



Open vSwitch 2015 Fall Conference

Using Open vSwitch to realize NFV and Service Function Chaining in a Carrier Network

Jeff Peterson – CTO

November 16, 2015



ONT vs. Cloud at the Edge

- ONT = Current/Historical Solution
- Access Network vs. Edge Network
- Cloud at the Edge solves the “edge problem” by changing how services are deployed, managed, and consumed
- FTTP with Cloud at the Edge and OVS changes everything

“Everything interesting happens in software at the edge under the control of SDN” - *Scott Shenker*

What is “Cloud at the Edge”?

Virtual Broadband Gateway (ONT on steroids):

- Linux based OS
- Dataplane - Open vSwitch
- Openflow capable
- Supports multiple virtual machines (Cloud at the Edge)
- Supports Linux Containers (LXC) on the host machine
- Supports Service Function Chaining (SFC)
- Supports Network Functions Virtualization (NFV)
- Supports software (CPU) switching
- Supports Trusted Platform Module (TPM)
- Supports Virtual Services, such as:
 - + Virtual Analog Terminal Adapter (V-ATA)
 - + Virtual Wireless (V-Wireless) LTE,WiFi,6LoWPAN, and/or ZigBee
 - + OpenWRT
 - + V-Switch
 - + V-Router
 - + V-Firewall
 - + Field of Dreams – Platform for Innovation

What does the VBG do?

- Moves control of the network from the core to the network edge
- Enables multi-tenancy for service providers
- Creates a clear demarcation point between the network operator, service provider(s), and subscriber(s)
- Enables self-provisioning for each network stakeholder

What does “Cloud at the Edge” look like?

EntryPoint’s Subscriber Cloud Platform

FlowOps



SecureOps

VBGateway

How it Works

- Platform creates Subscriber Cloud – An SDN based dynamic Open Access Network
- Architected to separate infrastructure from service
- Network hosts a services cloud or marketplace which enables subscribers to easily access service providers because control is moved to the subscriber edge

Who Cares? / Who Benefits?

- Network Operator – Can focus on managing infrastructure, new revenue opportunities
- Service Providers – Access to new markets and a platform for new innovation and services creation
- Subscribers – Given power to choose – benefits from competition: lower costs, more bandwidth, better service quality, and more services available to them



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Demo of “Cloud at the Edge”

Municipal Fiber Network in Ammon, Idaho



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Thank You

Questions?



Jeff Peterson
jpeterson@entpnt.com