

Brocade Topology Manager and Flow Manager Applications

HIGHLIGHTS

- Uses the Brocade GUI framework to provide intuitive visualizations of software-defined network topology and flows for dynamic, end-to-end visibility into network operations
- Simplifies the management of OpenFlow switches and network paths
- Enables granular control of network traffic, allowing administrators to verify flow statistics on the fly

Enabling End-to-End Network Visualization

Many organizations rely on traditional network management tools, which provide device- and port-level views of the network while aggregating port-level information for analytics. Software-Defined Networking (SDN), however, is changing the way organizations design and build networks as well as how they manage them. SDN shifts the atomic unit of the network from individual ports to traffic flows, allowing network operations staff to gain dynamic, end-to-end views and control of network traffic.

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 enable 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.

Brocade Topology Manager

Brocade Topology Manager is a free application included with the Brocade SDN Controller. It leverages the intuitive Brocade GUI to display information on network topology, hosts, switches, routers, ports, and flows in near-real time. With

Brocade Topology Manager, network operators can view the status of data center flows at any time.

The Brocade SDN Controller discovers the topology of OpenFlow 1.3-enabled network switches, or nodes, that are connected to the controller. Brocade Topology Manager then uses the northbound REST APIs to query the topology details and renders this information graphically, in near-real time. Updates to the topology are automatically reflected in the GUI (see Figure 1).

The Brocade Topology Manager application allows users to mount NETCONF devices on the controller. In addition, it displays port and flow statistics and operational flow details, such as packet match criteria and OpenFlow actions, in a compact and intuitive format. Administrators also can search for switches by OpenFlow, and NETCONF devices by name or IP address.

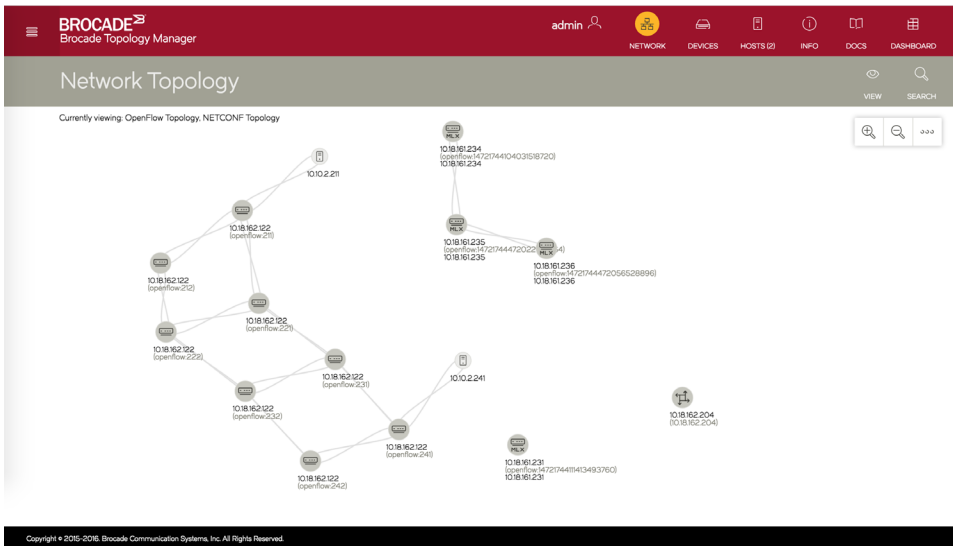


Figure 1: Example of Brocade Topology Manager output.

Brocade Flow Manager

The Brocade Flow Manager application simplifies management of OpenFlow flows within the network. It is licensed separately from the Brocade SDN Controller, with a simple upgrade path from the Brocade Topology Manager application.

The OpenFlow protocol defines the communications channel between the OpenFlow switch and the OpenFlow controller. The Brocade SDN Controller implements OpenFlow support by using the controller's OpenFlow plugin to provide the connection creation, session management, and error-handling functions. This plugin is installed automatically with the Brocade Flow Manager application.

Brocade Flow Manager extends the capabilities of Brocade Topology Manager by enabling administrators to view and interact with the network topology, using near-real-time information to perform traffic engineering and network slicing based on end-to-end flow views.

Organizations can use the Brocade Flow Manager application to:

- View the network topology discovered by the controller, rendered in near-real time
- Search for and manage OpenFlow 1.3-compliant switches by OpenFlow switch name or IP address
- View a summary of the switches by hovering over the icons; show or hide labels, hosts, and multiple links between switches
- View near-real-time updates of switch information:
 - Port statistics (port name, MAC address, Rx/Tx packets and bytes, link errors, link capacity utilization)
 - Flow statistics (active flows, packets matched and looked up)
 - Operational flows (using flow ID, priority, packet matching criteria, OpenFlow actions, and packet/byte counts)

- Create new flows with packet matching criteria (at Layers 1–4) and apply OpenFlow 1.3 actions, such as Drop, Controller, and Push VLAN
- Rename and modify actions for existing flows
- Create node-node (node can be either a switch or a host) intent paths, either by shortest-path method or by right-clicking on one of the nodes
- Manage network paths to perform OpenFlow-based traffic engineering and network slicing (see Figure 2)

Brocade Global Services

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 20 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, and education services, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

Maximizing Investments

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.

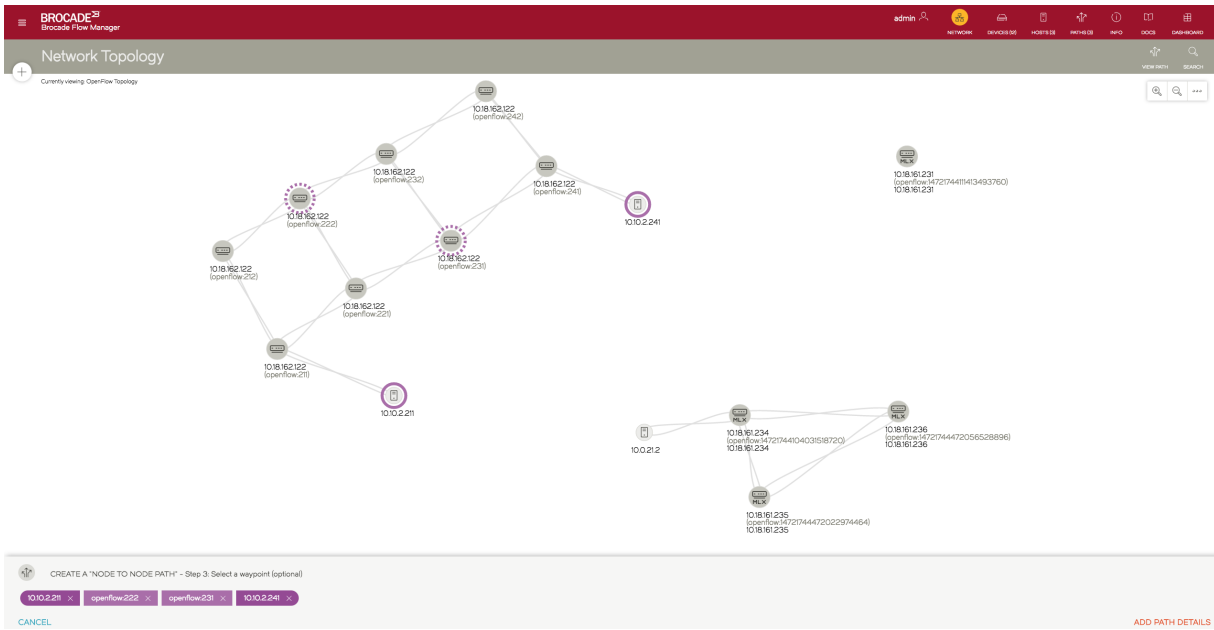


Figure 2: Editing in a path in Brocade Flow Manager.

Brocade Topology Manager and Flow Manager Specifications

System Requirements

Brocade Topology Manager and Flow Manager applications run on Brocade SDN Controller version 2.0 and above. The Brocade SDN Controller is supported on the Ubuntu 14.04 and RedHat RHEL 7.2 operating systems.

Server: Linux (Ubuntu 14.04), RedHat RHEL 7.2

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 v40, Google Chrome v44

Specific OpenFlow 1.3 Features Supported

Brocade Topology Manager and Flow Manager applications support basic Layer 1/Layer 2/Layer 3/Layer 4 flow configuration:

Layer 1 match: In-port

Layer 2 match: Source and destination MAC, Ethernet type, VLAN ID, and VLAN priority

Layer 3 match: IPv4 and IPv6 source and destination, IP protocol, and DSCP

Layer 4 match: TCP, SCTP, UDP source and destination protocols

Actions: Drop, Flood, Controller, Output, Normal, Local, Push VLAN, Pop VLAN, Dec NW TTL, Limited Group, and Set-Field

Flow Add, Flow Modify, and Flow Removal

Flow Statistics

Table Statistics

Port Statistics

LLDP topology

Brocade Topology Manager and Flow Manager Ordering Information

Software and Support

BR-BSC-APP-FM-1	Brocade Flow Manager application—one node license and support for one year
BR-BSC-APP-FM-3	Brocade Flow Manager application—one node license and support for three years
BR-9500-1NODE-SVV-SW-1	Brocade SDN Controller—one node license and support for one year
BR-9500-1NODE-SVV-SW-3	Brocade SDN Controller—one node license and support for three years

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
BSC200	Instructor-led training, three days, Brocade SDN Controller, operations
BSC201	Instructor-led training, four days, Brocade SDN Controller, developers

Corporate Headquarters

San Jose, CA USA
T: +1-408-333-8000
info@brocade.com

European Headquarters

Geneva, Switzerland
T: +41-22-799-56-40
emea-info@brocade.com

Asia Pacific Headquarters

Singapore
T: +65-6538-4700
apac-info@brocade.com



© 2016 Brocade Communications Systems, Inc. All Rights Reserved. 09/16 GA-DS-2044-01

Brocade, Brocade Assurance, the B-wing symbol, ClearLink, DCX, Fabric OS, HyperEdge, ICX, MLX, MyBrocade, OpenScript, VCS, VDX, Vplane, and Vyatta are registered trademarks, and Fabric Vision is a trademark of Brocade Communications Systems, Inc., in the United States and/or in other countries. Other brands, products, or service names mentioned may be trademarks of others.

Notice: This document is for informational purposes only and does not set forth any warranty, expressed or implied, concerning any equipment, equipment feature, or service offered or to be offered by Brocade. Brocade reserves the right to make changes to this document at any time, without notice, and assumes no responsibility for its use. This informational document describes features that may not be currently available. Contact a Brocade sales office for information on feature and product availability. Export of technical data contained in this document may require an export license from the United States government.

