Service Component Composition

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Network Service Modeling

• Many orchestrator efforts from operators requires the network service modeling
• Ref: draft-ietf-netmod-yang-model-classification-01
• Monolithic service model (e.g. L3SM)
  – captures the entire service in a single model
  – Hard to reuse
  – Hard to extend with new features
• Service component model
  – Break services into multiple reusable components
  – Operators can flexibly compose various services for different requirements.
  – Customized services for network slicing.
Narrow Waist for Network Service Customization

Transport and Application protocols

- email
- WWW
- phone...
- SMTP
- HTTP
- RTP...
- TCP
- UDP...
- IP
- ethernet
- PPP...
- CSMA
- async
- sonet...
- copper
- fiber
- radio...

Transmission medias.

Various network services

- Customized services, e.g. for different slices
- Connectivity, TE, QoS, NAT, Security, SFC, VAS
- MPLS
- vxLAN
- Carrier Ethernet

Diverse devices and networking technologies
Fast Adaption for New Services

Monolithic approach

- Monolithic Service model
- Adaption Code
- Device Model

- Not fixed
- Change with new requirements

- Rewrite code when north-bound model changes

Component based approach

- Customized Service Model based on composition
- Service Component Model
- Adaption Code
- Device Model

- Clear functions
- Standard model

- No need to modify
Potential Work in IETF

- A set of service component models
- Approach/framework on service composition