YANG data model of Control-Plane and User-Plane Separation BNG

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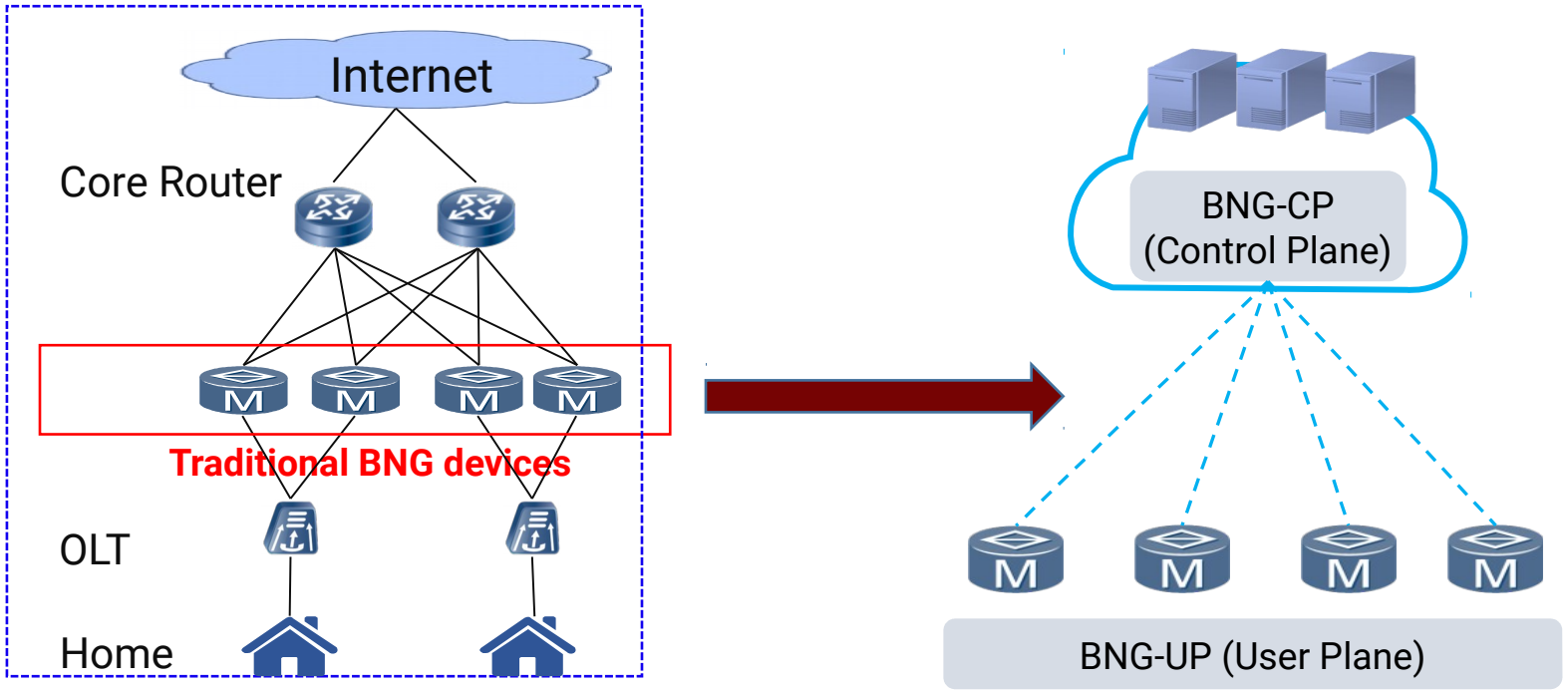
Background-vBNG Control pland and User Plane Separation



BNG-CP is a user control and management component

BNG-UP is a network edge and user policy implementation component

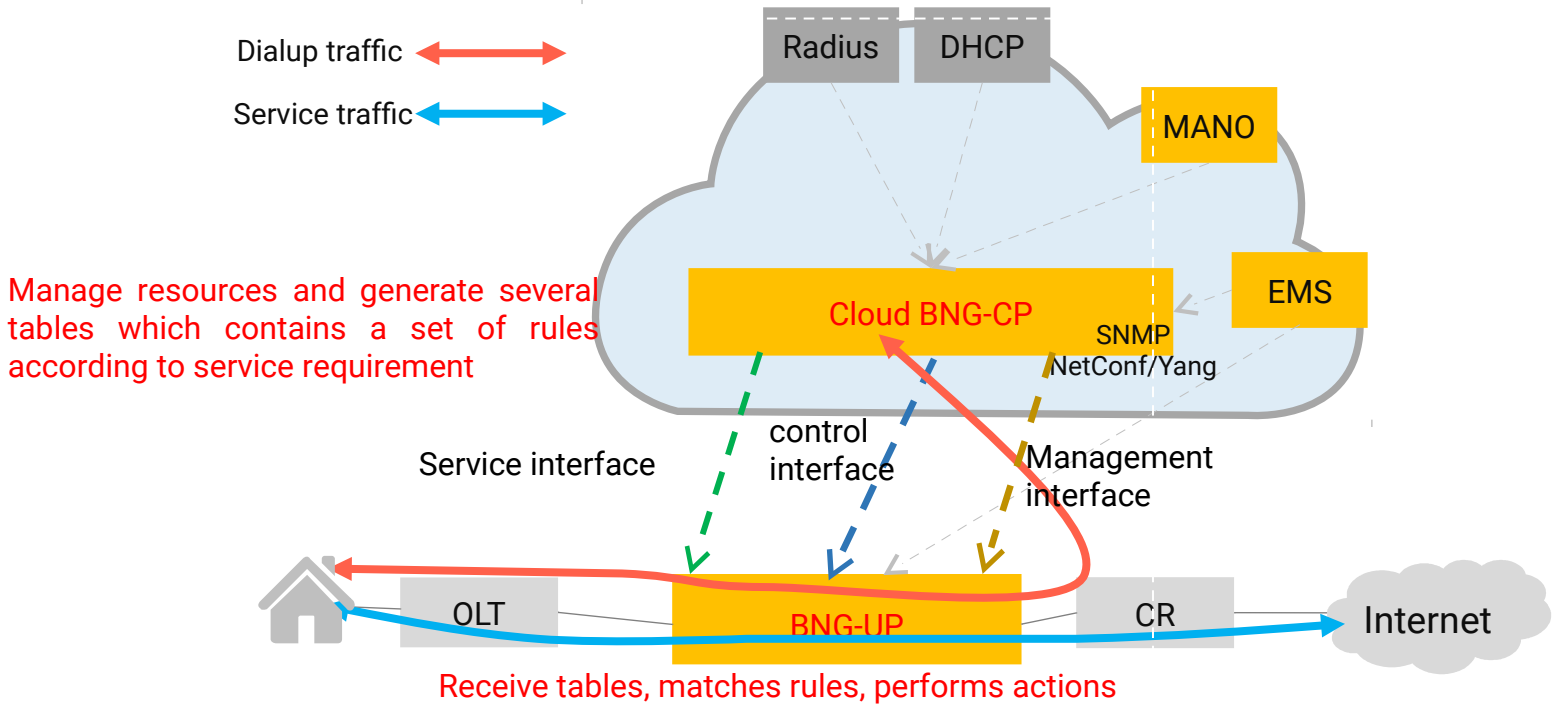
Painpoints for tradition BNG

(1) Services are **not well balanced** in different parts resulting to different utilization of resources such as sessions and IP addresses

(2) BNG is evaluated by indicators some related with forwarding resources and some related with controlling resources. Both can be the limitation of a BNG device .

(3) BNGs are configured on each device. It's not convenient **on management**.

vBNG interfaces



VXLAN: Service interface

Interface is used to establish VXLAN tunnels between CP and UP with PPPoE and IPoE packets transmitting over the VXLAN tunnels

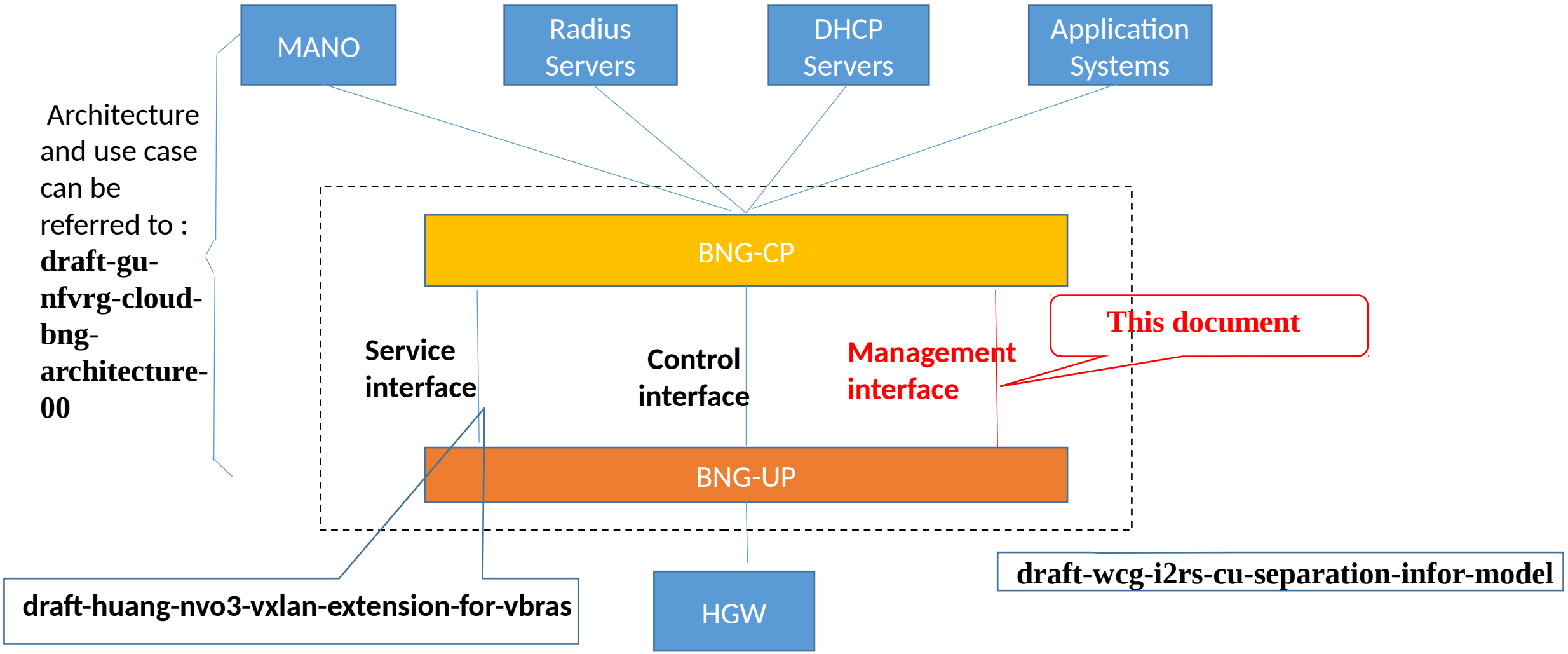
Control interface

CP uses this interface to deliver service entries with IP, QoS, etc, and UP uses this interface to report service events to the CP including traffic statistics.

Management interface

CP uses this interface to deliver configurations to the UP with YANG models to be contributed.

vBNG drafts


MANO
Radius Servers
DHCP Servers
Application Systems
Architecture and use case can be referred to : draft-gu-nfvrg-cloud-bng-architecture-00
BNG-CP
Service interface
Control interface
Management interface
This document
BNG-UP
draft-huang-nvo3-vxlan-extension-for-vbras
HGW
draft-wcg-i2rs-cu-separation-infor-model

vbng configuration

- vbng is based on LNE
  - vbng-name
  - enable

```
module: ietf-vbng
  augment /lne:logical-network-elements/lne:logical-network-element:
    +--rw ietf-vbng
       +--rw vbng-name?          string
       +--rw enable ?             boolean
```

vbng configuration

```
module: ietf-vbng
  +--rw ietf-vbng
        +--rw vbng-name?              string
        +--rw enable ?                 boolean
        +--rw interfaces
        |       +--rw interface* [name]
        |       +--rw name          if:interface-ref
        |       +--rw ethernet
        |       |   +--rw lacp?    boolean
        |       +--rw mac-offset?    uint32
        |       +--rw vlans
        |   ...     ...
        +--rw openflow-channel
        |       +--rw ofls-name?     string
        |       +--rw dpid?          uint32
        |       +--rw of-port?       uint32
        +--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?                 address-family-type
        |           +--rw tunnel-destination-ip?            address-family-type
        |           +--rw bind-vxlan-id* [vxlan-id]
        |             +--rw vxlan-id     vxlan-id
        +--  rw acl
        |    ... ...
        +--  rw qos
             ... ...
```

Comments

- Comments are welcomed.
- Anyone has the interest to work together?

Thank you