

SDN and NFV Entering the Data Center:

make the connection between virtualization and physical assets

InterComms talks to Oliver Lindner, Head of Business Line Data Center Infrastructure Management, FNT, about current trends and challenges in data centers resulting from upcoming virtualization technologies like SDN or NFV. Oliver joined FNT as Senior Consultant for Server Management after 20 years of business experience working as a System Analyst. Today, Oliver is heading the business line DCIM at FNT



Oliver Lindner, Head of Business Line Data Center Infrastructure Management, FNT

Q: The amount of data traffic within data centers and networks is currently exploding. The Cisco Global Cloud Index predicts that global data center traffic will grow nearly three-fold by 2018, but the overall growth rate for new data centers or additional space growth is not at the same level as the traffic and data provided. Is this a sign for increasing virtualization technologies such as SDN and NFV entering data center infrastructure management?

A: SDN and NFV are definitely entering the data center. The agility of a programmable network brings new speed to the data center world and allows data center managers

to react much faster to changing market demands and customer expectations. But many technology analysts, such as DCD Intelligence, also identify shifts from in-house facilities to colocation and outsourced space, from physical servers to virtualized and software-defined architectures and cloud-enabled services. DCD Intelligence predicts in its newly released "Global Data Center Market Overview" that the growth of in-house hosted IT facilities is limited to around 1.29% CAGR between 2014 and 2020. For colocation, outsourcing and shared facilities space growth is expected at 9% CAGR from 2014 to 2020. Also, the total data center space globally will rise from 36 million square meters to 46 million square meters, but only 56.8% of this will be in-house. This trend indicates a year-on-year decline of 2% to 2.5% in physical racks in-house, with this decline being balanced by an increase in external and in-house deployment of virtualizations and cloud and, to a lesser extent, colocation.

This forecast is also what we experience when talking to our customers. Especially if they build new data centers or consolidate existing infrastructures into new facilities, we find virtualization technologies such as SDN. Also in large telco providers we see the trend towards implementation of SDN. It is slightly different when looking at existing heterogeneous in-house data centers. Many of these data centers are still not yet on SDN technologies.

Other network virtualization technologies such as NFV will generate a further demand for virtualized network and data center resources and will transform network functions such as router, firewalls or intrusion detection systems stepwise into the data center. NFV still seems to be in an early stage of implementation within many data centers. ►

Q: What are the key challenges while implementing network virtualization technologies in the data center?

A: Data center managers will face different kind of challenges when implementing SDN or NFV technologies. First, we see organizational challenges that are related to roles and responsibilities within the data center. Many data center areas are still managed in silos. This means that one team is responsible for the facility part, while other teams are responsible for the IT stack and still others are responsible for the networks area. If you want to implement SDN or NFV technologies you must cross these organizational boundaries because network functionalities owned by the network team will impact the facilities area and have to be managed and deployed on IT systems from your IT team. The virtualized network service will be composed of services from different teams and you need to bridge the gap between the different silos without creating a new one.

Another challenge lies in the technical implementation process itself. If you deploy SDN or NFV on a green field it might be easier, but as many data centers are heterogeneous and have a grown infrastructure you often find two-folded implementation scenarios where part of the data center is already working on SDN while another area is still operating on old technologies. This leads to a difficult situation during the transition phase because you need a clear and transparent view into your existing physical infrastructure and a direct link to virtualized assets and technology areas. At this exact point it is vital to have all detailed data on your physical infrastructure available. Otherwise you will not be able to automate your services, keep your service quality and manage the capacities you need for the transformation towards a virtualized infrastructure.

Q: This means network virtualization is a key initiative for data center growth strategy, but how can one succeed without knowing the underlying physical infrastructure?

A: This is precisely the point. SDN and NFV technologies will provide huge benefits to data centers and interconnected sites. It will increase flexibility and agility for the delivery of services. It will shorten delivery-times and help automate many tasks and it will provide the right network capacities where needed. But all of this will only work if the underlying physical infrastructure is well-known and well-managed. NFV enables virtualization and SDN facilitates the interconnection to virtual resources, but nevertheless the underlying hardware capacity needs to be carefully planned and provisioned and resilient applications and services will only work if the underlying infrastructure is properly managed.

FNT, as a leading provider of integrated software solutions for IT management, data center infrastructure management and telecommunication infrastructure management worldwide, offers with its standard product, FNT Command, an easy-to-use software for the management of IT, network infrastructures, data centers and telecommunication. The deep integration of all asset data and the comprehensive data model of FNT Command are unique in the software market. It builds the central resource repository for all planning, fulfillment and assurance processes within the business areas of telecommunications, cable networks, outside & inside plant management, data center infrastructure management as well as IT infrastructure management.

FNT provides a complete software solution for managing your network infrastructure and data center, which increases transparency and efficiency across your network, communication services, and assets. Network infrastructure and data center managers see FNT software as the

Figure 1: The integrated data model of FNT Command provides a transparent view on all physical and virtual assets in data centers and networks

