

Virtualizing the On-Premise CPE with vRouter

HIGHLIGHTS

- Delivers a highly efficient, high-performance vCPE solution on a lower-cost COTS platform
- Reduces the need to service-chain, with an integrated secure router that provides routing, VPN, and firewalling as a CE gateway
- Simply complements other VNFs such as IDS, Spam, Malware Gateway, and Session Border Controllers
- Easily integrates into MANO frameworks with programmable APIs and open API controller-based architecture
- Proven turnkey on-premises vCPE solution with Brocade® ecosystem partners

Increasing Service Agility with vCPE

An increasingly competitive service provider market is challenging providers to continually evolve service offerings to meet the needs of enterprise customers. As a result, service providers have an incentive to continually discover new ways to improve service agility and create a scalable platform that is capable of upselling on-demand services to develop new revenue opportunities. This can mean updating costly legacy business Customer Premises Equipment (CPE), which limits a service provider's ability to deliver differentiated offerings and creates a barrier to upselling on-demand services.

Legacy CPE is not only costly to maintain, it also creates greater complexity for a service provider due to difficult management, lack of remote upgrade capabilities, and the bottlenecks that prohibit rapid and dynamic changes to services offered at branch offices. Traditionally, CPE involved several purpose-built appliances to deliver functions such as firewall, VPN, routing, and WAN optimization. Service providers are challenged to quickly replace functions and address, troubleshoot, maintain, or configure the service. Virtual CPE (vCPE) creates a new CPE that is capable of rapidly delivering dynamic services by virtualizing common network functions onto a Commercial Off-the-Shelf (COTS) server at branch offices.

Although vCPE creates a simplified solution for the delivery of on-demand services, it creates new challenges associated with the consolidation of multiple hardware-based appliances onto a single COTS server, including deploying, instantiating, and managing the vCPE and managing the lifecycle for various Virtualized Network Functions (VNFs).

The Brocade Solution

Brocade enables service providers and their customers to realize the agility and service benefits of vCPE. With the Brocade vRouter acting as the core VNF, service providers can leverage a proven, integrated, and secure solution for routing, firewalling, and VPN. Key Management and Orchestration (MANO) systems

help provision, monitor, and manage the vCPE platform, as well as the VNFs that constitute the solution. Utilizing the underlying compute resources enables greater efficiency and realizes the Return on Investment (ROI) benefits of virtualization. Also, because Brocade vRouter consumes the least amount of CPU for a given throughput, service providers have the ability to deploy additional revenue-generating VNFs.

The framework also manages the instantiation of existing services or new services, so providers can rapidly introduce new functionality into the

vCPE. This multiservice solution not only reduces the need to service-chain, it also supports easy integration with programmable Application Programming Interfaces (APIs) and an open API controller-based architecture. The Brocade vRouter utilizes a single vCPU, to drive upwards from 200 megabits per second (Mbps) to above multiple gigabits per second (Gbps) on a per-subscriber basis with a single virtual router.

For added flexibility, the Brocade vRouter solution can be blended into hybrid deployments with some network functions running in Central Office (CO) or Point-

of-Presence (POP) locations, or it can be utilized in its pure form in situations where existing POP locations and COs do not have the ability to accommodate servers. The Brocade vCPE solution simplifies branch device management and reduces costs and troubleshooting overhead, as well as providing greater flexibility for add-on solutions.

An ecosystem of partners enables the replacement of legacy CPEs with more flexible COTS platforms, while also providing MANO systems to support the provisioning, monitoring, and management of the vCPE platform and VNFs.

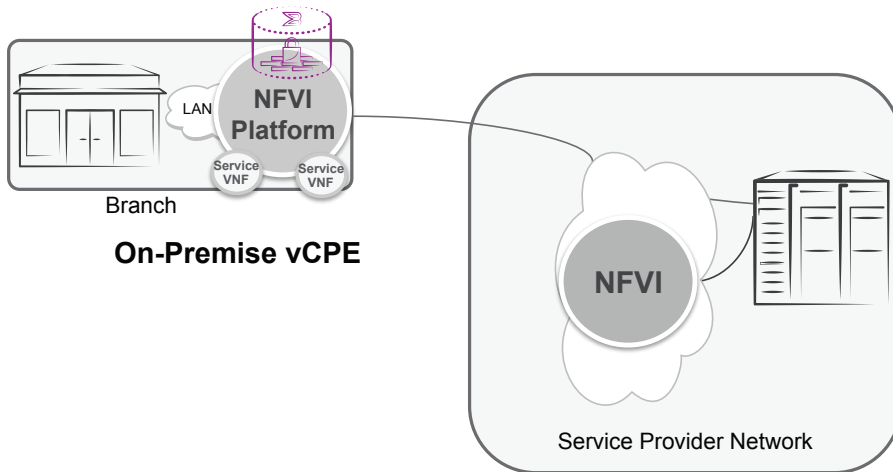


Figure 1: Brocade vRouter service and vCPE VNF on a Network Functions Virtualization Infrastructure (NFVI) platform.

About Brocade

Brocade networking empowers organizations to maximize investments for the New IP by transforming data center networking with open, virtual, and automated solutions. Brocade solutions help organizations achieve their critical business initiatives as they transition to a world where applications and information reside anywhere. Learn more at www.brocade.com.

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