Fabric-based management for Data center network

draft-zhuang-i2rs-yang-dc-fabric-network-topology-03
draft-zhuang-i2rs-fabric-service-model-02

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Design Concept

• **Motivation**
  – **Divide** Data Center network into several layers
    • service layer as a user network interface
    • fabric topology layer for fabric-based DC topology
    • physical topology for device management
  – **Conquer**: different administrator (human) manage through different data models per layer

• **Objectives**
  – Define a fabric service module to represent services for users regardless of topology, technology and device information used. ➔ a user interface
  – Define a fabric topology module to manage fabric-based Data Center network topology. ➔ a fabric-based topology interface
Multi-layer Interconnection

Fabric Service layer
a service interface of fabric networks to users

Fabric layer
Provide fabric-based DC network topology, which includes attributes of fabrics, such as gateway mode, involved nodes, roles of involved nodes etc.

Physical layer

Gateway information

Binding between layers

gw configuration
The usage architecture

Fabric service data module

Topology Manager

Network Provider

Orchestrator

Fabric capable Device module

Fabric Topology data module

Configuration/operation based on user service and topology

Fabric-based topology management

define user networks
Comments resolution

- Fabric topology vs. TE topology
  - Thanks for the good comment
  - Confirmed with authors of TE-topology:
    - The two models are for different applications and topologies, and they should work independently.
    - A fabric topology focuses on characteristics of a data center network such as roles of spine and leaf, while a TE topology focuses on TE nodes and links, and provides characteristics for traffic engineering.
    - For TE topology, a TE node of an overlay topology represents a underlay topology; while a fabric (pod) in a fabric topology consists of a set of spine and leaf nodes within an underlay network.
Updates since IETF 97

- **draft-zhuang-i2rs-fabric-service-model-02**
  - Add terminology section
  - Add a section to explain multi-Layer interconnection
  - Update usage architecture with fabric-capable-device module
  - The fabric-capable-device module is used to configure devices according to fabric-service module and fabric topology module.

- **draft-zhuang-i2rs-yang-dc-fabric-network-topology-03**
  - Remove rpc command for topology management
Next Step

• Ask the group whether this direction is good to move on.
• Collect feedbacks.
Question?