

# Benu SD-Edge on OSM

---

Sumesh Malhotra

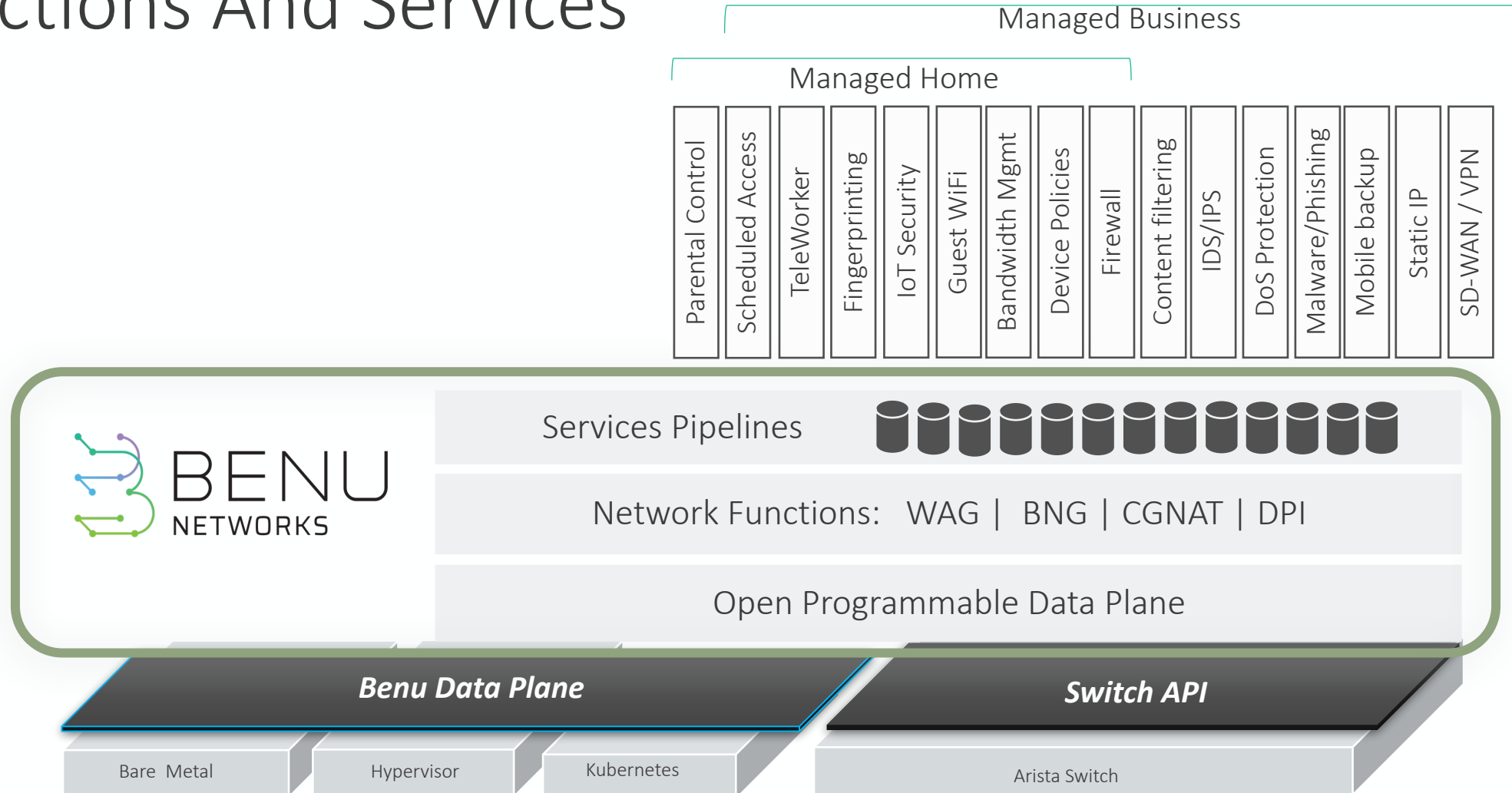
Benu Networks

---

# Simplifying the Edge

A fully-virtualized, software-defined edge for carrier networks that can run in the cloud, edge data centers, and regional hubs.

# Benu SD-Edge Platform For Virtual Network Functions And Services



---

# My search for the right MANO

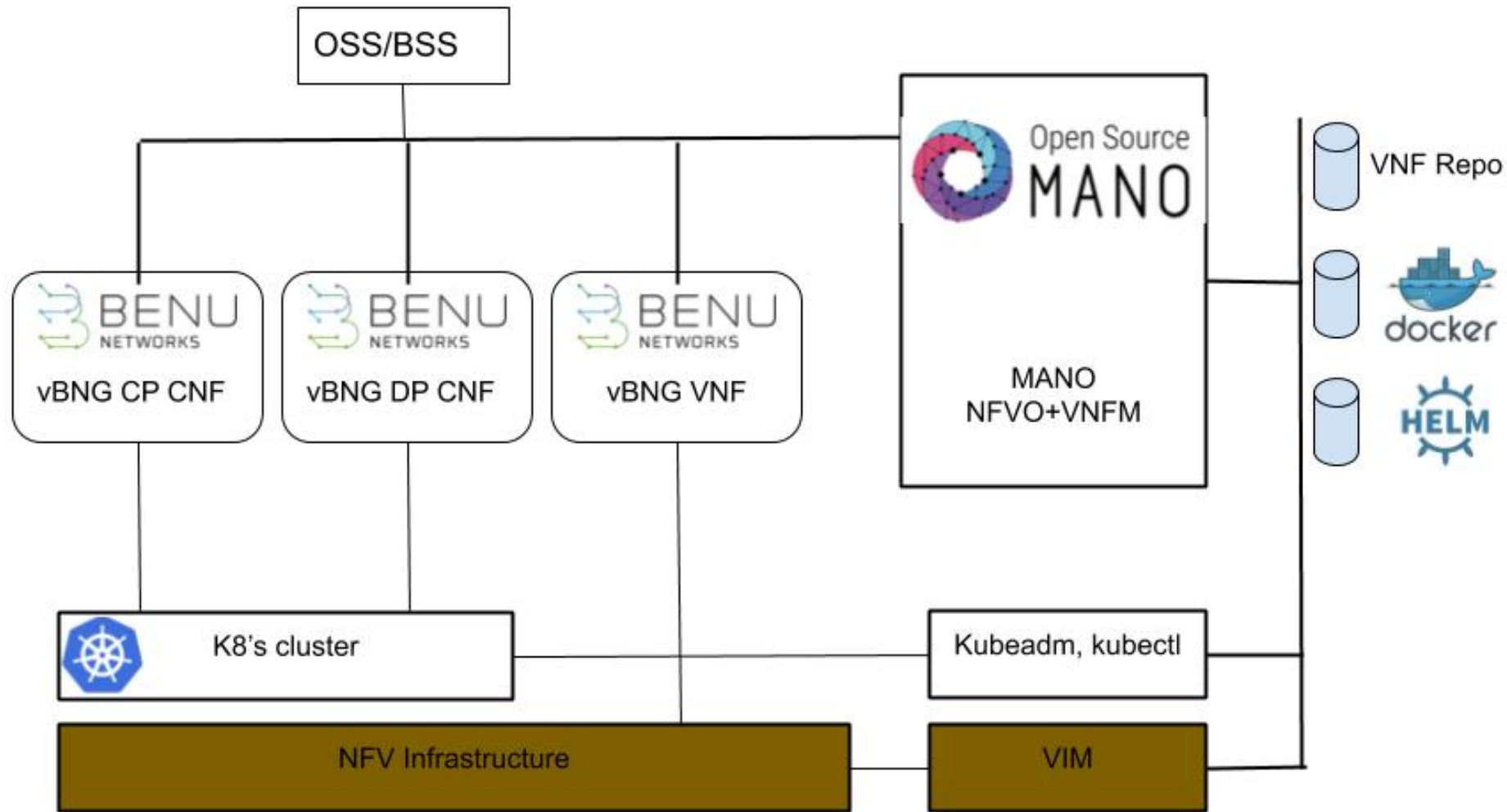
- Operator's requirements for a MANO are different from a VNF vendor's requirements
- What does VNF vendor really want?
- We want to showcase our VNFs to our customers. We want to demonstrate how easy it is to configure, monitor and scale our VNF.
- As a secondary requirement, we want a consistent way to do these things for our in-house testing

---

# What we don't want?

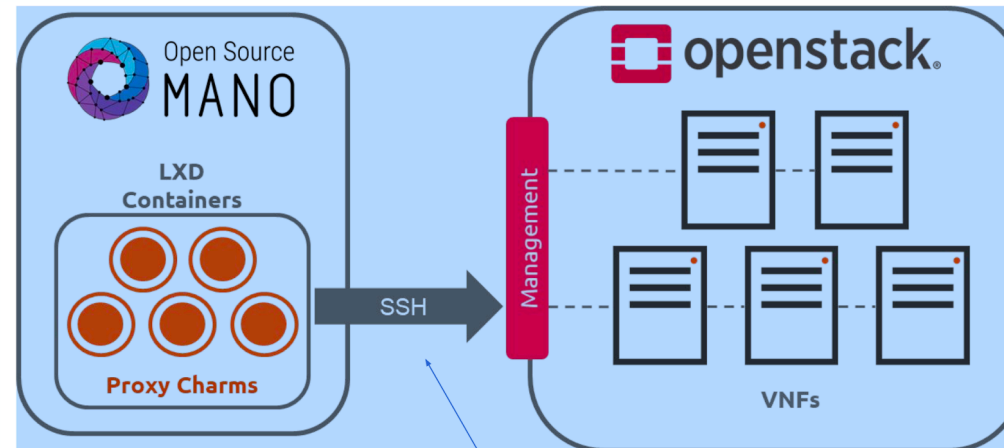
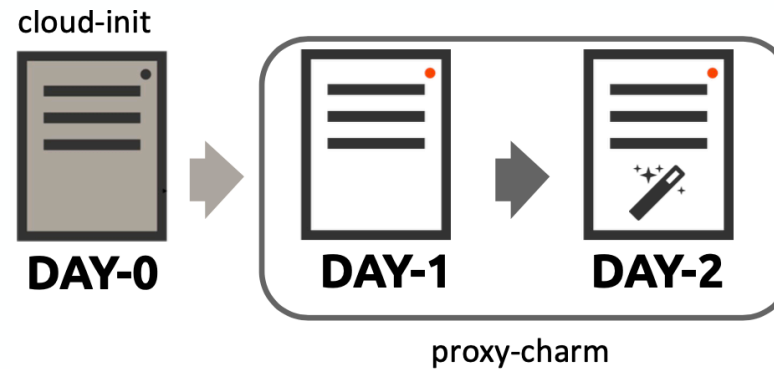
- Super Complicated installation. If I need to read a manual to install a software, I'm out!
- Very high requirements for compute, memory and storage
- We don't want to do a lot of work to get this going! We want to focus on our application.

# Use-case: vBNG VNF/CNF



# Step 1: Configure (Day-1 Operation)

```
vnf-configuration:
  juju:
    charm: benu
    proxy: true
  initial-config-primitive:
  - seq: '1'
    name: config
    parameter:
      - name: ssh-hostname
        value: <rw_mgmt_ip>
      - name: ssh-username
        value: xxxxxxxx
      - name: ssh-password
        value: xxxxxxxx
  - seq: '2'
    name: sinit
    parameter:
      - name: bdcip
        data-type: STRING
        value: '172.21.248.51'
  config-primitive:
  - name: sinit
    parameter:
      - name: bdcip
        data-type: STRING
        default-value: '172.21.248.51'
```



---

# Step 2: Monitor (Day-2 Operation)

metrics:

- name: benu\_tunnelcount
- name: benu\_subcount

monitoring-param:

- aggregation-type: AVERAGE  
id: benu\_vwag\_tunnels  
name: benu\_vwag\_tunnels  
vnf-metric:  
vnf-metric-name-ref: benu\_tunnelcount
- aggregation-type: AVERAGE  
id: benu\_vwag\_subs  
name: benu\_vwag\_subs  
vnf-metric:  
vnf-metric-name-ref: benu\_subcount



---

# Step 3: Scale (Day-2 Operation)

```
scaling-group-descriptor:  
- name: "benu_vwag_autoscale"  
  min-instance-count: 1  
  max-instance-count: 2  
  scaling-policy:  
  - name: "benu_vwag_subcount_above_threshold"  
    scaling-type: "automatic"  
    threshold-time: 10  
    cooldown-time: 180  
    scaling-criteria:  
    - name: "benu_vwag_subcount_above_threshold"  
      scale-in-threshold: 10000  
      scale-in-relational-operation: "LT"  
      scale-out-threshold: 12000  
      scale-out-relational-operation: "GT"  
      vnf-monitoring-param-ref: "benu_vwag_subs"  
vdu:  
- vdu-id-ref: benu_vWAG_vnfd-VM  
  count: 1
```

---

# Last but not least

- Ease of generating descriptors and packages.

---

# Thank You