Stratum's new capabilities: optical transport support for Cassini chassis

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PLVision is an SDN software developer

• A specialized provider of software engineering services, specializing in **SDN, NFV, Embedded Systems** and **Industrial IoT**.

• Profound experience with merchant switch silicons (Broadcom XGS, DNX families, Intel, Mellanox, Marvell/Cavium, Barefoot).

• 12 years in network software development, landing of commercial and open source NOSes on merchant silicons up to the level of integration with SDN controllers.
Disaggregating Transponders from OLS/ROADMS

Business Benefits

• Rapid adoption of innovation in terminal equipment
  • 2 years TX lifespan vs. 15 years for OLS/ROADMS
  • Enable vendors to innovate: speed, reach, QoT, …
  • Let operators reap benefits through simple bookending

• Rapid introduction of new services in production network
Intro: ODTN Use Case

Operator OSS/BSS

OLT Controller

OPENCONFIG

TAI

OPENCONFIG

STRATUM

PLVISION

Connectivity of Tomorrow
ODTN high-level picture (legacy problem)
ODTN high-level picture (solution)
CASSINI platform (hardware)

- White Box packet/optical transponder
- Open design contributed to OCP
- Broadcom Tomahawk+ ASIC (3.2T)
- 100Gbit/s QSFP28 x16
- 200Gbit/s CFP2-ACO x8
- ACO/DCO coherent DSP and optical transceivers
CASSINI platform (software)
CASSINI configuration: user perspective

New gNMI paths for OpenConfig nodes defined @ openconfig-terminal-device.yang
CASSINI configuration: internals

Remote or Local Controller(s)

P4 Runtime  gNMI  gNOI

Switch Interface

Table Manager  Node/Chip Manager  Chassis Manager  Platform Manager

Chip Abstraction Managers
E.g. ACL, L2, L3, Packet I/O, Tunnel

Switch SDK  TAI API  Platform API

Switch Chip Drivers  Transponder Lib  Platform Drivers

Switch Chip(s)  Optical line(s)  Peripheral(s)

Stratum switch agent

user

kernel

hardware
CASSINI configuration: operations perspective
Summary

Mixture of open projects/products:

- CASSINI
- Stratum
- OpenConfig
- TAI

Provides a mixture of traditional Ethernet networking with wide area optical transport in a single solution.
How to Engage with Community

• Stratum
  • Web: https://www.opennetworking.org/stratum/
  • Wiki: https://wiki.opennetworking.org/display/COM/Stratum+Wiki+Home+Page

• ODTN
  • Web: https://www.opennetworking.org/odtn/
  • Wiki: https://wiki.onosproject.org/display/ODTN/ODTN
Thank You!

Questions?
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