The future of the OpenStack Foundation: The clue is in the stack

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The OpenStack Foundation's new mission is to close the gap between the multitude of open source projects, with the goal of making available an integrated stack that provides the functionality of commercial cloud stacks to address users' key challenges. It has set in motion a series of actions that, while not explicitly spelled out, would ultimately deliver an integrated stack of open source technologies functionally equivalent to commercial offerings from AWS, Microsoft, Alibaba and Google.

THE 451 TAKE

The OpenStack Foundation hasn't positioned itself as 'looking for non-OpenStack projects to host,' but that's effectively what it is doing, and it's open about operating them under non-OpenStack conditions. This is not the Foundation leaving OpenStack behind; instead, the trajectory is to bring some of its magic to other projects and take open source to the next level. In addition to Kubernetes and containers, OpenStack developers are going to need open source tools to support their edge computing activities and a serverless option. They need a fully integrated, functional stack. For all of the adoption of open source, the fact is that open source companies (users and vendors) need to see a return. Microsoft, Dell (VMware), Oracle and other incumbent commercial code suppliers are only doing open source now because they have to. If in 10 years they don't have to (because open source hasn't delivered), you can be sure that they won't be. We think the progress the Foundation has achieved in seven years is remarkable when we consider other industry movements, such as Unix and Linux. A benevolent dictator in OpenStack like Torvalds on Linux may have foreshortened the seven years, but it's by no means a given. The fact is that existential threats have been largely removed – there's no crisis over IBM and HPE de-emphasizing their OpenStack activities. Indeed, the Foundation is now sold out of gold sponsorships, and there are mature OpenStack deployments.

CONTEXT

From containers, container management, continuous integration/delivery (CI/CD) and edge to serverless, in order to be able to provide a credible alternative to commercial cloud stacks, a joined up full-stack approach to open source tools beyond the core OpenStack base will be required. What form that could take is an open question at this point, but the involvement of other entities, such as tools and projects from the likes Cloud Native Computing Foundation and The Linux Foundation, would be needed in some shape or form in order to achieve this result. Enabling (although not owning) an entire open source stack equivalent to AWS might (for example) mean OpenStack and other Foundation technologies forming the core majority of services, with other groups participating. A first set of measures toward this end, termed an Open Infrastructure Integration strategy, was announced at the recent Sydney OpenStack summit after its board members endorsed the new approach.

The OpenStack Foundation expects to manage new open infrastructure projects as part of this integration strategy. The goal is to help organize the ecosystem and user community around domains, such as datacenter cloud infrastructure, edge infrastructure, container infrastructure and CI/CD. Historically, all software managed by the OpenStack Foundation has been part of the OpenStack project, but as the community organizes around these new domains, new projects may be managed independently with their own technical governance and branding. The strategy is to provide greater focus and more defined scope to OpenStack core services while supporting new use cases in parallel.

STRATEGY

A four-part strategy to address integration of OpenStack and relevant open source technologies includes documenting cross-project use cases; collaborating across communities, including upstream contributions to other open source projects; fostering new projects at the OpenStack Foundation; and coordinating end-to-end testing across projects. This means the Foundation will proactively seek to collaborate with other open source projects and foundations.

NEXT STEPS

The key thing OpenStack requires is an integrated way to deploy and manage containers on OpenStack. Kubernetes has the leading position in the market right now, which was given to the Cloud Native Computing Foundation by Google. However, there are other approaches in the market, such as Intel Clear Containers. The Foundation does not plan to duplicate work that's already been done here. The obvious way forward is to find a way to deliver Kubernetes on OpenStack.

Going forward, the Foundation will act as a facilitator for additional infrastructure primitives, enabling key open source enterprise environments to work (perhaps work best) on OpenStack, such as CloudFoundry, TensorFlow and Kubernetes. After all, CloudFoundry on VMware is slick – why shouldn't it be the same on OpenStack? There is a need for a credible open source serverless technology that could be used as an alternative to AWS's Lambda, which already has a massive lead in the market. There are a handful of OSS serverless mechanisms in the market, although none has much momentum at this point.