Huawei's open cloud strategy

OpenStack, the mainstream open source cloud OS, enables mainstream IT vendors to build an open ecosystem. Based on OpenStack architecture, Huawei has officially rolled out FusionSphere, and published its strategy for promoting the development of an open cloud platform.

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Open-source cloud is the future

Openness is an inevitable trend in IT development. Since specialized, closed platforms came into being, the industry has worked to open up and standardize various IT resources, including computing, storage, and network resources.

Since the birth of x86 processors in the 1970s, the industry has constantly improved the open architecture of x86 to meet user requirements. Almost all aspects of the industry are based on this open computing architecture, including personal computing systems, massive data processing on the Internet, and even public cloud services.

Internet development is also open-sourced. The open-source implementation mechanism of the TCP/IP protocol stack is embedded into Unix systems, which drives Internet development. Today’s Internet is based on openness, and almost all Internet technologies employ open-source implementation.

If openness embodies the essence of the Internet, then it is sure to characterize cloud platforms. In the current era, existing closed IT architecture, modes, and software platforms fail to address the requirements of forward-thinking industries. For a long time, enterprise virtualization resource pools and cloud systems were built by proprietary technology vendors, creating silos, increasing OPEX, and complicating management.

Significance of cloud openness

OpenStack has brought an opportunity to converge multiple virtualization pools and clouds. It is currently the mainstream open-source cloud operating system (OS). Open source has many benefits: The industry can share software, the open-source community can optimize functions and features, and participants can contribute to completing OpenStack. Open source can accelerate software development and product time-to-market (TTM), and products based on it can lower purchase costs for customers.

OpenStack enables independent software vendors (ISVs) to establish open architecture. Huawei’s OpenStack cascading solution converges multiple clouds so customers can manage resource pools and cloud data centers to improve operating efficiency and significantly reduce OPEX. Equally, open architecture can avoid vendor lock-in while reducing purchase costs.

The mainstream IT vendors for OpenStack have collaborated on building an open ecosystem, completing the entire cloud blueprint based on it. This has made the cloud industry a success, and laid a solid foundation for customers’ business transformation.

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Huawei’s open cloud strategy involves open source, open architecture, and an open ecosystem.

Open source

Committed to promoting the development of open cloud platforms, Huawei is an active contributor in the global open-source community that participates in numerous groups and projects.

Specifically, Huawei became a Silver Sponsor of the Apache Foundation in 2011,
a Gold Member of the Linux Foundation in 2012, a Silver Member of the OpenDaylight Project, a Gold Member of the open cloud computing organization OpenStack Foundation in 2013, and a Silver Member of the Open Compute Project in 2014. Moreover, Huawei is the sole Asian representative in the OpenStack Foundation.

Huawei has contributed considerable resources to open-source projects. In the OpenStack Juno release, Huawei operated two framework incubator projects, Compass (management automation) and OpenStack cascading, for cloud data centers and network functions virtualization (NFV). Huawei collated over 150 IT/ICT features, and incorporated dozens of carrier-grade NFV features, including NUMA affinity, VM NIC bandwidth scheduling, and CPU affinity, into the Juno version in collaboration with Red Hat.

By December 1, 2014, Huawei has submitted 116 blueprints (ranking second) to the OpenStack community. Of these, 25 were accepted (ranking sixth). In addition, Huawei resolved 91 bugs (ranking ninth), committed 133 times (ranking tenth), and submitted 1,068 reviews (ranking tenth) and 12,424 lines of code (ranking sixteenth).

The huge contributions made by Huawei to the open-source community have seen substantial returns. Huawei has officially rolled out FusionSphere, the industry-leading cloud-OS based on OpenStack architecture.

Open architecture

Huawei’s FusionSphere, featuring automated installation and deployment coupled with high availability (HA), upholds OpenStack’s value of openness thanks to completely open architecture.

The following figure shows the southbound and northbound interfaces of FusionSphere.

FusionSphere uses standard OpenStack plug-ins for southbound integration. When installed with these plug-ins, computing, storage, and network devices can be integrated easily. FusionSphere also supports mainstream hypervisors, such as VMware, KVM, XenServer, and Hyper-V. In addition, FusionSphere is compatible with SMI-S, enabling superior interworking with heterogeneous storage devices.

FusionSphere provides standard application programming interfaces (APIs) for northbound communication. Upper-layer applications can flexibly schedule computing, storage, and network resources based on service requirements. In addition to APIs, FusionSphere also provides interfaces for interworking with CloudStack, OpenStack-integrated eSDK interfaces for developers to invoke, and SNMP interfaces for network management.

FusionSphere also supports hybrid cloud services, and is compatible with OpenStack private and public clouds and Amazon public clouds.

In other words, Huawei FusionSphere has a fully open architecture, laying a firm technical
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foundation for customers to build a cloud computing ecosystem.

Open ecosystem: Huawei has launched the Yunfan plan to build a comprehensive cloud ecosystem. This plan consists of carrier, enterprise, and technology partnerships, as well as training.

Carrier partnerships: Backed by its leading position among global carriers, Huawei has initiated the inTouch Partnership Program, which offers marketing and technical support and helps Huawei partners enter the carrier market using the following three business models – revenue sharing, recommendation, and resale. For carriers, Huawei provides matchmaking and quality assurance services for applications.

Huawei has also proposed an NFV development plan, and FusionSphere is a core NFV product. Based on its open architecture, Huawei performs compatibility tests, ensuring that FusionSphere is interoperable with products from mainstream NFV solution providers. This also helps prevent vendor lock-in.

Enterprise partnerships: Huawei has strengthened its collaboration with ISVs, channel sellers, service integrators (SIs), and service providers across the industry.

In 2014, Huawei focused on a wide range of industries, including government, utilities, transportation, safety, energy, media, and finance. Huawei has developed a strategic relationship with at least one ISV from each industry to promote the application of cloud computing in these industries.

Huawei will further improve the regulations on channel partnerships to build an equal, trustworthy, and open channel. When expanding the scale of its partnerships, Huawei also helps partners boost sales and improve after-sales service capabilities.

Huawei’s service providers offer various professional cloud computing services for customers, such as consultation, service operation, basic virtualization, key service virtualization, management, and technical account manager services. Huawei also employs green solutions to bring profits to its partners and achieve win-win scenarios by sharing risks and rewards.

Technology partnerships: Huawei’s cloud computing technology partnership comprises three levels of technology partners – professional, elite, and global. It also includes one set of standard APIs – open FusionSphere APIs – based on a central software development kit (SDK). We also have access to an open remote laboratory, giving Huawei’s partners remote access for development and commissioning. General certifications fall into three types: HCNA-Cloud, HCNP-Cloud, and HCIE-Cloud. Huawei-ready certifications cover application software, virtual appliances, server storage, management, networking, and security.

Educational development: Huawei’s education partnerships consist of personnel training alliances with partners for cultivating cloud computing technicians and recommending posts for them, with standards for cloud computing technicians that outline career path and professional certification systems included. Teaching resources for cloud computing, including training and certification for instructors to jointly develop training classes and certify partners, and a complete ICT laboratory and e-learning platform are also included. Finally, Huawei also runs the Dandelion Empowerment Program, offers certification exams, and hosts ICT skills competitions and regular summits to help develop talent.