Xen in the Cloud

The Cloud Computing revolution is upon us! The computing industry is buzzing with this seemingly amazing new paradigm shift in how we compute; however, those of us in the industry realize that Cloud Computing is really just the final step in the centralization of computing power back from the PC revolution where de-centralization was the norm. Of course, this revolution is now being led by the open source community and its various solutions such as the operating system, virtualization platform, storage, and management tools. In this article, I will focus on the contributions of the open source Xen.org project and its contribution to Cloud Computing with the Xen hypervisor.

The Xen hypervisor is estimated to have about 20% of the server virtualization market and close to 100% of the existing cloud infrastructure including Amazon EC2, Rackspace Cloud Servers, and GoGrid. In August of this year the Xen.org community announced a new initiative, Xen Cloud Platform (XCP), to establish a complete open source solution with an industry supported API for Cloud Providers. XCP infrastructure will enable various other open source projects such as Eucalyptus, Convirture, OpenNebula, OpenXenCenter, Xen VNC Proxy, and Nimbus to better leverage the Xen hypervisor with a new API set focused exclusively on cloud computing.

"Rackspace is very excited about the direction and scope of the Xen Cloud Platform," said Lew Moorman, president and chief strategy officer, Rackspace. "We have built our Cloud Servers offering on the Xen platform and are experiencing strong customer interest in this new model of hosting. The cloud will not only reduce the cost of computing but also provide instantaneous access enabling customers to improve the speed of business. It is very exciting and encouraging to see Xen.org put the full weight of the community behind the development of a cloud platform."

The Xen Cloud Platform will address the needs of cloud providers by combining the isolation and multi-tenancy capabilities of the Xen hypervisor with enhanced security, storage and network virtualization technologies to offer a rich set of virtual infrastructure cloud services. The platform will also address user requirements for security, availability, performance and isolation across both private and public clouds. The project will not attempt to develop new, independent management and orchestration offerings since this is an area with existing rich offerings and active ongoing development in the community vendors.

The Xen Cloud Platform will combine the mobility and openness attributes of the Xen virtualization platform with innovative storage, security and network virtualization technologies already under development as part of Xen.org. As a result, the new platform will not only address cloud provider requirements around security and isolation, but will also meet next-generation user requirements for security, availability, performance, isolation and manage between on-premise and

off-premise infrastructures.

In early November of 2009, the Xen.org community announced XCP 0.1, a proposed virtualization solution to act as the platform for XCP 1.0. With the release of XCP 0.1, the Xen.org community invites all open source and proprietary vendors to join in the creation of an open, industry standard solution for cloud providers. We look forward to working with other industry leaders in being a component in the coming cloud revolution.

For More Information on the products discussed in this article, please visit:

Xen Cloud Project - http://www.Xen.org/products/cloudxen.html
Eucalyptus Project - http://open.eucalyptus.com/
Convirture — http://www.convirture.com
Open Nebula - http://www.opennebula.org/
OpenXenCenter — http://www.openxencenter.com
Xen VNX Proxy — www.xvpsource.org
Nimbus - http://workspace.globus.org/
Rackspace Cloud Computing - http://www.rackspacecloud.com/