YANG data module for uCPE management

draft-shytyi-opsawg-vysm-06

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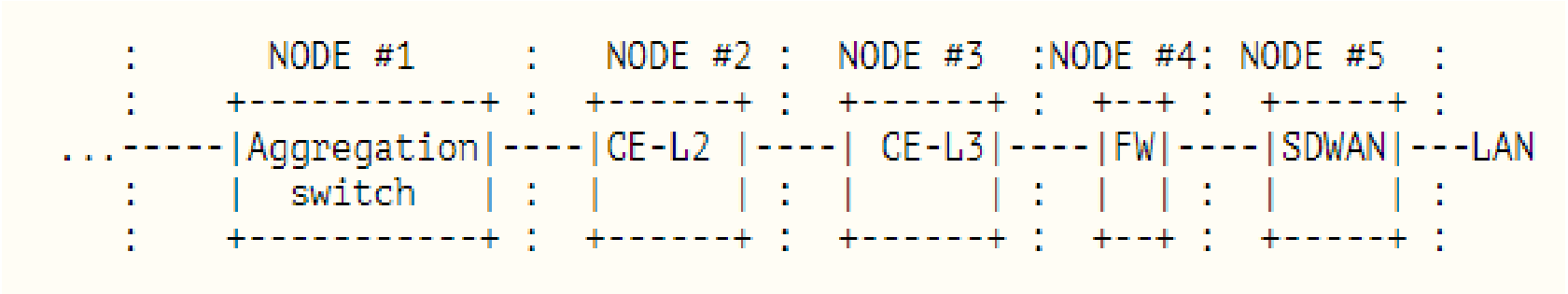
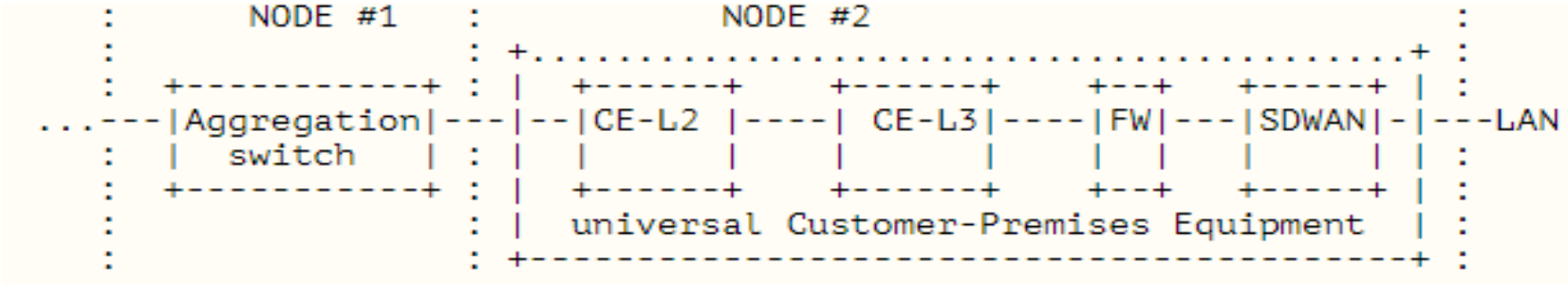
Problem statement 1 – Classical approach.



1. The installation of multiple equipment requires one/multiple technician.
2. Multiple equipment types means multiple boxes. (price for delivery, occupied space in the rack)
3. Modification of the service chain elements/phy links involve technician on the site (again).

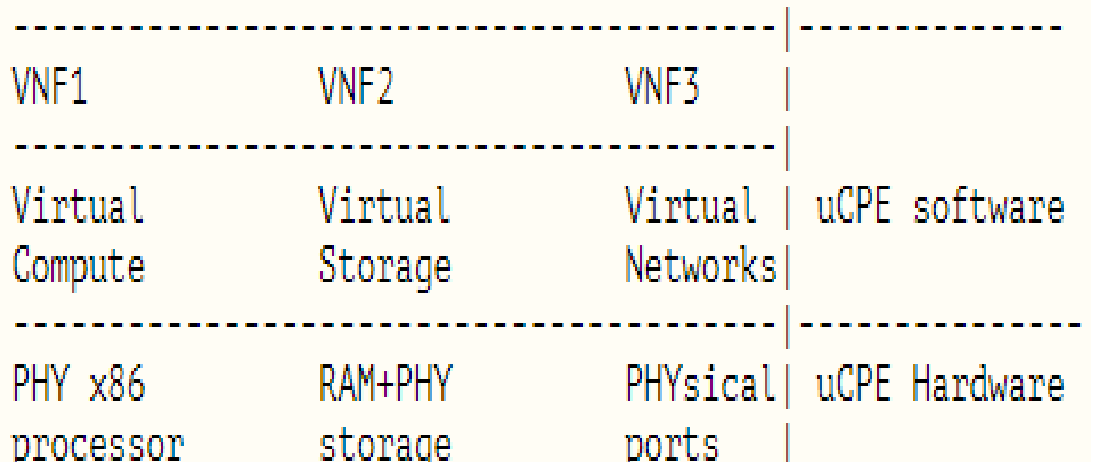
uCPE approach – expectations:

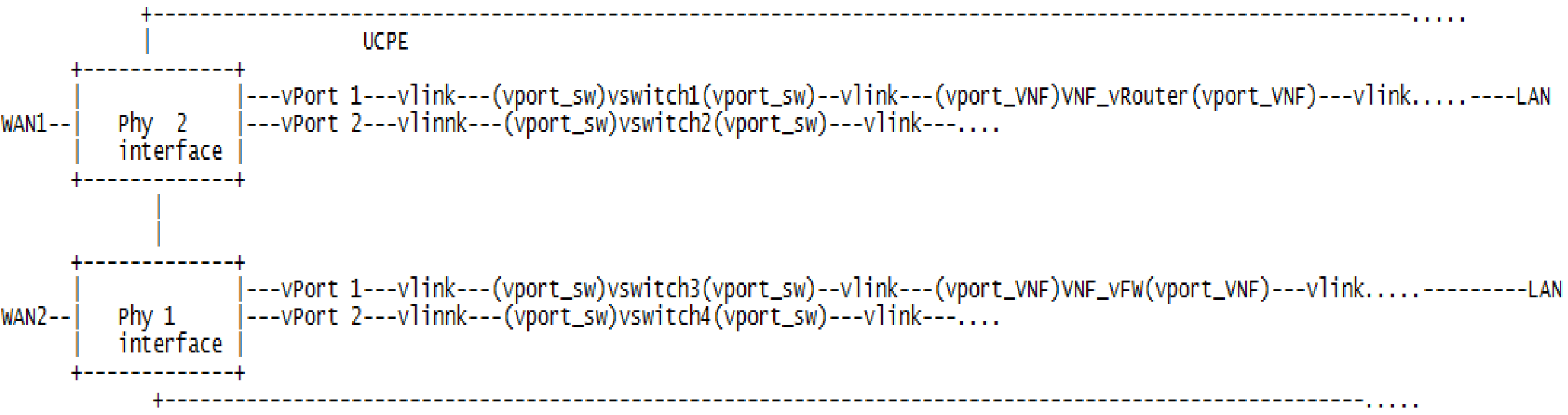
1. uCPE replaces multiple types of equipment with 1 unit by virtualizing them as Virtual Network Functions on the top of NFVIs.
2. uCPE facilitates the interconnection between the Network Funtions (NF) as interconnection between NF is performed via virtual links.
3. uCPE facilitates the 0day configuration of the VNFs as its 0day configuration can be put remotely.



Problem statement 2 – uCPE management

1. Virtualization layers from different suppliers have different netconf/yang interface commands.
2. The unique interface is required to manage the virtualized.

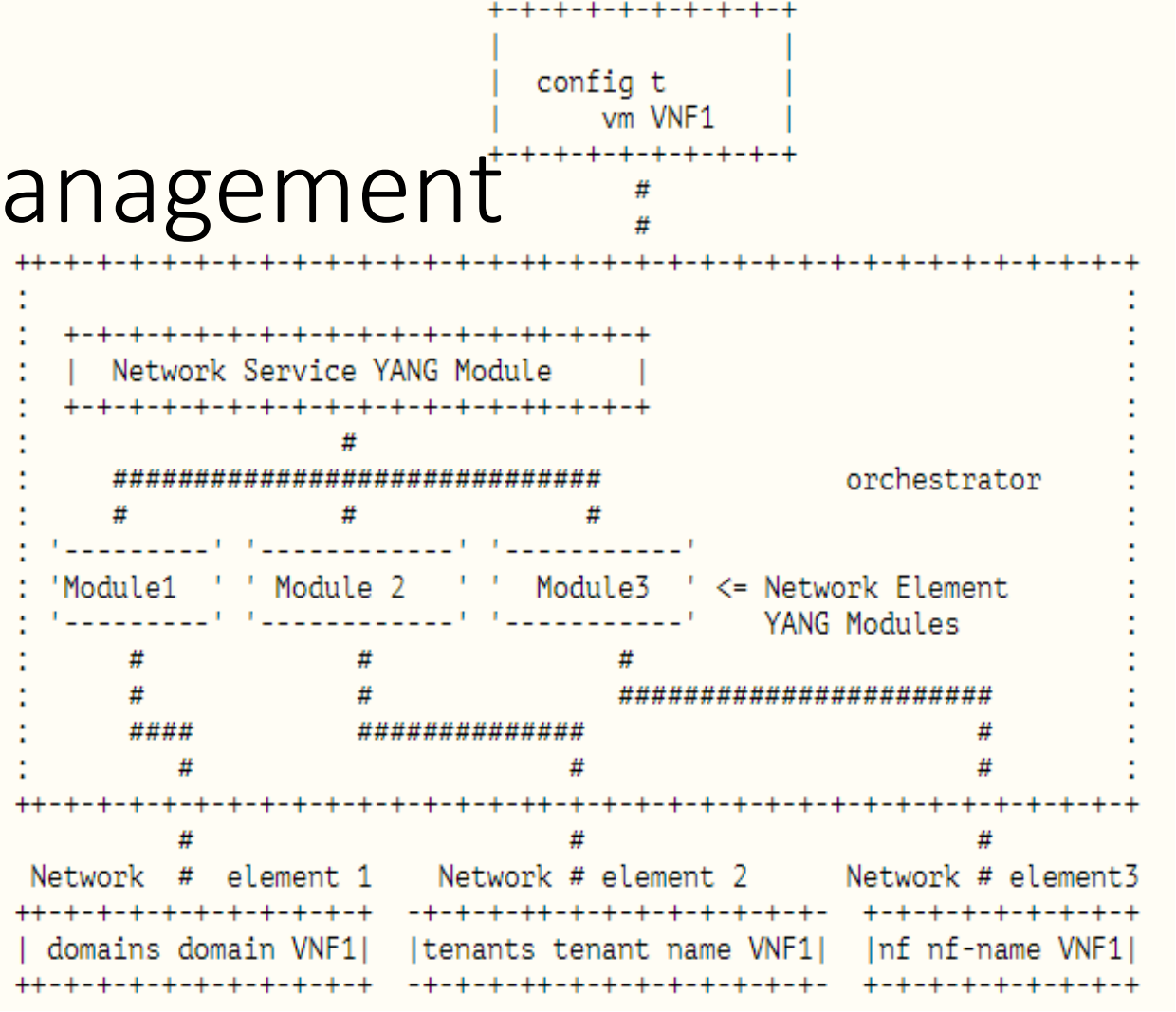


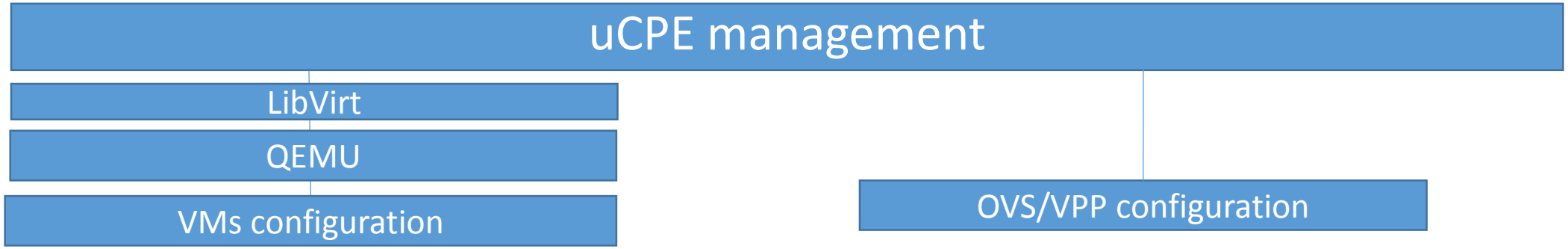


YANG module for uCPE management

draft-shytyi-opsawg-vysm-06 includes the yang model that is used to address:

1. uCPE resources management (vSW, VNF…)
2. Management of different type of uCPEs with unique model

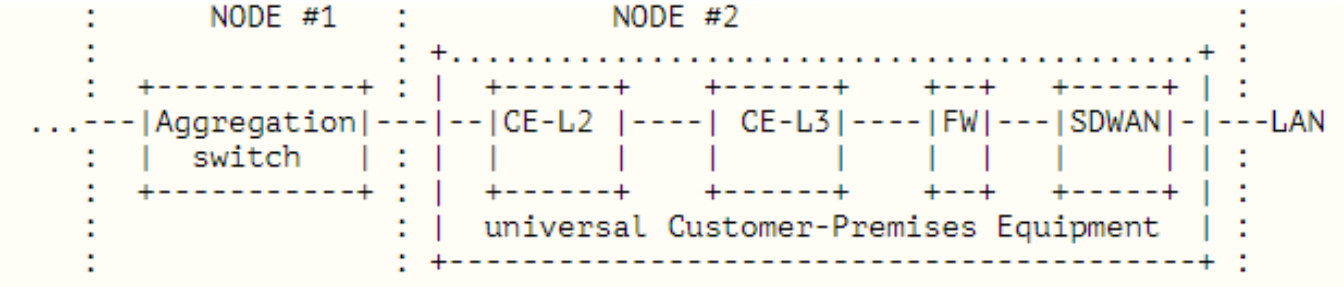




Points to address:

1. Should we introduce in the model the format of the disk (IDE/virtio) ?
2. Should we add on the top of the model an augmentation statement?
3. Should we add CPU pinning for VNF?
4. Adoption of I-D by the working group.

The uCPE all VNF in one hardware



Yang module for uCPE management

```
module: ietf-ucpe
    +--rw ucpe* [name]
       +--rw name                string
       +--rw links* [link]
       |  +--rw link     string
       +--rw phyInterfaces* [interface]
       |  +--rw interface     string
       |  +--rw ports* [port]
       |     +--rw port     string
       |     +--rw link?    -> ../../../links/link
       +--rw switches* [switch]
       |  +--rw switch     string
       |  +--rw ports* [port]
       |     +--rw port     string
       |     +--rw name?    string
       |     +--rw link?    -> ../../../links/link
       +--rw vms* [vm]
          +--rw vm               string
          +--rw ports* [port]
          |  +--rw port     string
          |  +--rw name?    string
          |  +--rw link?    -> ../../../links/link
          +--rw ram?             uint64
          +--rw cpu?             uint64
          +--rw storages* [id]
          |  +--rw id             string
          |  +--rw location?    string
          +--rw day0-config
             +--rw location?          string
             +--rw day0-var-path?     string
             +--rw variable* [name]
                +--rw name      string
                +--rw value?    string
```

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Backup slides


```
<ucpe xmlns="urn:...:ietf-ucpe">
    <name>ucpe1</name>
    <links>
     <link>l1</link>
    </links>
    <links>
     <link>l2</link>
    </links>
<switches>
     <switch>lan</switch>
     <ports>
      <port>10</port>
      <name>l2p10</name>
      <link>l2</link>
     </ports>
    </switches>
```

```
<switches>
    <switch>wan</switch>
    <ports>
     <port>10</port>
     <link>l1</link>
    </ports>
</switches>
<vms>
    <vm>VNF-vCPE</vm>
    <ports>
     <port>1</port>
     <name>l1p1</name>
     <link>l1</link>
    </ports>
    <ports>
     <port>2</port>
     <name>l2p2</name>
     <link>l2</link>
    </ports>
```

```
<ram>2048</ram>
     <cpu>2</cpu>
     <storages>
      <id>1</id>
      <location>http://192.168.2.1/vCPE-x86.qcow2</locatior
     </storages>
<day0-config>
     <location>https://192.168.2.1/vCPE-day0.iso</location>
     <day0-var-path>/config.rom</day0-var-path>
     <variable>
      <name>hostname</name>
      <value>IETF-vCPE</value>
     </variable>
     <variable>
      <name>ipaddress</name>
      <value>192.168.1.2 255.255.255.0</value>
     </variable>
    </day0-config>
</vms>
```