

## THE RACKSPACE MANAGED CLOUD

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# Building the “Cloud of Clouds” with CERN

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The issue of interoperability is as old as computing itself. In the cloud era, the impact of being able to federate identities and leverage resources from across public and private clouds has the potential to revolutionize science and industry.

For CERN, the European Organization for Nuclear Research, the prospect of a federated OpenStack cloud that powers collaboration among thousands of physicists around the globe is core to its vision. Because it conducts the largest scale scientific experiments on the planet, CERN also generates some of the biggest and most complex data sets. When particles collide at just below the speed of light in the 27-kilometre ring known as the Large Hadron Collider, more than 1 petabyte of data is created per second.

The data sets then need to be analyzed by physicists around the globe as they probe the nature of the universe—how it works and what it’s made of. Because of the volume of data and the computational resources required to interpret them, CERN adopted OpenStack as a model for global collaboration. Thousands of engineers, developers and architects work across multiple time zones to bring the dream of a “cloud of clouds” closer to reality.

Recently, Rackspace and CERN announced that they had jointly added code to the latest version of OpenStack (Icehouse) that federates identity in multi-cloud environments. The effort was led by a CERN research fellow sponsored by Rackspace and received contributions from other members of the OpenStack community.

This is an important step towards a fully federated OpenStack cloud. It means that a private cloud user can manage a multi-cloud environment using only their private cloud sign-in credentials.

What's the real-world application of this? Eventually, it will mean that a team of researchers in Switzerland can begin a project on a private cloud and then burst into the public cloud seamlessly, without requiring separate sign on or verification.

The next step for the Rackspace/CERN collaboration on OpenStack federation is the seamless use of resources, authorization models and service catalogs across public and private clouds. The vision is for a truly global, hybrid cloud fueled by OpenStack, one that sees public and private cloud distinctions as dotted lines instead of brick walls. The creation of a "cloud of clouds" will impact science and business for decades to come and, like the ubiquity of the Internet or the Internet of Things, will fuel a new era in global collaboration.

Read the full story and watch the CERN video to see federation in action.

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