lumina networks

Lumina SDN Controller

The Lumina SDN Controller, Powered by OpenDaylight™, helps Service Providers and Enterprises Transform Their Networks to Software without Vendor Lock-In

HIGHLIGHTS

- Provides a fully tested and vendor-supported distribution of the industry-leading OpenDaylight controller from the Linux Foundation™

- Pure play open source approach that does not lock you in and contributes new code and changes to the upstream development community without forking

- Comprehensive support program for both network operations and in-house software developers

- Licensing and support programs that allow you to innovate and invent without the typical vendor contractual terms

- Based on the industry-leading open source SDN platform, OpenDaylight, that boasts over 1 billion users world-wide and includes support from nearly 50 major networking vendors

- Includes a variety of southbound plugins that connect to and support popular platforms from the industry's leading switch and router manufacturers

- Enables migration to advanced switching using standard flow-control protocols, segment routing or path computation tools

- Provides a selection of northbound applications with easy-to-use GUIs and APIs for managing topologies, flows and southbound equipment configuration

- Supported by the most popular orchestration tools and virtual infrastructure managers allowing straight-forward migration to network function virtualization

- Lumina's advanced NetDev Services can assist you to develop, test and integrate the software you need using Agile development methodologies

Overview

Lumina provides software-defined networking technology and NetDev Services to equip service providers with the tools they need to accelerate their transformation to software networking.
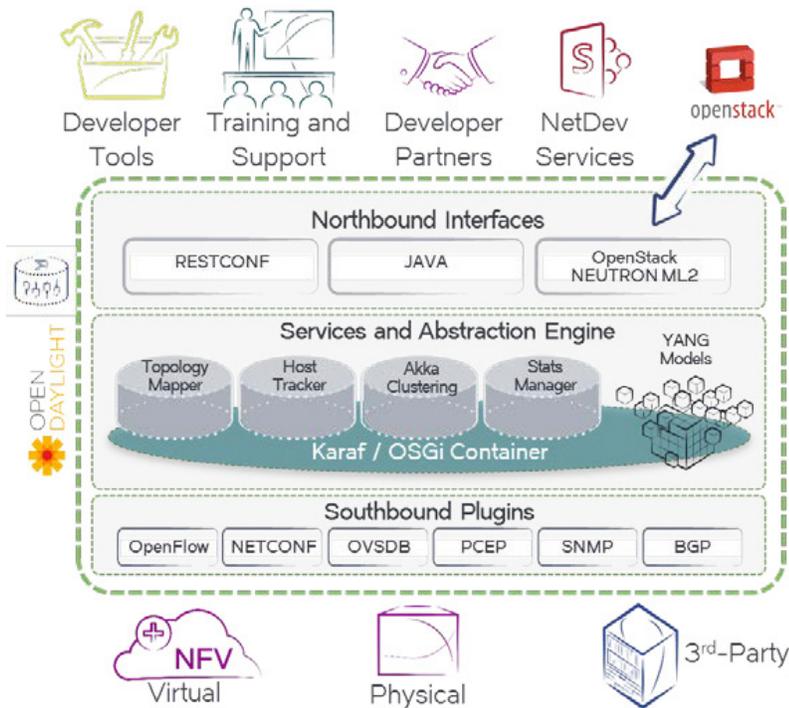
At the core is the Lumina SDN Controller, a quality-assured edition of the industry-leading OpenDaylight controller. Combined with Lumina's NetDev Services, providers can implement software-defined networks on their own timeline using an Agile development methodology. Lumina delivers multivendor interoperability using a common control plane and contributes its code back to the open source community.

Lumina brings open source leadership, respect for the customer's innovations and a highly collaborative approach to help organizations accelerate the delivery of new services.

Lumina SDN Controller Powered by OpenDaylight™

The centerpiece of Lumina's SDN product line is a controller built on OpenDaylight. Public customer surveys conducted by SDxCentral and others have shown a strong preference for OpenDaylight as the controller technology of choice for SDN. AT&T, Verizon, Tencent and other major carriers have OpenDaylight-based controllers in use today, and the Linux Foundation has announced that over 1 Billion internet users today subscribe to services based in-part on the use of OpenDaylight.

At a high-level, the OpenDaylight controller has three parts. 1) A central Service Abstraction layer that normalizes all data exchange via YANG 2) A "southbound" selection of control interfaces that connect to common switches and routers using protocols such as NETCONF, OpenFlow, BGP/PCEP and OVSDB. 3) A "northbound" API aimed at supporting applications using RESTCONF. This architecture allows the controller to enable software-defined networking by abstracting and normalizing the interface to a variety of network devices. At the same time, the controller facilitates the development of applications, interfaces and scripts for activating specific use cases.

Common use cases for the SDN controller are SD-Core, Network Configuration Management, Zero-Touch Installation, Network Analytics and Policy Control, Brownfield Adaption, and Alarming and Notification.
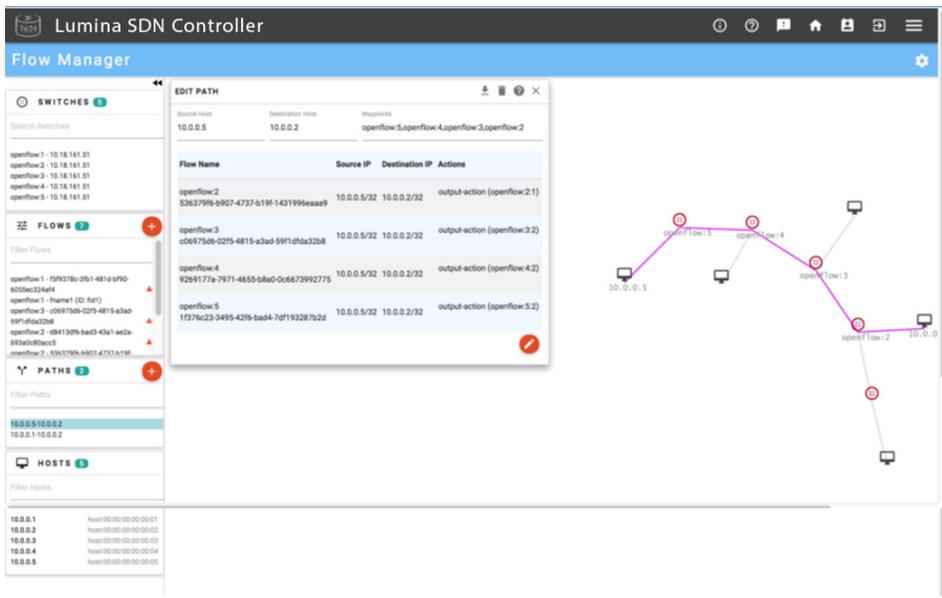
Lumina SDN Applications

Lumina's product offer includes several optional controller-based applications. These applications help you perform specific use cases, using the unique platform capabilities of the OpenDaylight-powered controller.

Lumina Flow Manager enables more simplified and sophisticated traffic engineering of the network with advanced algorithms such as path-computation for efficient traffic flows. Administrators can view and interact with the network topology, using real-time information to perform traffic engineering and network flow direction based on end-to-end views. The Lumina Flow Manager application allows you to view the network topology, search for and manage OpenFlow 1.3-compliant switches, view a summary

of switch configuration and operational data by hovering over the icons and apply OpenFlow 1.3 actions, such as Drop or Push VLAN.

Lumina Zero Touch Installer enables users to initialize devices with the correct software image and configuration. The most common use case provides the day zero image and creates and verifies the day zero configuration for new virtual or white box devices, as soon as they

are plugged into the network. Installed with or without the SDN Controller, key components of this solution include a bootstrap server and call home server. The application follows the IETF Zero Touch RFC and Call Home RFC draft specifications.

NetDev Services

Organizations that wish to accelerate the implementation of their open software network and want to expand the skill set of their network engineering and operations team through hands-on experience can utilize Lumina Network Development (NetDev) Services. Our NetDev Services team works with customers to jointly develop production systems using Agile methods to prototype and speed through proof-of-concept and pilot phases. The team's expertise and willingness to work spans open source, Lumina products and any third-party products needed to achieve multi-vendor interworking. The methodologies enable the engaging customer teams to become self-sufficient in developing and managing the deployed platforms.

Lumina SDN Controller Editions

The Lumina SDN Controller comes in two editions.

Lumina SDN Controller Commercial Edition is a quality-assured version of the industry-leading OpenDaylight controller licensed for production networks. Providers can scale their deployment with the needs of their network through an annual license based on the number of controlled nodes. Lumina delivers multivendor interoperability using a common control plane and contributes its code back to the open source community.

Lumina SDN Controller Developer Edition is the first production developer platform built directly from OpenDaylight community code, without any proprietary extensions or platform dependencies. Developers retain ownership of their developed applications and can count on portability to other OpenDaylight-based controllers. The annual license lets developers create and deploy applications in development networks. Developer support includes a catalog of tools and support services to speak directly with our developers, including contributors and committers in the ODL community.

Results You Should Expect

Lumina Networks strives to be the catalyst to bring open software networking out of the lab and into the live network. The results that Lumina hopes to help you achieve include:

- Turning your ideas into engineering action to bring new services and capabilities, many not possible without the architectures of open software networks, into your production network

- Successful PoCs and trials that prove concepts and advance your network technology, architecture and engineering competencies

Lumina SDN Controller - Features Supported

OpenDaylight Projects Supported

- AAA
- BGP-PCEP
- Controller
- Data Export Import
- L2Switch
- MD-SAL
- NETCONF
- NetVirt
- ODL Root Parent
- OpenFlow Java
- OpenFlow Plug-in
- OVSDB
- Neutron
- YANG tools

Other Features

- Installation scripts
- Data migration and upgrade tools
- Operator's web-based GUI and application slider
- Application development tools
- Clustering
- User documentation and support included

Service Interfaces

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

Southbound Plugins

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

Northbound Applications and Plugins

- RESTCONF
- OpenStack Neutron, ML2 Driver
- Lumina Topology Manager™
- Lumina Flow Manager™
- Lumina Zero Touch Installer™
- Lumina Overlay Manager™
- Lumina VNF Manager™
- Flow Optimizer

Editions and Support

- Lumina SDN Controller Commercial Edition
- Lumina SDN Controller Developer Edition and Support
- Eclipse Public License v1.0-Compliant Source Code Distribution
- Developer's Repository, Archetype and Support
- 24x7 Operations and Deployment Support

NetDev Services

- Custom software development
- Testing and integration services
- Operations support
- Architectural design
- Software practice methodology, Agile development
- Education and training

Pricing

- Annual recurring and subscription licenses are measured by nodes, seats, virtual machines or ports supported, depending upon the product
- NetDev Services are priced via contract or statement of work
- Perpetual licenses, packages, longer terms and volume purchase agreements can be specified by contract
- Eclipse Public License v1.0 source code distributions are available at no charge

- Vision and thought leadership within your organization and the industry in your move to next-generation software and cloud-based networking

- Evolution from closed, vendor-specific platforms to industry-wide, open source platforms that shift control from the vendors to you and include your requirements in roadmaps

- Launch of transformative initiatives that enable you to migrate systematically to software networking while protecting the investment and use of your current resources

- Integration into your current business systems of new software infrastructure tools including cloud orchestration platforms, virtual network functions and virtual infrastructure managers

- Ability to innovate at the industry-level, contribute code to open source programs and employ Agile Software Development methods and DevOps-like practices that reduce cycle times and speed your organization's ability to move and react

- Retooling and retraining of your network engineering and operations team to be ready for tomorrow's software networking architectures and to improve collaboration with your IT department

- Starting your build-out of next generation SDN and NFV-based use cases including network configuration management, whitebox switching, deployment of network function virtualization, central office redesign, data center virtualization and automation, 5G wireless data aggregation and evolved packet core.

Lumina Summary

Lumina believes the future is open software networks that give providers control over how they implement their ideas and priorities for change. Lumina Networks is a new type of networking company with a product and services model aimed at supporting the evolution away from the proprietary platforms of the past to the open and innovative software networking architectures of the future. By using open source platforms such as OpenDaylight and enabling innovation and transformation through NetDev Services, Lumina is a catalyst in your transition to open software networks.

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About Lumina Networks

Lumina Networks believes the future is open software networks where service providers are in control of their development. Lumina is the catalyst that brings open software networking out of the lab and into the live network. We develop open source platforms and provide NetDev Services to jointly deliver production systems and to transfer know-how in Agile methods.
www.luminanetworks.com

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