KAMP Netzwerkdienste GmbH uses Cisco UCS and Nexus as a platform for “Made in Germany” Infrastructure as a Service

A cloud computing center

Michael Lante, CEO of KAMP Netzwerkdienste GmbH: "Simple management is essential for broad acceptance of cloud computing in different customer groups. In this respect, the Cisco UCS and Nexus data center solutions are a significant milestone for Virtual Core."

KAMP is now offering companies of every size the opportunity to benefit from server virtualization.

Well-known colocation provider KAMP is now offering companies of every size the opportunity to benefit from server virtualization. Virtual Core is based on the Cisco Unified Computing System (UCS) and Cisco Nexus switches, and provides a virtual data center with virtual racks. This cloud service can be administered without restrictions, and is provided directly from the high availability data center at the company's headquarters in Oberhausen. KAMP has been able to perfectly implement its vision of an easy-to-manage virtual IT environment.

Why look far afield?

Virtual Core by KAMP disproves the notion that server virtualization is inherently complicated: the solution radically simplifies the configuration and operation of a virtual server landscape. Virtual Core positions KAMP in the German market as a domestic provider of Infrastructure as a Service, but what really sets it apart from the mainstream clouds mostly offered by American companies such as Amazon, Microsoft and Google is that there are no restrictions on the choice of operating system. "Rigid system defaults for virtual servers and restrictive management regulations will not meet the needs of many companies. This means that current cloud offerings are not a real alternative to costly continued operation of company-owned server hardware, especially in strongly mixed IT environments", states KAMP CEO, Michael Lante.

Operating system independence was just one of the reasons why KAMP chose not to use a ready-made virtualization layer for Virtual Core, instead developing its own virtualization management from scratch. In addition, the CEO points out, "We wanted to offer an intuitive management interface for each type of cloud service. Every company should be able to decide for itself which cloud model is best suited to its business activity, whether that’s a public, private or virtual private cloud. And it should be able to use the benefits of cloud computing without having to give up control of the administration".

VIRTUAL-CORE®

Background

KAMP Netzwerkdienste GmbH in Oberhausen has been an established premium service provider in the IT market for more than 20 years, and has built up a reputation in the health care sector in particular. Today KAMP operates in five European countries. Its customers include small and medium-sized companies as well as large DAX-30 companies.

Challenge

The more virtual machines fit on a physical server, the more effectively the resources of a cloud infrastructure will be utilized. KAMP was therefore looking for a computing platform without virtual server scaling limits, while maintaining the same performance. It also wanted the new platform to allow unified management of virtual servers as well as network and storage connection.

Solution

Three Cisco UCS's form the technological platform for Virtual Core, with one virtual rack equal to one UCS blade. Cisco Nexus 5000 switches create a common bridge both in the IP network and the storage landscape.

Benefits

- one terabyte of working memory: more virtual machines per system
- radical I/O consolidation: approximately 90 percent fewer cables
- unified server, storage and network management
- sustainable platform for profitable cloud services

Which cloud type would you like?

Virtual Core opens the door to different cloud models. In the hosting version, the service comes directly from the KAMP data center in Oberhausen, either via internet or an encrypted network connection. While the first scenario is a public cloud in the classic sense, the second is called a virtual private cloud, a reference to the term VPN, as access is only possible via encrypted network cables.

However, in some sectors certain data may not be transferred to just any data center, whether encrypted or not. In health care, for example, many medical institutions are understandably uncomfortable with passing on sensitive patient information to an external or even to a foreign service provider. Where concerns such as this are an issue, KAMP offers a Virtual Core version that is installed on site in the respective company as a truly private cloud. Even hybrid clouds - a combination of public and private clouds - are no problem with Virtual Core. For example, data protection-sensitive systems can be run in the private subcloud, while less critical applications can be managed in a public cloud segment, with Virtual Core acting as a common administration interface for all cloud components.

Higher performance, lower complexity

The basis for all public and virtual private cloud services hosted by KAMP is a state of the art data center at its headquarters in the heart of the Ruhr region. Constructed in 1996, IT infrastructure at the center grew to 150 percent in the first five years. In 2009 this growth rate was at 625 percent, and in 2012 it is expected to exceed 1,200 percent. In the first months of this year alone, KAMP has invested at least one and a half million euros in their high-tech Oberhausen data center. A large proportion of this has been used to further develop the IT architecture into a unified data center fabric with the Cisco Unified Computing System (UCS) at its core. “UCS is ideally suited to our philosophy of an extremely flexible yet intuitively manageable virtualization environment", remarks Danny Sternol, Marketing Manager at KAMP. He continues: "The transition from conventional blade systems to Cisco UCS means not only an enormous quantitative increase in performance, but also a qualitative transformation, which makes the frequently deplored complexity of managing virtual environments literally vanish”.

As a quantitative example he cites the working memory, which can be increased to a terabyte with UCS. As a technical note, processor speed does not significantly limit the maximum number of servers per system, contrary to popular belief. Instead, insufficient working memory proves to be the restriction in many cases. As a result, highly developed and intensively cooled CPUs cannot be utilized to capacity, with the economic disadvantage of incurring costs for unused resources. In the new generation UCS, the density of the processor cores was doubled and the working memory quadrupled. Intel Xeon E7 processors are the core of the new systems, yielding 25 percent higher performance per watt than all previous models. Furthermore, UCS is now even more energy efficient. This is possible through new management options for service-related energy and cooling policies. These can be configured directly with UCS Manager and saved in service profiles, allowing energy consumption to be dynamically adapted to the actual application throughput.

Danny Sternol, Marketing Manager at KAMP: "The savings on cabling alone were around 90 percent."

On the way to a unified data center fabric

With regard to the qualitative transformation of the IT architecture, Danny Sternol notes: "Cisco UCS combines powerful blade servers with storage and IP connection in a highly compact system. In our data center, Cisco Nexus 5000 Series switches act as a bridge both in the IP network and in the fiber channel-based storage landscape." This is enabled by data center bridging protocols, especially Fiber Channel over Ethernet (FCoE). The Cisco Nexus 5000 was the first Ethernet switch in the world to handle FCoE, but its capability has now been extended to other members of the Nexus family, such as the larger Nexus 7000. FCoE removes the old boundaries between the storage and IP worlds, merging LAN and SAN into a common fabric.

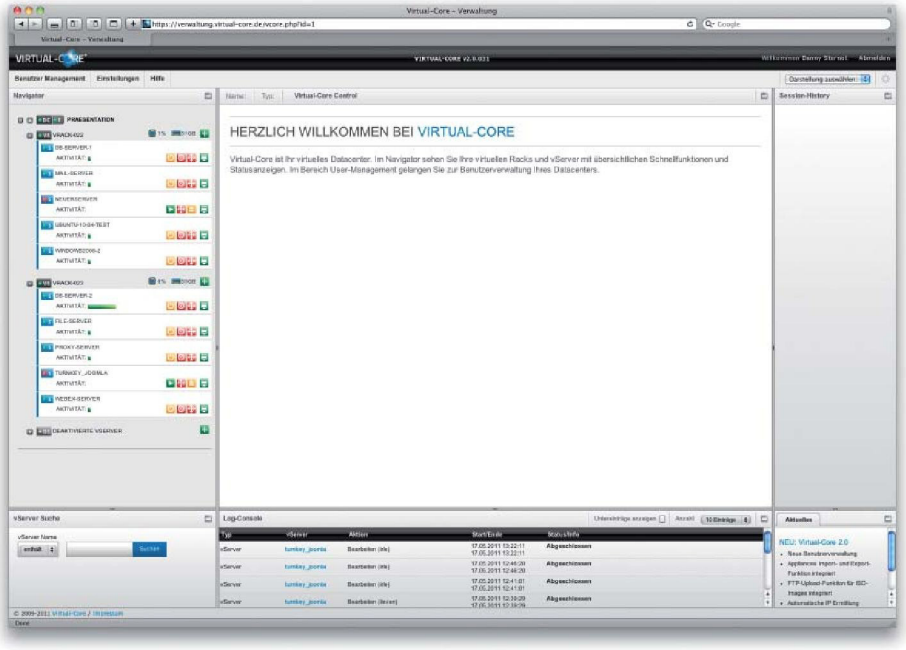
At KAMP the Cisco concept of an Ethernet-based data center fabric almost automatically leads to a radical input/output consolidation. Because server and memory data both run via the same Ethernet cables, KAMP was able to avoid a large number of adapters and cables that would otherwise have been necessary. "The savings on cabling alone were around 90 percent. And this means not only one-off savings on investment costs, but also similarly reduced installation and maintenance expenses in Virtual Core customer projects", says Danny Sternol.

The Cisco Nexus 5000 series offers unified fabric over 10 gigabit Ethernet for LAN, SAN and cluster traffic. This standardization enables consolidation and higher utilization of previously separate infrastructures and cables.

The simplest cloud ever!

Apart from cost advantages such as these, the UCS and Nexus data center fabric also lays the foundations for unified infrastructure-wide IT management. Virtual servers together with network connections and memory allocation can be moved to another blade during operation. This enables scaling at any time with no interruption of services. Complete configurations can also be stored as service profiles via UCS Manager, which greatly simplifies the new installation of racks for Virtual Core. The most important impacts by Virtual Core and UCS are found right here: "Virtual Core's web-based management interface passes the new simplicity on to the cloud user", confirms Danny Sternol.

Calling the Virtual Core interface "intuitive" really is anything but a mere advertising slogan. Most of its functions are absolutely self-explanatory. A surprising number of management tasks can also be carried out exclusively in the navigation area on the left. This area is divided into virtual racks, each matching a physical UCS blade.



Most functions of the Virtual Core interface are absolutely self-explanatory.

The Cisco Unified Computing System takes third place in the global blade server market. (Source: IDC, May 2011)

Virtual servers that are not currently required can be parked on an inactive rack by dragging and dropping, and can be reactivated just as easily when needed. An accounting server that is required only sporadically during a bill run, for example, ties up no resources such as CPU or RAM outside the scheduled times.

Installing a new virtual server only requires information such as the desired number of CPUs, the working memory and the operating system to be clicked in the menu selection. Virtual Core can create even complex IT structures within a very short time. Alternatively, virtual appliances, i.e. hard disk containers including operating system and applications, can be imported from other virtualization environments. This reduces the cost of migration to Virtual Core to a minimum.

"Simple management is essential for broad acceptance of cloud computing in different customer groups. The Cisco UCS and Nexus data center solutions are a true milestone for Virtual Core in this respect", sums up Michael Lante. Cisco UCS, the unified fabric concept and the new Nexus platform are the backbone of the Cisco Data Center Business Advantage architecture. The most important aim is to link technological and business innovations more closely together than before. The KAMP model provides an example of how a stronger link between IT and business activity can also have an enormous effect for other companies.

KAMP

Contact at the customer side:
AMP Netzwerkdienste GmbH
Danny Sternol
Vestische Straße 89–91
46117 Oberhausen
Germany

Tel.: +49 (0)208 89402-32
Fax: +49 (0)208 89402-40

ds@kamp.de
www.kamp.de
www.virtual-core.de