UNIVERSITÄT PADERBORN

Future Internet - SS19

Complex Service Orchestration with OSM and OpenStack

Mini-Project Intermediate Presentation

Goals

- Hands-on experiments with tools
  - Open Source MANO (OSM) / Sonata
  - OpenStack
  - Ubuntu Cloud Image
 - Cloud-init
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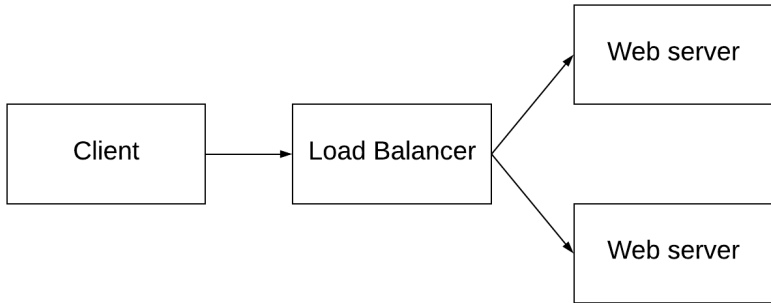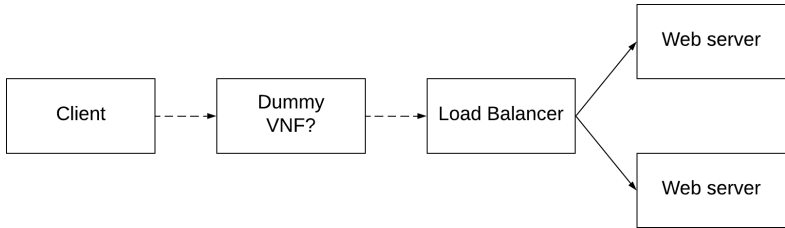
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- Build and deploy a complex service in virtual environment
- Get **Servce Function Chaining:** VNF Forwarding Graph to work (?)
  - Currently unstable in OSM, could lead to a pull request

Scenario
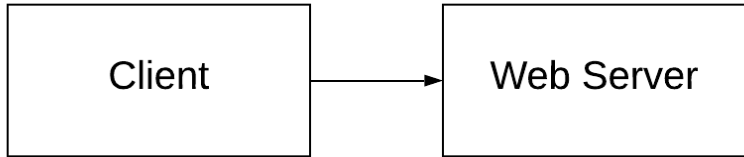
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Plan — Progress so far...

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- Base Image - Ubuntu Cloud Image 16.04
- Load Balancer - HAProxy
- Web Server - Nginx

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3. **Descriptor Creation**

- ○ Network Service Descriptor (NSD)
- ○ Virtual Network Function Descriptor (VNFD)
- ○ OSM provides a tool

```yaml
vdu:
-   id: ubuntu-cloudinit_vnfd-VM
    name: ubuntu-cloudinit_vnfd-VM
    description: ubuntu-cloudinit_vnfd-VM
    count: 1
    cloud-init-file: cloud-init.cfg

    vm-flavor:
        vcpu-count: 2
        memory-mb: 2048
        storage-gb: 10

    # Image including the full path
    image: 'ubuntu1604'

    interface:
    -   name: eth0
        type: EXTERNAL
        virtual-interface:
            type: PARAVIRT
        external-connection-point-ref: vnf-cp0
```

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```yaml
constituent-vnfd:
-    member-vnf-index: 1
     vnfd-id-ref: ubuntu-cloudinit_vnfd

vld:
# Networks for the VNFs
-    id: mgmtnet
     name: mgmtnet
     short-name: mgmtnet
     type: ELAN
     mgmt-network: 'true'
     # vim-network-name: <update>
     vnfd-connection-point-ref:
     -    member-vnf-index-ref: 1
          vnfd-id-ref: ubuntu-cloudinit_vnfd
          vnfd-connection-point-ref: vnf-cp0
```

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2. **Forwarding Graphs — 2 weeks**
   - Investigate further..

3. **Testing and Documentation — 1 week**

GitHub

ashwinprasadme/Future-Internet-SS19-Mini-Project