




LINUX FOUNDATION
COLLABORATIVE PROJECTS



OpenDaylight - An Open Source Community and Meritocracy for Software-Defined Networking

A Linux Foundation Collaborative Project

www.opendaylight.org



About The Project

The adoption of new technologies and pursuit of programmable networks has the potential to significantly improve levels of functionality, flexibility and adaptability of mainstream datacenter architectures. To leverage this abstraction to its fullest requires the network to adapt and evolve to a Software-Defined architecture. One of the architectural elements required to achieve this goal is a Software-Defined-Networking (SDN) platform that enables network control and programmability.

Today, SDN is a hotbed of innovation with a broad spectrum of vendors bringing products and technologies to market. Ironically, the myriad options may prove counterproductive to SDN adoption. Many organizations, overwhelmed by choice, also have to avoid the pitfalls of nascent technologies such as inconsistent interoperability, limited management tools or fragmentation.

At this early stage of SDN adoption, the industry acknowledges the benefits of establishing an open, reference framework for programmability and control through an open source SDN solution. Such a framework maintains the flexibility and choice to allow organizations to deploy SDN as they please, yet still mitigates many of the risks of adopting early stage technologies and integrating with existing infrastructure investments.

With OpenDaylight, a community has come together to fill this need through the combination of open community developers and open source code and project governance that guarantees an open, community decision making process on business and technical issues. Establishing an open source project in this way is designed to help accelerate the development of technology available to users and enable widespread adoption of Software-Defined Networking.

OpenDaylight can be a core component within any SDN architecture. Building upon an open source SDN controller enables users to reduce operational complexity, extend the life of their existing infrastructure hardware and enable new services and capabilities only available with SDN. Whether your organization is an enterprise IT provider, a network service provider or a Cloud services provider, you can begin taking advantage of SDN using a community driven, open source controller framework available today.

Mission Statement

Facilitate a community-led, industry-supported open source framework, including code and architecture, to accelerate and advance a common, robust Software-Defined Networking platform.



Establishing a Community-led, Open Ecosystem

To facilitate an open ecosystem, OpenDaylight was structured with an open source license, open design, development and contribution model and finally, an, appropriate, open governance model. OpenDaylight is a Linux Foundation Collaborative Project and implements many open source best practices familiar to other leading projects. Further, any individual, company or organization can engage directly and immediately to begin shaping the future of the project.

OpenDaylight is open to anyone. Anyone can develop and contribute code, get elected to the Technical Steering Committee, get voted onto the Board, or help steer the project forward in any number of ways. Developers who are elected to the Technical Steering Committee or who participate as project leaders will provide leadership regarding the technical direction of OpenDaylight. A Board of Directors will manage business leadership for OpenDaylight including governance, marketing and operational decisions.

Open Source License, Support for Open Standards

The license choice for an open source project is an important decision to make as the license sets the ground rules for how users, companies and the ecosystem will contribute to the code base. OpenDaylight has a mostly Java and Python codebase licensed under the Eclipse Public License – v 1.0 (EPL). The EPL is an approved open source license by the Open Source Initiative and is considered a free software license by the Free Software Foundation. The license choice of EPL also maximizes OpenDaylight's license compatibility with the large ecosystem of libraries and 3rd party components that have already been released under the EPL license. For more information on the EPL, see

- the full text of the license at <http://www.eclipse.org/legal/epl-v10.html>
- the EPL FAQ available at <http://www.eclipse.org/legal/eplfaq.php>

OpenDaylight will actively support open standards along with the prevailing defacto standards enabling infrastructure hardware customers are already using. For example, OpenDaylight from the start will support the OpenFlow open standard developed by the Open Networking Foundation. OpenDaylight will be extensible to enable users to support any number of existing or future applications, protocols or interfaces needed in their own infrastructure environment.

Open Source Contribution and Community Model

OpenDaylight's contribution model is grounded on a technical meritocracy that encourages new contributors and community participation at all levels. OpenDaylight's design and architecture are likewise open and not static. Any new projects can be proposed, incubated and matured to become core projects in OpenDaylight.

Technical decision-making has been structured based on other successful open source projects – based on the merits of the technical contribution and decided on by a community of peer-elected developers who are senior experts in their field.

Facilitating network abstraction has many parts and many potential use cases, all evolving quickly making it a prime candidate for open community development. Further, the ability to openly shape the future design and direction of the project ensures the project can evolve in the direction SDN goes, not based on any one vendor's purposes.

The open source development and design methodology is increasingly the driving force for modern architectures, especially those reliant upon building block or ecosystem approaches. As witnessed from the era of cloud computing, the rapid iteration and broad visibility of community-driven activity can drive a superior rate of code velocity while the broad peer review process ensures pragmatic progress in the face of fast technology cycles.

The compound effect of jumpstarting a project through code re-use from other projects, new contributed code at the project's inception and the ongoing efforts of hundreds of committed peer developers is a proven foundation for rapid creation of high quality software.

The open source development model celebrates merit over pride of authorship. Code is contributed for the express purpose of advancing technologies relevant to OpenDaylight, effectively separating technology advancement from individual or commercial intent.

OpenDaylight will be composed of numerous projects. Each project will have contributors, committers and one committer elected by their peers to be the Project Lead. Existing committers will select new committers with an approval from the Technical Steering Committee (TSC).

The initial TSC and project leads will be composed of the experts who developed the code that has been originally contributed to the project. This ensures the community gets access to the experts most familiar with the contributed code to ramp up and provide mentorship to new community participants. In addition, each initial project has a goal to add at least 3 new committers from outside the original contributing organization within the first 3 months of the project. This process encourages the project to develop new contributors and committers who can get up to speed and be ready to take on larger roles in the project.



Governance Model

OpenDaylight's governance model is designed to engage a broad community ecosystem inclusive of individuals, organizations and members. Most large, complex open source communities have both a business and a technical governance model and OpenDaylight follows a similar structure.

OpenDaylight's governance will operate transparently, openly, collaboratively, and ethically. OpenDaylight is a 501(c)(6) non-profit corporation as a Collaborative Project under the Linux Foundation.

Technical leadership contains both a Technical Steering Committee (TSC) and project leads for major components and the business leadership is instantiated in a Board of Directors of the Consortium (Board). As is normal in new organizations, the Board and TSC have the ability to change the way they operate over time, subject to the policy and by-laws of the consortium.

Decisions will be made using processes that have become open source community best practices. The Board and the TSC will use common voting methodologies and ensure no single vendor or group establishes a controlling number of votes on the Board. Any one member regardless of their membership level is limited to at most one Board seat/vote. No single member can override the TSC.

The TSC is responsible for specifying and coordinating release dates, release quality standards, technical best practices, monitoring technical progress, mediating technical conflicts between committers and project leads, and organizing inter-project collaboration across all ODP projects. OpenDaylight's TSC will be composed of the Project Leaders from the core OpenDaylight projects. Each project will have one technical leader and that person will represent the project on the TSC. The Project Lead will be elected by vote from the committers in that project. If there is initially only one committer for a project, that person will be the Project Lead. Further, the active committers for OpenDaylight will elect additional TSC members six months after the organization forms to ensure committer diversity. Finally, as a temporary provision and to be re-evaluated annually by the Board, if a Platinum member is not otherwise represented on the TSC, they will be allowed to designate one TSC member.

The Board is responsible for setting overall Consortium Policy in consultation with the TSC. This policy will describe OpenDaylight's scope (the aggregate scope of projects), technical vision and direction, and release guidance to the TSC (e.g., deliver via regularly-scheduled release cycles). Typically the Board has no say in technical issues, individual project scope or direction as long as they remain within the scope and direction of OpenDaylight the Consortium Policy.

There are a number of ways to get appointed to the Board. The key design decision was to be inclusive of developers who are contributing to the project, funding members who have made significant investments including developers to the project and individuals who can act as external advisors. Individual project committers will vote for 2 of their peers to be appointed to the Board. Platinum members will enjoy one Board seat as a result of their commitment and investment in the project. There will also be Board seats allocated for Gold and Silver members who will as a class vote in Board members they nominate. Finally, Associate Members (e.g. individuals from other .orgs) can also be elected to the Board. As mentioned earlier, no single company can hold more than one Board seat.

The End Result: Contributing Code to OpenDaylight

The project design decisions made above result in an easy to engage framework for developers and companies to contribute to OpenDaylight. At the end of the day, measurements for success include community engagement and making high quality code available. With the open design decisions made, contributing to OpenDaylight is easy to do and highly welcome and encouraged. Developers who wish to contribute code can earn committer status or be voted as a Project Leader and a member of the TSC or the TSC Board representative without any financial contribution at all. All that is required to increase your influence and decision-making authority is to earn the respect of your peer developers.

All OpenDaylight source code development will be done in the open. Some contributors or companies may choose to incubate and develop code internally and then contribute it openly later, which is fine as well, but eventually even those code submissions will all be developed in the open for everyone to see and use under a standard, OSI-approved EPL open source license.

Contributing developers operating at a senior level of quality can be selected as committers for their project. The existing community of committers selects new committers with an approval from the TSC. Committers will have right to check in code they create and code contributed by developers in the community.

And if any of these design points are disagreeable to you, OpenDaylight is an open community and you can certainly propose changes to be made and help evolve the project to be more inclusive. The key is to start getting engaged, understand the project and what it's all about and figure out what role and contribution you would like to make in advancing the future of SDN technology.

OpenDaylight
www.opendaylight.org

OpenDaylight is a trademark of OpenDaylight Project, Inc. All rights reserved.

 **LINUX FOUNDATION**
COLLABORATIVE PROJECTS

www.linuxfoundation.org/collaborative-projects