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OPEN GPON OLT
An Open Disaggregated Broadband Access Device

Architecture & Planning
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Agenda

- Quick review of basic Principles
- Updates from the last review of the spec
- Example
Legacy GPON Access Architecture
(Gigabit Passive Optical Network)
Disaggregating an OLT

Everything but the MACs can be virtualized and moved to NFVI using standard:
• Fabric Switches
• Storage
• Servers

We need to create a new standard high volume (HV) MAC
Minimize Stranded Hardware Complexity

Traditional OLT Line Card

- Onboard L2 Switch
- Onboard MACs SoC
- Local Host CPU

GPON OLT I/O Blade

- 10GE
- DDR
- Remote In-band management replaces local host SW
- GPON I/O Blade doesn’t require dedicated management port, external host CPU or associated memory.

The result is higher PHY density with low power, lower cost and significantly lower TCO.
Open GPON Software Stack

CORD
Central Office Re-architected as a Datacenter

Open Software Announcement Next Week at Open Network Summit

SDN controller, applications, and agents run on standard servers

OpenFlow Controller
Configuration Controller
NETCONF / YANG
OpenFlow Agent
NETCONF Agent
Proprietary OLT to Ethernet Abstraction and Interworking Function
OLT API
OMCI Stack

SoC FW & HW Drivers

HW drivers runs on SOC

DC Server
GPON OLT IO Blade
Open GPON OLT IO Blade

I/O blade fits into the CORD POD, just like a server. Connects to 1 or 2 ToRs

Refactored for NFV: Big, power hungry, proprietary OLT chassis now embodied in 1-2 pizza boxes

48 GPON OLT Ports
Carrying 120G DS / 60G US

Single Blade

In-band management
Updates to Spec from Last Review

- Genericized dimensions for 1RU 19” device.
- Provided generalized environmental requirements rather than the specifics for a particular design.
- Small changes to license language
Example