Voice of the User Reflected in New Features of OpenStack Icehouse Release

Rolling upgrades, federated identity and tighter platform integration reflect software maturity; continuous integration process drives software reliability.

April 17, 2014 // AUSTIN, Tex. – The ninth release of OpenStack®, code-named Icehouse™, is available today, with new features reflecting a community-wide effort to bring the voice of the user into the rapidly maturing open source cloud software platform.

The software, used by hundreds of companies for building public, private, and hybrid clouds, adds features such as rolling upgrades in OpenStack Compute (Nova). Rolling upgrades simplify the process of upgrading to new versions of the OpenStack software by not requiring virtual machine (VM) instances to be shut down in order for upgrades to install.

“Everyone we talk to wants cloud resources that let them move faster,” said Jonathan Bryce, executive director of the OpenStack Foundation. “The evolving maturation and refinement that we see in Icehouse make it possible for OpenStack users to support application developers with the services they need to develop, deploy and iterate on apps at the speeds they need to remain competitive.”

Each OpenStack release has attracted larger and larger groups of contributors. The Icehouse release had 1,202 contributors, a 32 percent increase from the Havana release six months ago. Approximately 350 new features and 2,902 bug fixes were added in the Icehouse release cycle, with a focus on testing, maturity and stability. A new focus on third-party continuous integration (CI) systems has resulted in 53 external systems testing OpenStack compatibility across broad sets of hardware and software configurations. OpenStack Dashboard (Horizon) now supports 16 languages, and the internationalization team translated nearly 700,000 words during the Icehouse cycle.

Top companies contributing code to the Icehouse release were Red Hat, IBM, HP, Rackspace, Mirantis, SUSE, OpenStack Foundation, eNovance, VMware and Intel. Top users contributing code also included Samsung, Yahoo! and Comcast.

New Capabilities in OpenStack Icehouse

Among the approximately 350 new features added are a new program, OpenStack Database Service (Trove), which was incubated during the Havana release cycle and is now available in the Icehouse release. Programs in incubation include OpenStack Bare Metal (Ironic), OpenStack Messaging (Marconi) and OpenStack Data Processing (Sahara).

Features new to Icehouse include:

- **OpenStack Compute (Nova):** New support for rolling upgrades minimizes the impact to running workloads during the upgrade process. Testing requirements for third-party drivers have become more stringent, and scheduler performance is improved. Other enhancements include improved boot process reliability across platform services, new features exposed to end users via API updates (e.g., target machines by affinity) and more efficient access to the data layer to improve performance, especially at scale.
- **OpenStack Object Storage (Swift):** A major new feature is discoverability, which dramatically improves workflows and saves time by allowing users to ask any Object Storage cloud what capabilities are available via API call. A new replication process significantly improves performance, with the introduction of s-sync to more efficiently transport data.
- **OpenStack Block Storage (Cinder):** Enhancements have been added for backend migration with tiered storage environments, allowing for performance management in heterogeneous environments. Mandatory testing for external drivers now ensures a consistent user experience across storage platforms, and fully distributed services improve scalability.
- **OpenStack Networking (Neutron):** Tighter integration with OpenStack Compute improves performance of provisioning actions as well as consistency with bulk instance creation. Better functional testing for actions that require coordination between multiple services and third-party driver testing ensure consistency and reliability across network implementations.
- **OpenStack Identity Service (Keystone):** First iteration of federated authentication is now supported allowing users to access private and public OpenStack clouds with the same credentials.
- **OpenStack Orchestration (Heat):** Automated scaling of additional resources across the platform, including compute, storage and networking is now available. A new configuration API brings more lifecycle management for applications, and new capabilities are available to end-users that were previously limited to cloud administrators. Collaboration with OASIS resulted in the TOSCA Simple Profile in YAML v1.0, demonstrating how the feedback and expertise of hands-on OpenStack developers can dramatically improve the applicability of standards.
- **OpenStack Telemetry (Ceilometer):** Improved access to metering data used for automated actions or billing / chargeback purposes.
- **OpenStack Dashboard (Horizon):** Design is updated with new navigation and user experience improvements (e.g., in-line editing). The Dashboard is now available in 16 languages, including German, Serbian and Hindi added during this release cycle.
- **OpenStack Database Service (Trove):** A new capability included in the integrated release allows users to manage relational database services in an OpenStack environment.

To see the dashboard demo, detailed release notes and download the source code, go to http://www.openstack.org/icehouse (https://www.openstack.org/icehouse).

Webinar Today

The OpenStack Foundation will host a webinar today at 11am PDT via BrightTALK to discuss the Icehouse release in greater depth with two OpenStack users. To register, please visit https://www.brighttalk.com/webcast/499/107965 (https://www.brighttalk.com/webcast/499/107965).

Supporting Quotes

"OpenStack has crossed the threshold and will become another de facto IaaS standard before the end of the year, when OpenStack compatibility will be a must, not a nice-to-have."
— Source: Forrester Research, Inc., State Of Cloud Platform Standards: Q1 2014, March 2014

"We host several applications in our OpenStack environment. So, clearly, we're heavily vested in OpenStack. Icehouse gives us several new capabilities that will make a big difference, including scheduler improvements and instance creation and deletion. Each OpenStack release makes impressive gains in maturity. It's a march of progress that gives us confidence in the platform and the community."
— Mike Wilson, senior systems architect at Bluehost

"Cloud computing has become strategic to our business by enabling our developers to move faster and providing a scalable infrastructure to deliver our content services. By using OpenStack, we are not only choosing a cloud platform, but a community in which we have the ability to influence the software roadmap, share knowledge among operators and build even stronger relationships with our technology vendors who are supporting the platform."
— Andrew Mitry, senior manager of platform infrastructure at Comcast

OpenStack Summit Atlanta

The next OpenStack Summit will be held May 12-16 in Atlanta to share user deployment case studies, devops best practices, showcase what's new in the OpenStack vendor ecosystem, and develop the roadmap for the 10th release, Juno. Headline sponsors include Rackspace, Dell, Canonical and SolidFire, along with 90+ other sponsors and exhibitors. The event will feature presentations from a wide range of OpenStack developers and users, representing service providers, application hosters and enterprises.

About OpenStack®

OpenStack is open source software for building clouds. OpenStack clouds enable businesses to rapidly roll out new products, add new features, and improve internal systems while preventing technology lock-in as the only open source cloud platform that's supported by every IT industry leader. Hundreds of the world's largest brands rely on OpenStack to run their businesses every day, reducing costs and accelerating time to market.

OpenStack is backed by an independent Foundation and global community with more than 15,900 individual members and 347 supporting organizations across 137 countries. For more information and to join the community, visit http://www.OpenStack.org (http://www.OpenStack.org).

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