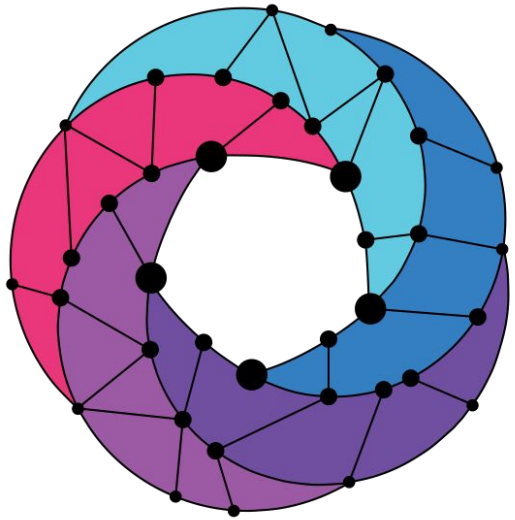

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OSM#9 Hackfest
Orchestrating a PNF in OSM

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ETSI

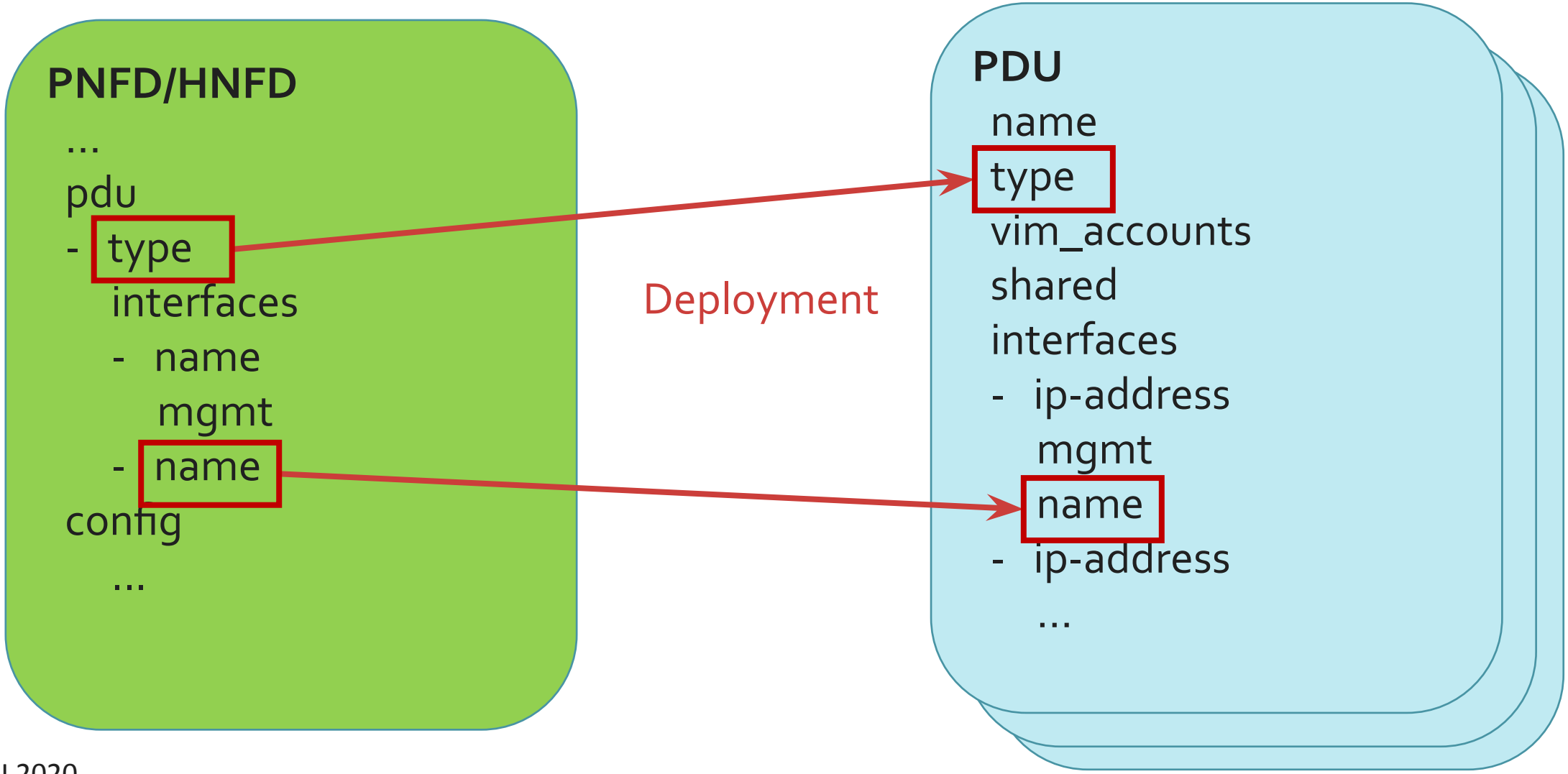
PNF / HNF - Definitions

- **PNF:** Physical network function. It refers to a HW box that provides a networking function. Routers, firewalls, load balancers, etc.
- **PDU:** Physical deployment unit. It refers to the “instance” of the physical appliance that will be incorporated to a Network Service instance.
- **HNF:** Hybrid network function: Network function composed of both physical and virtual elements.

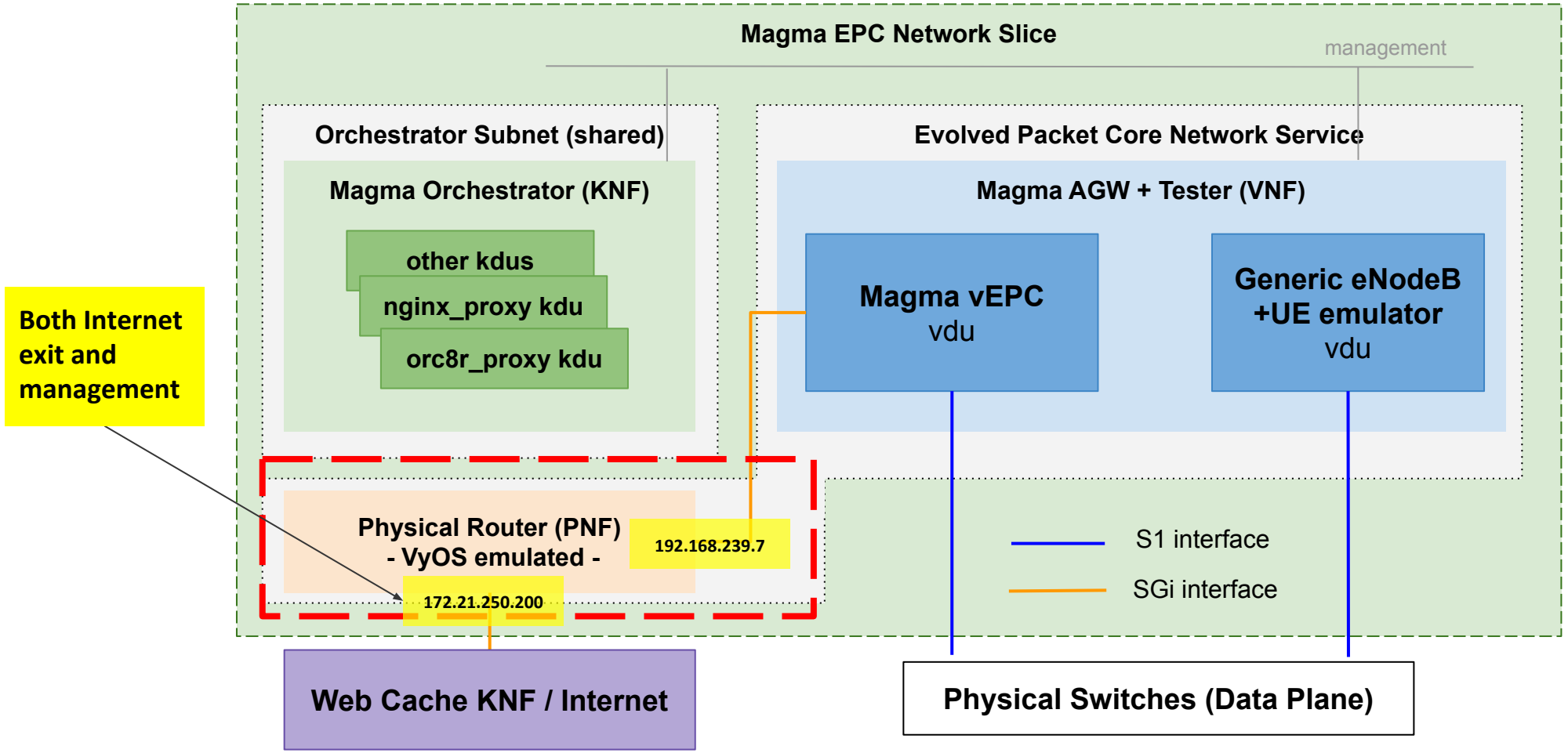
In OSM, there are no fundamental differences between a VNF, a PNF or a Hybrid Network Function (HNF)

In those cases where we want to define NS packages consisting of PNF packages or HNF packages, **OSM needs to be instructed about the available PDUs.**

PNFD/HNFD vs PDU



Let’s orchestrate the PNF!



(1) Tell OSM about the PDU instance(s)

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Via the OSM CLI

a) Create a file that describes the PDU (for example, pdu.yaml)

```
name:         router01
description:    VyOS Router
type:         gateway
vim_accounts: [ YOUR_VIM_ID_HERE ]
shared:       false
interfaces:
 -  name:      eth0
    ip-address: 172.21.250.200
    vim-network-name: osm-ext
    mgmt:      true
 -  name:      eth1
    ip-address: 192.168.239.7
    mgmt:      false
```

b) Create the PDU in OSM:

```
osm pdu-create --descriptor_file pdu.yaml
```

(1) Tell OSM about the PDU instance(s)

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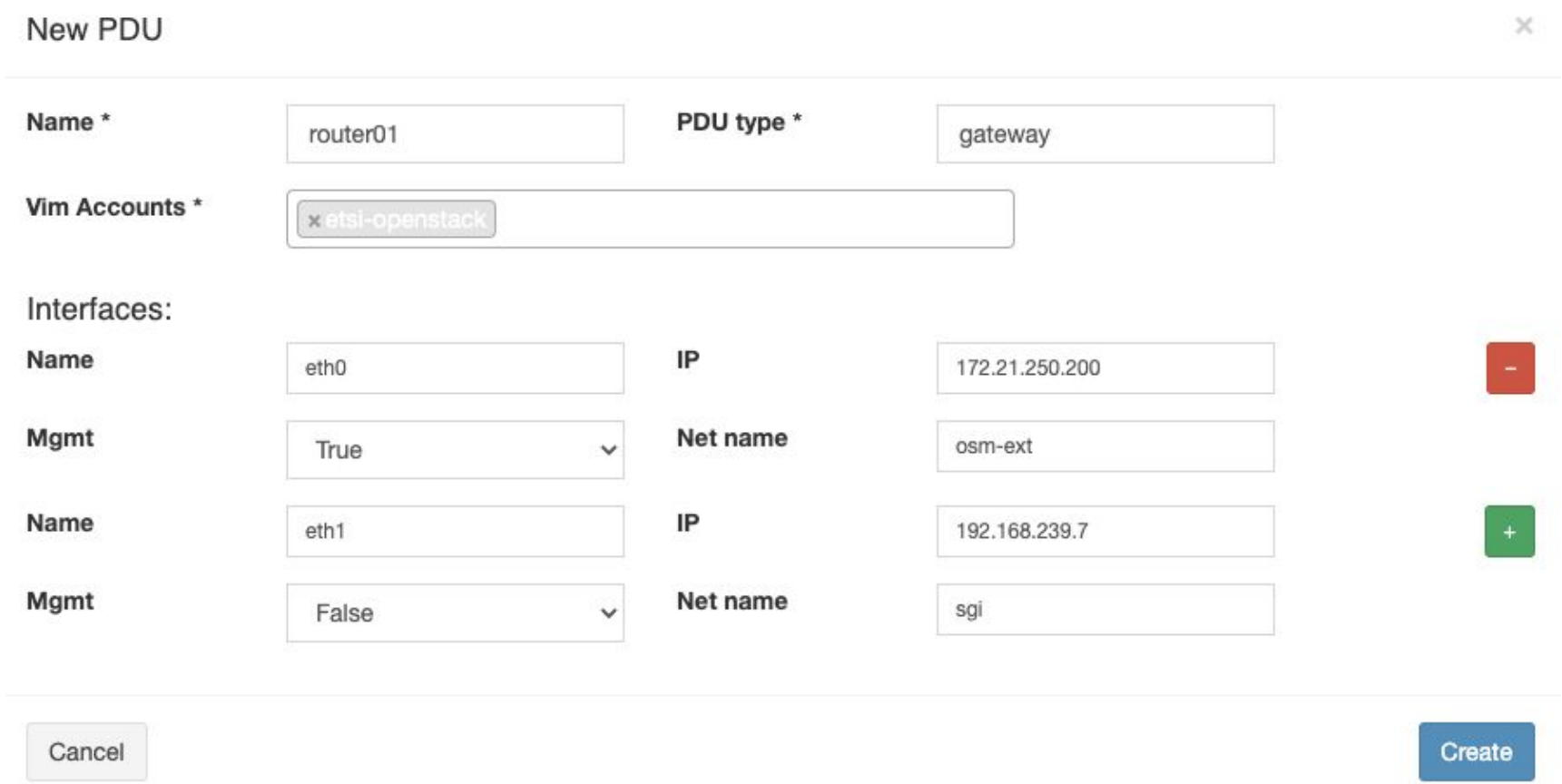
Or via the OSM GUI



(2) Now create the PNFD

In the june_2 folder, you will find the PNFD under the hackfest_gateway_vnfd folder:

```
vnfd-catalog:
    vnfd:
    -   connection-point:
        -   name: gateway_public
            type: VPORT
        description: Gateway PNF
        id: hackfest_gateway_vnfd
        mgmt-interface:
            cp: gateway_public
        name: hackfest_gateway_vnfd
        short-name: hackfest_gateway_vnfd
        vdu:
        -   description: gateway_pdu
            id: gateway_pdu
            interface:
            -   external-connection-point-ref: gateway_public
                name: eth0
                type: EXTERNAL
            pdu-type: gateway
        vnf-configuration:
            ...
```

(3) Next, include it in your NSD

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In the june_2 folder, you will find the NSD under the hackfest_magma-agw-enb_nsd folder. Uncomment those lines to include the PNF.

```
    constituent-vnfd:
    -   member-vnf-index: 'MagmaAGW+srsLTE'
        vnfd-id-ref: hackfest_magma-agw-enb_vnfd
#     -   member-vnf-index: 'VYOS-PNF'
#         vnfd-id-ref: hackfest_gateway_vnfd
    connection-point:
    -   name: nsd_cp_mgmt
        vld-id-ref: mgmt
    -   name: nsd_cp_sgi
        vld-id-ref: sgi
    vld:
    -   id: mgmt
        name: mgmt
        short-name: mgmt
        type: ELAN
        mgmt-network: true
        vnfd-connection-point-ref:
        -   member-vnf-index-ref: 'MagmaAGW+srsLTE'
            vnfd-id-ref: hackfest_magma-agw-enb_vnfd
            vnfd-connection-point-ref: agw-mgmt
        -   member-vnf-index-ref: 'MagmaAGW+srsLTE'
            vnfd-id-ref: hackfest_magma-agw-enb_vnfd
            vnfd-connection-point-ref: srsLTE-mgmt
#         -   member-vnf-index-ref: 'VYOS-PNF'
#             vnfd-id-ref: hackfest_gateway_vnfd
#             vnfd-connection-point-ref: gateway_public
```

(4) Don’t forget to add automation!

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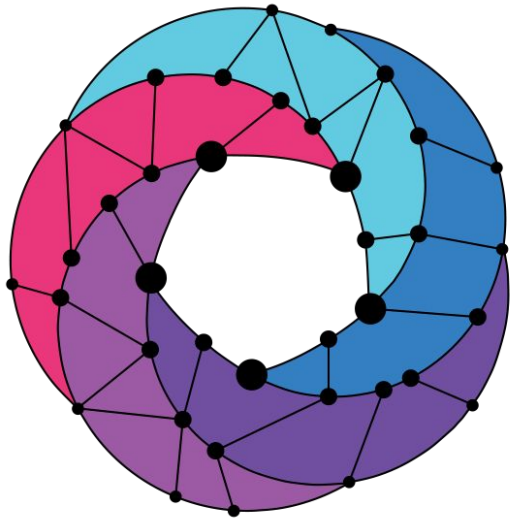
PNF orchestration, since is an element that already exists in the environment, is all about automating is configuration in the context of our Network Service.

Stay tuned for the **Automating Day 1 & 2 PNF Operations with OSM Primitives** session!



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