Brocade SDN Controller

HIGHLIGHTS

- Provides a fully tested, extensible commercial distribution of the OpenDaylight controller, the leading open-source SDN controller with a large, vibrant developer community

- Builds an agnostic solution based on OpenDaylight that is free of proprietary extensions and provides complete portability for various applications and plugins

- Delivers the broadest platform for use in multivendor environments—with the ability to control physical and virtual networking devices from all major vendors

- Fosters a collaborative relationship for innovation, enabling the creation of SDN environments that meet the needs of service providers and enterprises alike

- Enables high availability and disaster recovery capabilities for data backup and restore across multiple sites

- Comes packaged with education and professional services to help organizations develop and deliver their own business logic, use cases, and custom network services

- Includes single-source, 24×7 technical support for the entire Brocade SDN Controller environment

Innovation and Business Value—On Your Schedule

Software-Defined Networking (SDN) is a rapidly evolving approach to networking. Organizations typically cite two main reasons for exploring SDN:[1]

- Device interoperability and the ability to choose networking platforms independently of architectural needs

- The need for programmability to support rapid service design, development, and teardown

The majority say open source is a key decision factor in SDN technology selection. At the same time, adopting a new approach to network operations is not a minor undertaking, and users expect their technology partners to be able to assist in making the transition as seamless as possible.

The OpenDaylight Project, founded in April 2013, is operated by the Linux Foundation with the charter to establish a reference framework for network programmability and control through an open-source solution for SDN. The Brocade® SDN Controller is the first commercial distribution of the OpenDaylight Project with no proprietary extensions or platform dependencies. Brocade views the OpenDaylight community as a force multiplier for innovation with and on behalf of controller users and developers. Brocade's community leadership and multifaceted support help organizations of all kinds accelerate the delivery of new services while optimizing their business operations.

The Brocade SDN Controller package includes tools and services to quickly and confidently implement software-defined networks within existing environments. Brocade provides multivendor compatibility testing and complete, single-source support for Brocade SDN Controller environments, backed by the expertise of leaders within the OpenDaylight developer community.

Smooth Transition to SDN

Brocade is committed to providing the best experience for transitioning to open SDN.

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[1] GigaOm Research, "SDN, NFV, and Open Source: The Operator's View," March 2014.

Low Risk

Three-quarters of users interested in open-source SDN want to get the technology from a commercial provider in order to reduce adoption risks and have reliable support*. The Brocade SDN Controller is fully tested, documented, and quality assured by an established networking provider with global resources.

As the Brocade SDN Controller is continuously built on OpenDaylight code, defect resolution is promptly shared with the community and incorporated upstream. In addition, Brocade has committed to contributing any enhancements made to the Brocade SDN Controller (such as improvements for scalability, reliability, high availability, and usability) to the community to ensure interoperability with other OpenDaylight-based controllers on an ongoing basis. These practices continually improve the quality and reliability of the source code.

At the same time, new features, functions, and enhancements can be incorporated into the controller within weeks instead of months.

For user organizations that want to deploy open-source SDN with confidence, Brocade and its partners provide a range of support, education, and professional services options. Brocade Professional Services helps Brocade SDN Controller customers realize the full power of SDN by providing consulting expertise to assist with SDN architectural planning, implementation, and development efforts. Additionally, Brocade education courses, available in multiple formats, provide the conceptual foundation and skills that IT organizations need to adopt SDN successfully. Community support resources may be found at community.brocade.com/devnet.

Investment Protection

A common reason for delaying SDN implementation is the fear that it will require replacing existing equipment before it has depreciated. Some SDN controllers do have platform dependencies that constrain a controller domain to a single vendor's gear. Creating several vendor-specific controller domains also can lead to controller proliferation and interoperability challenges—further complicating operations.

OpenDaylight and the Brocade SDN Controller are designed to be general-purpose SDN controllers. The Brocade SDN Controller is platform-independent as well as host OS- and hypervisor-agnostic, making it the best choice for implementing SDN in existing heterogeneous data centers. Any networking equipment—physical or virtual—from any provider can be operated within the controller domain as long as it is compatible with any of the standard OpenDaylight southbound interfaces or has an OpenDaylight plugin. With the Brocade SDN Controller, IT organizations can gradually introduce ever-larger portions of their existing network into the controller domain without disruption.

Furthermore, Brocade provides single-source technical support for the entire Brocade SDN Controller environment, including troubleshooting connections with third-party platforms. Organizations can freely optimize their network infrastructures to match the needs of their workloads, and develop network applications that can run on any OpenDaylight-based controller (see Figure 1).
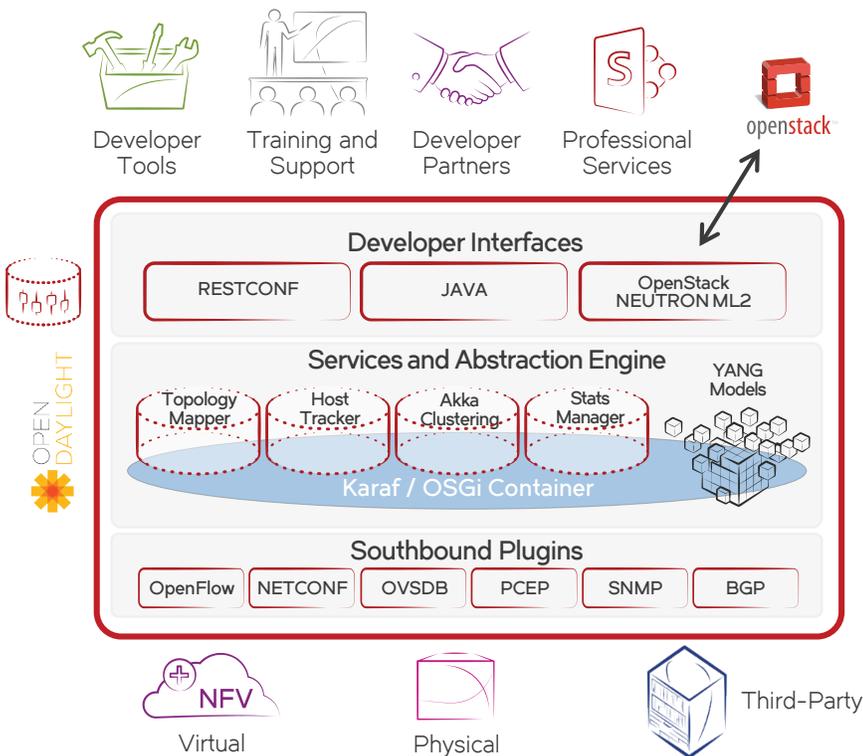
Figure 1: The Brocade SDN Controller is part of an open, modular portfolio.

Continued Operations without Interruptions

The Brocade SDN Controller is a reliable, highly available solution that helps ensure customer SLAs are met regardless of any failure. It provides a clustering solution within and across data centers to keep workloads up and running while simplifying data backup and restore.

Brocade has fine-tuned the code upstream in the OpenDaylight controller, by providing various scripts and tools that make it easier for network operators to utilize this functionality and maximize uptime in customer environments.

Smooth Installation and Maintenance

The Brocade SDN Controller offer includes many value-enhancing tools and tested solutions to reduce time-to-competence and ongoing administrative overhead, including:

- One-click controller setup, detailed deployment guides and tutorials, and architectural planning services

- An intuitive GUI to reduce training time and scale repeatable operations

- Tested solution packages to support a broad range of use cases

- Release and revision compatibility management

Easy Upgrade via Data Migration

Network operators can now easily upgrade to the latest version of the Brocade SDN Controller. Instead of having to manually re-enter all of their data, they can simply export the data file and import it into the latest version of the controller. This enables a smooth upgrade, with much less risk of error, while increasing operational efficiency and productivity.

Framework for Innovation

Network operators expect most of SDN's near-term benefits to be operational in nature: greater management efficiency, fewer interoperability challenges, and possible OpEx reductions. However, the original promise of SDN—faster, custom innovation through programmability—provides an even stronger business case for SDN adoption.

Brocade Provides the Bridge for User Organizations

In an era when specialized network developer skills are still a rare commodity, an OpenDaylight-based controller provides access to the industry's largest pool of SDN developer talent and code libraries. Some organizations may choose to be consumers of the OpenDaylight Project via the Brocade SDN Controller. By leveraging the history and technical depth of Brocade engineering personnel within the OpenDaylight community, organizations can realize product enhancements without having to burden their own development resources.

In addition, Brocade can co-design and, if desired, build custom applications to support unique use cases and environments—or refer customers to a qualified partner to meet their needs. Brocade understands that many of these applications are specific to the operator's business and takes formal measures to protect the operator's environment and intellectual property.

For user organizations that wish to build their own applications, Brocade provides a Developer Edition with a range of developer tools; free Web-based training and formal developer courses; a public YANG repository; and free Perl, Postman, Python, and Ruby libraries for the Brocade SDN Controller to simplify and speed application development. See the Brocade SDN Controller Developer Edition datasheet for details.

Brocade SDN Applications Get You Started

Brocade is investing in developing an ecosystem of OpenDaylight-based applications, on its own and with partners. These applications are licensed independently of the Brocade SDN Controller to ensure continuous integrity of the controller and full application portability.

For more information, contact a Brocade sales representative or partner, or visit www.brocade.com.

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.

Acquisition Options That Match Balance Sheet Objectives

Successful network deployments drive business forward, providing technical and financial agility. Brocade offers the broadest financing models, from traditional leasing to Brocade Network Subscription. Network-as-a-Service allows organizations to subscribe to network assets today then upgrade on demand, scale up or down, or return them with 60-day notification. Brocade Network Subscription plans can be structured to meet IASC guidelines for OpEx or CapEx treatment to align with financial goals. Learn more at www.nonetworkcapex.com.

Brocade SDN Controller Specifications

Northbound Plugins Supported

- Restconf Plugin
- OpenStack Neutron, ML2 Driver

Southbound Plugins Supported

- OpenFlow 1.0 and 1.3
- NETCONF/YANG (RFC 6241/6020)
- OVSDB
- BGP-LS/PCE-P

Specific OpenFlow Features Supported

Please refer to the user guide for a complete list of supported OpenFlow features.

NETCONF Protocol Version 1.1, RFC 6241

Please refer to the user guide for a complete list of supported NETCONF features.

YANG Protocol, RFC 6020

More than 200 YANG models are supported by the Brocade SDN Controller Developer Edition. Please refer to the User Guide for a complete list of supported YANG models.

OpenDaylight Controller Modules Supported

Please refer to the Release Notes for a list of supported modules and projects.

Supported Platforms/OS

- RedHat RHEL—7.2
- Ubuntu—14.04

Web UI Support

- Firefox v45
- Chrome v49

Service Interfaces

- Karaf: http://karaf.apache.org/ (3.0.4)
- OSGi: http://www.osgi.org/
- Akka: http://akka.io (2.4.1)

Recommended Minimum Server Configuration

- 3.0 GHz Intel Xeon or Intel Core: 4 cores or equivalent
- RAM: 12 GB
- Storage: 64 GB
- Network: At least 1 Gbps Ethernet

Brocade SDN Controller Ordering Information

Software and Support

BR-9500-5N-LIC-SVV-SW-60D	Promotion for five nodes or fewer, including 60-day support offer
BR-9500-1NODE-SVV-SW-1	1 node license (paper)—1 year; includes support
BR-9500-1NODE-SVV-SW-3	1 node license (paper)—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

BSC200	Brocade SDN Controller for operations—3 days
BSC201	Brocade SDN Controller for developers—4 days

Contact Brocade Education Services for pricing and availability.

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