Ribbon VNF Manager

Network Function Virtualization (NFV) fundamentally changes how applications are deployed and managed, from manual, hardware-centric to an automated, cloud-centric approach. This transformation massively reduces the complexity and cost of deploying new network services.

The Ribbon VNF Manager is a key NFV component that provides support for automated lifecycle management of virtual network functions (VNFs). The Ribbon VNF Manager dramatically simplifies the deployment of VNFs, which includes: onboarding and cataloging; real-time monitoring and health-check; and advanced functions such as healing, scaling, migrating, and upgrading VNFs. These advanced VNF lifecycle functions can be initiated by the Graphical User Interface or through the ETSI defined RESTful API (NFV-SOL 003).

The VNF Manager, as shown in Figure 1, has an intuitive, easy-to-use Graphical User Interface. It also comes with pre-built "Wizard" functionality which hides much of the complexity of VNF deployment, often down to a few mouse clicks.

The VNF Manager has a high level of resiliency and redundancy designed into its architecture that ensure non-stop operation in complex cloud environments. And the VNF Manager itself is a VNF, that is easy to deploy into OpenStack environment using the native Heat service or third party generic VNFM.

Based on the ETSI standard NFV architecture shown in Figure 2, the VNF Manager seamlessly integrates Ribbon's VNFs with the NFV Infrastructure (i.e. datacenter hardware and virtualization layer) and an OpenStack VIM. This allows the VNFM to provide full management of VNFs using the VNFM's built in GUI or an ETSI compliant NFVO supporting NFV-SOL 003.

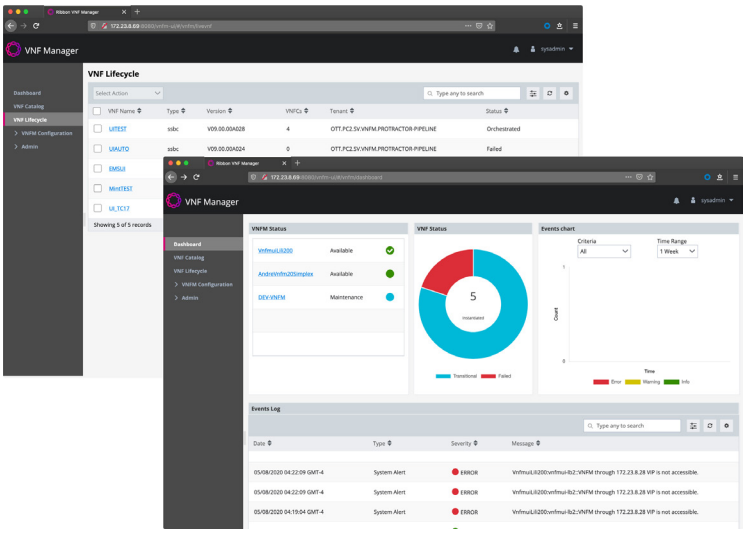

Figure 1 – VNF Manager GUI

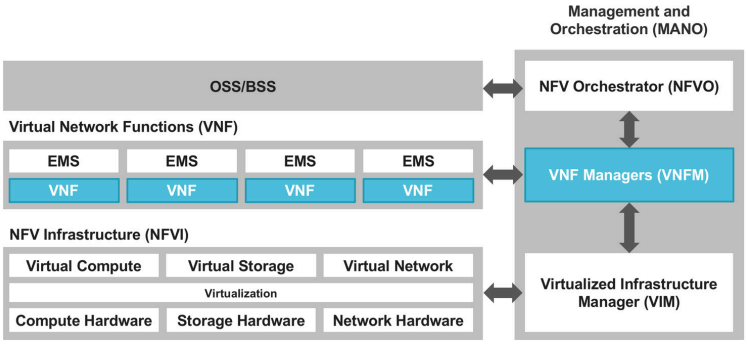

Figure 2 – ETSI NFV Architecture

Specifications

Key VNF Manager Benefits

- Easy-to-use via Graphical UI for VNF Management
- Reduced VNF deployment complexity via Wizards
- Rapid time to new deployment (days/weeks down to minutes)
- Simplified operations (single click deployment, moving, healing, scaling, etc.)
- Works with or without an ETSI NFVO

Common (Shared) VNFM Support

- Multiple Cloud (OpenStack)
- Multiple Tenant
- Multiple Zone
- Multiple VNF

VNF/VNF-C Lifecycle Management

- Onboarding/Cataloging
- Instantiation
- Termination
- Healing
- Scaling
- Migration/Resizing
- Upgrade/Rollback

Survivability

- Redundant High Availability Architecture
- Disaster Recovery (across Sites)
- Geographical Redundancy

Virtualized (Three-Tiered) Architecture

- Application (Active-Active)
- Load-Balancer (Active-Standby)
- Database (Primary-Secondary-Secondary)

Supported VNFs

- Ribbon C3
- Ribbon SBC
- Ribbon PSX
- Ribbon EMS

OpenStack Versions

- Queens
- Train

OpenStack Services (via REST APIs)

- Nova
- Neutron
- Glance
- Keystone
- Horizon
- Heat
- Cinder

Certifications

- Red Hat OpenStack Platform 13
- Red Hat Openstack Platform 16.1

ETSI Standards

- NFV IFA011/SOL001 (VNF Descriptor)
- NFV IFA014/SOL004 (VNF Package)
- NFV IFA007/SOL003 (or-vnfm REST API)
- NFV-SOL013 (OAuth 2.0)

Resource Requirements

High Availability configuration

- Virtual Machines: 7
- vCPUS: 18
- Flavors: 3
- RAM: 48 MB
- Boot (local or Cinder): 72 MB
- Disk: 680 GB

Geographical Redundancy configuration (for each instance, 3 minimum)

- Virtual Machines: 5
- vCPUS: 14
- Flavors: 3
- RAM: 32 GB
- Boot (local or Cinder): 52 MB
- Disk: 280 GB