Framework on Customer Premises Equipment Control in Optical Transport Network

CCAMP WG, IETF 103, Bangkok, Thailand
draft-ietf-ccamp-otn-cpe-fwk-00

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Motivation

• Address the following problem **automatically**:
  • Discover and map CPE to the OTN access;
  • Address the CPE configuration to access OTN;
  • Set up connection between CPE and OTN access;
  • Management of the CPEs;
  • Management of the connections;
• An automatic solution is required;
Reference Architecture

Carrier Orchestration System

EMS/Controller Vendor A

CPE Control & Mgmt

EMS/Controller Vendor B

OTN Subnetwork: Vendor A

OTN Subnetwork: Vendor B

Existing YANG model can be used

New YANG model maybe needed

Various mature Techs applying

GMPLS-UNI might be enabled here
Variant Architecture Example

Carrier Orchestration System

EMS/Controller Vendor A

EMS/Controller Vendor B

CPE Control & Mgmt

CPE Control & Mgmt

CPE

Gateway

OTN Subnetwork: Vendor A

OTN Subnetwork: Vendor B

New YANG model maybe needed

Various mature Techs applying

GMPLS may need extension here

New YANG model maybe needed

Various mature Techs applying

GMPLS may need extension here
Summary

• Provide CPE control architecture;
• YANG models required between any control system and the CPE devices;
  – To be augmented for CPE and management features;
  – To be simplified for efficiency;
• GMPLS-UNI protocols required to connect CPE to OTN networks;
  – To be extended for CPE-specific features;
  – To be simplified for efficiency;
Next Step

• Common Interest;
• Figure out the scope for detailed work;
• Produce solution documents;
Thank you!