

# Heal OpenStack VNF Using VNF-LCM

Call Session Control Function

OPERATING INSTRUCTIONS

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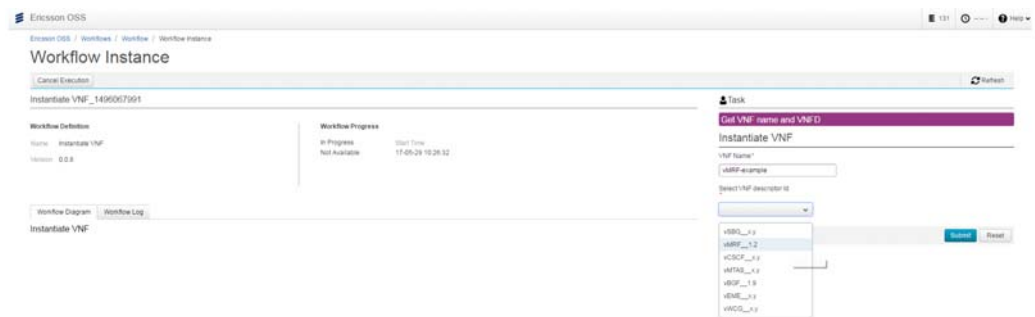




# 1 Description

This instruction describes how to heal a Virtualized Network Function (VNF) in the VNF Lifecycle Management (VNF-LCM). The healing can be manual or automated triggered by alarms.

The VNF-LCM procedures use workflow instances. The following figure shows an example of a workflow instance, where workflow progress can be tracked in the **Workflow Diagram** view. The boxes in the **Workflow Diagram** only represent the stages of the various procedures; operations are performed in the **Task** view.



For more information about the VNF-LCM, see [CSCF VNF Lifecycle Management](#).





## 2 Procedure

### 2.1 Heal a VNF

#### Prerequisites

- No tools are required.
- The following conditions must apply:
  - The VNF is instantiated and scaled out.
  - The VNF-LCM is available using either the Operations Support System for Radio and Core (OSS-RC) or the Ericsson Network Manager (ENM).
  - An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress (if a VNF is to be healed manually).

#### Steps

1. Select the appropriate action:
  - Heal the VNF automatically, triggered on the reception of the CLM Cluster Node Unavailable alarm from the VNF instance, proceed with Section 2.2 Heal a VNF Automatically on page 3.
  - Heal the VNF manually, proceed with Section 2.3 Heal a VNF Manually on page 4.

### 2.2 Heal a VNF Automatically

#### Prerequisites

- The VNF is onboarded using the VNF-LCM. During onboarding, an autostart-rule is specified in Section Prepare Workflow-Based VNF Operations in Onboard OpenStack Virtual Deployment Package on VNF-LCM, 68/1543-AVA 901 30/2 Uen.

#### Steps

1. Track the progress of the auto-heal VNF workflow in the **Instance Activity** view.

The Heal VNF workflow consists of a forceful scale-in and a scale-out operation. The following three workflow instances are shown for the auto-heal VNF workflow in the **Instance Activity** view:

- Heal VNF
- Scale-in (Heal VNF)



## — Scale-out (Heal VNF)

**Note:** It is recommended to lower the node (VM) alarm time-out on the VNF instance from 15 minutes to 5 minutes to trigger the CLM `Cluster Node Unavailable` alarm, if a VM has lost contact with the remaining cluster members for more than 5 minutes. To lower the value of the node (VM) alarm time-out, use command `cmw-node-alarm-timeout 300`.

The Heal VNF workflow can only heal the VNF if sufficient compute resource is available for OpenStack's Nova scheduler.

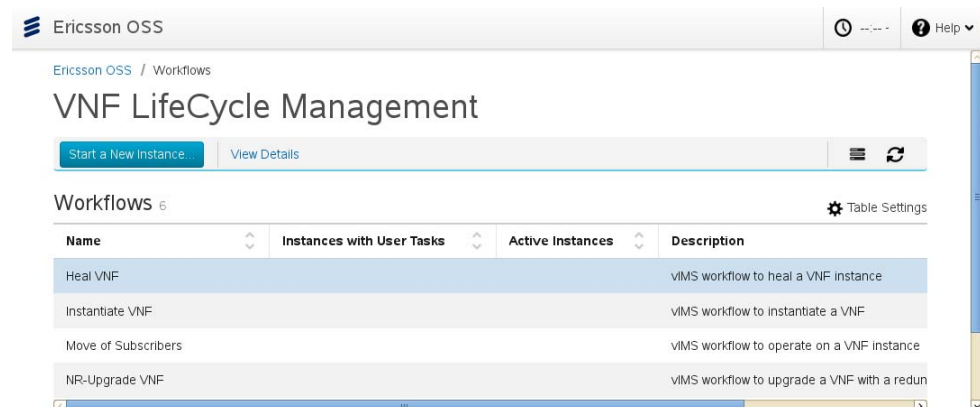
Healing of non-scalable VMs (SC-1, SC-2, PL-3, PL-4) is not possible.

2. If the VNF to be healed was instantiated using the VNF-LCM and the Heal VNF workflow is to be started manually, then proceed with Section 2.3 Heal a VNF Manually on page 4.

## 2.3 Heal a VNF Manually

### Steps

1. In the VNF-LCM **Workflows** view, select **Heal VNF** and then click **Start a New Instance**.



2. In the **Start a Workflow** view, fill out the **Instance Name** field and then click **Submit**.
3. Select the newly created workflow from the **Instance Activity** panel.
4. In the **Workflow Instance** view, select the VNF instance to be healed, and then click **Submit**.





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## Workflow Instance

[Cancel Execution](#) [Refresh](#)

**Heal VNF\_1551447443**

Workflow Definition		Workflow Progress	
Name	Heal VNF	In Progress	Start Time
Description	vIMS workflow to heal a VNF instance	Not Available	2019-03-01 14:37:07
Version	1.15.1		

[Workflow Diagram](#) [Workflow Log](#)

**Task**

**Collect user data for Healing**

**Heal VNF instance**

**Healing Data**

Select VNF instance\*

cscf (e5214824-e0df-442...)

[Submit](#) [Reset](#)

5. In the **Input additional parameters for workflow** view, specify the Universally Unique Identifier (UUID) of the VM to be removed from the cluster, and then click **Submit**.

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## Workflow Instance

[Cancel Execution](#) [Refresh](#)

**Heal VNF\_1551447443**

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Name	Heal VNF	In Progress	Start Time
Description	vIMS workflow to heal a VNF instance	Not Available	2019-03-01 14:37:07
Version	1.15.1		

[Workflow Diagram](#) [Workflow Log](#)

**Task**

**Collect extra parameters**

**Provide additional parameters for the workflow**

UUID of VM to be healed

ad370c-659b-4093-ac9b-cfa97f9857bd

[Submit](#) [Reset](#)

6. Get the UUID of unavailable or failed PL VM from the Ericsson Command-Line Interface (ECLI):

```
>show -r ManagedElement=1,Equipment=1
```

The VNF instance is scaled-in and the specified VM is forcefully removed from the cluster. After this, the VNF instance is scaled-out, and a PL is added to the cluster.

## 2.4 Troubleshooting

If the workflow execution fails, inspect the relevant logs to identify the cause of the failure.

### Steps

1. Increase the log level from INFO to DEBUG. For information on how to change log level, see VNF Lifecycle Manager System Administrator Guide, 1543-APR 901 0578.



2. Inspect the following logs to identify the cause of the failure:
  - Jboss Server log: `/ericsson/3pp/jboss/standalone/log/server.log`
  - System log: `/var/log/messages`
  - Workflow log: the **Workflow Log** view in the VNF-LCM
3. If the **Workflow Log** view reports Authentication failed, repair the Secure Shell (SSH) key between the VNF-LCM and the CSCF. See Section Check SSH Key for Authentication in [CSCF Troubleshooting Guideline](#).
4. If a problem cannot be solved, consult the next level of maintenance support and provide the logs. Further actions are outside the scope of this instruction.