Advanced application delivery over software defined networks

Citrix NetScaler Application Delivery Controller with IBM Software Defined Network for Virtual Environments
Businesses are rapidly adapting to changing needs by deploying complex applications over the cloud. Server virtualization enables more applications to run on less hardware, making it possible to obtain more value out of existing hardware. As more mission critical business applications rely on the cloud, the data center networks that host them need to be intelligent, reliable, scalable and manageable.

Application Delivery Controllers (ADCs) can optimize, accelerate and secure virtualized application server environments. They provide critical services to help improve the scale, security and availability of services within the network. Data centers are beginning to implement software defined networking, as it provides a fluid environment in where services can be chained and capacity can adapt. Some software defined networks are designed to overlay virtual networks onto physical networks, making existing infrastructure more adaptable to different workloads.

Introducing Citrix NetScaler Application Delivery Controller with IBM Software Defined Network for Virtual Environments

Enterprises need an elastic and scalable infrastructure to meet dynamic business needs and service delivery. Citrix NetScaler is an all-in-one application delivery controller that improves application performance, reduces web application ownership costs and improves application availability. It is deployed in thousands of networks around the globe to optimize, secure and control the delivery of all enterprise and cloud services and maximize the user experience. Employing Citrix TriScale technology, NetScaler enables Enterprise customers to boost business productivity by accelerating application performance for users, while lowering datacenter costs by offloading server functionality. Additionally, NetScaler delivers deep visibility and control into critical business applications across both public and private cloud environments, and provides a 360-degree view for all applications, including virtual desktop traffic. NetScaler offers flexible deployment options, and is available as a high-performance network appliance (NetScaler MPX), a software-based virtual appliance (NetScaler VPX) and as a services delivery platform (NetScaler SDX).

IBM’s Software Defined Network for Virtual Environments is a network virtualization overlay technology that runs on top of existing networks. With IBM SDN VE, a single physical network can scale to up to 16,000 virtual networks without requiring additional network infrastructure.

IBM has partnered with Citrix to provide customers with the ability to seamlessly incorporate NetScaler into IBM SDN VE deployments. By doing so, they can enable their cloud environments to scale up via Citrix TriScale technology; thereby bringing the same innovation that powers many of the world’s largest clouds to the IBM SDN VE reference architecture. Together, NetScaler and IBM SDN VE facilitate a new virtualized, multi-tenant network with advanced traffic management.

**Citrix NetScaler Benefits**

- Injects cloud scale deployments with the revolutionary TriScale technology and built in cloud connectivity.
- Reduces TCO and increases performance through its versatile and extensible platform for service delivery combined with delivering applications and data services with excellent performance and reliability.
- Combines a high level of control with full application security and visibility for all data entering and leaving the network.
**Citrix NetScaler and IBM SDN VE**

IBM's Software Defined Networking solution for Virtual Environments offers advanced multi-tenant, dynamic connectivity and efficient networking capabilities for data centers. Citrix NetScaler is the leading application delivery controller for cloud environments and the mobile age. Deployed in thousands of enterprises, service provider networks, and public cloud infrastructures, NetScaler delivers:

- **Unprecedented cloud scalability:** With revolutionary Citrix TriScale Technology, enterprise and service provider cloud networks can scale up performance, scale out capacity, and scale in with more efficient utilization and consolidation of expensive network resources by enabling up to 80 independently managed appliances in a single, multi-tenant platform.

- **Advanced Attack Protection:** NetScaler delivers a hybrid security model that combines attack signature detection with an advanced learning engine. A web application firewall leverages a comprehensive database of attack signatures for rapid deployment into any environment and block web-specific attacks as well as modern malware.

- **High Availability for Applications and Data:** The proven layer 4-7 load balancing of NetScaler delivers high availability application uptime and no single point of failure by directing users to the right application resource.

- **Simplified Service Delivery:** Unifies best-in-class Layer 4-7 network services into an application control layer and integrates this application control with both existing transport networks and emerging SDN technologies to deliver application-driven control, automated deployment and consolidated delivery and orchestration.

**IBM SDN VE Reference Architecture with Citrix NetScaler**

![SDN VE Reference Architecture](image)

Figure 1: SDN VE Reference Architecture
In this use case, the client, Citrix NetScaler ADC and application servers all reside on the virtual network.

The Citrix NetScaler ADC is installed on the SDN VE VDS vSwitch.

The actual servers responding to the load balancing service are on a different virtual network than the client.

The client makes requests to the Citrix NetScaler ADC load balancing service.

The Citrix NetScaler ADC provides the load balancing function and distributes requests to the servers on the application server virtual network.

Figure 2: Citrix NetScaler Virtual ADC Deployed with SDN VE – Internal Client

In this use case, the Citrix NetScaler ADC and application servers reside on the virtual network.

The Citrix NetScaler ADC is installed on a Distributed vSwitch.

The client resides on the physical network, on a physical host or hypervisor host.

The client makes requests to the Citrix NetScaler ADC load balancing service.

The Citrix NetScaler ADC provides the load balancing function and distributes requests to the servers on the application server virtual network.

Figure 3: Citrix NetScaler Virtual ADC Deployed with SDN VE – External Client
Summary

The combination of IBM SDN VE and Citrix NetScaler solutions provides customers with the flexibility of the IBM SDN VE overlay virtual network solution and the advanced Application Delivery Controller (ADC) technologies inherent in NetScaler. NetScaler also brings unique integrations with popular virtual desktop and enterprise mobility offerings such as Citrix XenApp, Citrix XenDesktop and Citrix XenMobile. These products bring innovative capabilities such as HDX Insight to customers, delivering deep visibility and control into critical business applications. Customers deploying NetScaler will enjoy the optimal user experience that only NetScaler can bring to XenDesktop environments. NetScaler enables customers to optimize their XenDesktop deployments by ensuring availability, security, a seamless user experience, unprecedented scalability and visibility to ensure optimal performance, and maintain SLAs for any user, anywhere, on any device.

For more information

To learn more about IBM SDN solutions, please visit:
http://ibm.com/systems/networking/solutions/sdn.html or contact your IBM representative.

To learn more about the Citrix NetScaler ADC, visit:
For More Information
IBM Software Defined Network for Virtual Environments
Citrix Systems NetScaler Application Delivery Controller

http://www.ibm.com/systems/networking/
http://www.citrix.com

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