

Brocade VNF Manager

HIGHLIGHTS

- Provides a pure-play, open-source approach to Virtual Network Function (VNF) management for Network Functions Virtualization (NFV)
- Features an enhanced Brocade GUI framework, facilitating ease of use
- Uses standards-based modeling (TOSCA) for multivendor VNF cataloging
- Provides multivendor VNF support for lifecycle management and monitoring

Enabling NFV Service Automation and Management

As more organizations adopt Network Functions Virtualization (NFV), the need for effective orchestration and management tools continues to grow. Traditional network management tools, which are often proprietary and hardware-centric, are not designed to meet this challenge. Organizations need an open solution that can automate management and orchestration of Virtual Network Functions (VNFs), while integrating with existing management tools and controllers.

Brocade® VNF Manager is an NFV orchestration application based on the OpenStack Tacker Project. It provides automated NFV orchestration and VNF management using standards-based architectures. Through a combination of VNF health monitoring and lifecycle management, Brocade VNF Manager helps organizations automate network service delivery while simplifying NFV deployment. Brocade VNF Manager runs on top of Brocade SDN Controller 3.x to integrate critical elements of typical NFV and Software-Defined Networking (SDN) deployments.

Ensuring VNF Resiliency and Availability

Brocade VNF Manager continuously monitors the health status of deployed VNFs, ensuring the availability and

reliability of the deployed services. It leverages a closed-loop system to provide self-healing and automatic recovery from network issues. As a result, VNFs can be deployed and failures auto-corrected based on VNF Descriptor (VNFD) policy (see Figure 1). Organizations can extend this support and gain access to advanced health and monitoring actions by integrating a robust, service-oriented monitoring framework.

Key VNF monitoring features include:

- Health check
- Continuous VNF availability monitoring
- Auto-restart on failure (based on VNFD policy)
- Extensible vendor- and service-specific health monitoring driver framework


BROCADE SDN CONTROLLER: AN OPEN PLATFORM FOR MULTIVENDOR ENVIRONMENTS

Brocade provides several SDN applications—on its own and with partners—that accelerate the adoption of software-defined techniques for monitoring and managing networks holistically, as well as enabling more advanced, end-user functionality. These applications run on the **Brocade SDN Controller**, a leading commercial distribution of the **OpenDaylight Project**. The Brocade SDN Controller provides a fully tested, extensible platform for use in multivendor environments, with the ability to control physical and virtual networking devices from all major vendors.



Name	Description	VNF ID	Status	Delete
Firewall Blocker	Intrusion protection, service isolation	8DeaDe64-47c1-4e17-a105-8eb9f946ff	Active	X
Load Balancer	Elastic round-robin distribution	bf63d78-5c06-441d-898f-8363c93e6b94	Active	X
vRouter	BSC vRouter 5600	c79a65b-8249-4d79-8370-c69bb46469c	Error	X
vRouter	BSC vRouter 5600	16306975-2ee4-4ee9-9ab7-823abdc21898	Active	X

Figure 1: Brocade VNF Manager provides ongoing health monitoring and status of VNFs.



Name	Description	Services	Delete
BSC vRouter 5600	BSC vRouter 5600	firewall, vnfid, router	X
Intrusion protection, service isolation	Intrusion protection, service isolation	router, firewall, vnfid	X
Elastic round-robin distribution	Elastic round-robin distribution	firewall, router, vnfid	X

Figure 2: Brocade VNF Manager catalog snapshot.

Automating VNF Deployment

In addition to constant health monitoring, Brocade VNF Manager supports VNF lifecycle management. It simplifies VNF deployment by using an open, standards-based approach to VNF descriptions and templates. The VNF templates are based on Topology and Orchestration Specification for Cloud Application (TOSCA) and feature direct, integrated support for OpenStack Heat templates for service descriptions and deployments. In addition, Brocade VNF Manager supports the instantiation and termination of VNFs.

Key VNF lifecycle management features include:

- VNF cataloging
- Pluggable infra-driver framework
 - OpenStack Heat (default)
 - TOSCA to OpenStack Heat converter
 - VNF and service Virtual Machine (VM) instantiation based on TOSCA
 - Instantiation of one or more VMs described in the TOSCA template
- Instantiation and termination of VNFs

Simplifying the VNF Onboarding Process

Operators deploying NFV must be able to catalog VNFs that are part of the services being deployed. Brocade VNF Manager cataloging features simplify the onboarding process and utilize TOSCA templates to define the necessary attributes each VNF requires for deployment (see Figure 2).

Key VNF cataloging features include:

- Repository of VNFs
- VNF definition using TOSCA templates
 - Description of VNF attributes
 - Glance image IDs
 - Performance monitoring policy
 - Auto-healing policy
- Support for multiple VMs per VNF Virtual Deployment Unit (VDU)
- APIs to onboard and maintain VNF catalog
- VNFs are stored in the OpenStack Tacker catalog database

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To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

Brocade VNF Manager Specifications

System Requirements

Brocade VNF Manager application runs on Brocade SDN Controller version 3.0 and above.

Server	Linux (Ubuntu 14.04, RHEL 7.0.) OpenStack Liberty
RAM	6 GB minimum; 16 GB recommended
Network	1 GbE minimum; 10 GbE recommended
CPU	4 cores minimum; 8 cores recommended
Storage	32 GB minimum; 64 GB recommended
Browsers	Mozilla Firefox v45, Google Chrome v49

Specific orchestration and management features supported:

- VNF lifecycle management
 - VNF cataloging: Repository of VNF Descriptors (VNFDs)
 - VNF configuration: Configuration injection during instantiation
 - VNF instantiation and termination
- VNF monitoring: Health and performance indicators
- Support for both simple and complex VNFs
- Brocade SDN Controller configuration driver using NETCONF (for Brocade vRouter)

Brocade VNF Manager Ordering Information

Software and Support

BR-BSC-APP-BVM-1	Brocade VNF Manager application—1 node for 1 year; includes support
BR-BSC-APP-BVM-3	Brocade VNF Manager application—1 node for 3 years; includes support
BR-9500-1NODE-SVV-SW-1	Brocade SDN Controller—1 node for 1 year; includes support
BR-9500-1NODE-SVV-SW-3	Brocade SDN Controller—1 node for 3 years; includes support

Professional Services

SVC-CONTROLLER-SME	Consulting time with a subject matter expert for Brocade SDN Controller customers; per hour
SVC-CONTROLLER-INSTALL	Contract Brocade SDN Controller implementation; SOW

Education

SDN-CNTRL-WBT	Web-based, self-paced training, Brocade SDN Controller, basics
SDN-CNTRL-9500-OPS1	Instructor-led training, two days, Brocade SDN Controller, operations, basic

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