Abstract

Today's data center complexity has been drastically increased with the widespread of many dynamic services. However, provisioning heterogeneous services to satisfy user's demand is a challenging task for the service providers and as well for the cloud Network administrators. Traditional network architectures were not designed to meet the requirements of today's enterprises and end users. Hence to meet the users demand and to address the difference between market requirements and network capabilities in data centers the industry has come up with the Software-Defined Networking (SDN) architecture and its related standards. With SDN, static network can advance into a wide range of service delivery platform capable of responding rapidly to changing business, end user's demand, and market needs. SDN provides a novel and innovative approach for controlling and managing virtual machines in data centers. In this paper, we discuss the concept of SDN, which can be implemented by the OpenFlow protocol. We discuss the OpenFlow architecture and its components with various OpenFlow versions. Finally we discuss OpenFlow based SDN implementation, testing and present an overview of SDN based applications.
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- Open networking foundation. https://www.opennetworking.org
- Y. Cheng, V. Ganti and V. Lubsey, &quot;Open Data Center Alliance Usage Model: Software-Defined Networking rev. 2.0&quot;, Open Data Center Alliance, 2014, [Online].
- OpenvSwitch, available online: http://openvswitch.org, last visit: 18.10.2014
- POX, available online: http://www.noxrepo.org/pox/about-pox/, last visit: 18.10.2014.
- Beacon, available online: https://openflow.stanford.edu/display/Beacon/Home, last visit: 18.10.2014.
- Floodlight OpenFlow Controller - Project Floodlight, available online: http://www.projectfloodlight.org/floodlight/, last visit: 18.10.2014.
- Announcing release of Floodlight with OF 1.3 support, available online: http://sdnhub.org/releases/floodlight-plus-openflow13-support/, last visit: 18.10.2014.
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- Opendaylight, available online: http://www.opendaylight.org/, last visit: 18.10.2014.
- Bismarck, Available online: http://projectbismark.net, last visit: 18.10.2014.
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