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HPE Helion Private Cloud and Cloud Broker Services
February 2016

HPE Helion is a complete portfolio of cloud products and services that offers enterprise security, scalability, and performance. Helion enables customers to deploy open and secure hybrid cloud solutions that integrate private cloud services, public cloud services, and existing IT assets to allow IT departments to respond to fast changing market conditions and to get applications to market faster. HPE Helion is based on the open-source OpenStack cloud technology.
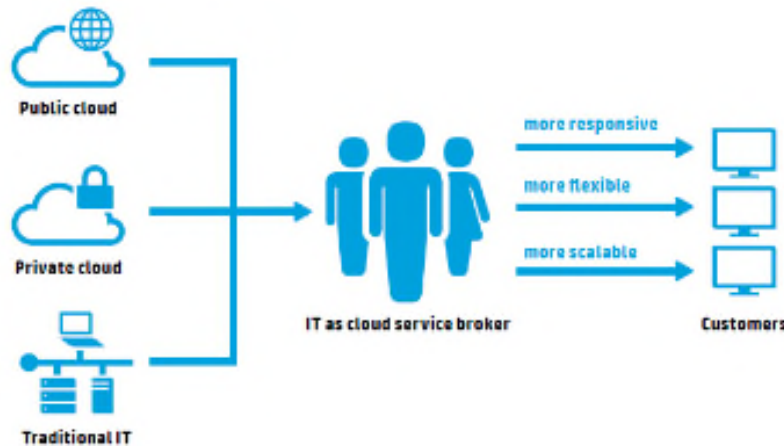
How a Hybrid Cloud Delivery Model Transforms IT
(from "Become a cloud service broker," HPE white paper)

The Helion portfolio includes the Helion CloudSystem, which is a private cloud; the Helion Development Program, which offers IT developers a platform to build, deploy, and manage cloud applications quickly and easily; and the Helion Managed Cloud Broker, which helps customers to deploy hybrid clouds in which applications span private and public clouds.

In its initial release, HPE intended to create a public cloud with Helion. However, it has since decided not to compete with Amazon AWS and Microsoft Azure in the public-cloud space. It has withdrawn support for a public Helion cloud as of January 31, 2016.

The Announcement of HP Helion

HP announced Helion in May 2014 as a portfolio of cloud products and services that would enable organizations to build, manage, and run applications in hybrid IT environments. Helion is based on the open-source OpenStack cloud. HP was quite familiar with the OpenStack cloud services. It had been

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running OpenStack in enterprise environments for over three years. HP was a founding member of the OpenStack Foundation and a leader in the OpenStack and Cloud Foundry communities.

HP's announcement of Helion included several initiatives:

- It planned to provide OpenStack public cloud services in twenty of its existing eighty data centers worldwide.

- It offered a free version of the HP Helion OpenStack Community edition, supported by HP, for use by organizations for proofs of concept, pilots, and basic production workloads.

- The HP Helion Development Program based on Cloud Foundry offered IT developers an open platform to build, deploy, and manage OpenStack cloud applications quickly and easily.

- HP Helion OpenStack Professional Services assisted customers with cloud planning, implementation, and operation.

These new HP Helion cloud products and services joined the company's existing portfolio of hybrid cloud computing offerings, including the HP Helion CloudSystem, a private cloud solution.

What Is HPE Helion?

HPE Helion is a collection of products and services that comprises HPE's Cloud Services.

- Helion is based on OpenStack, a large-scale, open-source cloud project and community established to drive industry cloud standards. OpenStack is currently supported by over 150 companies. It allows service providers, enterprises, and government agencies to build massively scalable public, private, and hybrid clouds using freely available Apache-licensed software.

- The Helion Development Environment is based on Cloud Foundry, an open-source project that supports the full lifecycle of cloud developments from initial development through all testing stages to final deployment.

- The Helion CloudSystem (described in more detail later) is a cloud solution for a hybrid world. It is a fully integrated, end-to-end, private cloud solution built for traditional and cloud native workloads and delivers automation, orchestration, and control across multiple clouds.

- Helion Cloud Solutions provide tested custom cloud solutions for customers. The solutions have been validated by HPE cloud experts and are based on OpenStack running on HP Proliant servers.

OpenStack – The Open Cloud

OpenStack has three major components:

- OpenStack Compute - provisions and manages large networks of virtual machines.
- OpenStack Storage - creates massive, secure, and reliable storage using standard hardware.
- OpenStack Image - catalogs and manages libraries of server images stored on OpenStack Storage.

OpenStack Compute

OpenStack Compute provides all of the facilities necessary to support the life cycle of instances in the OpenStack cloud. It creates a redundant and scalable computing platform comprising large networks of virtual machines. It provides the software, control panels, and APIs necessary for orchestrating a cloud, including running instances, managing networks, and controlling access to the cloud.
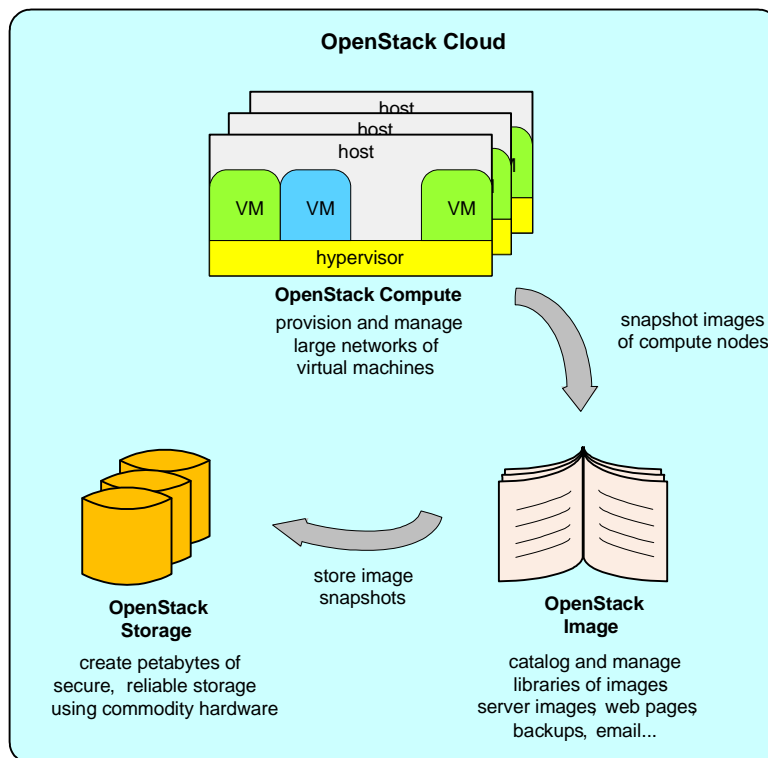
OpenStack Storage

OpenStack Storage is modeled after Amazon's EBS (Elastic Block Store) mass store. It provides redundant, scalable data storage using clusters of inexpensive commodity servers and hard drives to store massive amounts of data. It is not a file system or a database system. Rather, it is intended for long-term storage of large amounts of data (blobs). Its use of a distributed architecture with no central point of control provides great scalability, redundancy, and permanence.

OpenStack Image Service

OpenStack Image Service is a retrieval system for virtual-machine images. It provides registration, discovery, and delivery services for these images. It can use OpenStack Storage or Amazon S3 (Simple Storage System) for storage of virtual-machine images and their associated metadata. It provides a standard web RESTful interface for querying information about stored virtual images.

The Demise of the Helion Public Cloud

After announcing its public cloud, HP realized that it could not compete with the giants of the industry, Amazon AWS and Microsoft Azure, in the public-cloud space. Therefore, HP (now HPE) sunsetted its Helion public cloud program in January, 2016.

However, HPE continues to promote its private and hybrid clouds by helping customers build cloud-based applications based on HPE Helion OpenStack and the HPE Helion Development Platform. It provides interoperability with Amazon AWS and Microsoft Azure. It acquired Eucalyptus, a company that offers private-cloud technology that interoperates with Amazon AWS.

HPE supports customers who want to run HPE's Cloud Foundry platform for development in their own private clouds or in large-scale public clouds such as AWS or Azure.

The Helion Private Cloud – The HPE Helion CloudSystem

Building a custom private cloud to support an organization's native cloud applications can be a complex project that takes months to complete. This is too long a time if immediate needs must be addressed. The Helion CloudSystem reduces deployment time to days and avoids the high cost of building a proprietary private cloud system.

The HPE Helion CloudSystem was announced in March 2015. It is a secure private cloud delivered as a preconfigured and integrated infrastructure. The infrastructure, called the HPE Helion Rack, is an OpenStack private-cloud computing system ready for deployment and management. It comprises a minimum of eight HP ProLiant physical servers to provide performance and availability. The servers run a hardened version of Linux, hLinux, optimized to support Helion. Additional servers can be added as bare-metal servers or as virtual servers running on the KVM hypervisor.

The Helion CloudSystem is fully integrated with the HP Helion Development Platform. Since the Helion CloudSystem is based on the open-source OpenStack cloud, there is no vendor lock-in.

HP's white paper, "HP Helion Rack solution architecture,"[1] is an excellent guide to the Helion CloudSystem.

Helion Cloud Broker Services

HPE extends the private cloud services offered by the Helion CloudSystem by providing hybrid cloud management with its Helion Managed Cloud Broker. This service is designed to solve the problems of managing cloud and IT services from in-house and external providers. It brokers public-cloud platforms for customers who wish to distribute workloads both on-premises with a Helion CloudSystem private cloud and off-premises using other public-cloud platforms such as Amazon AWS and Microsoft Azure. It also supports virtualized environments using VMware.

The Helion Managed Cloud Broker supports the entire Helion portfolio. It is a universal system for both on-premises private clouds and off-premises public clouds. It offers customers a self-service portal, monitoring dashboards, and management services for security, performance, budgets, and application life-cycle.

HPE also will help organizations become their own cloud brokers. Via its Helion Managed Cloud Services, it provides the following guidance to customers:

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[1] HP Helion Rack solution architecture, *HP White Paper*; 2015.
http://www8.hp.com/h20195/V2/getpdf.aspx/4AA5-7655ENW.pdf?ver=1.0

- Advise – Advise services deliver insight and education on possible uses for cloud technologies in the organization.

- Transform – A hybrid cloud system is developed to meet the organization's specific needs.

- Manage – Experts monitor and manage day-to-day operations to ensure secure, consistent delivery and responsive, reliable service.

Summary

The HPE Helion Cloud offering includes the following services:

- The Helion CloudSystem, a private cloud based on the open-source OpenStack cloud.

- The HP Helion Development Program based on Cloud Foundry, an open platform for developers to build, deploy, and manage cloud applications quickly and easily.

- The Helion Managed Cloud Broker, a service designed to solve the problems of managing cloud and IT services from in-house and external providers.

- The Helion Managed Cloud Services, a service that helps organizations become their own cloud brokers.

Two excellent HP white papers describing Helion are "Designing private clouds for cloud native apps"[2] and "Become a cloud service broker."[3]

Acknowledgements

Information for this article was taken from the following sources:

OpenStack – the Open Cloud, *Availability Digest*; April 2012.
HP Launches HP Helion Portfolio of Cloud Products and Services, *HP Press Release*; May 6, 2014.
A Novel Approach to HP Helion Documentation, *The Connection*; July/August 2015.
Hewlett-Packard throws in the towel on public cloud, *Fortune*; October 21, 2015.
HPE Helion cloud brokerage supplants its defunct public cloud, *TechTarget*; December 7, 2016.
HP Helion Rack - Your OpenStack private cloud is ready – now!, *hp.com*.
HPE Helion Managed Cloud, *hp.com*.
Become a cloud service broker, *HPE White Paper*; 2014.
Designing private clouds for cloud native apps, *HPE White Paper*; 2015.

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[2] Designing private clouds for cloud native apps, *HPE White Paper*; 2015.
http://www8.hp.com/h20195/v2/GetPDF.aspx/4AA5-8470ENN.pdf
[3] Become a cloud service broker, *HPE White Paper*; 2015.
http://www8.hp.com/h20195/v2/GetPDF.aspx%2F4AA5-1140ENN.pdf