Stacking up the gains with OpenStack

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With 37,000 global members and 80 user groups spanning 165 countries and 800 organizations, OpenStack is proving that there's strength in numbers – it's dominating markets and big-name participants are promoting its offering: open-source cloud management technology. What's the secret behind the enthusiasm? Alan Clark, the Chairman of OpenStack Foundation, tells us.

By Linda Xu & Carol Chen

Reasons to believe

The four business drivers of OpenStack...

First and foremost is scalability. OpenStack wants to produce a ubiquitous open source cloud computing platform that makes public and private clouds easy to implement and massively scalable, regardless of size. BMW, for example, uses OpenStack on its private cloud platform to raise the scalability and flexibility of its IT infrastructure.

The second is modularity. We've designed OpenStack to be adaptable to several markets and scenarios, so it forms a diverse and vital ecosystem with add-ons and plug-ins.

Next comes interoperability. Users like choice – they don't want to be locked into a single solution. Many users and operators state that interoperability between OpenStack clouds and hybrid cloud scenarios is an important part of the value they're after. OpenStack is most useful when it provides a common platform that splits workloads between clouds without making resource-intensive changes

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to tools and processes. Development tools and applications unlock value when they have a common target in public and private OpenStack clouds.

The fourth main driver is manageability. OpenStack lets users converge IT services so they're more manageable and autonomous, meaning employees are freed up to work on innovating.

A federated future

How Openstack benefits verticals...

Healthcare, finance, manufacturing, R&D – all receive benefits. But how each vertical uses OpenStack varies quite a bit. For example, film and media users like Digital Film Tree, which specializes in designing post and IT workflows for the media and entertainment industry, want a more federated cloud. By federated I mean a cloud environment that uses multiple vendors' solutions. This allows these companies to transfer media and data between clouds smoothly, from creation and editing to production. Cloud – particularly when federated – facilitates geographically dispersed content.

Other users are trying this out on private cloud. The European nuclear research agency CERN embraced cloud computing with help from OpenStack, and now its multiple clouds can run collision reconstructions on OpenStack. Cloud tech makes CERN much more responsive to its user community, so it can do continue with research without waiting for hardware to be delivered and configured.

What's in store for 2020...

I don't believe there'll be a single cloud – instead, many federated clouds will allow us to tailor clouds for the services customers want to deploy and use. The way vertical markets use clouds varies with the types of services they deploy.

Rackspace and CERN's open lab have collaborated on linking multiple clouds to form a cloud federation where users can use computing resources from multiple cloud providers. For example, a CERN OpenStack user cloud can spin up an image and migrate it to Rackspace's public cloud using CERN credentials. Rackspace will continue to work with CERN open lab on improving federated capabilities for using resources, authorization models, and

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service catalogues in multiple public and private cloud environments.

On Docker as competitor or collaborator...

We're already cooperating. Many people believe Docker and cloud are different, but they're actually used in conjunction. We need one platform for bare metal, virtual machines, and containers, and an integration engine for every cloud technology that matters over the next decade and beyond. We're standardizing APIs to power a global network of public and private clouds.

Docker manages Linux containers with a high-grade API in a lightweight solution that runs processes in isolation and automates software deployment in a secure and replicable environment. A Docker container includes a software component alongside dependencies like binaries, libraries, configuration files, scripts, jars, gems, and tarballs. Docker can run on any x64 Linux kernel that supports cgroups [Control Groups] and aufs.

Docker can also manage multiple containers on a single machine. It's used behind Nova, making it much more powerful as it can manage several hosts, which in turn manage hundreds of containers. The current Docker project is aiming for full OpenStack compatibility. We need to recognize the additional role and services provided by cloud, which include networking, policy, security, and orchestration.

Jockeying for virtualization

On SDN, NFV, and what's in it for telcos...

SDN and NFV are key paradigms for future telecom networks, with network agility and programmability as the transformation drivers. OpenStack provides many of the capabilities needed in any NFV environment, having worked on this area since 2012. NFV is a game-changer for operators because they can develop and deploy services twice as fast, reduce reliance on proprietary networking hardware, and free up data center capacity.

Telcos want to automate their resources, and OpenStack is supporting them by giving them use cases and looking at how to implement the solutions.

On Openstack, video, and IoT...

People now expect a real-time response. We're

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no longer satisfied with static web pages or static documents. We want real-time interaction. OpenStack happens to be very good at that. Part of the impetus from cloud is the ability to respond rapidly to the needs of services through orchestration, policy management, real-time analytics, and real-time data response.

Going for gold

On Huawei...

Huawei is helping to build the OpenStack industry ecosystem, and is a Gold Member Board Director on the OpenStack 2016 Board. By October 2015, Huawei had completed 60 complete blueprints, resolved more than 350 bugs, and finished nearly 8,000 reviews for the release of OpenStack Liberty, ranking sixth overall out of all contributors.

In 2015, Huawei held two OpenStack Hackathons China, where top OpenStack development engineers from eight companies fixed more than 150 bugs. These events have also given Chinese open-source technology developers a bigger voice in the OpenStack Community and showed that China has powerful open-source technologies.

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