SDN Solutions Showcase

Real SDN, Real Customers, Real Solutions

The first-ever SDN Solutions Showcase, sponsored by ONF, debuted at the SDN & OpenFlow® World Congress in 2014. Following the huge success of that event, and the recently concluded Solutions Showcase at the Open Networking Summit, we are thrilled to announce our next SDN Solutions Showcase.

Featuring a vast array of real world solutions with real customers, this showcase will focus on the following themes:

Themes & Demos

These demos feature open source SDN software

Carrier/WAN SDN

Commercially Deployed Transport SDN Platform in Action

Featuring a KT T-SDN Controller, based on OpenDayLight, this demo will show two visualized E2E path planning and computation use cases over multi-vendor/domain environment. This showcase will highlight an operator's direction for operational efficiency in the transport network.

Programmable SDN Algorithm Engine - Flow Engine

Showcasing the Flow Engine, a HUAWEI-owned algorithm platform compatible with various SDN controllers including SNC, ONOS and other open source platforms. It enables comprehensive embedding or overlay algorithmic Apps, including 3rd party Apps.

Large Data Set Transfer with SDN Metering and QoS (Quality of Service)

Using OpenDaylight, Corsa Technology will present the ability to classify and prioritize traffic in the presence of large data set transfers, often referred to as

"elephant" flows, using Open SDN metering and Quality of Service (QoS).

BROCADE | CERN openlab

Brocade Flow Optimizer

This demo highlights the Brocade Flow Optimizer and the various use cases addressed to solve real network performance challenges. The Flow Optimizer is an SDN policy based app that provides customers proactive visibility to gain insight into network traffic, and allows them to detect & manager large Layer 2-Layer 4 traffic flows. Customers can use this app to increase network efficiency through better network capacity planning and resource utilization, mitigate network attacks, and eliminate network congestion through policy based traffic engineering thereby improving overall customer experience.

NoviFlow switching made smarter | CUBRO

L2 VLAN over MPLS using SDN for Brownfield Networks

In this demo, Cubro will present a SDN – legacy network gateway, to integrate the SDN feature set in existing networks. The demo will highlight SDN to MPLS conversion with LDP integration in the controller, to use cost effective SDN equipment on the edge of an existing MPLS infrastructure network.

Multi-vendor IP and Optical Control for Service-provider Core Networks

Showcasing the working & benefits of an optical/IP multi-layer control, this demo includes a service provider, commercial gear from multiple IP vendors, commercial gear from multiple optical vendors, and an SDN application provider.

Live Analysis of Video Feeds Utilizing Edge NFV – Enabling New Business Services for IoT with NFV

Based on an open NFV platform, this demo highlights how a CCTV solution featuring a comprehensive set of enhanced functions can be quickly and efficiently introduced on top of existing network infrastructure using standard, open-source orchestration tools (OpenStack). The demo underpins the potential of NFV to enable service providers to create new managed service offerings.

Global SDN Deployment Powered by Onos

Featuring an effective migration strategy for Service Providers, this demo focuses on introducing SDN islands in existing brownfield deployments. SDN-IP, running as an application on ONOS, enables these SDN islands to peer seamlessly with the rest of the legacy network. Over time, the provider can extend the footprint of the SDN island and eventually migrate to an all-SDN environment.

Data Center SDN

ONOS Open Network Operating System | ciena | HUAWEI

FUJITSU | CORSA

Multilayer SDN Control of Packet and Optical Networks

Service providers currently operate and manage packet and optical networks in silos, resulting in over-provisioning and under-utilization of these networks and lack of agility. This demo showcases the converged SDN control of packet and optical networks with ONOS to optimize utilization of these networks based on availability, economics and policy. In a first-of-its-kind effort at ONS, the demo also brings together optical hardware from three vendors to showcase effective SDN control with ONOS across a diversity of data plane devices and technologies.

KEMP Load Balancers & ADCs | hp

Active Path SDN Adaptive Quality of Service

Kemp will showcase the integration of network infrastructure level intelligence coupled with application centric load balancing and quality of service (QoS) controls to prioritize application flow traffic of high importance through the SDN network. By showing a video stream from one server without SDN Adaptive QoS turned on, this demo will then introduce the typical East-West traffic (server-to-server) to show the impact. The scenario will then be repeated with SDN Adaptive QoS turned on for a side-by-side comparison.

Multi-Site, Multi-Domain Data Center Capacity Management

This proof-of-concept (PoC) demonstrates the ability of a network under SDN control to respond dynamically to Elephant Flows both at the Packet and Optical Layers. In the context of an unscheduled Data Centre VM Migration that needs to be completed immediately, this demo will showcase two use cases.

In the Packet Layer Use Case, the SDN Controller senses congestion and signals the packet device to use low-priority links in conjunction with QoS to provide the Elephant Flow minimum bandwidth guarantee, and the Optical device remains unchanged. In the Optical Layer Use Case, due to the absence of packet-layer resources, the SDN controller redirects the Elephant Flow to the lower-priority ODU2 links being used.

Campus SDN



Aspen: Real-Time Media Interface Specification

Project Aspen will demonstratre the world's first implementation of the ONF NBI specification for real-time media (RTM) applications. This showcase will feature an integrated stack of purely open-source components working together to provide an automatically provisioned QoS-protected network path. The key component is the VTN-based RTM network service that translates between the ONF RTM interface and the virtual tenant network (VTN) interface.






Atrium: An SDN-based Open Source BGP Peering Router

Atrium aims to simplify and accelerate open SDN adoption by making it easy to build applications in a multi-vendor environment. This demo features a community-driven open source SDN distribution - a vertically integrated stack of open-source SDN

components, meant to help network operators move quickly towards real-world deployments.

Boulder: Intent Based NBI

Boulder is an open source, intent-based, Northbound Interface (NBI) framework that achieves application portability across multiple open source SDN Controller frameworks. This showcase will demonstrate the ability to write portable intent-based applications capable of leveraging different controller frameworks with the same grammar.

SDN/NFV

CORD: Central Office Re-architected as Datacenter

CORD re-architects the Telco Central Office as a Datacenter to bring in cloud-style economies of scale and agility to operator networks. It takes today's proprietary boxes, determines how their functions can be aggregated or disaggregated, and

instantiates them on commodity infrastructure. In addition to virtualized network functions, the CORD demo also includes virtualization of three legacy network devices common to today's access network, refactored as software running on (and controlling) commodity servers, white-box switches and merchant silicon I/O blades. The resulting software is then organized as an interconnected set of elastic and scalable services, all managed by open source software – specifically ONOS, OpenStack, and XOS – to unify SDN, NFV, and the Cloud under a common, intuitive, carrier-grade framework.

Integrating NFV Orchestration with OpenVIM

This showcase focuses on addressing the real pain points of service providers who need to orchestrate and automate the full lifecycle of VNFs and service chains of a variety of VNFs (such as DPI, Firewall and VPN) that are often requested by tenants for a given network path. The solution demonstrates that an existing MANO system can take advantage of the high-speed, high-performance NFV infrastructure that OpenVIM provides.

OPNFV on ARM Reference Platform

This demo will showcase the first ARM®-based reference platform for Open Platform for Network Function Virtualization (OPNFV) based on the highly integrated QorIQ LS2085A multicore SoC. Developed by Freescale, in partnership with ARM and Enea, this application-ready platform highlights the processing efficiency, scalability

and cross-platform flexibility required for future NFV-enabling technologies.

NFV-based LTE Core in the Cloud

This proof-of-concept (PoC) will demonstrate a revolutionary method for rapidly deploying and managing an end-to-end, cloud-based LTE core network. This showcase will include the dynamic deployment/enablement of hardware, software and associated SDN/NFV elements. For the purpose of the demo, the vEPC, vIMS and additional open source software will run in the CENGN lab, while the small cell (eNodeB) will be located at the conference.

SDN Testing & Validation

Benchmarking the SDN Switch

Understanding, deploying, and managing SDN in today's networks gives more control to operators, and opens up new ways to understand and manage network performance.

This showcase will demonstrate that SDN can run at a 100 Gig line rate, with circuits enforced, queueing works at congestions and millions of flows covering multi million address spaces added to the flow table.

These demos feature open source SDN software