Network challenges in a demanding environment

Customers of today’s enterprise and service/web provider organizations around the globe are pushing data centers to their limits for real time services that can keep up with demanding workloads and applications. Network traffic within data centers is shifting from traditional north-south (vertical) paths to east-west (horizontal) paths due to high-performance workloads and virtualization technology requiring more communication and coordination between server and storage platforms.

At the center of all of this is the data center network infrastructure which serves as the mission-critical super highway to handle all of these growing applications and services. In order to meet these expectations, organizations require a more flexible network infrastructure that can quickly scale and provide the utmost agility. Some of the key challenges that are prohibiting organizations existing network infrastructures from delivering this flexibility include:

• Traditional proprietary network infrastructures that are hardware-bound, inflexible and hard to manage
• Existing SDN-based overlay architectures where a centralized controller provides a single point of failure and increases network latency
• Increasing complexity and cost when configuring, deploying and managing physical networks layers and components

The new networking paradigm

Network virtualization overlays using Midokura’s Enterprise MidoNet platform over robust network underlays with Dell switches provide customers the power to do more, at cloud scale across a global environment. Dell worked closely with the Midokura Enterprise MidoNet team to deliver an end-to-end solution that allows customers the flexibility to unify pools of virtualized and non-virtualized IT assets. Network virtualization with Midokura Enterprise MidoNet and Dell’s robust data center S6000 switching product provide the programmability, automation and cloud scalability to meet the needs of today’s complex networks. This joint solution provides enterprise and service/web providers with:

• The simplicity of an robust, highly distributed SDN overlay-based network virtualization that runs on top of a physical infrastructure fabric
• A highly distributed networking architecture placing control at the edge of the network that allows higher scalability and maximum efficiency
Midokura Enterprise MidoNet software

Midokura Enterprise MidoNet is a software-based, highly scalable and resilient, network virtualization system for OpenStack and Neutron compatible environments. With its distributed architecture it enables enterprises and service providers to build, run and manage virtual networks with increased control, security and flexibility. Using industry standards and by leveraging existing physical infrastructure, MidoNet reduces costs and improves stability, scalability and performance of networks.

MidoNet’s unique architecture achieves high scalability, security and resiliency by distributing intelligence at the network edge. Midokura’s approach not only adds automation that significantly reduces the human cost (OPEX) of managing the network, but also impacts the overall economics of cloud computing (CAPEX) by simplifying network requirements.

Midokura Enterprise MidoNet is a product combining the most stable, production hardened version of MidoNet for network virtualization with their MidoNet Manager, longer term support, and enterprise-class 24x7 service level agreement.

Dell S6000 L2 Gateway for MidoNet

Dell’s S6000 is a highly scalable, high-performance 40GbE switch engineered to deliver unprecedented performance to accelerate workloads in demanding, mission-critical enterprise networks. The S6000 delivers line rate performance providing native VXLAN encapsulation and decapsulation for communication over VXLAN tunnels, enabling virtual machines in virtual networks to consume services offered by non-virtualized, physical infrastructure elements.

The Dell S6000 extends virtual networks to physical servers for complete connectivity between virtualized and nonvirtualized legacy workloads. This allows virtualized workloads to take advantage of existing investments made into physical networking appliances, while also enabling legacy physical workloads to fully leverage the latest virtualized networking services available in the virtualized ecosystem. This offers compelling benefits for the newest cloud-enabled applications, and improves the efficiency, cost and capabilities of network service delivery for traditional and legacy workloads.

Dell backs up each and every deployment with a comprehensive suite of design, deployment and management services to help customers of any size every step of the way. All of this translates directly into a capability set designed to fit any organization’s needs, granting them and their business the power to do more.

Summary

Having a robust, flexible and agile network infrastructure is critical for organizations striving to meet growing demands. Shifting to a software-defined networking environment can help these organizations to stay ahead and deliver superior services.

Together Dell and Midokura are helping organizations gain greater flexibility to build, run, and manage virtual networks independent of the physical network and provision services more quickly. This joint solution also provides the scalability, performance, and resiliency of virtual networks and avoids single point of failure.

For more information go to www.dell.com/networking