

MTAS VNF Lifecycle Management

MTAS

DESCRIPTION

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1 Understanding VNF Lifecycle Management

The Virtualized Network Function Lifecycle Management (VNF-LCM) provides a workflow execution environment and a web-based application for managing VNF lifecycle procedures. The procedures are realized by executing ordered sequences of steps, called workflows, installed in the VNF-LCM. Each workflow must be provided with VNF-specific input parameters during execution.

The workflow manages virtual resources for the VNF by interacting with the Virtual Infrastructure Manager's (VIM) API. For example, if Ericsson CEE is used, the Heat API is used at the Vi-Vnfm reference point.

The workflow calls LCM scripts to interact with the VNF for VNF-specific operations, such as configuration importing. The LCM scripts access the VNF using the SSH or the NETCONF Northbound Interface (NBI).

Figure 1 shows an overview of a full Ericsson Stack and also the difference to a small stack.

Full Stack and Small Stack

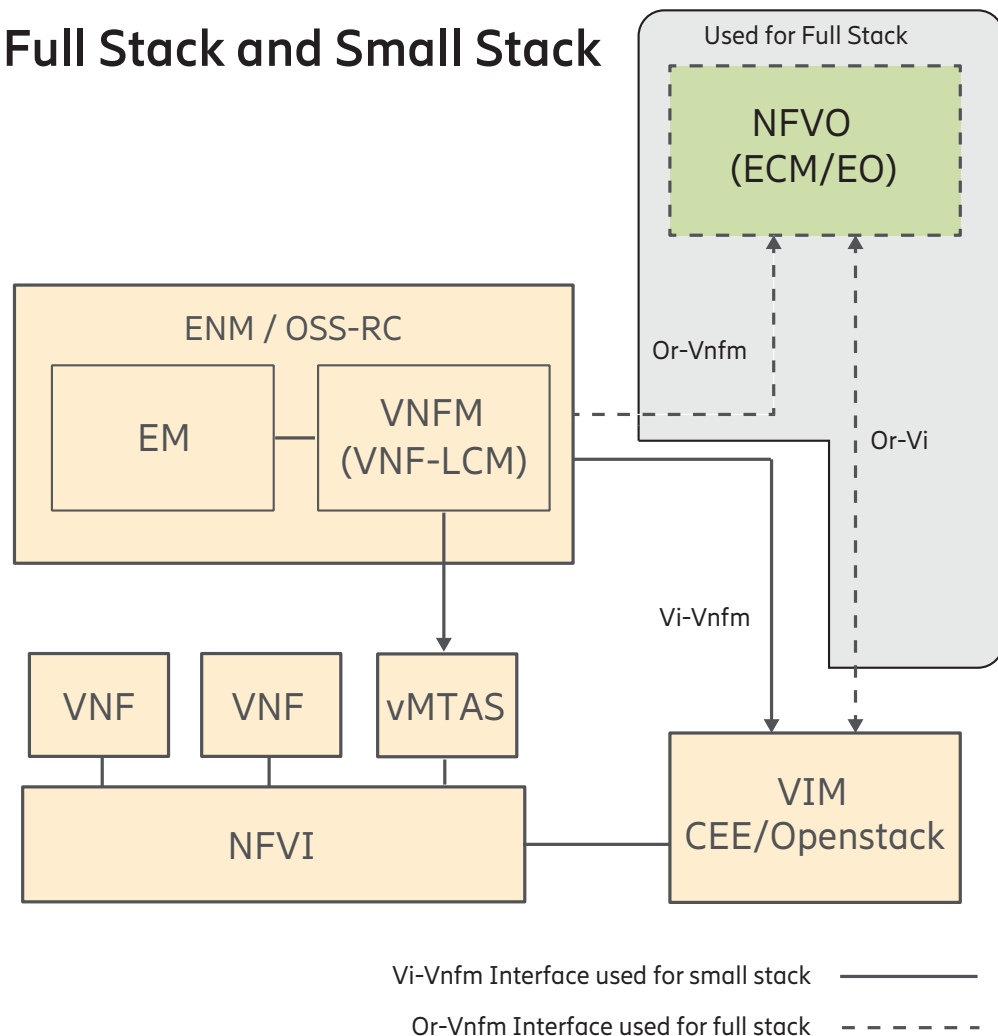


Figure 1 VNF-LCM Overview

The workflows can be executed through the following:

- Ericsson Orchestrator (EO)

For a Full Ericsson Stack, the EO can be used to trigger workflows on VNF-LCM through the Or-Vnfm interface.

- VNF-LCM

For a Small Ericsson Stack, VNF-LCM is the only option.

The following limitations apply to life cycle operations EO through the Or-Vnfm interface:

- EO is the only supported Network Functions Virtualization Orchestrator (NFVO).



- The only supported workflows are instantiation and termination.
- The only supported Virtual Infrastructure Manager (VIM) is OpenStack.

Operations Support System for Radio and Core (OSS-RC) is the Ericsson product acting as Element Management System (EMS) and specific Virtual Network Function Manager (VNFM) for the VNFs. VNF-LCM is the feature name in OSS-RC that fulfills specific VNFM functionality. For more information about EMS and VNFM, see Network Function Virtualization (NFV); Architectural Framework, ETSI GS NFV 002, <http://www.etsi.org/standards>.





2 VNF Lifecycle Management Procedures

A VNF lifecycle is managed using VNF-LCM or EO.

Note:

- The Upgrade VNF Work Flow (WF) is not available in the current release.
- The use of WFs in a VMware environment is not commercially supported in the current release.

The following procedures can be performed by the user:

- Onboard VNF Package on EO

The user creates the workflow-based VNF operations using EO.

The procedure [Onboard VNF Package on EO](#) provides further details on how to perform this operation on EO.

- Onboard VNF Package on VNF-LCM

The user unpacks the VNF package and the parts are copied to different directories.

The procedure [Onboard VNF Package on VNF-LCM](#) provides further details on how to perform this operation on OpenStack and VMware VIMs.

- Instantiate a VNF

The user selects a VNF to instantiate and selects configuration data for the VNF. The VNF starts handling traffic after the instantiation is finished and all manual post-installation steps are completed.

The procedure [Instantiate VNF Using VNF-LCM](#) provides further details on how to perform this operation on OpenStack and VMware VIMs.

The procedure [Instantiate VNF Using EO](#) provides further details on how to perform this operation on EO.

- Scale out a VNF

Managed scaling adjusts the size of the VNF. The reason for this can be to adjust the size of the VNF to the traffic level. Scaling is also used after instantiation to scale out the node to the wanted size.

The procedure [Scale Out VNF](#) provides further details on how to perform this operation OpenStack and VMware VIMs.

- Scale in a VNF

Managed scale-in reduces the size of the VNF. It is also possible to point out which VM to scale in. The following is supported:

- Graceful scale-in is used for minimizing the traffic disturbance.
- Forceful scale-in is used when traffic disturbance is acceptable.

The procedure [Scale In VNF](#) provides further details on how to perform this operation on OpenStack and VMware VIMs.

— Time-Based Scaling

The time base scaling is a possibility to start scaling workflows in a predefined time. It can be used for scaling a VNF capacity dynamically in a well known time slot of a day, depending on the traffic load.

The procedure [Configure Time-Based Scaling](#) provides further details on how to perform this operation OpenStack and VMware VIMs.

— Terminate a VNF

Terminating a VNF instance means that the VNF is taken out of service and its virtual resources are deleted. The following is supported:

- Graceful termination means the VMs in the cluster are gracefully locked and the VNF instance gradually stops processing traffic. The VNF terminates after the expiration of a specified graceful termination period.

It is possible not to set a graceful termination period, in which case the VNF terminates only when all ongoing traffic stops.

- Forceful termination means that the VNF terminates immediately. All ongoing traffic is lost.

The procedure [Terminate VNF Using VNF-LCM](#) provides further details on how to perform this operation on OpenStack and VMware VIMs.

The procedure [Terminate VNF Using EO](#) provides further details on how to perform this operation on EO.

— Heal a VNF

A VNF can be healed from a computer resource or network resource (for example, neutron port) failure. The heal VNF workflow can be started two ways:

- Manually from the VNF-LCM user interface
- Automatically, triggered on the reception of the CLM Cluster Node Unavailable alarm from the VNF instance



Automatic Healing cannot be triggered by the users. It happens automatically. The users can only check the progress of the Heal VNF workflow.

The procedure **Heal VNF** provides further details on how to perform this operation on OpenStack and VMware VIMs.

— Upgrade a VNF

The Upgrade VNF WF is not supported by the current release.