SEBA with Microplug OLT

Presenters

Chip Boling, Tibit Communications
Hagen Woesner, BISDN
Durga Bodla, Delta Electronics
Microplug OLT

- 10 Gigabit OLT implemented in a single SFP+ Optical Transceiver
  - ITU-T G.987 XGS-PON compliant
  - 10G Ethernet-to-PON (XGS-PON or EPON) MAC Bridge (L2/L3 switching, traffic shaping, ...)
- 32-bit RISC CPU
- Boot Loader + Firmware
- Control plane external to OLT (VOLTHA)
  - Interfaces with Microplug firmware via IEEE 1904.2 Layer 2 protocol
Saving Boxes in SEBA

- plug OLT directly into leaf switches
- no additional OLT boxes
- single leaf switch with 48 ports can take up to 6K subscribers
Problem: Leaf switch is part of fabric and vOLTHA

- Fabric control (trellis) works on top of ONOS
- OLT control is done in vOLTHA
  - no BAL here, no OLT aggregation
- need control interface to both ONOS and vOLTHA adapter

Solution: create second control interface on switch
gRPC interface from vOLTHA adapter, OpenFlow from ONOS
no real control virtualization, no 'flowvisor'
Schematic of grpc/OF coexistence in k8s

- currently working on vOLTHA 1.6
SEBA POD Topology

ONU Serial Numbers:
ONU-1: 414c5048e3bb8851
ONU-2: 414c5048e3bb8ad6

Tibit OLT MAC:
Port 5: 70:b3:d5:52:30:6f
Port 1: 70:b3:d5:52:31:25

Tibit OLT MAC:
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ONOS, NEM, Kubernetes,
Docker Registry, AAA,
VOLTHA

DHCP Server

operator machine

mgmt network

SDN Fabric

Switch – Delta AG 7648
NOS – BISDN Linux

Web Server

BNG

172.18.0.10
# Fabric Switches

<table>
<thead>
<tr>
<th>Actions:</th>
<th>Backend status</th>
<th>Driver</th>
<th>Id</th>
<th>Ipv4 loopback</th>
<th>Ipv4 node sid</th>
<th>Is edge router</th>
<th>Name</th>
<th>Of id</th>
<th>Policy status</th>
<th>Router mac</th>
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</thead>
<tbody>
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### OLT Devices

Represents a physical OLT device

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<thead>
<tr>
<th>Actions:</th>
<th>Admin state</th>
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<th>Device id</th>
<th>Device type</th>
<th>Dp id</th>
<th>Driver</th>
<th>Host</th>
<th>Id</th>
<th>Mac address</th>
<th>Name</th>
<th>Nas id</th>
<th>Of id</th>
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### ONU Devices

Represents a physical ONU device

<table>
<thead>
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<th>Actions</th>
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<th>Connect status</th>
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<th>Device type</th>
<th>Id</th>
<th>Oper status</th>
<th>Policy status</th>
<th>PON port id</th>
<th>Serial number</th>
<th>Vendor</th>
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<td>ALPHE3BB8AD6</td>
<td>Broadcom</td>
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Thank You