# Tribhuvan University

Institute of Engineering

# Pulchowk Campus

# Lab 3

## Open Network Operating System

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**Title**
  Open Network Operating System

**Basic Theory**
  ONOS (Open Network Operating System) is an open source SDN controller platform that manages network components and software programs, and actively supports the transition from legacy networks to SDN networks. It provides high availability, scalability, performance and rich abstractions, is resilient, and supports legacy devices as well as state-of-the-art hardware. ONOS was designed by leading service providers, network vendors, R&E network operators and collaborators, and was validated by the ONF. The open source project ONOS consists of an expanding community of developers and users encouraging discussion, development, documentation and improvement of the Open Network Operating System.

**ONOS Architecture**
  ONOS is the first open source SDN network operating system specifically addressing service providers and mission critical networks of enterprises and research institutions

- **Distributed Core**
  Delivers carrier grade features and web style agility to the control plane by providing scalability, high availability and performance

- **Northbound Abstraction / APIs**
  Enables simpler control, management, and configuration services, allowing network operators to program the network at a high level

- **Southbound Abstraction / APIs**
  Enables pluggable southbound protocols for controlling and managing multiple devices, simplifying migration of legacy devices to OpenFlow, and adding devices

- **Software Modularity**
  Enables the community and the providers to develop, maintain, debug and upgrade the Open Network operating software.

**Reasons to use ONOS:**
  ONOS will

- bring carrier grade features (scale, availability, and performance) to the SDN control plane

- enable Web style agility

- help service providers migrate their existing networks to white boxes
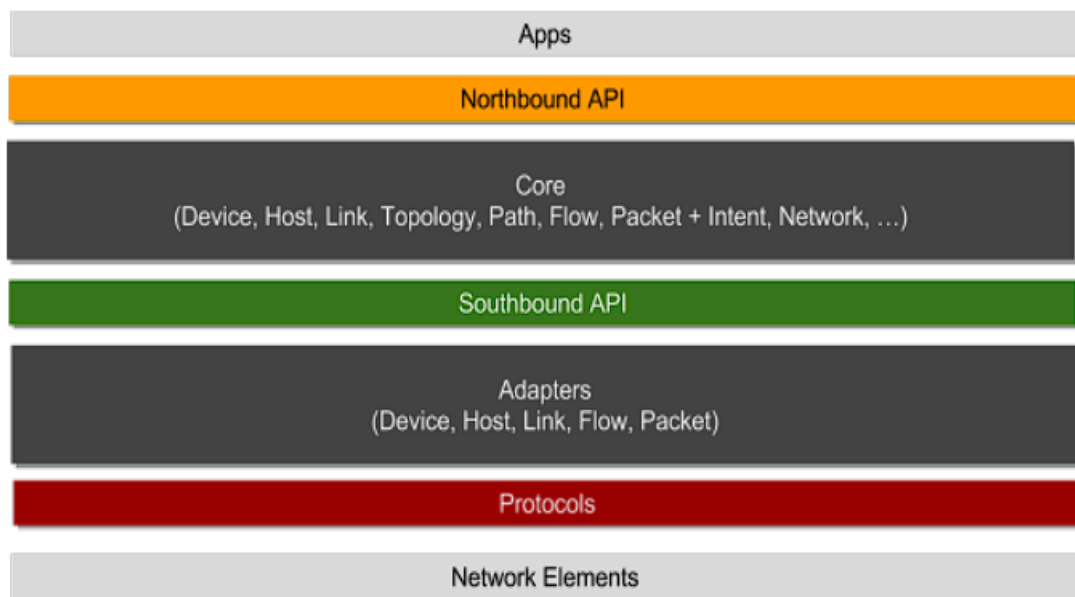
- lower service provider CapEx and OpEx

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Figure 1: ONOS Layers

**ONOS Implementation**

```
public interface sumInterface extends java.rmi.Remote
{
int add ( int n1 , int n2 ) throws java.rmi.RemoteException ;
}
```

**Conclusion**

In this way "Lab3 : Open Network Operating System" was completed.