YANG Models for Transport Client Signals

CCAMP WG, IETF102, Montreal, Canada

draft-zheng-ccamp-client-signal-yang-00

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Changes from the previous version

- Rename the draft:
  - A YANG Data Model for ~~Optical~~ Transport Network Client Signals;
- Client modeling Categories;
  - Carrier Ethernet (non-transparent);
  - Other Transport Network Client Signal (transparent)
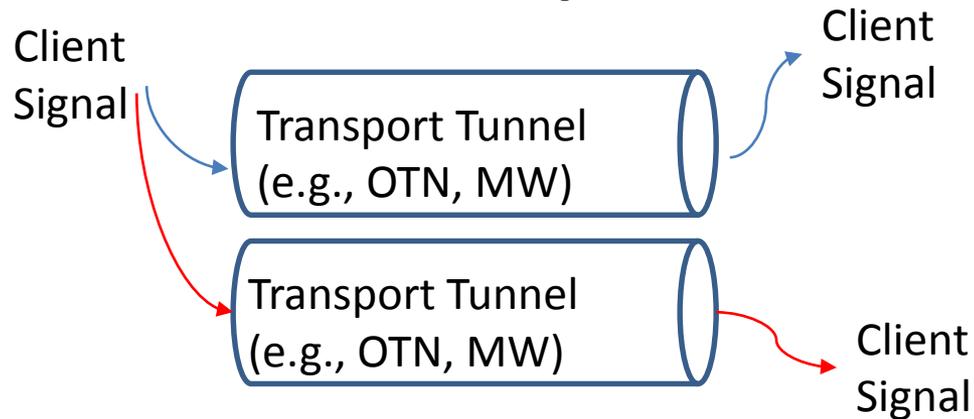
Transparent Client Signal

Client Signal → Transport Tunnel (e.g., OTN, MW) → Client Signal
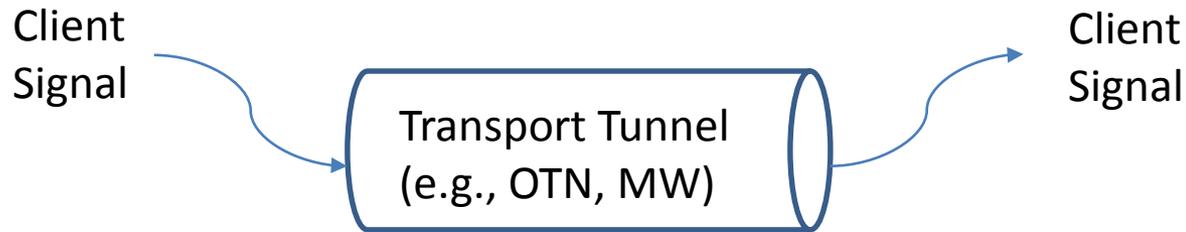
- ➤ Key Features for Transparent Client Signal
    - ➤ No switching needed at client layer;
    - ➤ No Tunnel model needed;
    - ➤ Topology model provides only the access links
    - ➤ Only point-to-point and port-based mapping
    - ➤ Both access links have the same client signal type, rate and coding
- ➤ Typical transparent client signal:
    - ➤ SDH/SONET (STM-n, OC-N);
    - ➤ SAN Storage (ESCON,FICON,FICON4G,FICON8G,FC100,FC200);
    - ➤ Ethernet PHY (GE, 10GE, 40GE, 100GE);
- ➤ Parameters to be Configured:
    - ➤ Client signal Type;
    - ➤ Mapping between the client access link(s) and Transport tunnel;

YANG model for Transparent

```
module: ietf-trans-client-service
  +--rw client-svc
    +--rw client-svc-instances* [client-svc-name]
      +--rw client-svc-name         string
      +--rw client-svc-descr?       string
      +--rw access-provider-id?     te-types:te-global-id
      +--rw access-client-id?       te-types:te-global-id
      +--rw access-topology-id?     te-types:te-topology-id
      +--rw admin-status?           identityref
      +--rw src-access-ports
      |  +--rw access-node-id?      te-types:te-node-id
      |  +--rw access-ltp-id?       te-types:te-tp-id
      |  +--rw client-signal?       identityref
      +--rw dst-access-ports
      |  +--rw access-node-id?      te-types:te-node-id
      |  +--rw access-ltp-id?       te-types:te-tp-id
      |  +--rw client-signal?       identityref
      +--rw svc-tunnels* [tunnel-name]
      |  +--rw tunnel-name    string
      +--ro operational-state?      identityref
      +--ro provisioning-state?     identityref
```

Ethernet Non-transparent Client Signal

Client
Signal

Client
Signal

Transport Tunnel
(e.g., OTN, MW)

Transport Tunnel
(e.g., OTN, MW)

Client
Signal

➤ Typical non-transparent client signal:
  ➤ Carrier Ethernet (EPL, EVPL, EPLan, ...);
➤ Key Features for Ethernet Non-transparent Client Signal
  ➤ Can be point-to-point, multipoint-to-multipoint or rooted-multipoint
  ➤ Access links have the same client signal type (Ethernet) but they can have different rates and coding
  ➤ Packet-based mapping: VLAN classification and operations are possible
  ➤ No Tunnel model needed;
  ➤ Topology model provides only the access links
    ➤ Candidate draft: draft-zheng-ccamp-client-topo-yang;
➤ Parameters to be Configured:
  ➤ Basic Service parameters;
  ➤ Explicit Ethernet Service Profiles;
  ➤ Network access information (including VLAN classification and operations);

YANG model for non-transparent


```
Eth-specific        +--rw CIR?                              uint64
Attributes          +--rw CBS?                              uint64
                    +--rw EIR?                              uint64
                    +--rw EBS?                              uint64
                    +--rw color-aware?                      boolean
                    +--rw coupling-flag?                    boolean
                  +--rw etht-svc-instances* [etht-svc-name]
Basic Service       +--rw etht-svc-name                     string
Information         +--rw etht-svc-descr?                   string
                    +--rw etht-svc-type?                    etht-types:service-type
                    +--rw access-provider-id?    te-types:te-global-id
                    +--rw access-client-id?      te-types:te-global-id
                    +--rw access-topology-id?    te-types:te-topology-id
Access              +--rw etht-svc-access-ports* [access-port-id]
Information         |   +--rw access-port-id                        uint16
                    |   +--rw access-node-id?                       te-types:te-node-id
                    |   +--rw access-ltp-id?                        te-types:te-tp-id
```

Ethernet Client Tunnel

Client
Signal

Client Tunnel

Transport Tunnel
(e.g., OTN, MW)

Client Tunnel
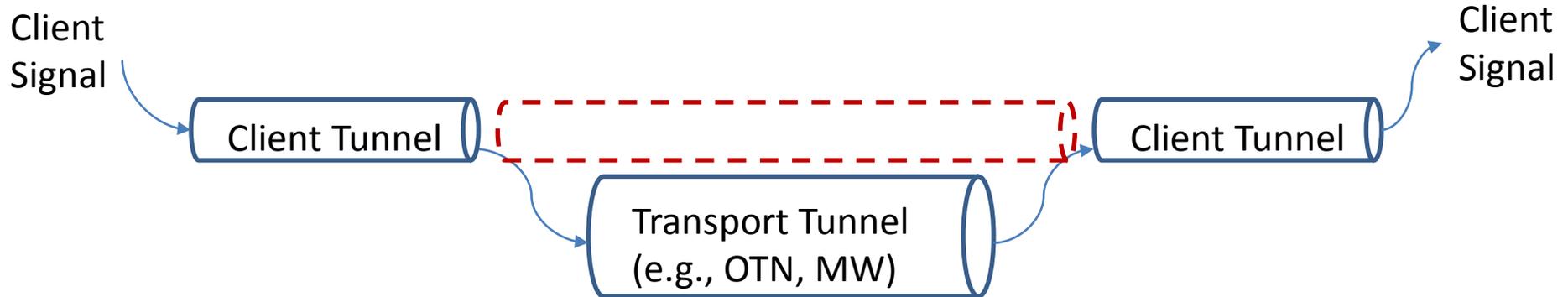
Client
Signal

➢ Key Features for Ethernet Client Tunnel
  ➢ Hop-based, Switching needed at client layer;
  ➢ Topology/Tunnel model needed;
    ➢ Candidate draft: draft-zheng-ccamp-client-topo-yang;
    ➢ Candidate draft: draft-zheng-ccamp-client-tunnel-yang;

Open Issues & Next Step

- **Expect consensus on current transparent/non-transparent separation;**

- Model available on: https://github.com/haomianzheng/IETF-ACTN-YANG-Model/tree/master/YANG/ccamp/Client-signal-yang ;

- Ask for WG Adoption;