SDN Solution and Impact on NFVI
Contents

1. Introduction of SDN Solution
2. Impact on NFVI
Simplify network configuration and accelerate service onboard

• Simplify the configuration of EOR, TOR, CE in DC, and use Layer 3 communication between devices to solve the flooding problem of traditional Layer 2 networking
• Adopt VXLAN encapsulation and simplify VLAN configuration
• Using SDN controller to configure all NFVI and service network can reduce the workload and error rate of manual configuration
• The service gateway is moved to vSwitch or TOR, reducing the number of BFD sessions on centralized gateway and improving network scalability

Centralized management of network equipment to realize network intelligent operation and maintenance

• Using SDN controller as well as MANO can automatically configure network forwarding devices in the resource pool in the process of VNF lifecycle
• The controller can provide APIs for topology management and traffic visualization for centralized and intelligent operation and maintenance
• Introduce IBN to achieve network self-healing in the future

Support application innovation in the future

• 5G network slice end-to-end automation and strategy dynamic configuration
• Cloud-based VAS application and business chain
Based on the existing ETSI NFV architecture, VIM is used as a key component for the integration of NFV and SDN to refine.
**LCM Solution**

**Descriptor Parsing**

**NFVO**

**VNF Descriptor**
- vCSCF
- vMRF
- vATS
- ...

**Network Descriptor**
- Router
- Internal network
- External network
- Firewall

**VNFM**

**SDNC**

**OpenStack Nova**

**OpenStack Neutron**

**SDN Plug-in**

**vSwitch**

**vCSCF**

**vMRF**

**vATS**

**Network Info**

**EOR**

**TOR**

**VxLAN**

**DC GW**

**NIC**

**SR-IOV**

**VLAN**

**VM**

**VM**

**VM**

**VM**

**VM**

**VM**
Impact on NFVI

- **SDN Plug-in:**
  VIM supports the installation of SDN plug-in to take over the function of Neutron components, and connects to the SDN controller

- **Function enhancement:**
  1. support the creation of VXLAN type networks, vSwitch as SDN access point supports being managed by the controller;
  2. Compute node scale under SDN

- **Northbound interface enhancement**
  cooperate with upper-layer network orchestration process, expand VIM northbound interface to accomplish traffic mirroring (TAPaaS), network instance deployment, and route configuration
CNTT Networking Focus Group

› All interested members of the CNTT community are encouraged to contribute to the work of the CNTT Networking Focus Group

› Please assign to the team in: https://github.com/orgs/cntt-n/teams/net-fg/members and start contributing

› Or, talk to us if you need more information

For NFG:
› Kevin Edmison (RM WS Lead)
› Ahmed ElSawaf (Edge WS Lead)
› Tomas Fredberg (Networking lead contributor)
› Walter Kozlowski (NFG Lead)