

## ONOS FEATURES



ONOS provides scalability, high performance, high availability and more features that make it the perfect choice for building next-generation SDN/NFV solutions.

### High Availability & Resiliency

Service Providers require high availability so that customers do not experience network downtime. ONOS was architected from the start to support the most demanding operator networks and has many mechanisms to ensure the network and its connections are reliable.

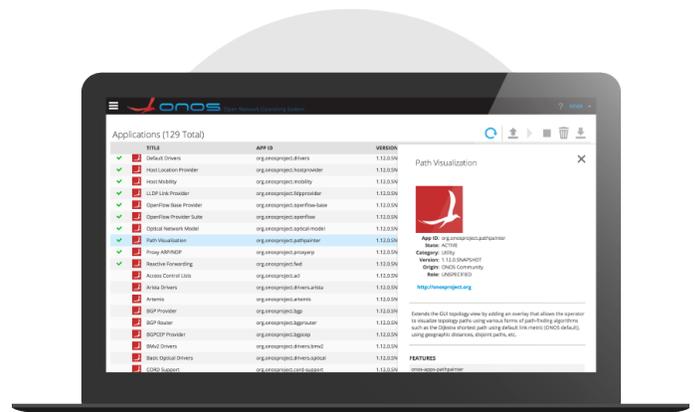


### Performance at Scale

ONOS has been architected and built to provide the highest performance possible for scaled network operations. All releases are held to this performance, even while adding many new features. It supports millions of application intent requests at its northbound interface, while maintaining less than 50 msec response time (or better) for network events—and ONOS scales as needed by adding new instances when more control plane capacity is needed.

### Modular Software

Software modularity in ONOS means that the community has been diligent about keeping software functions well defined and localized by defining the right abstractions and interfaces. This has many important benefits: software that is easier to read, test, and maintain. Most importantly, it allows partners to more easily customize the software. ONOS comes with over 135 platform extensions, which include traffic steering applications, network overlay apps, southbound providers, pre-compiled YANG models (including OpenConfig, Open ROADM), device drivers and various utilities. This list of available extensions keeps growing with each platform release.





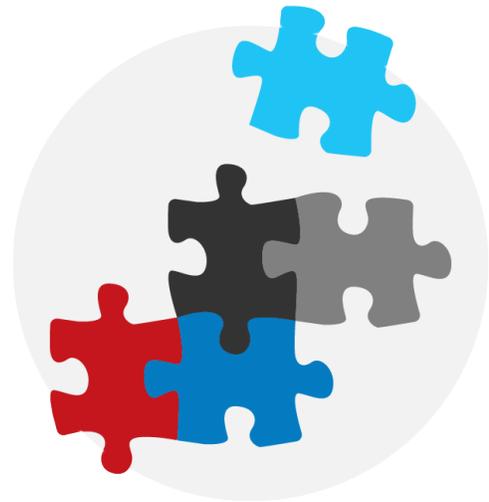
## Northbound Abstractions

Ease of Network Programming for Automation & Control  
 ONOS provides innovative northbound abstractions that simplify the creation, deployment, and operation of configuration, management and control applications. The global network view and application intent framework are two examples. Applications can be easily added to run “on-box” using native interfaces, or “off-box” using REST and/or gRPC interfaces.

## Southbound Abstractions

Easy Adaptation to Legacy or New Devices (Plug-in Architecture)

ONOS abstracts device characteristics so that the core operating system does not have to be aware of the particular protocol being used to control or configure a device. ONOS has an extensive and growing list of southbound support including P4, OpenFlow, NETCONF, TL1, SNMP, CLI, BGP, RESTCONF and more.



## GUI Framework & Base UI

The ONOS® GUI provides the view of the multi-layer network and allows the user exploration of network elements, connectivity, network state, network errors and more.

## YANG Tool-Chain

ONOS YANG tool-chain provides a compiler capable of parsing YANG source files and generating Java artifacts, which can be used for writing applications against the abstractions defined by the YANG models. It also provides a runtime capable of encoding and decoding between such internal models and their external JSON or XML data representations. Together, the compiler and runtime can be used by ONOS applications to interact with various network elements that support configuration interactions modeled via YANG. The tool-chain also supports on-the-fly compilation of YANG models, thus allowing the platform to dynamically extend its configuration capabilities.

