SEBA Rationale, Assumptions & Architecture

- Operator-Driven
- Deploy in 2018
- Common infrastructure
- Containers run in Kubernetes as cloud underlayer
- Edge cloud orchestration option for convergence to Akraino EdgeStack (Linux Foundation)
- Enable any Northbound CAP - Legacy OSS and new systems like ONAP
- Integrate to existing networks as well as greenfield
- Aggregation and Service Gateway (ASG) enables Wireline Broadband Network Gateway (BNG) or Wireless PDN Gateway (PGW)
SEBA RD Team Activity

Operator Group

Customization
Hardening
Field Trial
Production Deployment

Supply Chain Group

SEBA RD & Exemplar
Per-Operator Workflow

AT&T
ONOS
VOLTHA
R-CORD
XOS
Netsia
Radisys
Ciena
Dell EMC
Edge-Core Networks
Juniper Networks

RD Review – ONF Members
High Level SEBA AT&T Workflow

A high level overview of the AT&T workflow for SEBA and look at the ongoing AT&T field trials

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Reference: SEBA AT&T Workflow
Link: https://wiki.opencord.org/pages/viewpage.action?pageId=4982370
• POD consists of:
  • 3 Compute nodes
  • 1 AGG Switch
  • Up to 16 x 16 XGS PON Ports
  • Software Stack
Abstract OLT

Name: PLANOTX3400OLT1

• Builds a representation of the POD hardware as an OLT with uplinks, slots, and ports.
• Each port supports a split of ONTs
• Provides a consistent model to OSS/BSS with various hardware configurations
• Support provided for 1 port, 16 port, 24 port, etc. OLTs

• For AT&T the model will provide 16 ports per slot and up to 16 slots.
• ONT split ratio can be 1 of 2 models
• 32 ports with coexistence of GPON + XGS-PON
• 64 port greenfield
AT&T vAccess Architecture

OSAM – Open Source Access Manager
SEBA – SDN-Enabled Broadband Access
NEM – Network Edge Mediator
ONOS – Open Network Operating System
VOLTHA – Virtual OLT Hardware Abstraction
vOLT – virtual Optical Line Terminal (OLT)
PON – Passive Optical Network
DPU – Distribution Point Unit
BGW – Broadband Gateway
ONU – Optical Network Unit
AT&T Workflow High Level Description

- OSAM provides upstream access to the POD
- POD Management
  - Operational personnel/systems maintain the POD
- OLT/ONT Management
  - Operational personnel/systems define the Abstract Model
  - Operational personnel/systems define manage the deployment of specific ONT HW to the Abstract Model (tied in by SN number)
- Service Provisioning
  - High Level APIs provide top down provisioning model via the Abstract Model
  - APIs include generic parameters such as service type, speeds, BNG mappings, and authentication details applicable to multiple access technologies
- Alarming, Status, and Trouble shooting
  - Alarms, Events, and PM information are streamed to Kafka, and transfer via a VES agent to DCAE
  - Data collection, alarm reporting and correlation, real time status are handled in ONAP
  - Status APIs using industry standard yang definition in the BBF provide on demand access for troubleshooting
The vAccess project helps realize the D2.0 architecture enabling us to support multiple wireline, wireless access technologies at the edge of the network which strategically minimizes latency for customer applications.

**AT&T vAccess Field Trial**

**vAccess Trial POD**
This strategic open source architecture is deployed using common Compute servers as used in a Data center, and an Open Compute Platform (OCP) based virtualized OLT (vOLT).

**CO Trial Details:**
- Our first application is 10G XGS-PON which will provide Multi-Gbps services for residential and business customers on the shared fiber.