

Challenges and Requirements in Supporting OpenROADM in Disaggregated Optical Network.

ABSTRACT

Control, management, and orchestration of an Optical Transport Network (OTN) require consistent abstraction of Network Element (NE) in the underlying network. This abstraction is the representation of the configuration/operation parameters of the devices using data models standardized by working groups like OpenConfig and OpenROADM. Network operators have been engaged and working on the fully dis-aggregated optical network to achieve greater interoperability between NEs from different vendors. This eliminates vendor lock-ins in the network enabling cost reduction and increased flexibility in OTN deployment. However, with an increase in functionality requirements and competitors in the market, vendors are crucial in updating their device capabilities and inventing interoperable network devices. The unified data model approach faces increased complexity here to support, configure, and provision network services between the NEs in the OTN.

As a result, partial disaggregation of the optical network is proposed, with an entire optical network separated into two sectors, an open Optical Terminal (OT) and Optical Line System (OLS) [1,2]. The OT is the transponder which complies with OpenConfig data model implementation and can be vendor-neutral. The OLS consists of roadms, splitters, amplifiers, and other supporting entities provided by a single vendor. The OpenROADM [3] based yang model is going to be evaluated as an agent between OLS and domain controller to examine the applicability of the unified data model in the OTN. The rationale behind this is to analyze the openROADM ability in accordance with vendor device configuration and network automation capabilities.

REFERENCES

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