

# YANG Data Model for CU Separated BNG Protocol

draft-hu-rtgwg-cu-separation-yang-model

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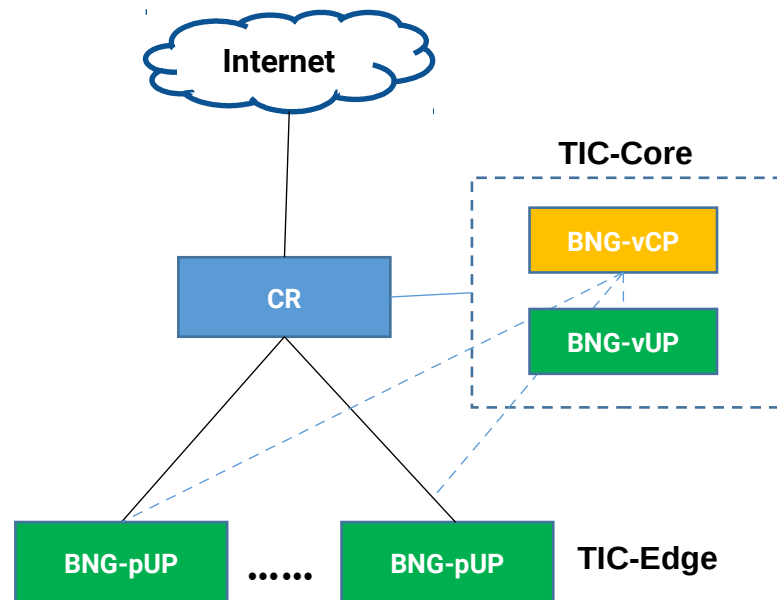
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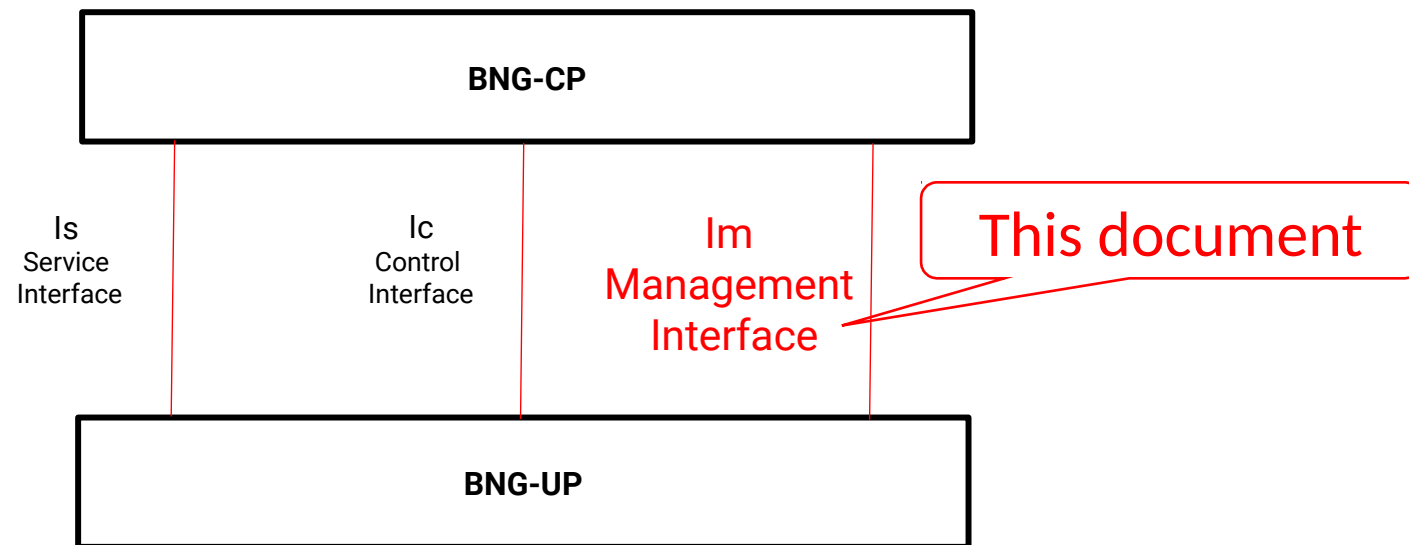
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# CUSP Management Interface

- C/U separation vBNG architecture which combined NFV and SDN advantages satisfy the requirements of field network



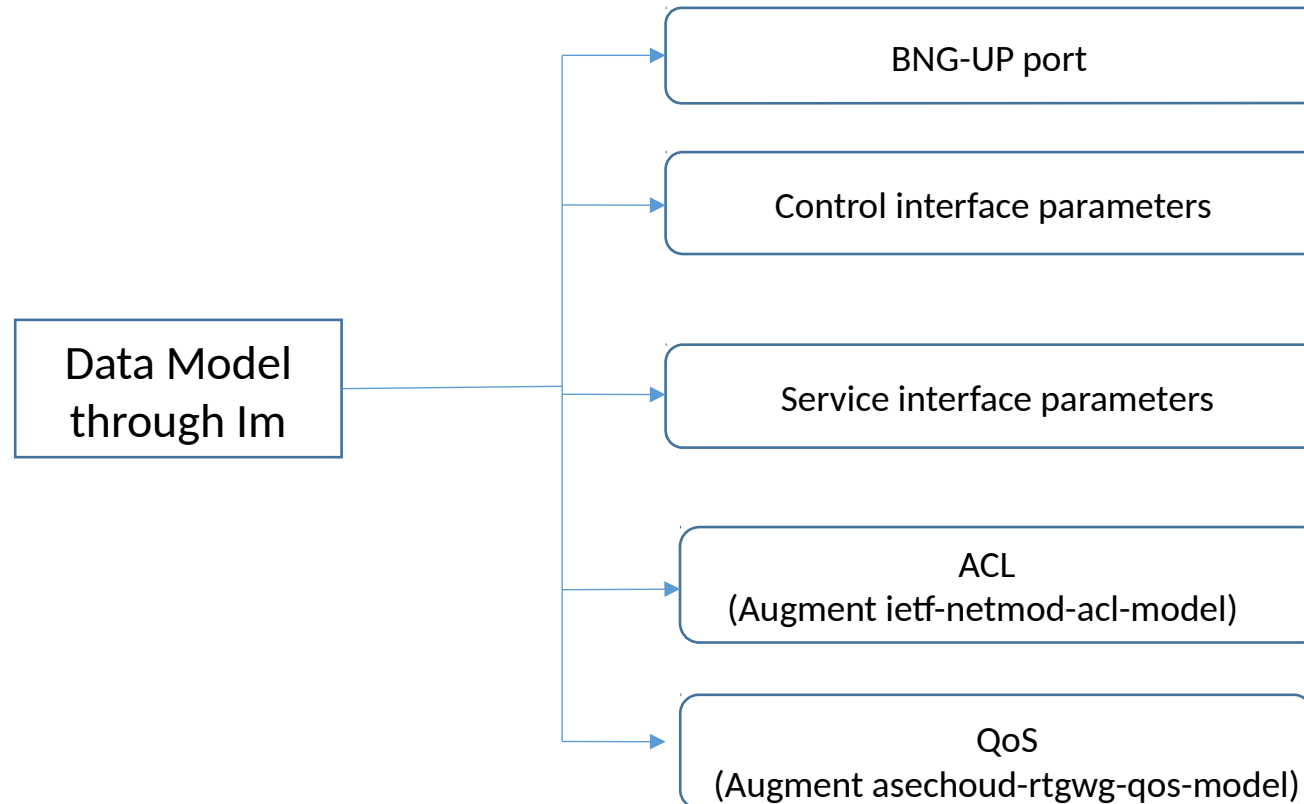
Architecture of C/U separation vBNG



Interfaces of C/U separation vBNG

# CUSP YANG Data model Through Im

- The YANG data model through Management Interface for BNG-UP includes: BNG-UP Port, Control interface parameters, service interface parameters, ACL and QoS, etc.



# BNG-UP Port Configuration

- BNG-CP configures BNG-UP port parameters information through the management interface by Netconf protocol

```
+--rw port
|  +--rw port* [name]
|    +--rw name      if:interface-ref
|    +--rw ethernet
|      |  +--rw lacp?  boolean
|      +--rw mac-offset?  uint32
|      +--rw vlans
|        +--rw tag* [index]
|          +--rw index    uint8
|          +--rw tag
|            +--rw tag-type?  string
|            +--rw vlan-id?  vlan-id
```

# Configure Service Interface Parameters

- VxLAN/VxLAN-GPE protocol is used for the service interface.
- The VxLAN tunnel parameters are configured through management interface for BNG-UP.

```
+--rw vxlan-channel* [vxlan-tunnel-id]
|  +--rw vxlan-tunnel-id      uint32
|  +--rw vxlan-tunnel-name?   string
|  +--rw address-family* [af]
|      +--rw af                address-family-type
|      +--rw tunnel-source-ip? inet:ip-address
|      +--rw tunnel-destination-ip? inet:ip-address
|      +--rw bind-vxlan-id* [vxlan-id]
|          +--rw vxlan-id      vxlan-id
```

# Configure Control Interface Parameters

- The CUSP parameters for control interface are configured through management interface for BNG-UP. below is the tree structure.

```

+--rw cusp-channel
|  +--rw address-family* [af]
|  |  +--rw af          address-family-type
|  |  +--rw control-ip? inet:ip-address
|  +--rw name?         string
|  +--rw id?           uint32
|  +--rw port?         uint32
|  +--rw disconnect
|      +--rw (response-delay)?
|          +--:(nolimitflag)
|              |  +--rw forever?    enumeration
|          +--:(range)
|              +--rw delay-time?    uint32

```

# BNG-CP Configuration

```
augment /lne:logical-network-elements/lne:logical-network-element:
+--rw ietf-vbng
|
|+--rw bng-cp
| | +--rw bng-cp-name?    string
| | +--rw enable?        boolean
| | .....
+--rw multicast-service
| | +--rw multicast-global
| | | +--rw keepalive-timer?  enumeration
| | | +--rw query-interval?   uint16
| | +--rw igmp-service-profile
| | | +--rw igmp-service-profile* [service-profile-num]
| | | .....
| | +--rw mld-service-profile
| | | .....
+--rw bng-pppox
| +--rw pppox-ipv6cp-cfg
| | .....
| +--rw pppox-ipcp-cfg
| | .....
+--rw pppoe-cfg* [template]
```

# BNG-UP Configuration

```
+--rw bng-up!  
|  +--rw bng-up* [shelf-no]  
|    +--rw shelf-no          uint8  
|    +--rw bng-up-name?     string  
|    +--rw netconf-server!  
|      |  +--rw ip           inet:ipv4-address  
|      |  +--rw user-name?   string  
|      |  +--rw password?   string  
|      |  +--rw port?       uint32  
|      +--rw keepalive-sink? enumeration
```



# Security Consideration and IANA Updated

- The Security and IANA consideration section is updated based on T. Petch's comments(Thanks, ^\_^).
- Rich the Security consideration based on <https://trac.ietf.org/trac/ops/wiki/yang-security-guidelines>.
- Add the IANA consideration part to register the vbng yang model.

# Next Steps:

- More comments for CUSP YANG data model?
- Continue to rich the document based on comments and implementation

Thank you