KEMP helps Deltion College lead the way in Software Defined Networks

Dutch education centre rolls out first European Software Defined Network (SDN) with HP and KEMP Technologies

Website

· deltion.nl

· deltion.nl/english

Headquarters

· Zwolle, Netherlands

Industry

· Education

Solution Implemented

· LM5400

· KEMP Edge Security Pack (ESP)

Results

· Seamless integration process

· Increased availability of educational programs for students and faculty

· Increased protection from potential hacking and Denial of Service cyber-attacks

"We recognised the benefits of SDN very early on and focused development teams on coming up with innovative technology to help harness the full potential of SDN deployments, working with key market players such as HP" – Michael Worlund, Tech Director

With over 15,000 students and 1,200 staff, Deltion College in the Dutch city of Zwolle has always been an early adopter of proven new technologies and is now leading the way in Software Defined Networks (SDN). Deltion College has just deployed the first European SDN based on HP's VAN (Virtual Application Networks) Controller and KEMP Technologies' adaptive load balancing technology for SDN.

The college made the decision to replace its Cisco network with a new SDN environment to deliver Microsoft SharePoint, Lync and Exchange services in order to support high availability of educational programmes, from vocational and pre-university courses to adult education and company training schemes.

For the forward-thinking IT team at Deltion, the idea of decoupling control of its physical infrastructure through software would allow them to support a multi-vendor infrastructure and respond more quickly to changing requirements. "By definition, an SDN network is less complex, easier to manage, more robust and more dynamic and scalable," said Robert Vos, manager I&A at Deltion College. "And while there is an up-front investment, we will save on hardware and are not tied into any one vendor, so the return on investment case was compelling"

One of the key features of SDN for Deltion was the ability to dynamically configure its network bandwidth and servers as well as automate activities such as application upgrades and back-ups and provide better protection from potential hacking and Denial of Service cyber-attacks.

When it came to selecting vendors to roll out its pioneering SDN, the Deltion team studied the market carefully and selected the HP VAN (Virtual Application Network) Controller. The HP VAN Controller is based on OpenFlow, a standard communication protocol defined by the Open Networking Foundation (ONF), which provides access and communication between the control and infrastructure layers of SDN.

Deltion also realized that load balancing would also play an important part in the efficiency and performance of its SDN as well as supporting dynamic application delivery and QoS. The college already used load balancers from KEMP Technologies, so when it realized that KEMP had a working SDN product solution and was able to interact with the HP VAN Controller, it was the natural choice.

"Our experience of KEMP's technology and excellent support made it the ideal choice to replace our Microsoft load balancing to control traffic via the SDN controller," said Hans Hoeven, Security Officer at Deltion College. In effect, KEMP dynamically uses Layer 2 information such as network and server congestion extracted from the SDN controller to enrich its Layer 4 and Layer 7 load balancing policies for making more intelligent forwarding decisions and enhancing application delivery, user experience and service levels.

"We recognized the benefits of SDN very early on and focused development teams on coming up with innovative technology to help harness the full potential of SDN deployments, working with key market players such as HP," said Michael Worlund, Technical Director, Emerging Technologies at KEMP Technologies . "Our advanced patent-pending KEMP SDN Adaptive technology and scheduling methods are able to access critical flow pattern information from the SDN controller to route applications to the optimal servers via the best paths available on the switching infrastructure."

Deltion kept its two existing KEMP 2600 LoadMasters and purchased two further KEMP 5400 appliances to steer traffic to some 250 Microsoft Hyper-V servers. Load balancing for Lync in the new SDN environment went live at the end of February with SharePoint and Exchange to follow.

Deltion is also using KEMP's Edge Security Pack (ESP) pack to replace Microsoft's Forefront Threat Management Gateway (TMG), which is no longer sold or supported by Microsoft. ESP

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provides a way to securely publish Internet facing applications such as SharePoint, Lync and Exchange and includes features such as edge security, Single Sign On (SSO), application integration and flexible authentication options, to deliver an optimal user experience along with information security policy compliance.

"Network protection and resilience are critical to provide our students and staff with secure, 24x7 services, so KEMP's ESP is a major added benefit to the load balancing solutions," says Hans Hoeven. "We also took the decision to configure our network in a hybrid configuration allowing the switches to revert to legacy switching in the event of a failure. This gives an extra layer of resiliency."

Deltion's innovative approach to IT is reflected in its practical, 'learn by doing' approach to its students and ethos of Social Return. "We want our students to be able to harness knowledge and embrace the latest technologies through our own experiences and working environments," says Deltion's Robert Vos. "So, we will be using our new SDN implementation to help students of our IT courses learn about the leading-edge network technologies that they will face in the future workplace."

"We are already seeing the benefits of the agile, automated open standards infrastructure that SDN promises," added Hans Hoeven. "KEMP's innovative technology and its excellent support have played a vital role in getting us to where we are today and as an educational establishment, the price/performance of its LoadMaster products have also been a key factor in the relationship. We look forward to the on-going journey."

KEMP has also worked closely with HP's Michael Zhu, Sr. Director, Global Solutions and Alliances at HP. "The Virtual Application Networks SDN Controller's reliability and rich features empower integrated applications, such as the KEMP ADC, to deliver greater network efficiency, advanced security, and rapid application or service delivery within an OpenFlow-compatible SDN environment."

"At KEMP, we have always been quick to push the boundaries of emerging technologies by developing innovative load balancing and application delivery solutions for CIOs and network owners," said KEMP's Michael Worlund. "We now support all established and emerging environments – from traditional physical networks through virtual and cloud deployments to new KEMP SDN and NFV ecosystems. It has been a great experience working with forward-thinking Deltion College who are already realizing the OpEx savings, automation and agility that SDN Adaptive brings to their operations. And it demonstrates that SDN is far more than just hype."

KEMP Defining The Path To The Agile Data Center

Virtual Network Services

| Other Services | GEO LB | L4 LB | L7 LB | SSL | IPS/IDS | WAF | SDN Adaptive | VPN GW | IP64GW |

SDN Control

Virtual Infrastructure

| Bare Metal | XEN | KVM | Hyper-V | ESXi |

Orchestration

Management & Monitoring

OpenStack VMware Microsoft HP

Cloud Control Interconnect

| AWS | Azure | vCloudAir |