

Innovative cloud service in China takes off

UnitedStack achieves its ambition for open source cloud service with an OpenStack-based platform built on an end-to-end solution that also reduces the total cost of ownership



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Cheng Hui, Founder and CEO, UnitedStack

Customer profile



UnitedStack 有云

Company	UnitedStack
Industry	Technology
Country	China
Website	www.ustack.com

Business need

With rising demand for cloud services among enterprises in China, UnitedStack wanted to seize first-mover advantage by creating an OpenStack cloud platform for customers.

Solution

The company achieved its goals by creating an OpenStack platform running on a Dell end-to-end infrastructure featuring Dell PowerEdge servers with Intel® Xeon® processors, Dell Networking switches, SonicWall firewalls and Dell OpenManage software. Dell ProSupport for Enterprise helps maintain reliability.

Benefits

- Drives double-digit growth for innovative OpenStack cloud service
- Gives enterprise customers fast and reliable access to big data
- Keeps customer data protected, preventing denial-of-service attacks
- Cuts total cost of ownership significantly in comparison to past environments
- Achieving payback in three years on cloud platform investment

Solutions at a glance

- Cloud Solutions
- Networking
- Network Security
- Enterprise Support

In recent times, cloud and OpenStack are gaining increasing importance in IT at the enterprise level. The cloud concept is widely understood with companies benefitting from highly scalable and agile IT environments. Possibly less well-known — though this is changing fast — is OpenStack, an open source cloud solution software increasingly being implemented by large-scale companies.

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The cloud debate: public or private?

UnitedStack, in China, sought first-mover advantage by building its own private cloud service based on OpenStack for enterprise customers. The company saw customers were keen to adopt cloud IT. The evidence was clear: cloud-based environments delivered valuable returns by lowering costs while supporting greater business agility. But enterprises in China were still cautious. Of the public or private cloud options, they wanted to start their cloud journeys with private environments, because they were less worried about confidential information being accessed.

Yet concerns over a private cloud solution remained. Just how cost-effective would the cloud be? And wasn't there the risk of being locked-in to a vendor solution that became more expensive over time? UnitedStack saw that it could overcome all of these worries by helping customers start their cloud journeys first with private and then public cloud environments based on OpenStack technology. There would be no rising costs from vendor lock-in because the open source cloud technology was just that — open — enabling customers to change providers at will.

Cheng Hui, founder and CEO of UnitedStack, says, “We identified a clear opportunity for private cloud services based on OpenStack. It answered concerns around cost and vendor lock-in while delivering the full power of cloud technology. Now we needed a platform

to enable our business goals and drive our service forward.”

The need for an innovation partner

UnitedStack wanted an end-to-end solution from a provider that would inspire confidence in customers. And one whose commitment to OpenStack development and the cloud were clear. Comments Cheng, “We had a good relationship with Intel and were keen to use Intel processors. From this point, we began to assess hardware from different vendors and focused our attention on Dell.” He adds, “We saw that Dell offered the solutions to deliver our innovative approach to cloud

Products & Services

Services

Dell Support Services

– Dell ProSupport for Enterprise

Hardware

Dell PowerEdge R620 and R720xd with Intel® Xeon® processors

Dell Networking S6000, S4048, ON and N2048 switches

SonicWall NSA 220 firewall

Software

Dell OpenManage

Partner

OpenStack cloud software

services in China. We gained an end-to-end solution with servers, storage, networking and firewalls to create our cloud services.”

Ensuring speed and scalability at the core

The company discussed its networking objectives with Dell to find the right solution for the cloud. “Stability and manageability were our key aims for networking,” says Cheng. “Performance was always going to be crucial, and so we looked for networking technology to support 40GbE data links.” Working with Dell, UnitedStack designed the cloud’s network architecture based on Dell Networking switches. “We put Dell Networking S6000 switches at the core to give us 40GbE links and multipath high availability,” explains Cheng.

Alongside the S-series managed switches, the customer also deployed Dell Networking S4048-ON switches for 10GbE to 40GbE links for the access layer, and Dell Networking N2048 switches for 1GbE speeds at the edge. “We were able to guarantee a low-latency network to our customers with our Dell Networking solution,” says Cheng. “At the same time, we made sure the network was both easy to scale and simple to manage to maximize efficiencies.”

A feeling of security for launch success

To complete the platform, UnitedStack also included the SonicWall NSA 220 firewall, which provided secure communication between the headquarters and data centers across the country. It also ensured the operation of management traffic through a safe, encrypted channel, thereby avoiding potential threats from remote maintenance and management of the cloud platform.

Combining compute performance and storage capacity

For compute performance and storage, UnitedStack decided to use Dell

PowerEdge servers. The company found it simple to choose the server models since there were already plenty of examples of Dell servers helping companies deliver their OpenStack cloud IT ambitions. Stakeholders decided on Dell PowerEdge R620 servers with Intel® Xeon® processors to support the cloud’s compute and management nodes and Dell PowerEdge R720xd servers with Intel Xeon processors for storage.

The hyper-density of the Dell PowerEdge R620 server meant UnitedStack could pack a lot of compute power into a small space, while the Intel Xeon E5-2660 v2 processors ensured the cloud had all the processing performance it required. In addition, the Dell PowerEdge R720xd gave the cloud multiple terabytes of storage through a range of solid-state drives, SAS or SATA disks. In both instances the server software was UnitedStack’s own UOS operating system.

Says Cheng, “Here was a platform to support our private cloud service and customers’ big data applications. Using Dell servers, we were able to build a cloud environment fit for large enterprises in China and the rest of the world.”

An innovative service that customers want

A brief proof of concept for the cloud took place before UnitedStack began to build the platform in earnest and launched its UOS cloud service. It has ramped up the number of servers supporting the cloud to 11, and have plans to scale the solution further as more enterprise customers come on board. “We see the demand among Chinese enterprise customers growing for private cloud services. In the last half year, we have seen double-digit growth, and the rate of new customers is growing all the time,” explains Cheng.

He adds, “We saw the opportunity for cloud and big data services running on

“Customers are highly satisfied with the performance of their OpenStack cloud environments powered by Dell. The performance reflects on the maturity of both OpenStack and Dell in the cloud-computing market. They represent a powerful combination that gives our customers confidence.”

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OpenStack among enterprises in China. Our aim was to achieve first-mover advantage in the market and with the support of Dell we are delivering the innovation in cloud services the market is calling for.”

Clients enjoy data fast and big

The news from customers is good. They gain reliably fast access to all their applications on the cloud, including big data applications using the Apache Hadoop framework. In a typical UnitedStack private cloud environment, both compute and management nodes are virtualized, with 48 virtual machines per physical server. Confirms Cheng, “Customers are highly satisfied with the performance of their OpenStack cloud environments powered by Dell. The performance reflects on the maturity of both OpenStack and Dell in the cloud-computing market. They represent a powerful combination that gives our customers confidence.”

Maintaining a great level of cloud service whatever happens

Since launching UOS, the platform has remained highly available at all times, despite denial-of-service attacks. With the support of its SonicWall firewall technology, UnitedStack has been able to overcome the attacks without any loss of service to customers. Cheng says, “We are greatly enhancing the protection of our network with SonicWall firewalls. There are instances where SonicWall has kept our private cloud services protected, such as when a large volume of messages were trying to block uplink ports, which would have resulted in packet losses. We overcame the attack successfully, highlighting the strength and value of our Dell solution.”

More innovation time with total cost of ownership reduced significantly

UnitedStack believes the infrastructure underpinning its cloud services is more efficient than any other IT platform it has created in the past. In fact, the total cost of ownership for the Dell cloud solution has been reduced considerably when compared to previous platforms, according to Cheng. He says maintenance today is noticeably more efficient than in the past when he ran other platforms. And he expects administration to get simpler still as he and the IT team continue to learn more about Dell OpenManage, the systems management solution that administrators use day to day. “We can dedicate more IT resources to strategic tasks, to developing new services and solutions for customers. We’ve reduced maintenance significantly, while cutting TCO in the process,” comments Cheng.

Payback is expected in three years

Based on current trends, UnitedStack expects to recoup its investment in three years or less. Based on the number of new customers for UOS and the performance of the hardware, Cheng expects payback with the current lifecycle of the Dell platform powered by Intel® technology. Indeed, he has added confidence that the solution can perform to the company’s expectations because UnitedStack works with Dell ProSupport for Enterprise to maintain the infrastructure. Says Cheng, “You can’t overestimate the importance of support, especially for such a crucial infrastructure as our cloud service. The advantage of working with Dell is that you get that support and work with an organization that understands the IT pressures you face. We believe that Dell is a great choice for any successful company.”

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