FAQ

Brocade VCM Products Frequently Asked Questions

Introduction

Brocade® VCM software provides a full-function Evolved Packet Core (EPC) solution designed for virtualized environments. Organized in independent slices of the control, user, and management plane, its innovative architecture is free of the redundant functionalities and inter-node dependencies that increase costs and reduce performance in physical node-based packet cores. Brocade VCM solutions, running on Intel x86 servers, provide linear-scaling performance to support any size network for cost-effective business growth. In addition, with their adaptiveness to multiple deployment use cases, Brocade VCM software products offer a lower total cost of ownership while providing greater business agility.

For product information, visit www.brocade.com/en/products-services/mobile-networking.html.

General Questions and Answers

Q. What does VCM stand for?

A. VCM stands for Virtual Core for Mobile. Brocade VCM software is a fully virtualized mobile packet core solution.

Q. Is VCM a product name?

A. Brocade VCM is the name of a product suite for mobile networking. The Brocade VCM product suite currently includes: Brocade Virtual Evolved Packet Core (vEPC), Brocade Virtual Packet Data Network Gateway (vPGW), Brocade Virtual SAE Gateway (vSAE-GW), Brocade Virtual Home Subscriber Server (vHSS), and Brocade Virtual Cellular IoT Serving Gateway Node (vC-SGN).

Q. How is the Brocade VCM product family different?

A. Brocade has transformed the mobile packet core architecture by designing it from a function/service perspective. Instead of the physical, monolithic box-based vertical architecture of traditional networks, Brocade VCM software provides a function-based horizontal architecture with separate interface, control, data, and database modules. This enables Brocade VCM software to be deployed in multiple product combinations, and in various form factors.

Q. What are the benefits of Brocade VCM products?

A. Due to its innovative design, Brocade VCM software provides multiple benefits for all product personalities, including:

- Separation of control and data planes
- Independent scaling of each module
- Deployment in various form factors (miniature to multi-site)
- Stateless operation of the control plane
- Higher service reliability
- Cloud readiness
- ETSI NFV framework compliance

Q. Why is control plane and user plane separation important?

A. Traditional network boxes have both a control plane and a user plane inside, which consequently ties dimensioning to control plane and user plane requirements. For example, when there is higher demand for user plane traffic, but minimal demand for control plane traffic, operators have no choice but to add additional physical boxes, increasing both user plane and control plane capacity. This results in wasted control plane capacity and unnecessary cost for the operators. Brocade VCM software provides complete control plane and user plane separation, allowing operators to add only the capacity that is needed.

3GPP has recently approved a study item for control plane and user plane separation (CUPS) (3GPP TS 23.714). Brocade VCM software already has the framework to support this separation.

Q. If Brocade VCM software provides a full EPC, are operators restricted to using it only as an EPC?

A. Brocade VCM software is modular and provides separate interface, control, data, and database modules. Each module has all the functionality required by the entire EPC, yet Brocade VCM software is a single package that provides multiple personalities through configuration, including Brocade vEPC, Brocade vPGW, Brocade vSAE-GW, Brocade vHSS, and Brocade vC-SGN.

Q. If Brocade VCM software provides a full EPC, can it interwork with existing networks?

A. Brocade recognizes that, whenever possible, operators prefer to use their existing network infrastructure to maximize their IT investments. Brocade VCM software is modular and provides separate interface, control, data, and database modules. Its interface module supports all the external 3GPP-standard interfaces while the control and data modules provide all the functions that need to be supported at the EPC level. In effect, the interface module abstracts the control logic from external interfaces, making it possible to have common control logic for the whole EPC. The interface module supports all the interfaces to radio and core network nodes, making Brocade VCM architecture interoperable with existing networks. This allows operators to preserve their investments in existing infrastructure, while reaping the benefits of Brocade VCM as they expand their networks to offer new services.

Q. Can Brocade VCM products interwork with LTE only? What about 3G?

A. The Brocade VCM interface module supports 3GPP-defined standard interfaces to radio and core network nodes. It also supports the interface to/from 3G SGSNs, thereby ensuring that traffic from an LTE user in a 3G area stays anchored at the Brocade VCM interface module for seamless handover between 3G and LTE.

Q. How can Brocade VCM products achieve line-rate data plane performance on Virtual Machines (VMs)?

A. Brocade VCM products provide line-rate data plane performance on VMs thanks to a close collaboration with Intel. As a result, the Brocade VCM data plane stack is optimized to work with Intel DPDK and provides line-rate performance with small packets. It also supports linear scalability so that operators only need to add more data plane VMs to meet higher throughput requirements.

Q. Has Brocade VCM software been deployed in any customer networks?

A. Brocade VCM software has gone through many rigorous field and live network trials with Tier-1 operators. As part of a commercial deal in North America, Brocade VCM software will be deployed to support air-to-ground data services, beginning in early 2017. Brocade already has commercial deployments in North America to provide last-mile access for remote areas. More commercial discussions are under way across the globe, as the architecture's inherent scalability allows deployments for various use cases.

Q. What is the pricing model?

A. Brocade VCM products use a disruptive, simple, and scalable pricing model that can adapt to different use cases. To learn more, please contact your Brocade representative or AskMobile@brocade.com.

Q. How does Brocade VCM software fit in the ETSI NFV framework?

A. Brocade VCM software is a Virtualized Network Function (VNF) implementation that supports the ETSI NFV framework and interworks with the MANO layer through open APIs. It interworks with multiple orchestrators, such as Ciena BluePlanet, Nokia CloudBand, and Amdocs Network Cloud Service Orchestrator, in customers' field and live network environments. In addition, Brocade VCM software can be deployed on general purpose NFV Infrastructure (NFVI) with or without a Virtualized Infrastructure Manager (VIM) layer, such as Openstack or VMware vCloud Director, as it is hypervisor- and hardware-agnostic. Brocade VCM packages feature an EMS that displays system-level KPIs and alarms, and provide standard interfaces based on SNMP and REST. Brocade VCM software also provides REST/XML APIs, along with SSH-based CLI, to simplify configuration tasks.

Q. What is the server specification?

A. Brocade VCM software can run on any Intel x86-based platform. It has been demonstrated to work on IBM, HP, Dell, and Intel platforms in many customers' field and live network environments. Furthermore, Brocade VCM software can run on both the VMware ESXi and KVM hypervisors. With its independent and modular scaling, Brocade VCM software is composed of Virtual Network Function Components (VNFCs) designed to meet operators' requirements.

Learn More

Q. How do I learn more about Brocade VCM products?

A. For more information, visit www.brocade.com/en/products-services/mobile-networking.html or contact AskMobile@brocade.com.

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