ONF Broadband Meetup, Berlin
Rajesh Chundury
May 20th, 2022
Introduction: DNA of Open Telecom Innovation

1987-1995

- Founded 1987
- Vision: Bring Intel Silicon to Telecom
- IPO 1995
- Acquired IBM Open Platform division

2006-2011

- Acquired
- Convedia: Media Server
- Continuous Computing: Trillium

2012

- Pivoted Strategy
- Focus: Tier 1 Carrier - direct and indirect

2017

- Open Radisys
- Open, Disaggregated access and media solution, dev ops methodology

Dec 2018

- A Reliance Industries company
- Innovate, Scale, Expand and Disrupt with Open Solutions

Headquarters: Hillsboro, OR
United States

Centers of Excellence: Bangalore (India)
Hillsboro, OR (US)
Frisco, TX (US)
Guangdong (China)
Shanghai (China)

No. of Employees: ~1000

Global sales and operations

Over 30 years of experience and leadership in networking

Leading contributor to open standards organizations and initiatives
Open: Our Vision for the Networks of Tomorrow

Creating new digital experiences

Disaggregated
Software / Hardware
Network Functions
Control / Media

Open
Software, Hardware, Interfaces

Intelligent
Software Defined
Programmable
AI/ML
Recent contributions to ONF/VOLTHA community

Device Management Interface

ONOS Replacement Controller
(Light Weight Controller)
Open and Disaggregated Architecture

Disaggregated Access Solution Enabled by Open Interfaces and Open-Source Software

OSS/BSS/MANO Platforms

- Vendor EMS (FCAPS)
- Vendor MIBs/SNMP

Vendor EMS (FCAPS)

- Proprietary Vendor OLT SW + HW

Proprietary Vendor OLT SW + HW

- Radisys Management System (RMS)
- Connect Broadband Access Controller
  - Microservices (Control & Mgmt.)
  - Optimized SDN Controller (LWC)
  - VOLTHA*
  - OPEN OLT Adaptor*

Connect Broadband Access Controller

- White box OLT HW
  - GPON -> XGS/NG-PON2 -> 25G/50G/100G

White box OLT HW

Key Value Propositions

- Highly programmable
- Enables faster innovation
- Technology & vendor agnostic
- Operationally efficient
Transform Your Network at Your Pace
Flexible Deployment Options

DISTRIBUTED CONTROL PLANE

- (OSS/BSS)
  - Common North Bound Interface (NBI)
    - CBAC (NFVi)
      - OpenOLT Interface
      - White box OLT Vendor #1
    - CBAC (NFVi)
      - OpenOLT Interface
      - White box OLT Vendor #2

PROPRIETARY & DISTRIBUTED SW

- (OSS/BSS)
  - Management
    - Proprietary Interface
      - Proprietary Vendor #1 OLT HW & SW
    - Proprietary Interface
      - Proprietary Vendor #2 OLT HW & SW

CENTRALIZED CONTROL PLANE

- MANO (OSS/BSS)
  - Common North Bound Interface (NBI)
  - Rest API South Bound Interface (SBI)
  - CBAC (NFVi)
    - OpenOLT Interface
    - White box OLT 1 (Vendor #1)
    - White box OLT 100 (Vendor #2)
Architecture Evolution to Converged Disaggregated Edge

- **RMS**
  - CBAC (Control + Mgmt.)
  - OLT-1
    - Distributed PON Control Plane
  - Data Plane

- **RMS**
  - CBAC (Control + Mgmt.)
  - NFVi (Agg.)
  - OLT-1
    - Centralized PON Control Plane
  - Data Plane

- **MANO RMS**
  - CBAC (Control + Mgmt.)
  - NFVi (Agg.)
  - OLT-1
    - Wireline Edge (w/BNG CUPS)
  - Data Plane
  - BNG-U*

CBAC deployed on Google Cloud Platform as a PoC

*Roadmap
**Vision

5G mmWave Small Cell (RU + DU + CU)

Backhaul for Local Breakout

Radisys Corporation - CONFIDENTIAL
Customer Case Studies & Deployment Models
Deployment Models

Central Management
Inventory, Topology, Configuration, Assurance

Control Plane on pOLT (Distributed)
- OLTs in a Ring
- Connected to Central BNG
  - (ToR-less)

Control Plane on compute (Centralized)
- OLTs connected to ToR
- ToR connected to Central BNG
- OLTs connected to Leaf/Spine in POD
- Service Edge (BNG) on Leaf switches
- Management & PON Controller on local compute

1
- OLTs in a Ring
- Connected to Central BNG

2
- OLTs connected to redundant ToRs
- ToR connected to Central BNG

3
- OLTs connected to Leaf/Spine in POD
- Service Edge (BNG) on Leaf switches
- Management & PON Controller on local compute

4
- OLTs connected to ToR
- ToR connected to Central BNG
- PON Controller on local compute
Deployment Models

Central Management
Inventory, Topology, Configuration, Assurance

Control Plane on pOLT (Distributed)

- OLTs in a Ring
- Connected to Central BNG
- (ToR-less)

1 JioFiber

Control Plane on compute (Centralized)

- OLTs connected to redundant ToRs
- ToR connected to Central BNG

2

- OLTs connected to Leaf/Spine in POD
- Service Edge (BNG) on Leaf switches
- Management & PON Controller on local compute

3

- OLTs connected to ToR
- ToR connected to Central BNG
- PON Controller on local compute

4

• Compute
• L/S Service Edge
• L2/L3 TOR
• Router
• OLT

Mgmt & PON Controller
PON Controller
BNG on Leaf
Redundant ToR
WB OLT
Radisys OLT w/ controller
Deployment Models

Central Management
Inventory, Topology, Configuration, Assurance

Control Plane on pOLT (Distributed)
- OLTs in a Ring
- Connected to Central BNG
- (ToR-less)

Control Plane on compute (Centralized)
- OLTs connected to Leaf/Spine in POD
- Service Edge (BNG) on Leaf switches
- Management & PON Controller on local compute

1
2 Europe Tier-1

3

4
- OLTs connected to ToR
- ToR connected to Central BNG
- PON Controller on local compute
Deployment Models

Central Management
Inventory, Topology, Configuration, Assurance

Control Plane on pOLT (Distributed)

1. OLTs in a Ring
2. Connected to Central BNG
3. (ToR-less)

Control Plane on compute (Centralized)

4. OLTs connected to ToR
5. ToR connected to Central BNG

• OLTs in a Ring
• Connected to Central BNG
• (ToR-less)

• OLTs connected to redundant ToRs
• ToR connected to Central BNG

• OLTs connected to Leaf/Spine in POD
• Service Edge (BNG) on Leaf switches
• Management & PON Controller on local compute
• PON Controller on local compute