

YANG Data Model for FlexE Interface Management

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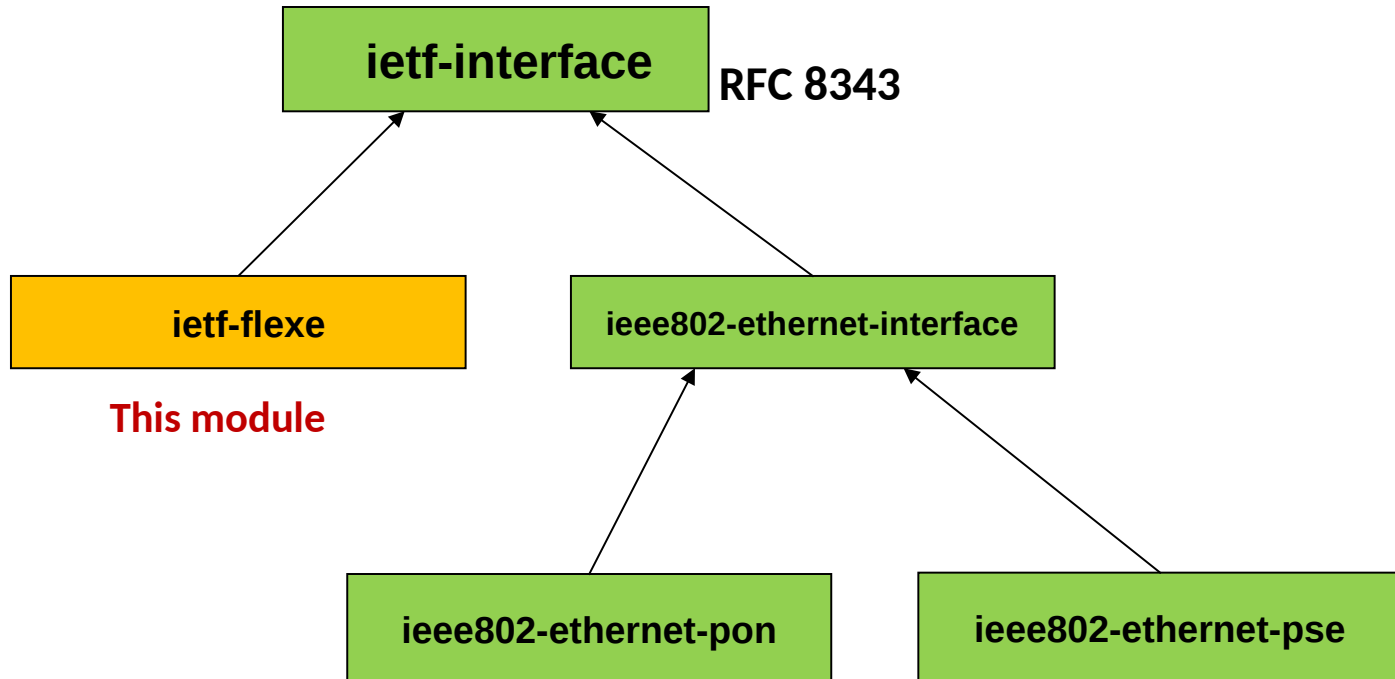
Backgrounds

- Flex Ethernet is a mechanism specified by OIF
- Used widely in DC interconnection, and wider applications are in prospect for both transport equipment and routers
- ITU-T incorporated FlexE as one of the primary interfaces in recommendations (e.g., G.8023 “Characteristics of equipment functional blocks supporting Ethernet physical layer and FlexE interfaces”)

Requirements on FlexE Interface Mgmt

- Configuration of FlexE Group, binding of FlexE PHYs, and its FlexE Instances, support of slot configuration
- Support of interface management in applications for both SDN and distributed routing
- Remote configuration of FlexE interfaces and FlexE status retrieval
- Support of FlexE 2.0, but backwards compatible with FlexE 1.0

Inheritance Hierarchy of FlexE interface



- ✓ Augment to **ietf-interface** , a FlexE Group can be used as a network interface

YANG Tree Diagram of FlexE interface

module: ietf-flexe

augment /if:interfaces/if:interface:

```
+--rw flexe-group                               //Each FlexE Group is a network interface
  +--rw group-number?      uint32
  +--rw slot-granularity?  slot-granularity-enumeration
  +--rw flexe-phy-type?    flexe-phy-enumeration
  +--rw flexe-calendar-inuse?  calendar-enumeration
  +--rw flexe-phy-list* [phy-number]           //Each Flexe Group has a Flexe PHY list
  | +--rw phy-number      uint8
  | +--rw flexe-inst-list* [instance-number]   //Each Flexe PHY has an Flexe Instance list
  | +--rw instance-number uint8
  | +--rw calendar-slot-list* [slot-id]
  |   +--rw slot-id      uint8
  |   +--rw flexe-slot-status? slot-status-enumeration //slot states {used, unused, unavail}
+--rw flexe-client-list* [client-id]         //Each Flexe Group has a client list
  +--rw client-id      uint16
  +--rw group-number?  uint32
  +--rw mapped-slot-list* [mapped-slot-id]   //Each Client uses a mapped slot list
  | +--rw mapped-slot-id  uint8
  | +--rw mapped-phy-number? uint8
  | +--rw mapped-inst-number? uint8
+--ro flexe-client-status? uint8
```

Summary & Next Step

- This doc added to the IETF interface the configuration capability of FlexE as defined in OIF FlexE 2.0
- The model is compatible with both YANG 1.1 and NMDA
- Hierarchy Logic of FlexE Group, PHY and Instance are modelled in the module
- Call for WG reviews and adoption?

Thank You