CLOUD MIGRATION AND A SOFTWARE-DEFINED EXISTENCE ACROSS APPLICATIONS, INFRASTRUCTURE, AND NETWORKS

EXECUTIVE SUMMARY

With more than 90% of businesses using the cloud in some form, the question facing business owners, IT leaders and web application owners is not when to move to the cloud, but how to do it most efficiently. Whether it's a single workload on one cloud provider, with a disaster recovery plan to be executed on another, or a single workload across multiple environments, both private and public, every business' needs will vary, and aligning migration strategy with long term business goals is critical. New software-defined methods of application migration and control are removing the need to re-write applications and making "lift-and-shift" models, where applications can only use a subset of the cloud's capabilities, no longer necessary. Once deployed in the cloud, applications with software-defined infrastructure control (SDIC) and software defined network elements address the mission critical needs of your global web presence, detecting issues and deploying controls to keep your web application fast, secure and available.

INTRODUCTION

Cloud computing has seen enormous growth over the last few years as enterprises explore and exploit what the cloud can do for their IT infrastructure, as they scale their compute resources to better serve customers. According to Gartner, by 2019, more than 30 percent of the 100 largest vendors' new software investments will have shifted from cloud-first to cloud-only. Cloud will increasingly be the default option for software deployment.[1] Agility, scalability and access to leading-edge IT capabilities, that are only available in the cloud, are the primary drivers toward this rapidly growing trend, helping to secure the technology's prevalence in modern IT infrastructures.

Any shift in technology of this magnitude creates opportunities as well as challenges to achieve its full potential. The complexities of application integration and migration to the cloud evolve over time, and businesses that really understand the value in finding the right balance of public, private and hybrid cloud solutions will benefit the most.

The question then is how to create a cloud migration strategy – and determine which cloud migration process best serves the long-term corporate objectives and growth plans. While there are a number of different migration options there are also infrastructure considerations common to any organization looking to migrate their applications to the cloud.

DECIDING WHAT GOES WHERE

When it comes to migrating applications to the cloud there are a number of questions that need to be addressed, the first of which is determining whether or not the applications should be moved to the cloud at all, since many may have characteristics that mandate their need to remain in-house. If the application is deemed cloud-worthy then which type of cloud? Public? Private? Hybrid? Companies need to orchestrate a path with the future in mind – a process that maximizes resources, time and existing infrastructure while reducing pain and costs.

For cloud-worthy applications, one will find much written about the "lift-and-shift" method of application migration as it is less time consuming and costly than completely re-architecting an application to make it cloud-native. With lift-and-shift, one can replicate the application in the cloud without modifying its design, or at least making only minor changes. The downside is that this method fails to leverage all the benefits the cloud as a true utility, leading to additional incurred costs to run and maintain the application due to a lack of consistency in networking policies.

Dave Bartoletti, Forrester Research, also believes 2017 will see a dramatic increase in application migration to the cloud and that while the best option today may be to take the longer and more expensive route to rewrite the application and take advantage of the cloud's elasticity, lift-and-shift migration can be costly too.[2] Other forward-looking cloud experts have made some predictions and give valid advice about cloud migration for 2017 and beyond:

Predictions

- The "great migration" begins in 2017 with more workloads moving to cloud-based platforms than ever before
- Security and performance will continue to be issues to overcome, as well as management
- New problems are solvable with some thought and technology
- Attention on approaches and technologies needed to assist enterprises in mass workload migrations
- A majority of applications will be web-based

Advice

- Take advantage of what the cloud has to offer when writing and migrating applications
- Exploit provisioning, scaling, security, performance and continuous delivery ideals
- Consider enterprise security, compliance, availability, data integrity, and scalability requirements
- No need to make the applications overly complex[3]

Ultimately, the business requirements, priorities, timing, costs and long term corporate objectives will dictate which applications and which method, or methods, an enterprise will use to migrate their applications to the cloud. As we mentioned previously, with new opportunities come new challenges, so Webscale approaches things a little differently to get there faster, easier and with a lot more flexibility.

GOING SOFTWARE-DEFINED

Webscale's approach to cloud migration takes into consideration the critical elements needed to determine where and how to migrate an application to the cloud: scalability, security, flexibility, availability, performance and management. We achieve this by adopting an auto-provisioning model whereby the entire application is migrated into the cloud as a software-defined infrastructure. There is no need to re-write, saving massive amounts of time and resources, nor is there any need to lift-and-shift and use only a subset of the cloud's capabilities.

What is unique about this comprehensive migration process is that it manages application configuration, network requirements, instance details and overall deployment and maintenance discipline, in a 100% software-defined environment. Migrating to the cloud becomes a simple, automated, and easy to manage task as the entire deployment is under source and version control. A software-defined infrastructure allows for automated application deployments and continuous integration for the wide range of dynamic systems common in today's enterprises. This gives web application owners the ability to rapidly deploy cloud applications with unprecedented application monitoring and control tools for easy management across multiple cloud environments.

GLOBAL MULTI-CLOUD FLEXIBILITY

Just as your applications vary in their requirements from the cloud, so do the cloud providers vary in their ability to meet all of a business' needs. There are pros and cons to locking into one specific cloud vendor which will depend upon your long-term expansion plans, business requirements and limitations with staff, time and other resources.

For example, enterprises expanding into new markets and regions need much more flexibility and need to consider how and with whom they intend to engage as their cloud providers in those new regions. Working with multiple cloud providers to optimize their respective services in each relevant market need not create anxiety or fear of "infrastructure armageddon" for your IT team.

By employing a multi-cloud disaster recovery strategy, enterprises can operate across different regions of a single cloud provider or entirely different cloud providers thus creating a business continuity plan and easy path to expanding and migrating applications irrespective of physical location. Multi-cloud disaster recovery helps businesses remain flexible and resilient, always-on and high performing in the event of operational downtime or any type of catastrophe, all while adhering to compliance requirements where needed.

There is no one-size-fits-all for the level of flexibility and control an enterprise needs for its applications, so the decision to commit to one cloud provider or to work with multiple vendors will depend on your application's requirements and its demands for the future. Either way disaster recovery should be part of the overall plan.

CLOUD CONTROL

There is no denying that catastrophes happen but how many of us prepare for that inevitable event or seriously evaluate which parts of our production infrastructure we would have to literally recreate by hand should such an emergency occur? Deploying truly resilient distributed systems in an SDIC deployment model hinges on our ability to treat all aspects of an application deployment as software, redeploying them wherever we want, and with version control across entire deployments in a cloud provider independent manner.

Consider what piece of data you absolutely cannot lose and what it would take to get it back. Traditional management and orchestration systems may only be doing half the job, as once the application is in the cloud, the ongoing management and control of that application is limited to a very basic subset of functions, and there may be no way to recover critical applications in the event of a disaster.

As more enterprises run software-defined networks and workloads across multiple environments – on premise, private, public or multi-cloud – the need for workload portability, simplified policies and single pane of glass management across the entire system is critical. SDIC technology delivers a tightly integrated and controlled environment, from auto-provisioning that takes an application from a simple list of requirements, to a cloud deployment in minutes and complete source control for the entire infrastructure.

CONTINUOUS INTEGRATION IN A DYNAMIC SYSTEM

Establishing this automated workflow enables continuous integration and brings unprecedented levels of resilience for workloads. For example, if your web application is returning errors after a code change, simply launch a rolled back system in minutes, and get back up and running with minimal disruption. Continuous integration also facilitates complete control up and down the stack, from performance features like content optimization, intelligent CDN usage and security features like web application firewalls (WAF), file integrity monitoring (FIM) and Distributed Denial of Service (DDoS) mitigation, to advanced infrastructure management features like right-sizing, predictive scaling and server self-healing to ensure your deployments remain cost effective and high performing with minimal human interaction.

Migrating applications to the cloud via a software-defined infrastructure method moves cloud deployments from weeks to minutes and automates application monitoring and control, delivering 100% available, blazing fast web applications.

THE WEBSCALE ADVANTAGE

Be a master your own cloud-iverse with Webscale.
The Webscale model is built to keep web application and hosting control with you while Webscale technology addresses the mission critical elements of your global web presence, detecting issues and deploying controls to keep you always fast, secure and available.

High Performing Applications.
We know enterprises demand high performing applications that are well adopted by users and address critical business needs. Traffic spikes and rapidly changing dynamic content are common, so Webscale automates web and mobile content optimization, combining it with intelligent content caching, both at the ADC layer in the cloud, and close to end users through CDN integrations, to ensure efficient delivery anywhere in the world.

Resilient Service Assurance.
Disasters happen so the ability to recover quickly from any operational downtime, whether it be because of a cyber-attack or an erroneous code change, and maintain business continuity, is as critical to your business as the web applications you run. Webscale has your back so you are always-on and high performing, no matter what. We backup and mirror critical applications across cloud and regions with round-the-clock availability for critical applications in the cloud.

Enterprise-Grade Security.
Every enterprise differs slightly in their approach to security so Webscale includes a programmable WAF, as well as custom security policies in our security suite. Designed to protect both online data and web infrastructure, while allowing fast and easy configuration of security policies to assess and act upon threats in real-time, Webscale provides protection against DDoS attacks, as well as other threats, blocking malicious attacks before users are impacted.

Insight Powered by Machine Learning.
Obtaining actionable insights to drive new business is key to an enterprise's growth. Webscale brings unprecedented levels of insight into global web applications through session analysis and machine learning. The Webscale platform analyzes web sessions in real time, identifying patterns, and classifying both good and suspect behavior so that the appropriate action can be taken system-wide or just for a single account.

Simplicity through Automation.
As discussed in this document, Webscale makes configuration management easy, removing deployment headaches and reducing operational expenses. Configuration management tools provide templates for easy roll-out or migration of new applications across single, multi-region, data center, hybrid or multi-cloud environments using Webscale's provisioning systems combined with industry tools like Chef, Opsworks and Ansible. Webscale's self-healing infrastructure ensures uptime and availability, with predictive analytics and fast data used to monitor user traffic, predict demand and scale out ADC and application layers in real time, without manual intervention.

CONCLUSION

The cloud has much to offer companies wanting to migrate their applications and infrastructure to take advantage of its limitless capacity, flexibility and availability. But no two applications are alike, and each takes thoughtful consideration about its needs in the context of a global cloud environment. With so many potential paths available to business owners, IT leaders and the application owners themselves, understanding the long term business needs, the options available to you and the resources needed to achieve your goals is critical for any successful migration.

Learn more about how Webscale can partner with you to seamlessly migrate, speed up and protect you in the cloud.

[1] Gartner Says By 2020, a Corporate "No-Cloud" Policy Will Be as Rare as a "No-Internet" Policy Is Today

[2] 6 trends that will shape cloud computing in 2017

[3] 5 Cloud Experts Predict Cloud Computing Trends 2017