Integrating Open vSwitch with 802.1aq SPB

Paul Unbehagen

unbehagen@avaya.com
What does Auto Attach (AA) solve?

- SPB provides for a more scalable and simpler Ethernet network, AA provides an automated means for attachment for devices not supporting IEEE 802.1ah to individual services.
- AA uses IEEE 802.1AB Link Layer Discovery Protocol (LLDP) to simplify and automate attachment of endpoints to ISID based services.
- Defines a method of using IEEE 802.1AB Link Layer Discovery Protocol (LLDP) with IEEE 802.1aq Shortest Path Bridging (SPB) network to automatically attach network devices not supporting IEEE 802.1ah to individual services in a SPB network.
  - These network devices typically do not support SPBM, MAC- in-MAC (802.1ah), nor I-SID usage and therefore cannot easily take advantage of the SPB infrastructure without manual configuration of attachment of VLANs to I-SIDs in multiple locations.
What does SPBm solve?

- Scalability: Mac address explosion
- Loop prevention & suppression
- Use all links. Does not block and waste link resources
- Use shortest path for unicast and multicast traffic
- Ease of provisioning
- Service virtualization
- Simple encapsulation
SPB services

- Transparent Layer 2 VLAN extension of services across SPB domain
- Simply associate I-SID to VLAN in BEB Switches
STEP 1 of demo
show auto attach with
dynamic config of ISID/
VLAN map on the FA-OVS
via ctl command

STEP 2 of demo
Invoke a vmotion
migration of VM1 from
ESXi1 to ESXi2 and show
re-attach with Fabric
attach changes on
ERS4850 to port 3 and
traffic re-establishes
automatically
Conceptual Auto Attach Model with OVS

SDN Controller

AA Port Configuration (OVSDB)

OF Switch Discovery (OF Protocol)

Connection Discovery (LLDP Protocol)

Eth Switch Discovery (SNMP4SDN)

Open vSwitch

AA Port Configuration (OVSDB)

OF Switch Discovery (OF Protocol)

Connection Discovery (LLDP Protocol)

Eth Switch Discovery (SNMP4SDN)

© 2012 Avaya Inc. All rights reserved.
Summary

- Submitted to IETF and IEEE
  - Currently moving active work to IEEE

[https://github.com/auto-attach](https://github.com/auto-attach)

It has 2 git repos:

- `aa-lldp`  % git clone [https://github.com/auto-attach/aa-lldp](https://github.com/auto-attach/aa-lldp)
- `aa-sdk`   % git clone [https://github.com/auto-attach/aa-sdk](https://github.com/auto-attach/aa-sdk)