



# VOLTHA v2.11 Techinar

Feb 23, 2023 | 9am PDT

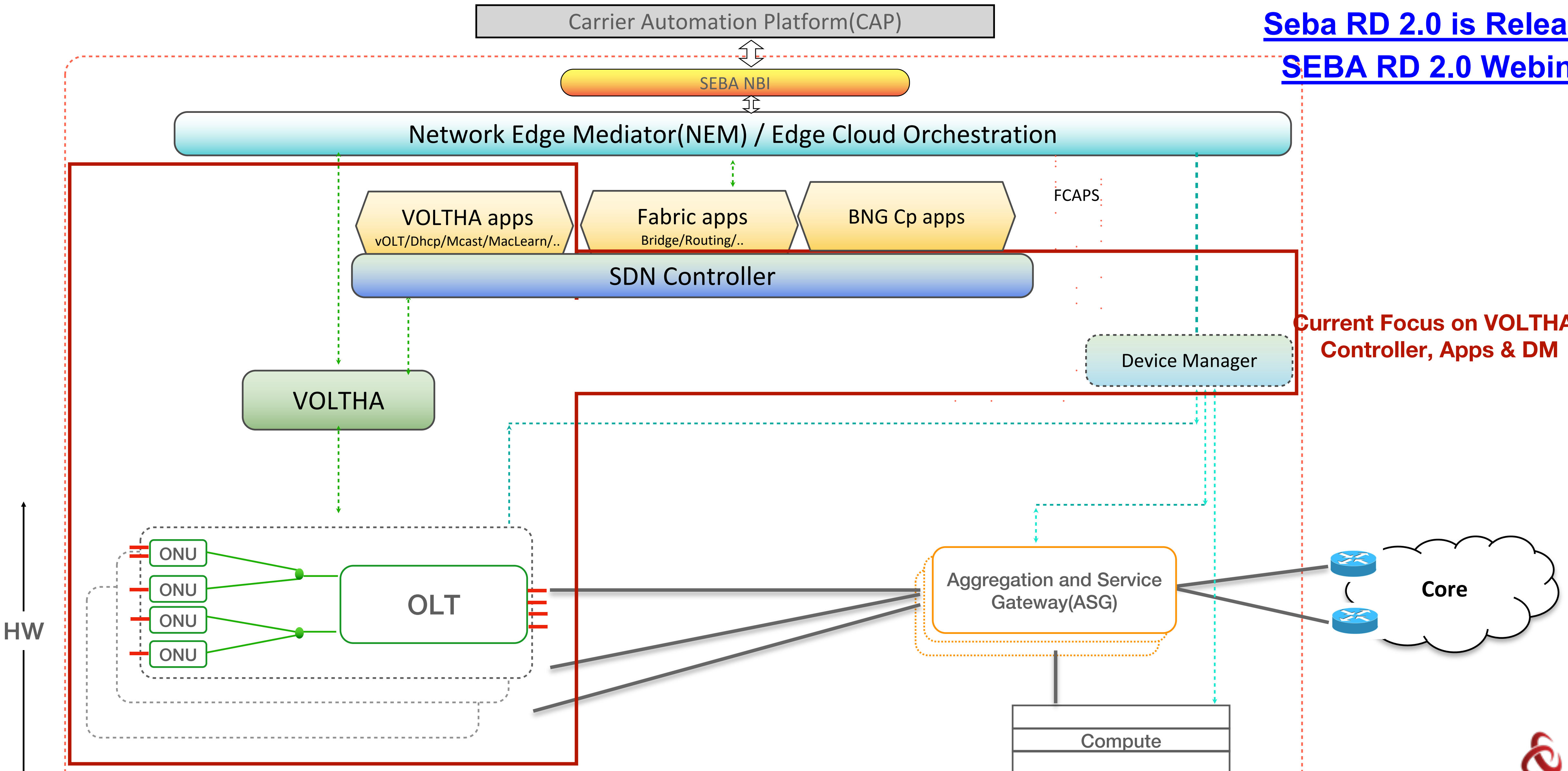
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# Outline

- SEBA Reference Design
- VOLTHA Architecture
- Typical SEBA Test Setup
- CI/CD System
- VOLTHA 2.11 Release Notes
- Next Releases - Backlog
- How to Join and Contribute - Resources
- Q/A

# SEBA Reference Design

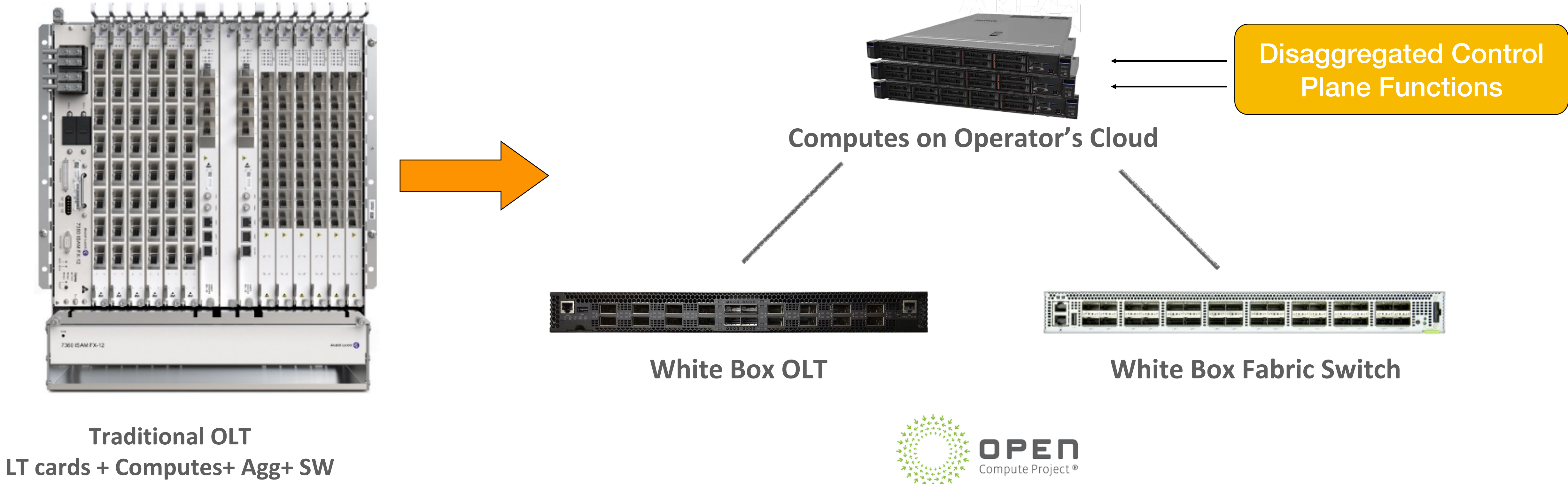
[Seba RD 2.0 is Released](#)  
[SEBA RD 2.0 Webinar](#)



**Current Focus on VOLTHA, Controller, Apps & DM**

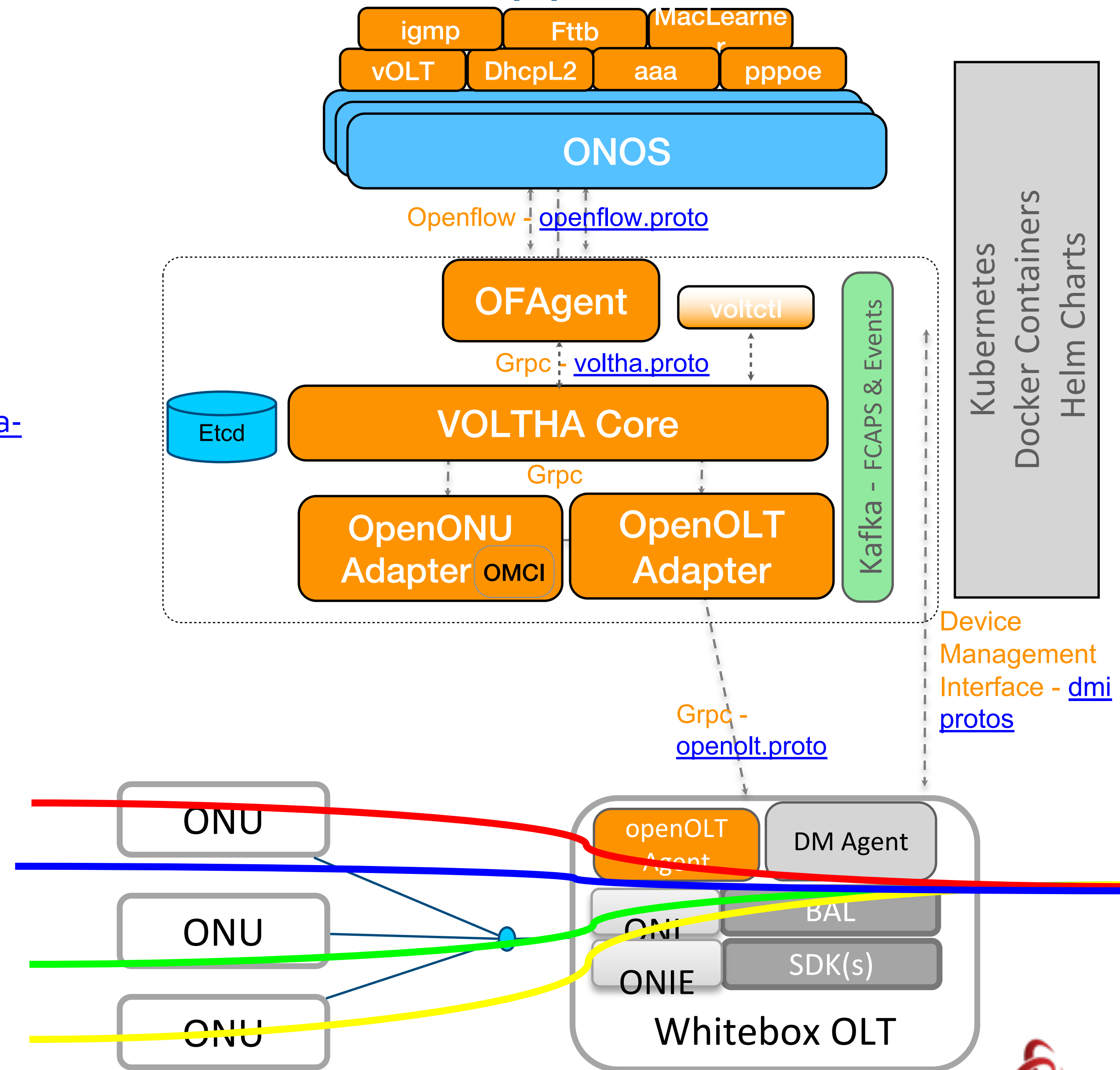


# Disaggregation

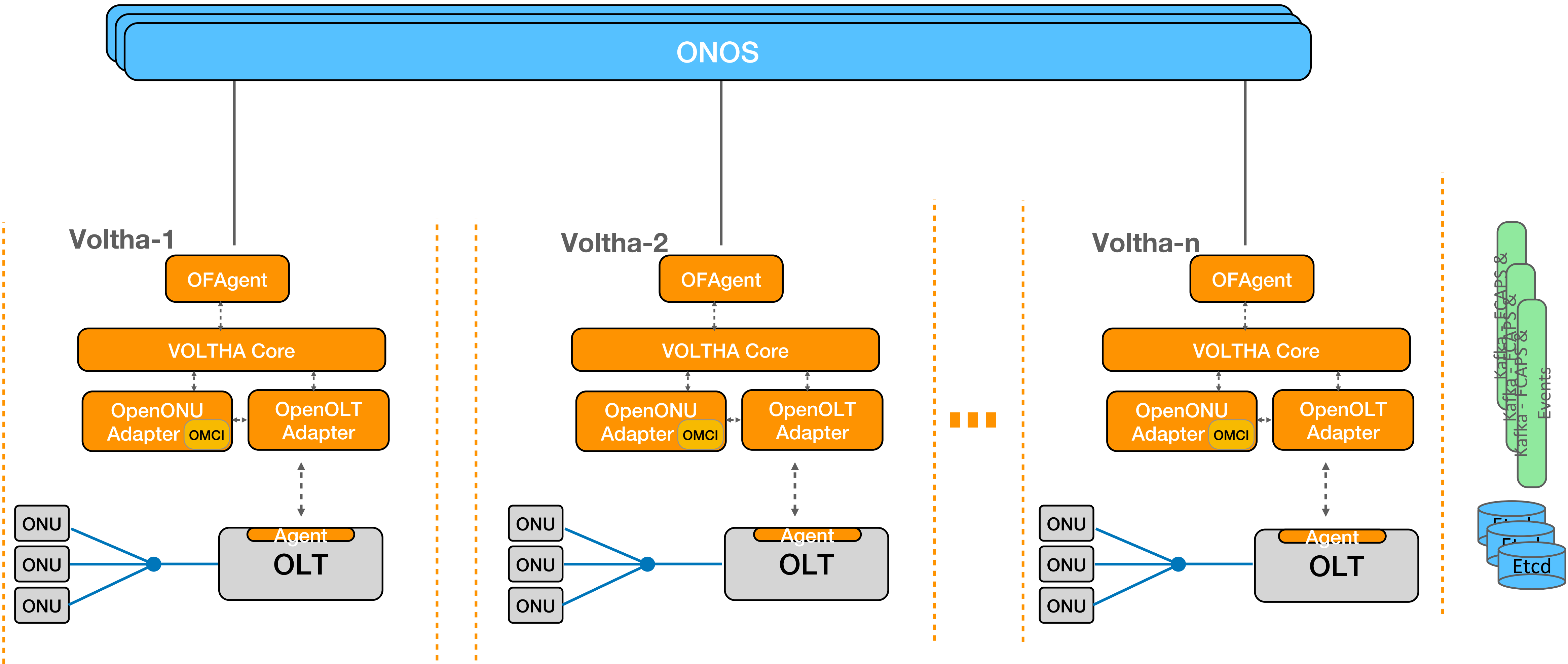


# VOLTHA(Virtual OLT Hardware Abstraction) and Apps

- Cloud native, container based, Kubernetes orchestrated
- All components are deployed in docker containers
- gRPC for inter container communication
- Etc as KV Store
- Kafka for FCAPS
- Using Helm for deployment (<https://github.com/opencord/voltha-helm-charts>)
- SW Components
  - Agent on OLT
  - VOLTHA Core and adapters
  - Controller Apps
- Device Management Interface based on IETF Rfc-8348 - A YANG Data Model for Hardware Management
- Softwarized standards( Open interfaces in proto files - <https://github.com/opencord/voltha-protos>)
- Horizontal scaling per OLT



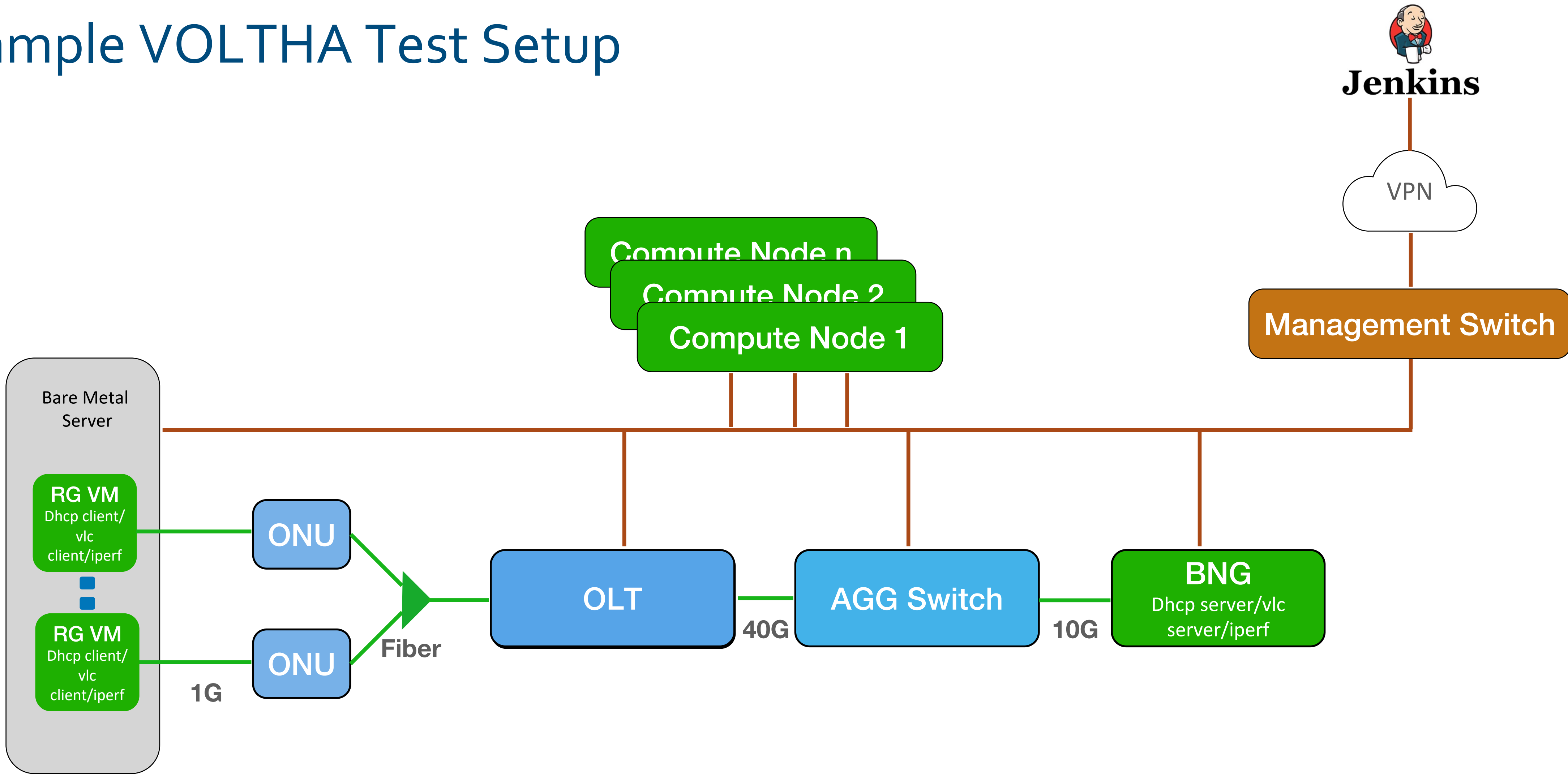
# VOLTHA Stack Per OLT



# VOLTHA Feature Set

- 3-play services(HSI, IPTV, VOIP)
- 1:1 & n:1 service models
- Multiple Tcont Type(Tcont types 1,2,3,4,5)
- Configurable GEM - Tcont modelling
- Multiple UNIs on same ONU
- Traffic classification, shaping and policing
- SP and WRR HQos
- Multiple Technologies(GPON, XGSPON, EPON, COMBO PON)
- Multiple Device brands(Both OLT and ONT)
- Vlan & Pbit manipulation in ONU and OLT.
- QinQ support
- US and DS Bandwidth limitation in ONU and OLT
- ISSU
- Multicast with Igmp version 2/3
- Dhcp L2 Relay
- Extensive Counters and Alarms/Events
- OLT and ONU Software Upgrades
- PON Security Features

# Example VOLTHA Test Setup



— 1G Management Network  
— Subscriber Traffic Network





# CI/CD

- 3 Labs in 3 different locations
- Periodic Tests
  - Master verification Tests
  - LTS verification Tests
  - Simulator and HW tests
- Scale Tests
- Certification Tests
- SW verification for patches
  - Lint check
  - Version check
  - Unit tests
  - Functional tests

Jenkins Jobs:

<https://github.com/opencord/ci-management>

Tests:

<https://github.com/opencord/voltha-system-tests>

Pod configurations:

<https://github.com/opencord/pod-configs>

Simulator:

<https://github.com/opencord/bbsim>

# VOLTHA Release 2.11

- The Broadband Forum (BBF) models were extended to align with VOLTHA interfaces and implemented in an adapter layer at the northbound of VOLTHA. The POC work on Broadband Forum integration is demonstrated in the [NetworkX event](#) in Amsterdam in October [2022](#).
- CI/CD scripts are enhanced to improve visibility of job steps and failures.
- ONU OMCI counters enabled on CLI for improving system debugging.
- OMCI extended message support in openonu-adapter has been enhanced to be used in alarm and PM data retrievals.
- New robustness tests to exercise corner cases in openonu-adapter as well as the tests for OMCI extended message support.

# Release 2.12 Backlog

- LAG & LACP
- New Access Controller
- VOIP over POTS ports
- Multi ISP Support
- Multiple NNI
- L3 ONT

[Current Backlog here](#)

# VOLTHA Deployments

## Voltha is in production with live customers:

- Turk Telekom (TT)
  - TT has been in mass deployment for several years.
  - [TT initial deployment](#) , [Mass deployment](#)
- Deutsche Telekom(DT)
  - DT is deploying VOLTHA in production with their Access 4.0 program
  - [DT's first live deployment](#)
- Jio - in NetworkX presentation shared they are in deployment
- There are other operators in different countries, having VOLTHA based solutions in several stages of field trial and production
  - Telefonica announced planning deployments in 2023 with VOLTHA
  - Comcast - in field trials
  - TIM - in field trials



# Community Contribution - Resources

- Project Page : <https://opennetworking.org/voltha/>
- Documentation : <https://docs.voltha.org/master/index.html>
- Contributing : <https://docs.voltha.org/master/overview/contributing.html>
- Wiki: <https://wiki.opennetworking.org/display/COM/VOLTHA>
- Mailing Lists
  - Voltha Discuss: <https://groups.google.com/a/opennetworking.org/g/voltha-discuss>
  - TST: [voltha-tst@opennetworking.org](mailto:voltha-tst@opennetworking.org)
- Slack
  - Volta-dev : <https://onf-community.slack.com/archives/Co1D229FP2A>
- Jira: <https://jira.opencord.org/secure/Dashboard.jspa>
- VOLTHA TST Meeting - Tuesday at 8 am PT
- ONF Marketplace : <https://opennetworking.org/marketplace/>

# SEBA/VOLTHA Community



# Q/A

- Questions?