

BROCADE SOLUTIONS FOR CLOUD SERVICE PROVIDERS



SOFTWARE NETWORKING

Helping Cloud Service Providers Optimize Resources and Accelerate Revenue Growth

HIGHLIGHTS

- Reduces dependence on disparate, purpose-built hardware devices
- Reduces capital costs by eliminating over-provisioning with a pay-per-use utility pricing program to “pay-as-you-grow”
- Helps lower operating costs by reducing space, weight, power, and cooling requirements
- Simplifies network management by automating the provisioning and management of advanced services in common orchestration and control platforms
- Provides dynamic, elastic scalability of advanced Layer 2–7 services to address changing customer demands
- Increases business agility by accelerating the delivery of new, custom service offerings through a programmable application scripting engine
- Supports new revenue streams by enabling scalable Layer 2–7 services to be deployed on a per-tenant basis and by virtualizing shared services

Cloud computing is continuing to grow. Gartner, Inc., estimates that by 2016, this growth will increase to become the bulk of new IT spending, with public cloud services reaching \$207 billion annually.¹ These numbers validate that cloud computing is not a novelty or passing fad, but rather a mainstream IT initiative.

Cloud Service Providers (CSPs) realize the revenue potential of cloud computing and are seeking ways to differentiate their services and positively impact their pricing strategy. One area ripe for disruption and innovation is networking, and software is leading the way. CSPs are moving away from costly, proprietary hardware solutions in favor of more cost-effective, standardized x86-based software networking solutions, as they evolve their data center networks to support the growing demands of highly virtualized and public cloud architectures.

In this rapidly changing and highly competitive market, CSPs must reduce their cost structures and deliver additional services in order to offer competitive pricing, maximize ROI, and create new revenue streams to fuel their growth. To increase their agility and cost-efficiency, CSPs are seeking new network infrastructure

technologies that can deliver even higher levels of network performance, scalability, and reliability to meet customers' ever-changing needs.

THE BROCADE SOLUTION

Today's mobile, on-demand business environments require a cloud offering built on a dynamic platform that can deliver services quickly and with the highest performance possible. Brocade® software networking solutions enable CSPs to migrate from static hardware networking to dynamic software networking. This shift to software networking solutions helps CSPs to:

- Free up capital and equipment
- Speed service delivery
- Gain high-margin sources of revenue

As a result, CSPs can now adopt open infrastructures and avoid vendor lock-in, while providing secure network services to thousands of customers to satisfy their application needs, increase loyalty, and generate new revenue streams.

¹ Gartner, Inc., “Gartner Says Cloud Computing Will Become the Bulk of New IT Spend by 2016,” October 24, 2013.

FREEDING UP CAPITAL AND EQUIPMENT

Brocade software networking solutions can significantly reduce CSPs' Total Cost of Ownership (TCO) by freeing up capital and shrinking the hardware pool required to support cloud deployments (see Figure 1). Advancements to Intel's x86 architecture, combined with Brocade software innovations, enable networking functions to be delivered via software on any industry-standard server hardware, reducing the need to purchase expensive, purpose-built hardware in many areas of the data center.

Decreasing the reliance on proprietary hardware eliminates vendor lock-in and the inherent costs associated with being reliant on a single vendor. It also can shrink the overall amount of hardware that is needed for a CSP's cloud deployment. Less hardware requires less space, power, and cooling in the data center—expenses that can be significant to the overall TCO of a CSP's cloud deployment.

With Brocade, CSPs can increase the utilization of their infrastructure by using software to quickly add, move, or change network capabilities to meet evolving needs. Plus, because Brocade is tightly integrated with Intel, CSPs can leverage the performance advances of off-the-shelf Intel x86 servers to maximize the utility and lifetime of their investments.

SPEEDING UP SERVICE DELIVERY

The open, flexible design of Brocade software networking products enables

networking services to run on any hypervisor and easily support the ever-changing needs of a CSP's cloud deployment.

Delivering network services via software on industry-standard servers can reduce deployment time by up to 80 percent. Faster deployment times can free up staff resources to focus on other initiatives and ongoing innovation that garners additional business benefits.

Virtualized network functions deployed as Virtual Machines (VMs) can be quickly deployed and scaled on a per-tenant basis and as capacity is needed. The result is a network and/or service capable of dynamically scaling up or down to match business demands.

As a result, CSPs can add valuable functionality while enabling customers to tailor their environments to meet their needs. This gives CSPs the freedom to quickly and cost-effectively create new offerings to meet changing customer demand, increase loyalty, and drive new revenue.

CREATING HIGH-MARGIN SOURCES OF REVENUE

In delivering high-value networking offerings—such as routing, VPN, firewall, application delivery controllers, NAT, and more—as a VM, CSPs can significantly reduce time-to-market for new services. This ability to capitalize on market demands in turn helps create a shorter path to profitable revenue.

CSPs can quickly achieve positive margins for their networking services with the pay-as-you-grow model offered by Brocade. The utility pricing program helps ensure that CSPs are paying for only what they actually use, not what they think they might need. CSPs can establish a base usage level and leverage license “bursting” capabilities to ensure that their infrastructure can accommodate fluctuating demand. This approach eliminates wasteful over-provisioning and helps CSPs align their monthly billing with their revenue streams.

Brocade software networking products reduce reliance on purpose-built hardware, as well as the overall physical device footprint, to simplify data center operations. CSPs have the option to integrate virtualized network functions into existing orchestration automation systems to further streamline operations and to ensure management of the software networking products is incorporated into existing processes and workflows. As a result, CSPs can take advantage of simplified deployment, management, and upgrade cycles that support an accelerated path to revenue.

INCREASING PROFITABILITY WITH SOFTWARE NETWORKING: THREE USE CASES

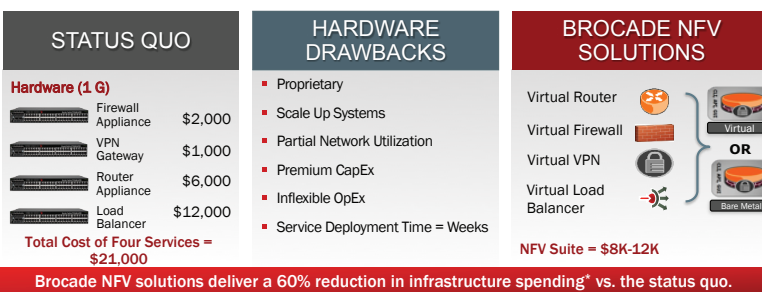
Brocade software networking products enhance a CSP's ability to offer differentiated networking services to enterprise customers. CSPs can take advantage of Brocade solutions to deliver services with unmatched performance and scale that can provide new sources of revenue.

For example, with software networking, CSPs can increase their profitability by:

- Building multi-tiered architectures
- Offering additional services
- Expediting cloud adoption

Building a Multi-tiered Architecture in the Cloud

Brocade empowers CSPs to sell more of what they are already offering—compute and storage—without having to make significant capital investments or run the risk of over-provisioning. Brocade offers easy-to-deploy solutions that support multi-tiered subnetting and augment the limitations of existing VMware vSwitches. This enables CSPs to give customers the option to build a multi-tiered architecture



*Just CapEx. Does not include support. Also assumes leveraging existing server.

Figure 1.

Brocade software networking solutions help CSPs reduce TCO by freeing up capital and equipment.

(see Figure 2), allowing them to push more complex workloads to the cloud. Moreover, it enables customers to customize and scale their cloud deployments to meet their changing needs, and ultimately drives an increase in demand for VMs, compute, and storage—all of which equates to more revenue for the CSP.

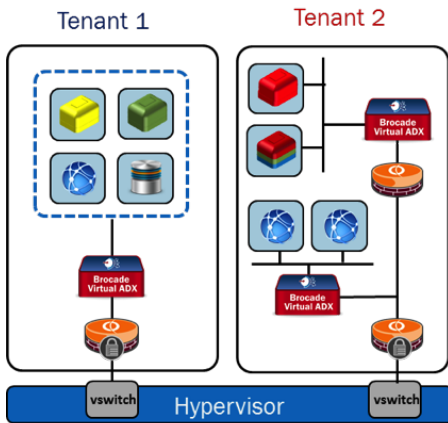


Figure 2.

A multi-tiered architecture in the cloud built with Brocade software networking solutions.

Increasing the CSP Service Portfolio

CSPs can use Brocade software networking products to offer their customers additional services for new high-margin revenue streams. CSPs can take advantage of flexible deployment options for virtual appliances by leveraging Brocade platform-independent solutions to add capacity and support a variety of functions, such as firewalls, VPNs (Layer 2/Layer 3), routing, application delivery controllers, and NAT (see Figure 3). Inherent support for advanced scripting languages and tools such as OpenScript® enables operators to dynamically inspect and customize a variety of services in real time. Furthermore, services can be offered on a per-tenant basis to increase the service portfolio and grow revenue.

Expediting Cloud Adoption

Although customers want to move to the cloud to take advantage of the flexibility, scalability, and efficiencies it offers, they likely have investments in their existing data center that they want to maintain. With Brocade, CSPs can offer customers a bridge between their infrastructure today and the cloud environment that represents their future.

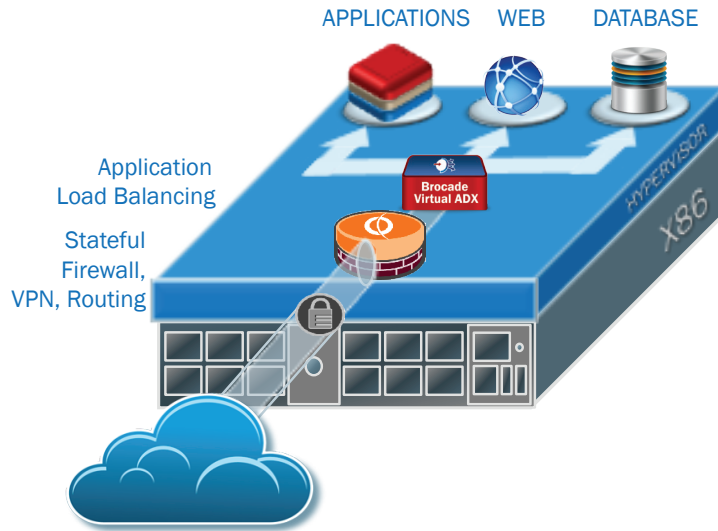


Figure 3.

CSPs can increase their service portfolio by leveraging Brocade platform-independent solutions to add capacity and support for a variety of functions.

By leveraging Brocade software networking solutions, CSPs can offer scalable VPN services from their office to the virtual private cloud (or between virtual private clouds), with SSL or IPSec, to facilitate secure, seamless user access—in addition to a stateful firewall with NAT (see Figure 4). CSPs can also support advanced routing capabilities such as BGP and OSPF for full-mesh topologies, high-availability architectures that are compatible with legacy networks, and full-

fledged Layer 4–7 server load balancing to optimize application traffic management. Additionally, they can take advantage of flexible deployment options within Amazon Marketplace, Rackspace, or SoftLayer to ensure customers are comfortable with expanding to the cloud. As a result, CSPs can accelerate customer adoption, which increases their total addressable market and revenues, while increasing customer loyalty.

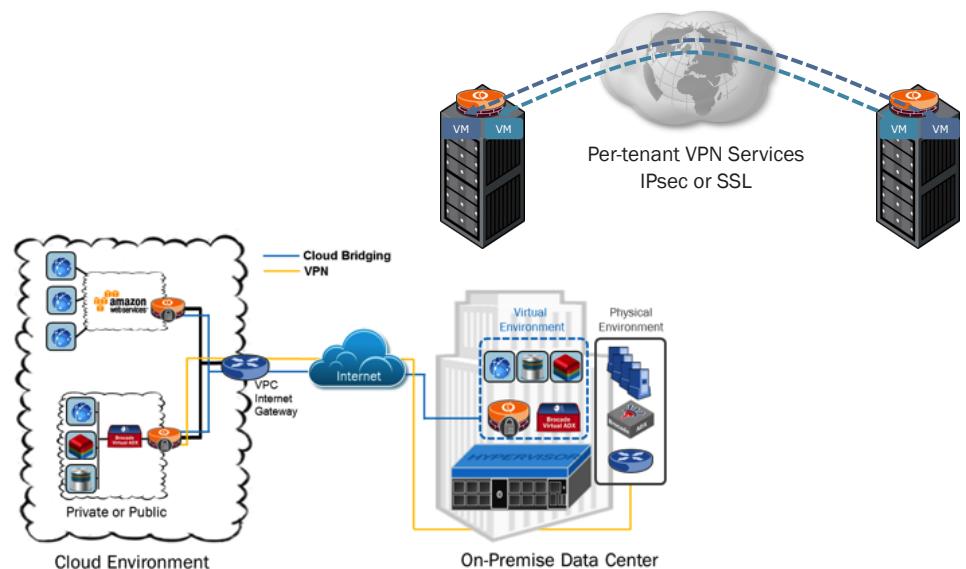


Figure 4.

Brocade software networking solutions enable CSPs to offer scalable and secure VPN services from their office to the virtual private cloud.

ON-DEMAND PROVISIONING IN HYBRID CLOUD ENVIRONMENTS

Varying demands on computer and network resources pose a significant challenge to administrators planning for the right capacity. Cloud bursting enables them to scale out local application delivery resources to a remote data center by creating virtual Brocade ADX® instances when there is a spike in traffic. This operating model enables network traffic to be offloaded in a cost-effective manner when it exceeds the resources in the local data center. With the Brocade Application Resource Broker, in conjunction with Brocade Virtual ADX, Brocade offers key capabilities for enabling hybrid cloud deployments with cloud bursting.

Brocade Application Resource Broker essentially acts as a dynamic application delivery resource manager, enabling organizations to burst their local resource footprint to a cloud-optimized data center when demand for computing capacity spikes, and revoking that burst capacity as demand subsides. Through the global scripting capabilities of Brocade Application Resource Broker, administrators can customize particular environments and actions during the burst cycle and gain the flexibility to leverage third-party and/or custom resources to improve application performance.

OPTIMIZING RESOURCES AND ACCELERATING REVENUE GROWTH

Brocade Ethernet, storage, and converged network solutions help the world's leading organizations transition smoothly to a virtualized world where applications and information reside anywhere. As a result, organizations can achieve their most strategic business objectives, such as consolidation, network convergence, virtualization, and cloud computing.

To ensure investment protection, Brocade supports an open architecture networking philosophy. This means Brocade networking solutions facilitate migration, evolution, and extensions that build on customers' existing multivendor infrastructures while improving their TCO.

LEARN MORE

Brocade partners with companies of all sizes to deliver innovative solutions that help organizations maximize the value of their most critical information. To learn more, visit www.brocade.com.

ABOUT BROCADE

Brocade networking solutions help organizations achieve their critical business initiatives as they transition to a world where applications and information reside anywhere. Today, Brocade is extending its proven data center expertise across the entire network with open, virtual, and efficient solutions built for consolidation, virtualization, and cloud computing. Learn more at www.brocade.com.

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