditional environments and public clouds treat the applications. This can often result in downtime, frustration and create roadblocks to unlocking the benefits of cloud.

How the application is designed will impact the choice of cloud. Unlike virtual private clouds, public clouds are optimized for low unit costs, often sacrificing reliable performance and availability. Dealing with variance in the performance and reliability of the cloud now becomes the responsibility of the application, requiring developers to code applications with a "design for failure" approach.

The team at CloudOps have been working with the public cloud since 2008 and are experts at helping determine how to get value out of the cloud for new, existing or legacy applications. Their experience with public cloud led them to build cloud.ca for a full range of applications from new cloud-native applications to older Windows based applications.

Do you know where your data is being stored?

As touched upon earlier, public cloud solutions, when not used correctly, may leave a business exposed to considerable security and privacy risks. "Cloud security is like a fence around your data," explains Dominigue. "Before cloud.ca we were using a couple of servers plugged into the Internet. There was no cloud. Now I set up a new server and it is protected so I don't need to worry about a big range of attacks. It's the wild west out there! Having control on what is exposed and what isn't is very important."

Regulations and laws surrounding data sovereignty—the geographical location where a company's data is stored—deserve careful scrutiny when considering a cloud service provider. Foreign -owned and -operated public clouds are at risk of having their data subpoenaed by a foreign power. In September 2014, the US government ordered Microsoft to relinquish data stored in its cloud in Dublin, Ireland. While this violates Irish law, noncompliance on the part of Microsoft would have resulted in the company breaking US laws.

Companies preferring to keep their data close to home should seek out a provider offering a domestic storage solution. It may be valuable to partner with a regional provider that is owned and operated in the company's country of origin. cloud.ca is owned and operated by Canadians and meets Canadian requirements regarding data residency and privacy.

Converting capital expenses to variable expenses while lowering operating costs

Public cloud services are generally best suited to cloud-native and/or non-critical applications with minimal downtime costs, and usually trump private cloud offerings when it comes to cost efficiencies. It's worth noting, however, that the additional complexity of operating business-critical applications in the public cloud could easily negate any savings.

Alternatively, private clouds demand a sizable investment in fixed assets including hardware, software, networks and facilities, in order to develop, test and support their IT services. While it's a substantial

investment for any organization, for many SMBs and startups it could well be a prohibitive one. Furthermore, you always have too much or too little hardware - both can have significant impact on the growth.

The pay-as-you-go cost model, or utility-based pricing, offered by a virtual private cloud turns capital expenses into variable ones and lowers operating costs by working with the ebb and flow of workloads. This practical pricing model eliminates the need for capital investments, most notably in IT infrastructure. And because resources can be removed when they're no longer required, businesses see a significant reduction in operating costs. cloud.ca bills by the hour, so companies only pay for what they use. Further enhancing the pay-as-you-go model, cloud.ca provides transparent cost reporting per department, resulting in increased efficiency and accountability of resources across multiple projects and departments.

Virtual private cloud model - the right fit

As we move further into a digital age the requirements for robust and scalable systems will place increasing demand on the need for resilient and secure cloud services. And as cloud services continue to evolve by offering improved options for applications and workloads migrating to the cloud, they will command increasing space in the software universe.

While it's clear there is no definitive one-model-fits-all solution to the cloud question, it's refreshing to see the virtual private cloud model stepping into the ring as a viable contender against common public and private cloud offerings. With an increasing demand and constantly evolving technology, the virtual private cloud model is altering the image of IT infrastructure.

Experts like the team at CloudOps can help an organization choose the wisest cloud services solution for their needs. They're committed to finding the ideal fit based on each company's unique business and technology requirements, and easing the transition into this exciting and critical frontier.

For more on cloud.ca visit www.cloud.ca or connect on Twitter and LinkedIn.