Dutch Service Provider Unifies its Data Center

PINS prepares for virtualization, SaaS, and cloud computing opportunities in the Netherlands.

EXECUTIVE SUMMARY

Customer Name: PINS

Industry: Service provider

Location: Netherlands

Company size: 55 employees

Challenge

- Maximize new market opportunities and operating efficiencies by creating a more dynamic, on-demand data center model

Solution

- Cisco Data Center 3.0 vision, architecture, and technologies
- Cisco Unified Computing System

Results

- Easier and faster to provision services
- Reduction in total cost of ownership
- Improvements in flexibility and server utilization

Challenge

PINS is one of the leading providers of hosting and managed services in the Benelux. It protects the e-business of over 15,000 customers by delivering support to their critical processes with solutions for Internet services, managed hosting, software as a service (SaaS) and hosted desktop solutions.

PINS uses a number of high-quality data center facilities in Amsterdam, which are connected via a fully redundant Cisco fiber infrastructure and continuously monitored by a central Network Operating Centre. The IP backbone allows data to be mirrored and distributed over several locations. As well as delivering high availability, the network design also includes Cisco® ASA firewalls, which help ensure secure open peering and allow PINS to maximize traffic exchange with as many Internet service providers as possible.

The server farm is managed using HyperGrid, a VMWare-based hosting platform that lays a virtual layer on top of the physical servers. Having started the process of consolidation and virtualization, PINS wanted to find a way to increase capacity to support SaaS and cloud computing applications, while also making its data center environment more flexible and less labour intensive.

"In the past, data centers were built to cope with maximum demand," says Jan Willem des Tombe, CEO for PINS. "Today it's a whole new ball game. Our customers are looking for a more flexible arrangement. They want to be able to rapidly scale up and scale down storage and compute resources, and to only pay for the services they use. In order to do this, we needed to create a more dynamic 'on-demand' operating model."

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> **–Etienne van Rijn, Manager Infrastructure and Solutions, PINS**

Solution

PINS' vision is aligned to Cisco Data Center 3.0, an architectural approach for data center evolution that uses a three-phase methodology: *consolidate*, *virtualize*, and *automate*. The end result is tighter integration of servers, networks, and storage systems, which in turn helps to deliver new improvements in performance and cost efficiency.

The first stage of this strategy has seen PINS implement the Cisco Unified Computing System™ (UCS), a next-generation data center platform specifically built to accelerate the virtualization process.

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Virtual machine (VM) portability, or live migration, is central to server virtualization. However, a number of challenges inhibit its broader adoption. These challenges include:

- Inability to apply security and policy at the VM level and have that policy move with the VM
- Lack of visibility into VMs, which complicates accounting and troubleshooting
- Organizational challenges introduced by the virtualized environment.

Powered by the latest breakthrough in Intel processor technology, the Cisco Unified Computing System removes these barriers by combining with VMware vSphere to radically simplify data center architecture. This simplification is achieved by using pioneering Cisco VN-Link technology that is embedded in the UCS blade servers. The virtual links communicate directly with the network interface cards and virtual interfaces on the parent switch, allowing quality of service and security to be managed on a per-virtual machine basis.

So, for example, when UCS port profiles are associated with VMware port groups to move a VM from one physical server to another, that event is signaled to the data center network and SAN, and the appropriate network profile and storage services move with the VM.

Intel Xeon Processor 5600 series enables better CPU power management. With this innovation, PINS can align power consumption with workload requirements, dynamically assigning capacity with push-button simplicity.

"We can take advantage of other Cisco Unified Computing System innovations, such as memory expansion and the Virtualized Network Interface Card, which combined with the power of the Intel Xeon Processor 5600 series, will improve energy efficiency and server performance further still," says van Rijn.

Importantly, this approach introduces new levels of automation and makes it easier to administer policies for VLAN membership, traffic shaping, I/O filtering, network addresses, and so on. Application performance is also improved, because CPU cycles are not consumed in switching packets, leaving more cycles available to deliver application performance.

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>
> **–Jan Willem des Tombe, CEO, PINS**

PINS can also take advantage of a unified fabric, which allows both Ethernet and Fibre Channel traffic to travel through the same cable, resulting in less cabling, fewer components, and fewer points of management. The installation also included a customized solution to protect PINS' investment in Internet Small Computer System Interface (iSCSI) technology. This solution enables data blocks to be read from, or sent at high speed, to existing storage disks and tape drives using Ethernet Internet Protocol (IP).

Results

The Cisco Unified Computing System provides PINS with the first steps towards its goal to build a platform where SaaS, virtualization, and the cloud work together to make on-demand IT services more accessible and manageable. "We decided to go with the Unified Computing System without seeing or touching the solution, says des Tombe. "That's how much faith and trust we have in Cisco. If they say it will work, we know it will."

PINS data centers will be among the first in the Netherlands to benefit from breakthrough Cisco technology. The solution is expected to deliver several new advantages.

Capital expenses can be reduced through further consolidation of cabling and hardware. In addition, greater flexibility to mix dedicated servers with the VM platform will help PINS to optimise server utilization rates and scalability. Rack requirements, a major expense for hosting providers, are also significantly reduced. "The UCS solution only takes up one rack compared to a traditional three-rack approach," says van Rijn. "Also, it's easier to build out, because all the power is fully utilized. We rent our space, so that's a saving that goes straight back onto our bottom line."

Although each customer deployment is different, based upon internal modelling and early customer data, the UCS can:

- Lower site costs by as much as 20 percent
- Reduce platform costs by up to 15 percent
- Cut organizational costs by as much as 35 percent.

Improving bridging and communications between the server, storage, and network management domains is also expected to provide operational efficiency gains. For example, tight integration of Cisco UCS Manager and VMware vCenter will make virtual machine movement more efficient and secure. In turn, this capability will allow PINS to better balance workloads, increase availability, and implement disaster-recovery strategies.

The UCS makes it easier and faster to provision, because users only have to configure once. "We no longer have to create separate VLANs each time on the switch, vCenter, router, and firewall," says van Rijn. "We simply build the template and point it to the new blade. The device then automatically gets the information it needs from the SAN and reboots itself. As well as increasing staff productivity, we believe these new levels of automation will also help to improve customer experience, both in terms of recovery times and offering higher SLAs."

These changes will enable PINS to transform its business model and improve the services that it currently offers. As well as benefits, such as the ability to reduce servers and carbon footprint, taking a Cisco Data Center 3.0 approach provides PINS customers with the opportunity for much improved business agility.

One of these customers, a leading worldwide drinks retailer, has deployed Cisco Nexus® 5010 Switches with Fibre Channel over Ethernet (FCoE) capability within its U.S. operations. This deployment has helped to consolidate 80 servers onto four, with 20 virtual machines and multiple SANs into one, while also reducing cabling costs by 30 to 60 percent.

Cloud computing provides the retailer with the ability to rapidly scale IT and storage resources to better support specific advertising campaigns and to optimize its supply chains to meet increased demand. Alternatively, for a global car manufacturer, being able to share applications more efficiently and effectively via the cloud can help to accelerate R&D, production, and distribution timescales.

Next Steps

To get the full benefit of the UCS solution, PINS intends to use the results from customer trials to inform the second stage of this strategy, which will focus on the redesign of its core infrastructure.

"The next logical evolution would be to upgrade our Cisco Catalyst switches to the Cisco Nexus family of Data Center switches," says van Rijn. "This will provide us with even greater levels of network virtualization and 10 Gbps networking speeds. It will also improve inter-communication between physical and virtual servers by reducing the distance and number of devices that the data has to travel through."

PRODUCT LIST

Data Center

- Cisco Unified Computing System

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
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