



Reasons to Include
OpenStack in
Your Cloud Strategy

Table of Contents

| | |
|---|---|
| Introduction | 3 |
| #1 You Need to Increase Agility and Reduce Time to Market..... | 4 |
| #2 It's a Multi-Cloud World | 5 |
| #3 You're Wasting Time & Money Force Fitting Legacy IT Infrastructure | 6 |
| #4 Applications Should be Matched to the Best-fit Infrastructure..... | 7 |
| #5 You Want to Create a DevOps Culture and Transform IT Service Delivery | 8 |
| Conclusion | 9 |
| Learn More | 9 |

Introduction

OpenStack is an open source software project that enables users to build Infrastructure as a Service (IaaS) clouds. It pools together and virtualizes compute, storage, and network resources and presents these via APIs to create a programmable infrastructure. The goals of OpenStack are to accelerate time to value for cloud deployments and to allow businesses or public cloud providers to build infinitely scalable cloud services.

You've probably heard of OpenStack and may be wondering if you should include it in your cloud strategy. Ask yourself these questions:

- Does your business need increased agility?
- Can you scale your infrastructure efficiently to seize market opportunities?
- Do you want to be able to move workloads easily between public and private clouds?

If you answered yes to any of these questions OpenStack is important and you should continue reading to understand how it can help transform your business.

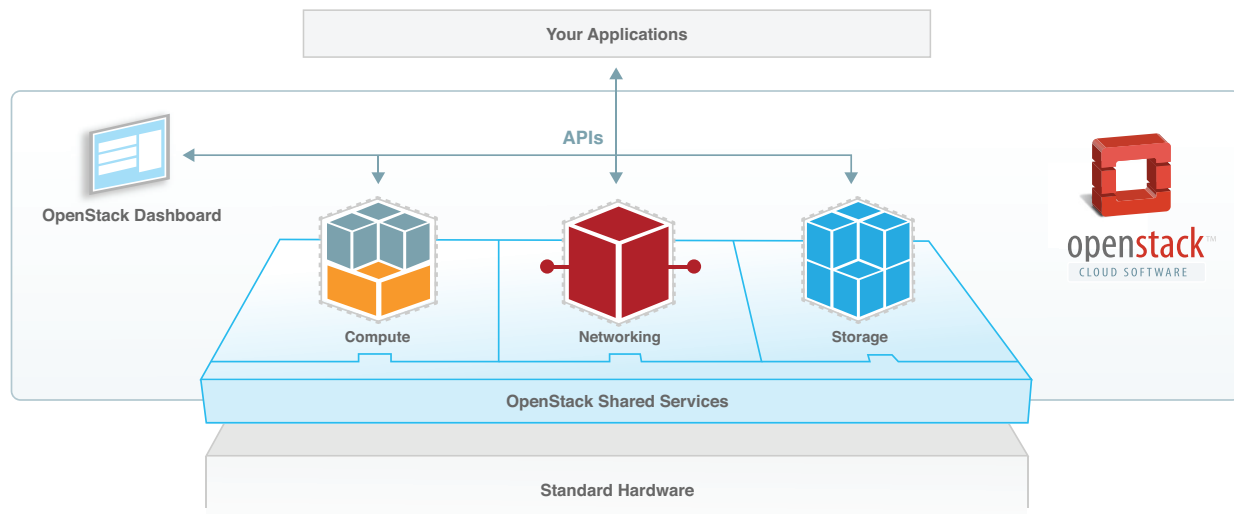


Figure 1: OpenStack Marketecture Diagram

1

You Need to Increase Agility and Reduce Time to Market

“Seventy percent of the companies that were on the Fortune 1000 list a mere 10 years ago have now vanished – unable to adapt to change,” states Forrester analyst Craig Le Clair.¹ No wonder that most enterprises point to agility as the top driver for private cloud. The consumers of IT (mostly lines of business and others looking to use IT as a competitive differentiator) are demanding that IT be more responsive to their business needs. Lines of businesses want to move at a faster pace—for example, building new applications, driving innovations in these applications more rapidly, and reducing the amount of time it takes to provision new infrastructure to support these applications.

OpenStack clouds bring unprecedented speed and flexibility to IT, allowing users to get access to resources faster and respond faster to the business, whether this is getting a new application deployed, a website up and running, a marketing campaign executed, or data analysis completed. Because cloud computing helps share and scale IT resources across workloads and users, it improves performance and availability of information. And, by enabling self-service access to information and applications, cloud computing reduces IT operational costs and improves business performance.

Time to market is a critical advantage of the cloud. It’s more than just the rapid provisioning of computer resources explains IDC research analyst Gary Chen. “An important aspect in allowing IT to respond faster is automation, which is a key philosophy of true cloud and OpenStack. Look at any of the massive public clouds and Web companies, and you’ll see that they automate everything they possibly can and eliminate any manual processes and workflows, which are pervasive in enterprise IT today.”²

¹ “Make Business Agility A Key Corporate Attribute – It Could Be What Saves You,” Craig Le Clair, Forrester, 9 September 2013. http://blogs.forrester.com/craig_le_clair/13-09-09-make_business_agility_a_key_corporate_attribute_it_could_be_what_saves_you.

² “Capitalizing on the Cloud Revolution with OpenStack,” Gary Chen, IDC, March 2014.

2

It's a Multi-Cloud World

When it comes to cloud models, you have several options, your own private cloud built on an Infrastructure as a Service platform such as OpenStack, various public cloud options such as Amazon Web Services (AWS) and Google Compute Engine (GCE), or perhaps even private or public clouds built on your own cloud technologies. Which option is right for you? For a number of reasons, one cloud model may not meet all of your needs. Public clouds require no capital investment and offer nearly unlimited scale with their on-demand access to resources. However, private clouds give you more control over security, resource provisioning, and service levels than public clouds and improve remote access.

To get the best of what each cloud model offers, organizations are moving to hybrid clouds that integrate public and private cloud services. Gartner predicts that almost half of large enterprises will have deployed hybrid clouds by the end of 2017.¹ With the hybrid cloud model, you can use the private cloud to host critical operations with high security requirements and leverage the public cloud to cost-effectively extend your private cloud and to handle projects that require quickly spinning up workloads or access to temporary resources. Hybrid clouds offer a number of benefits such as improved fault tolerance and availability, enhanced agility and the ability to mix and match cloud providers based on their service differentiation and potential cost savings.

Already, cloud infrastructure providers based on OpenStack are opening Google Compute Engine and Amazon Web Services APIs to OpenStack and delivering behavioral fidelity with the goal of building truly federated hybrid clouds.

“While the question of how compatible to make OpenStack with other clouds has been hotly debated, the reality is that it is going to be a multi-cloud world. While complete compatibility with other clouds cannot easily be achieved, the open source model has probably the best chance of building it if users demand it, without vendor agendas or competitive strategy to get in the way.”

– Gary Chen, Analyst IDC

¹ Merrett

3

You're Wasting Time & Money Force Fitting Legacy IT Infrastructure

Everything about IT is changing – the current environment was not designed for a social, mobile, big data era. If you haven't already invested in the cloud your IT department is probably struggling to keep up with the new demands and will eventually need to evolve your data center infrastructure with open source technologies. You can't keep trying to force fit legacy IT to handle applications it simply wasn't designed to do. The effort and cost to run cloud applications on enterprise virtualization clouds is high and eventually

“The transformation in enterprise infrastructure has happened because a new generation of apps requires a new generation of infrastructure. As that generation becomes pervasive, some technology will come along to make things more efficient operationally...”¹

**Satya Nadella, CEO Microsoft
Technology Infrastructure Research
Board (TIRB), Spring 2014 Meeting**

becomes prohibitive. And, the architectural approach on which they're built (specifically, preventing failure through “gold-plated” proprietary hardware with massive redundancy) is a major source of conflict with dynamic cloud applications that are self-managing and resilient to failure.

As applications that are driving computing demand are evolving, so must IT architectures. New cloud architectures are building to a “scale-out” model instead of the traditional “scale-up” model, leveraging commodity components and copying innovations first invented by web companies to provide services at massive scale. These new applications are forcing traditional IT architectures to keep up with the high service levels delivered by public cloud service providers which many lines of business now often consider as an alternative for building new applications.

So, you need two different clouds for two different sets of applications. An enterprise cloud is appropriate for running your legacy applications while an OpenStack cloud is best suited for your dynamic cloud applications to realize service efficiency, economies of scale and greater agility.

¹ “Research Board Meeting Speaker Content Guide,” Technology Infrastructure Research Board (TIRB), Spring 2014 Meeting, Atlanta, March 18-20.

4

Applications Should be Matched to the Best-fit Infrastructure

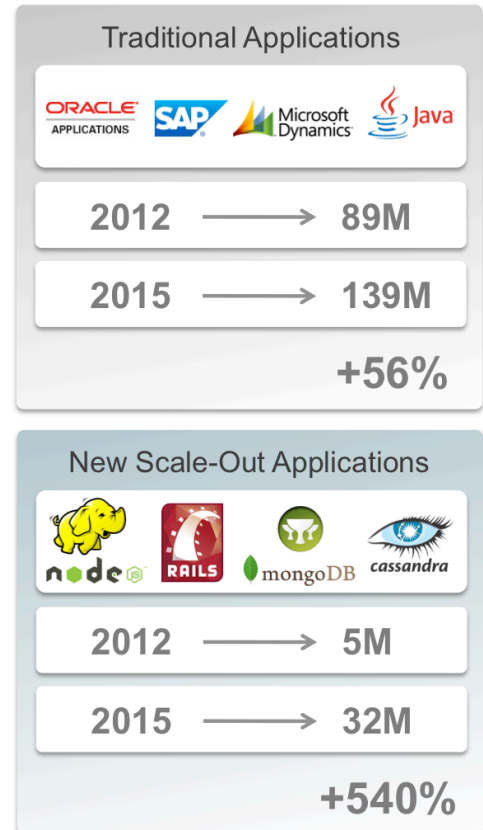
To identify applications for migration to a cloud, it is necessary to consider the business case and technical feasibility for the migration. Some traditional/legacy applications might ultimately never move to the cloud since the cost of re-writing them is greater than the benefits of cloud computing or because of the impact on the architecture of the application. Other applications can benefit from an OpenStack cloud's tremendous economies of scale that would never be possible with legacy IT infrastructure. The majority of applications that will be built for the cloud are new applications. Just as many mainframe applications didn't migrate to client/server, new applications will be written for a new generation of cloud infrastructure. Gartner is predicting IaaS, cloud management & security devices, and Platform as a Service (PaaS) are growing from \$7.6B in 2011 to \$35.5B in 2016, a CAGR of 36%.¹ By 2016, most new IT spending will be in the cloud.²

Once you identify a candidate for cloud migration, you must decide which migration path (SaaS, PaaS, or IaaS) and which migration option (private or public cloud) best meets your needs. The move to SaaS will most likely involve replacing applications. PaaS platforms offer a complete cloud IT stack while IaaS provides cloud infrastructure. When deciding whether to choose a public or private cloud for migration, you should examine the application's IP and use of sensitive data, regulatory compliance and security requirements and role as a core business application. Usage is also an important factor for the private/public cloud decision. You may be able to save money by keeping your base capacity on premise and renting additional resources from the public cloud for spikes in demand.

For most enterprises, the cloud journey will span many years. But there's no reason to wait. Because there are so many entry points that require little or no resource commitment, cloud projects can easily be run in parallel with legacy maintenance. Applications or workloads best suited for immediate OpenStack consideration include:

- Scale-out web applications: social, mobile, collaboration
- PaaS running packaged and custom business applications
- Distributed applications
- Dev/Test
- Big Data

Figure 2: Massive Growth in Scale-Out Applications is a Present Reality



Source: EMC, IDC, Gartner, AWS

¹ "Forecast Analysis: Enterprise Infrastructure Software, Worldwide, 2011-2016, 3Q12 Update," Gartner, 18 October 2012, ID:G00234775.

² "Almost half large enterprises to have hybrid cloud by 2017: Gartner," Rebecca Merrett, CIO, 24 October, 2013.

5

You Want to Create a DevOps Culture and Transform IT Service Delivery

The emergence of cloud computing represents a significant shift in the way IT delivers applications and services today. Enabled by OpenStack clouds, DevOps and IT as a Service (ITaaS) aim to make companies more agile and efficient.

A key change in the cloud model is the operational model. Cloud operations are services driven, where the mind set of IT must be to continuously improve and deploy new cloud services and make them more easily accessible and consumable. Taking this further, DevOps breaks down development environment and production environment silos, allowing development and operations teams to work hand in hand to develop applications faster with less failure rates.

In a DevOps environment, software isn't handed over to operations after coding is finished. Instead, application development, test and release teams are in continuous sync with the operations team. Continuously deploying smaller changes sets translate into less complex problems. And resolution times are faster because team members don't need to wait for another team to troubleshoot and fix the issue. With DevOps, you are able to deliver new features to your users several times a day while other companies may wait months or longer for software release updates. The competitive implications of this accelerated time to market are clear.

The cloud is also transforming the way organizations consume IT resources. ITaaS is an operational model where IT is a service provider that offers and orchestrates IT services. This model is enabled by underlying technology models such as IaaS, PaaS and SaaS. ITaaS transforms business by empowering users with on-demand services where computing, software and storage can be provisioned and de-provisioned with a single click. With the ITaaS model, IT is no longer in the business of delivering tactical day-to-day tasks. Instead, they turn their attention to services that will better advance the business and increase its agility.

Conclusion

OpenStack is rapidly becoming a crucial piece of an enterprise IT strategy as well as a core piece of the modern data center fabric. OpenStack clouds can help you with business strategy and competitive advantage in the following ways:

- **Agility** – Most enterprises point to agility as the top driver for cloud. Cloud brings unprecedented speed and flexibility to IT, allowing users to get access to resources faster and respond faster to the business.
- **Efficiency** - Cloud operations are services driven, where the minds et of IT must be to continuously improve and deploy new cloud services and make them more easily accessible and consumable. Taking this further, DevOps integrates application developers into this process, allowing development and operations to work hand in hand to develop applications faster.
- **Time to market** - One of the key aspects in allowing IT to respond faster is automation which is an underlying philosophy of true cloud and OpenStack. Look at any of the massive public clouds and web companies and you will see that they automate everything they possibly can and eliminate any manual processes and workflows.
- **Economics** - OpenStack-powered clouds offer the cloud-like economics and performance that you need going forward for your business. Commodity hardware really changes the game in the enterprise data center.

Today's IT journey is to build out Web-scale infrastructure using OpenStack to support next-generation applications, which bring differentiation and top-line growth to businesses. Web-scale infrastructure is a step change from enterprise-scale infrastructure. It is based on commodity hardware, open standards, and an infrastructure fabric that seamlessly connects members' environments to third-party public environments to satisfy variable demand or achieve greater reach.

Learn More

If you're researching, evaluating or actively investing in OpenStack as a strategic element of your cloud infrastructure, the time to contact Cloudscaling to learn more is now. Visit our website www.cloudscaling.com

Give us a call at (415) 508-3270 or email sales@cloudscaling.com

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ABOUT CLOUDSCALING Cloudscaling is the leading provider of OpenStack-powered IaaS for private and hybrid clouds. Our core product Open Cloud System (OCS), is powered by OpenStack and designed to meet the requirements of next-generation dynamic applications. OCS delivers the agility, performance and economic benefits of leading public cloud providers, but deployable in the customer's data center and under the IT team's control. Cloudscaling is backed by Trinity Ventures and headquartered in San Francisco.