Edge Cloud + Pharos Spec + StarlingX

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OPNFV Edge Cloud Project: https://wiki.opnfv.org/display/EC

Current Need of Edge OpenStack

➢ **Minimum footprint of OpenStack control components => Light weight OpenStack**

- In current actual deployment scenarios, OpenStack control services will monopolize 2 to 3servers

- Some typical small/medium edge sites only have 2~20 servers

- Light-weight OpenStack only takes a few physical cores, and rest CPU resources on the same server open to services to increase resource usage rate

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General Pharos Spec

➢ **Current Pharos Spec cannot meet the edge needs**

- General Pod: 3 controller nodes + 2 compute nodes + 1 jump server
- Control services are too heavy for edge deployment scenario

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Edge Pharos Spec

➢ **Hardware:**

- **General definition:**

  - One CentOS/Ubuntu jump server on which the virtualized Openstack/OPNFV installer runs. For an ARM POD, the jump server should also be an ARM server

  - **4 nodes: 2 or 3 servers with light weight control services, save the rest resource to compute; 2 or 1 nodes as compute**

- **Servers:**

  - **CPU**: 2 CPU, minimum 10 cores for each CPU (the more the better if running performance testing)

  - **Firmware:** remains the same with general pharos spec (BIOS/EFI compatible for x86-family blades)

  - **Local Storage:** below describes the minimum for edge Pharos spec. Additional and/or faster disks are nice to have

    - Disks: 2 * 1TB HDD or 100 GB SSD (number and volume of SSD depends on service requirements)

    - The first HDD should be used for OS & additional software/tool installation

    - The second HDD is used for data storage

    - SSD could be used as data storage disk or cache disk if requires high performance

    - No specific ceph requirement on edge (local storage form LVM as cinder back end)

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Edge Pharos Spec

➢ **Hardware:** (continued)

  • **Servers:**

    • **Memory:** 64G RAM minimum

    • **Power supply:** single power supply acceptable (redundant power is nice to have)

    • **PCI-e slot**: two more free PCI-e slots are recommended for extra hardware like SSD, RAM, NIC, acceleration card and etc. in case some services requires high performance

➢ **Network:**

  • **Network Hardware**:

    • 24 or 48 Port TOR Switch minimum

    • **NICs:** combination of 1GE and 10GE based on network topology options

    • Separate NIC for data/control network. Storage network could use the same NIC with control/data network

    • BMC for lights-out management network using IPMI

  • Network Options: (save the previous three option)

    • Option 4 (similar to option 3): 2*1G control, 2*10G data, 2*10G storage, 1*1G for LOM OPNFV
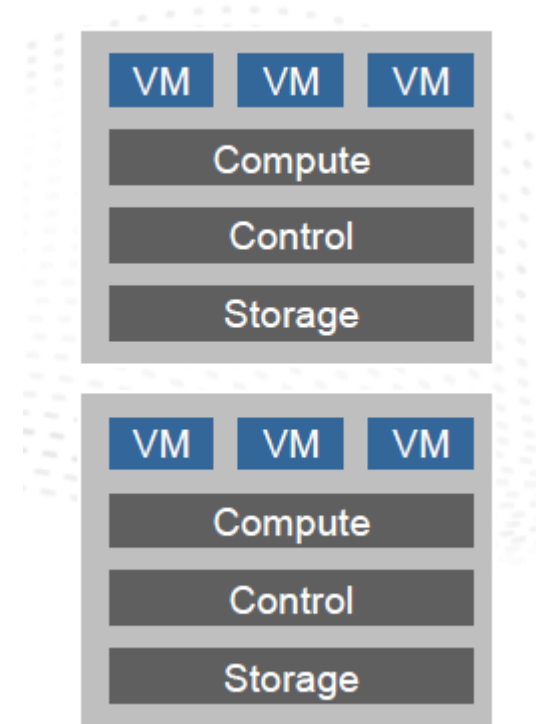
Sample Network Drawings
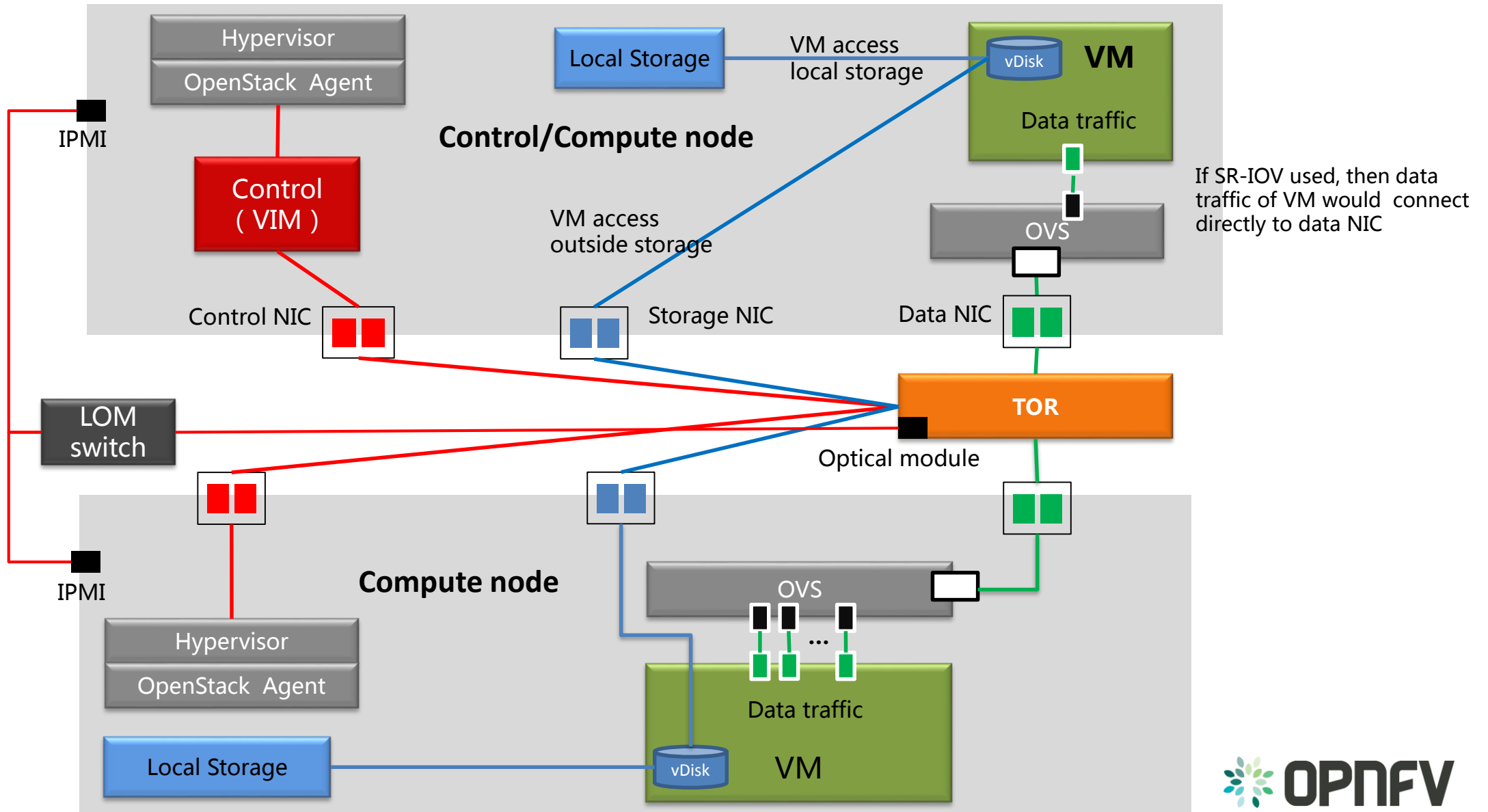
What to deploy

➢ **Current OpenStack at hand could be used for edge:**

- StarlingX/Titanium distributed cloud (Duplex version)
  - All-in-one deployed
  - Footprint of OpenStack control services on demand
  - OpenStack control services form HA and use active-standby mode
  - Meet basic telco functional test
  - Special designed edge features

➢ **How to continue:**

- Integrate StarlingX/Titanium cloud Duplex version through XCI as OPNFV edge cloud prototype
  - Further question: How to integrate starlingX based on edge Pharos Sepc? Duplex version does not support managing extra compute node.

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Thank You!