

Increase Capacity with Heat Orchestration

OPERATING INSTRUCTIONS

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Contents

1	Description	1
2	Procedure	1
2.1	Increase Capacity with Heat Orchestration	1



Increase Capacity with Heat Orchestration



1 Description

This instruction describes how to increase the capacity of the Call Session Control Function (CSCF) cluster, that is, to scale out, by adding a Virtual Machine (VM) to it.

This document always refers to horizontal scaling, where the scalability of the system is provided by multiple instances to distribute the load in parallel for having the capacity needed. Vertical scaling is not considered in this document.

The scaling function does not require a license.

Note: Even though the PL-3 and PL-4 Virtual Machines (VMs) are considered to be part of the scaling domain, they cannot be scaled in.

2 Procedure

2.1 Increase Capacity with Heat Orchestration

Prerequisites

- This instruction references the following documents:
 - [CSCF Health Check](#)
 - [Ericsson Command-Line Interface User Guide](#)
- No tools are required.
- The following conditions must apply:
 - The procedure must only be performed by support personnel with experience of Cloud and the CSCF.
 - No other upgrade or maintenance activity must be performed during the procedure.
 - Before starting these procedures, the user performing the operations must have access to the System Controller (SC) nodes.
 - Signaling Manager Command-Line Interface (CLI) or Graphical User Interface (GUI) must be closed before the start of the Scaling Operations. Manual updates of the configurations during Scaling Operations are not allowed.
 - A Virtual Infrastructure Manager (VIM) is available.



- An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.

Steps

1. Before any scaling-related activities are performed, create a system backup. See [Create Backup](#).
2. Check that the cluster is in a healthy state, see [CSCF Health Check](#).
3. Check that the status of the CSCF stack is CREATE_COMPLETE or UPDATE_COMPLETE:

```
openstack stack list
```

If the status of the stack is not CREATE_COMPLETE or UPDATE_COMPLETE, stop the scaling procedure. For information on how to identify and correct the stack status, see the VIM documentation.

4. Check the value of parameter number_of_scaled_out_PL_VMs.

```
openstack stack show <CSCF stack name> | \
grep number_of_scaled_out_PL_VMs
```

5. Calculate the new value of the parameter number_of_scaled_out_PL_VMs by adding the number of VMs to be scaled out.

For example:

The current value of the parameter number_of_scaled_out_PL_VMs is 1. This means that, beyond the initial size of 2+2, the cluster contains one extra VM/PL. Therefore, the current size of the VNF is 2+3.

To increase the size of the cluster to 2+5, the VNF must be scaled out by 2 VMs. Therefore, the new value of the parameter number_of_scaled_out_PL_VMs is 1+2=3.

6. Update the stack with the new value of number_of_scaled_out_PL_VMs:

— For non-Cinder Environment:

```
openstack stack update -t vcscf_hot.yaml -e
vcscf_env.yaml <CSCF stack name> --parameter \
number_of_scaled_out_PL_VMs=<number_of_scaled_out_PL_VMs>
```

— For Cinder-Supported Environment:

```
openstack stack update -t vcscf_hot_sio.yaml -e
vcscf_env.yaml <CSCF stack name> --parameter \
number_of_scaled_out_PL_VMs=<number_of_scaled_out_PL_VMs>
```

7. Monitor the progress of the stack-update until the stack status is UPDATE_COMPLETE:



```
openstack stack list
```

8. If the stack status is not UPDATE_COMPLETE, check the reason and troubleshoot the issue as described in [CSCF Troubleshooting Guideline](#) and then repeat Step 6:

```
openstack stack show <CSCF stack name>
```

9. Navigate to the CrM MO, for example:

```
>dn ManagedElement=1,SystemFunctions=1,\  
SysM=1,CrM=1
```

10. Verify that the new VMs are added and enabled:

```
(CrM=1)>show -r
```

Note: It takes a few minutes until the VMs added in the stack show up in the CrM MO.

```
CrM=1  
autoRoleAssignment=ENABLED  
ComputeResourceRole=PL-5  
adminState=UNLOCKED  
instantiationState=INSTANTIATED  
operationalState=ENABLED  
provides="ManagedElement=1,SystemFunctions=1,SysM=1,CrM=1,Role=PLs"  
uses="ManagedElement=1,Equipment=1,ComputeResource=PL-5"
```

11. Check that the cluster is in a healthy state, see [CSCF Health Check](#).