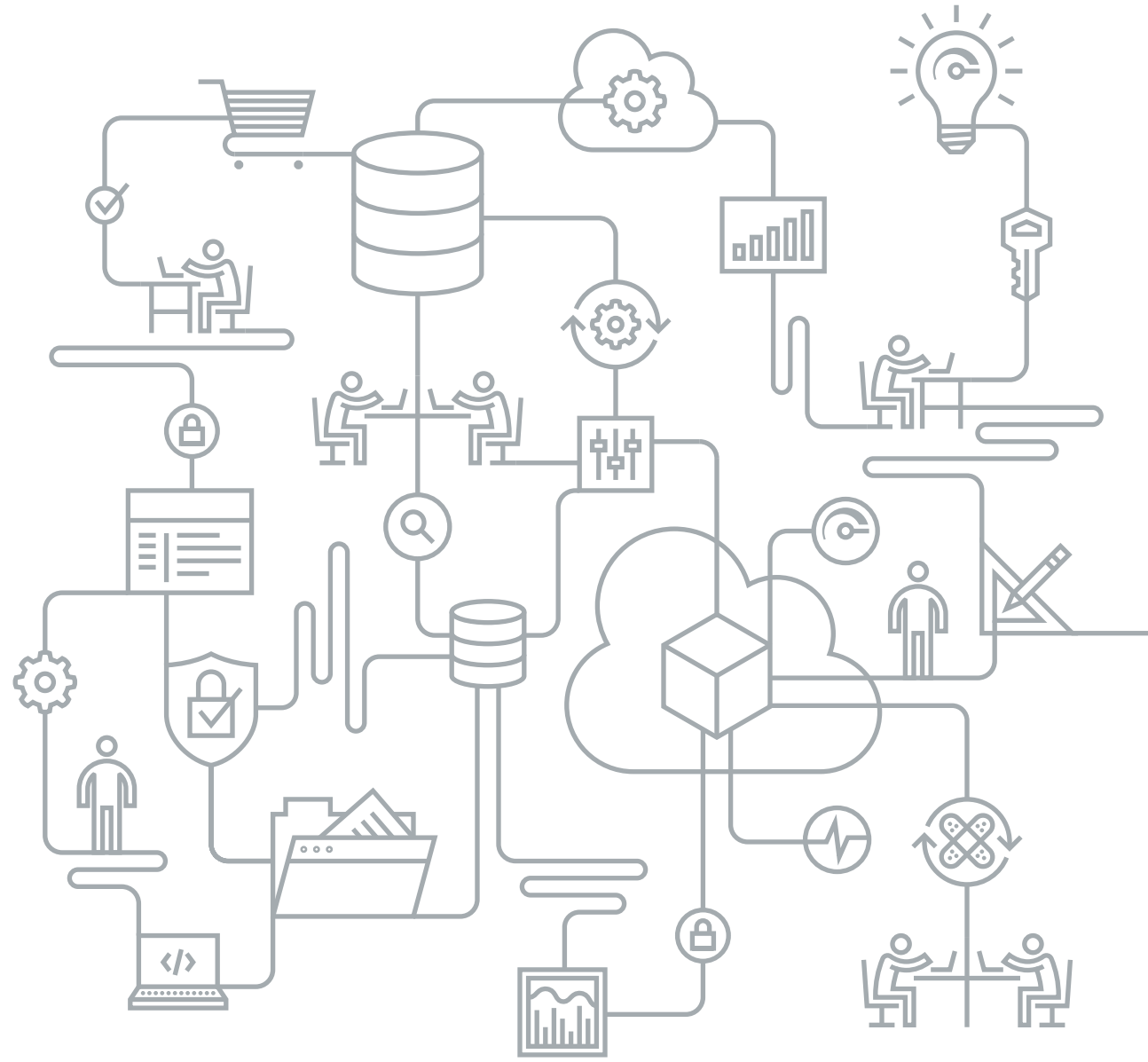




RACKSPACE: DRIVING OPENSTACK FORWARD



INTRODUCTION

As you know, cloud computing has become mainstream. According to IDC¹, as of September 2016, nearly 70% of organizations surveyed are using cloud in their IT mix – a 60% jump since 2015.

That's because cloud is an enabler for business transformation. If successful, it can help companies become more efficient, drive new and faster innovation, and help reduce costs. Cloud computing provides:

- On-demand self-service: Developers and application owners can automatically provision server, network and storage resources
- Resource pooling: Provides location independence and higher resource utilization
- Rapid elasticity: Resources can be quickly provisioned and released based on demand
- Measured service: Optimize resource use and report usage via metering

Though it's rapidly maturing, cloud is still fraught with complexity. Dozens of platforms and vendors compete for attention and market share, including well-known public clouds from organizations like Microsoft and Amazon. But cloud isn't really a one-size-fits-all technology.

Many companies have concerns about public cloud performance, security and uptime. Others have compliance or regulatory issues with public cloud, leading them to taking a hard look at issues of data protection and data sovereignty. And beyond those challenges, concerns about proprietary lock-in lead thousands of organizations toward a fully functional alternative that's built around an open ecosystem.

Today, organizations like yours are adopting a multi-cloud strategy that may encompass public cloud for some workloads, and private cloud for others. In choosing private cloud technologies, they're looking for an alternative that addresses the limitations and restrictions of public cloud.

For many, the choice is OpenStack[®].

WHY OPENSTACK?

OpenStack is a collection of open-source software projects that allow organizations to develop and manage private and public clouds. Rackspace and NASA jointly launched OpenStack in July 2010 to provide organizations with an open-source alternative to proprietary clouds. Over the past six years, it's become the default standard for private cloud, backed by over 63,000 individual contributors across hundreds of innovative IT organizations.

OpenStack helps enterprises lower costs, is flexible, modular and open, and helps eliminate vendor lock-in. It is an open-source cloud computing software platform on its 14th release and is demonstrating the completeness, robustness and capability that enterprise-level CIOs need to address the growing requirements of their businesses. In a September 2015 brief, Forrester Research called OpenStack, "the dominant platform for private cloud."

With unquestionable benefits, including cost reductions, accelerated service delivery and reduced organizational risk, thousands of organizations use OpenStack for production workloads, across public, private and hybrid cloud.

But getting to production environments in OpenStack isn't always straightforward. A recent OpenStack [survey](#) found that "81% of senior IT professionals are planning to move or are already moving to OpenStack private cloud."² However, the same survey found that half of all enterprises that tried to implement an OpenStack cloud failed, and 65% of companies report they have found the implementation experience difficult. There is a learning curve that goes beyond the technology into operations, mindset and toolkits. Many organizations struggle with do-it-yourself OpenStack, and end up turning to a thought leader and trusted partner for support and insight.

That's where we come in.

EXPLORING RACKSPACE

Rackspace is the leading operator of OpenStack clouds because we simplify OpenStack and eliminate its complexity by delivering it as a managed service.

If you're considering OpenStack, there's no way to dispute that Rackspace offers more versatility than any other organization. We're willing to state, without compromise, that Rackspace delivers the best OpenStack experience in the world. No one knows OpenStack better. In fact, the 451 Research group recently

said, "Rackspace is the world's leading OpenStack service provider."³ That's because we have more experience operating OpenStack private clouds at scale than anyone in the world. We operate the world's largest OpenStack cloud and have over 1 billion server hours operating production-ready OpenStack clouds for many of the world's largest and most recognized companies. We've successfully scaled OpenStack beyond limits that no one else has touched.

It's true that we're the leading operators of OpenStack – but we go beyond operations through end-to-end innovation. We've developed an instantaneous cycle of pragmatic innovation (operate, discover, innovate) to help ensure our customers continue to succeed with OpenStack. When we encounter an issue, we solve the problem and implement the fix in real time. And we contribute these fixes upstream to the community. We are experts so you don't have to be. Rackspace gives you the power of OpenStack without the pain of running it – so you can focus on your business.

We're also thought leaders in the OpenStack community. Since inventing OpenStack with NASA in 2010, Rackspace has continued to innovate and contribute back to the upstream project. Our contributions to the community include:

- Over 5.7M lines of code (all-time leading contributor at 17% of total lines of code)
- Over 5,800 resolved bugs (9% of total resolved bugs)
- OSAD, the OpenStack Ansible project
- Swift, the object storage project
- Solum, a framework to develop and deploy PaaS solutions
- Concept of Nova Cells to scale regions to 1,000s of nodes
- Magnum, the container management system
- Tempest, the initial QA test framework for OpenStack
- Barbican, the key management service
- Designate, the DNS service for OpenStack
- And we founded the OpenStack Innovation Center (OSIC) with Intel[®]

Rackspace continues to drive OpenStack forward to help ensure our customers get the best outcomes. We've delivered several industry firsts, including a 99.99% uptime guarantee, delivering OpenStack as a managed service, and architecting a control plane with OpenStack services deployed in containers to enable non-disruptive, in-place upgrades.

When it comes to OpenStack expertise, we're unparalleled. But that's not enough. Rather than just rest on our expertise, we've worked intensely to make sure that our competitors can't come close to our customer experience and business-driven outcomes. Our unique and unmatched expertise enables us to deliver the best OpenStack experience in the world, built on four key pillars:

- A superior offer
- Industry-leading reliability
- Unmatched scalability
- Innovation-driven agility

Let's examine each pillar further.

A SUPERIOR OFFER

As the leading operator of OpenStack clouds, Rackspace removes barriers to entry and success by delivering OpenStack as a managed service to any data center in the world. Beyond that, we support our customers with over 1,000 Rackspace-badged OpenStack professionals. Our superior offer includes:

- A managed service consumption model
- The ability to deploy OpenStack everywhere
- 24x7x365 Fanatical Support®
- Professional services and training courses to help customers accelerate their cloud adoption
- An unmatched cloud portfolio (public, private, hybrid, containers)

In other words, we provide OpenStack to your preferences, at your location, at your speed, with unparalleled flexibility and capability.

INDUSTRY-LEADING RELIABILITY

We understand that running code on a few nodes in test/dev is far different from running it in large-scale production, so we architect our clouds for scale and service availability. Our experts continually perform rigorous tests on new OpenStack features to determine whether they are ready for inclusion in our supported offering. Each service or feature must meet our stringent standards for consistent deployments, highly available control planes and enterprise

scalability before it is included in our offering. This design philosophy and our unmatched expertise enable us to deploy and operate OpenStack clouds in a fault-tolerant architecture with advanced monitoring and operational tooling that allow us to provide industry-leading guarantees. Our industry-leading reliability is made possible with:

- A managed service architected like a public cloud, designed for scale and service availability
- A rigorous service and feature testing process designed for operating production-ready clouds
- Advanced monitoring capabilities via teams of OpenStack experts who proactively monitor and maintain the health of customers' private clouds 24x7x365
- A dedicated account manager and a dedicated OpenStack architect to help train you on OpenStack, optimize your environment and plan for future growth (capacity planning)

This enables Rackspace to provide industry-leading SLAs that include:

- 99.99% OpenStack API Uptime Guarantee
- 15-minute live response time to emergency tickets
- 100% Network Uptime Guarantee
- 24x7x365 access to OpenStack engineers

UNMATCHED SCALABILITY

No one has the experience scaling OpenStack like Rackspace. We have over 1 billion server hours of experience operating production-ready OpenStack clouds at scale – more than any other company in the world. Our unmatched experience at scale means that we've identified and corrected scalability limits that no one else has yet to encounter. The Rackspace OpenStack solution includes:

- A fault-tolerant architecture designed to scale to thousands of physical servers
- A containerized control plane that enables independent scaling of each OpenStack service and enables non-disruptive, in-place upgrades to keep your cloud up-to-date with the latest security patches and features
- A scalable tenant networking solution based on best practices implementing L2 and L3 network models and expert guidance on using VLANs and VXLANs

We help you grow as needed by delivering unique technology and implementing the best practices we've developed through fine-tuning and tailoring our customers' OpenStack clouds. We're able to help you scale because we deliver practical, pragmatic improvements that fit your unique requirements.

INNOVATION-DRIVEN AGILITY

Since inventing OpenStack in 2010, Rackspace has continued to lead and drive OpenStack forward through innovation. As operators of the world's largest OpenStack cloud, we developed a pragmatic innovation cycle (engineers and operators working side by side to identify opportunities and implement improvements in real time) to meet our customers' needs and overcome barriers that the community at large has not yet faced. We are able to extend the upstream capabilities of OpenStack to meet our customers' specific needs without introducing the risk of vendor lock-in. Our innovations include:

- An advanced storage offering for hyper-scale use cases using Hummingbird technology with Swift object storage
- Delivering continuous and seamless upgrades through expanding Ironic to create an A/B control plane setup
- Enabling complete show back and charge back for a Fortune 50 company by maturing Cloud Kitty
- Creating production-ready application stacks that can be deployed in one click for many of the world's leading open source software applications

In short, we continue to innovate to help ensure that you have unparalleled cloud agility that meets, and exceeds, your expectations.

CONCLUSION

The benefits of cloud are beyond dispute. Many organizations need cloud computing to serve as the catalyst for change, to help drive new and faster innovation, improve efficiencies and reduce costs. But achieving those benefits isn't always easy.

As thought leaders and trusted advisors, we're here to help you understand how to move forward. Private cloud is an enabler for business transformation – and it meets enterprise requirements for performance, availability, security,

compliance and risk management. Our portfolio of cloud capabilities helps make IT more relevant and "in control," while delivering the agility and cost savings that enterprises need. With our public cloud alongside private cloud, organizations like yours can scale for burst workloads, handle test and development workloads seamlessly, and meet your enterprise needs, now and in the future.

We are the leading operator of OpenStack clouds, the market leader with 5x more OpenStack revenue than our closest competitor and the single largest contributor to the OpenStack code base. We're here to continue driving OpenStack forward so that it meets the requirements of organizations like yours. The bottom line: We're here to help enterprises like yours understand OpenStack, find the right path forward with OpenStack, and succeed with OpenStack – on your terms.

To uncover what we can do for you to improve and enhance your OpenStack cloud capabilities, sign up for our free OpenStack strategy session at <http://go.rackspace.com/OpenStackExperts>.

FOOTNOTES

1. "IDC" <https://grs.cisco.com/grsx/cust/grsCustomerSurvey.html?SurveyCode=12017&KeyCode=001373286>
2. "OpenStack Survey Reveals Potential, Potholes," CIO.com, February 2016
3. "Rackspace and the Push to Agnostic Service," 451 Research, August 2016

ABOUT RACKSPACE

Rackspace (NYSE: RAX), the #1 managed cloud company, helps businesses tap the power of cloud computing without the complexity and cost of managing it on their own. Rackspace engineers deliver specialized expertise, easy-to-use tools, and Fanatical Support® for leading technologies developed by AWS, Google, Microsoft, OpenStack, VMware and others. The company serves customers in 120 countries, including more than half of the FORTUNE 100. Rackspace was named a leader in the 2015 Gartner Magic Quadrant for Cloud-Enabled Managed Hosting, and has been honored by Fortune, Forbes, and others as one of the best companies to work for.

Learn more at www.rackspace.com or call us at **1-800-961-2888**.

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