

Runtime Configuration Guide

Cloud Execution Environment

USER GUIDE

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1 Introduction

This document provides information on configuring or reconfiguring settings in a running Cloud Execution Environment (CEE). It is a collection of independent procedures. Use the Table of Contents to select the section relevant to the task to be performed.

Note: This document is not used for CEE installation.

1.1 Prerequisites

This section states the prerequisites that must be fulfilled.

1.1.1 Conditions

Ensure that CEE is installed and it is operational.

1.1.2 Tools and Equipment

Ensure that the management tool for the node configuration is available.

1.1.3 Documents

Ensure that the following documents have been read:

- The user guide of the used management tool
- CEE Connectivity User Guide

1.2 Disaster Recovery

After changes to the system configuration files, for example, `config.yaml`, it is recommended to back up the configuration files for disaster recovery purposes. For more information, refer to the document [Disaster Recovery](#).



2 Reconfigure Fencing

Use the relevant section:

- To reconfigure the fencing behavior, see Section 2.1 on page 2.
- To reconfigure the access of fencing to out-of-band management, see Section 2.2 on page 2.

2.1 Reconfigure Fencing Behavior

To change the settings for fencing behavior:

1. Modify the fencing-related parameters in the `cmha` section of the `config.yaml` configuration file in the `CEE_RELEASE` directory on the vFuel node. Refer to the [Configuration File Guide](#) for the parameters and their possible values.
2. Validate the updated configuration file by using the following command in vFuel:

```
validate_config_yaml /mnt/cee_config/config.yaml
```

If the command output contains errors for some of the parameters, fix the reported problems and repeat this step. If the command output does not contain errors, continue with the next step.

3. Update the Ericsson inventory with the required changes:

```
pre_deploy /var/lib/ericsson/pre_deploy/ =>  
/mnt/cee_config/config.yaml 1 /etc/cee/openstack_config/
```

4. Upload the configuration changes to all nodes:

```
fuel node --node <node_ids> --tasks =>  
upload_configuration
```

5. Rerun the CM-HA Fuel plugin tasks:

```
fuel node --node <node_ids> --tasks =>  
eri_cmha_install eri_cmha_pacemaker_setup =>  
eri_cmha_location eri_cmha_post_task =>  
eri_cmha_copy_node_info_map --force
```

where `<node_ids>` is the list of node IDs from the `fuel2 node list` printout. Multiple node IDs must be comma-separated.

6. Perform a Fuel synchronization as described in [Fuel Synchronization](#).



2.2 Reconfigure Fencing Access to Out-of-Band Management

In case the out-of-band management access has been changed, fencing must be reconfigured accordingly to make sure that it works with the new password.

To change the settings for fencing:

1. Modify the out-of-band management access parameters in the `shelf` section of the `config.yaml` configuration file in the `CEE_RELEASE` directory on the vFuel node. Refer to the [Configuration File Guide](#) for the parameters. Fencing uses the usernames and passwords configured for blade management.
2. Validate the updated configuration file by using the following command in vFuel:

```
validate_config_yaml /mnt/cee_config/config.yaml
```

If the command output contains errors for some of the parameters, fix the reported problems and repeat this step. If the command output does not contain errors, continue with the next step.

3. Update the Ericsson inventory with the required changes:

```
pre_deploy /var/lib/ericsson/pre_deploy/ =>  
/mnt/cee_config/config.yaml 1 /etc/cee/openstack_config/
```

4. Upload the configuration changes to all nodes:

```
fuel node --node <node_ids> --tasks =>  
upload_configuration
```

5. Rerun the CM-HA Fuel plugin tasks:

```
fuel node --node <node_ids> --tasks =>  
eri_cmha_install eri_cmha_pacemaker_setup =>  
eri_cmha_location eri_cmha_post_task =>  
eri_cmha_copy_node_info_map --force
```

where `<node_ids>` is the list of node IDs from the `fuel2 node list` printout. Multiple node IDs must be comma-separated.

6. Perform a Fuel synchronization as described in [Fuel Synchronization](#).



3 Reconfigure CSS CPU Reservation

Both automatic and manual CSS CPU reservation can be reconfigured after CEE deployment. The reconfiguration is applicable for compute hosts, including those containing a vCIC.

Note: If multiple compute hosts are to be reconfigured, they have to be processed one by one.

As a result of this procedure, the number of CPUs reserved for tenant VMs can be altered on those hosts. This procedure is based on the server replacement procedure. Depending of the reconfiguration, more (if allocating fewer CPUs for CSS) or less (if allocating more CPUs for CSS) CPU resources would remain on the reconfigured compute hosts.

3.1 Reconfigure CSS CPU Reservation

Perform the following steps for each server where the CSS CPU allocation is to be reconfigured, one by one:

1. Evacuate the VMs from the server.
2. Change the CSS CPU allocation in the `/mnt/cee_config/config.yaml` file on vFuel. For the configuration options, refer to the section [Allocating CPUs for CSS \(OVS\)](#) in the [Configuration File Guide](#).

Note: If the `css_mode` parameter is changed in the `config.yaml`, the vSwitch capacity must also be reconfigured according to the [Multi-Server System Dimensioning Guide, CEE 6](#). Refer to the [vSwitch Capacity](#) section in the [Configuration File Guide](#).

3. Perform the server replacement procedure on the server, see [Server Replacement](#).



4 Change Legal Text at Logon

The legal text presented at logon can be updated depending on the deployment:

- To change the legal text in multi-server deployment, see Section 4.1 on page 5.
- To change the legal text in single server deployment, see Section 4.2 on page 5.

Note: The legal text at logon cannot be changed if using CSC CLI.

4.1 Change Legal Text in Multi-Server Deployment

To change the legal text in a multi-server deployment:

1. Modify the `legaltext` section of the `config.yaml` configuration file in the `CEE_RELEASE` directory on the vFuel node. Refer to the [Configuration File Guide](#) for the parameters.
2. Validate the updated configuration file by using the following command in vFuel:

```
validate_config_yaml /mnt/cee_config/config.yaml
```

If the command output contains errors for some of the parameters, fix the reported problems and repeat this step. If the command output does not contain errors, continue with the next step.

3. Update the Ericsson inventory with the required changes:

```
pre_deploy /var/lib/ericsson/pre_deploy/ =>  
/mnt/cee_config/config.yaml 1 /etc/cee/openstack_config/
```

4. Upload the configuration changes to all nodes:

```
fuel node --node <node_ids> --tasks =>  
upload_configuration
```

5. Rerun the hardening vFuel plugin task:

```
fuel node --node <node_ids> --tasks =>  
eri_hardening_slave --force
```

where `<node_ids>` is the list of node IDs from the `fuel2 node list` printout. Multiple node IDs must be comma-separated.

6. Perform a Fuel synchronization as described in [Fuel Synchronization](#).



4.2 Change Legal Text in Single Server Deployment

To change the legal text in a single server deployment:

1. Log on to the vCIC:

```
ssh ceeadm@<vcic_address>
```

2. Update the `/etc/issue` and `/etc/issue.net` files. Sudo privileges are required.

3. Log on to the compute host:

```
ssh ceeadm@<compute_address>
```

4. Update the `/etc/issue` and `/etc/issue.net` files. Sudo privileges are required.

5. The `legaltext` section in `config.yaml` on vFuel also has to be updated.

- a. Log on to the kickstart server or installation laptop hosting vFuel.
- b. Log on to vFuel.
- c. Update the `config.yaml`. Sudo privileges are required.



5 Change GRUB Password

To change the Grand Unified Bootloader (GRUB) password after CEE installation:

1. Modify the GRUB password in the `grub` section of the `config.yaml` file. For more information, refer to section [GRUB Configuration](#) in the [Configuration File Guide](#).
2. Validate the updated configuration file by using the following command in vFuel:

```
validate_config_yaml /mnt/cee_config/config.yaml
```

3. If the command output contains errors for any of the parameters, solve the reported problems and repeat Step 2.
4. Run the following command to update the environment with the `config.yaml` changes:

```
pre_deploy /var/lib/ericsson/pre_deploy⇒  
/ /mnt/cee_config/config.yaml 1 ⇒  
/etc/cee/openstack_config/
```

5. Run the upload configuration task and the hardening vFuel plugin task to update the GRUB password:

```
fuel node --node <node_ids> ⇒  
--tasks upload_configuration eri_hardening_slave --force
```

where `<node_ids>` is the list of node IDs from the `fuel2 node list` printout. Multiple node IDs must be comma-separated.

6. Perform a Fuel synchronization as described in [Fuel Synchronization](#).



6 Set Static Routes

This section is only applicable to configurations with Neutron managed Extreme switches.

The maximum number of static routes is defined in the `neutron.conf` file. If more static routes are needed, the default setting must be changed by performing the following steps:

1. Log on to the vCIC:

```
ssh ceeadm@<cic_address>
```

2. Add the following option to the `/etc/neutron.conf` file:

```
ext_max_routes = <value>
```

3. Repeat Step 1 and Step 2 for each vCIC.
4. Restart the Neutron server by using the following command:

```
crm resource restart neutron-server
```

Note: For setting the `ext_max_routes` value at CEE installation, refer to the [Neutron Configuration Options in the Configuration File Guide](#).



7 Perform ScaleIO Maintenance Operations

This section is only applicable to configurations using unmanaged EMC ScaleIO storage solution.

Permanent changes to the ScaleIO MDM cluster or to the frontend network interfaces of the SDSs must be propagated in the CEE region manually after the following operations:

- Changing ScaleIO cluster mode between three-node and five-node MDM cluster
- Changing the IP address of an MDM cluster member or changing the frontend IP address of an SDS
- Adding or removing an MDM cluster member

To propagate ScaleIO changes in the CEE region, do the following:

1. Log on to Fuel as **root**. For more information, refer to the document *CEE Connectivity User Guide*.
2. Navigate to the `/usr/share/ericsson-orchestration/playbooks` folder:
3. Execute the `eri-scaleio-setup-openstack` Ansible playbook:

```
cd /usr/share/ericsson-orchestration/playbooks/
```

```
openstack-ansible eri-scaleio-setup-openstack.yml
```

The propagation of changes can be verified by executing the following commands on any of the vCICs as **root**:

- `/bin/emc/scaleio/drv_cfg --query_mdm`

The printout contains the management IP addresses of the MDMs as defined in CEE. This information can be used to verify the propagation of MDM cluster changes and MDM IP address changes.

An example of the printout is the following:

```
root@cic-1:~# /bin/emc/scaleio/drv_cfg --query_mdm
Retrieved 1 mdm(s)
MDM-ID 562e5f61376e3d03 SDC ID dfc71ae500000000 INSTALLATION⇒
ID 32b0b57a468a998b IPs [0]-192.168.17.84 [1]-192.168.18.84 ⇒
[2]-192.168.17.81 [3]-192.168.18.81
```

- `/bin/emc/scaleio/drv_cfg --query_tgt`

The printout contains the frontend IP addresses of the SDSs.



An example of the printout is the following:

```
root@cic-1:~# /bin/emc/scaleio/drv_cfg --query_tgt
Retrieved 5 tgt(s)
TGT-ID 0xcd50762f00000000 MDM-ID 0x48b290cd6524c335 Tgt IPs :=>
[0]-192.168.17.85 [1]-192.168.18.85
TGT-ID 0xcd50763000000001 MDM-ID 0x48b290cd6524c335 Tgt IPs :=>
[0]-192.168.17.87 [1]-192.168.18.87
TGT-ID 0xcd50763100000002 MDM-ID 0x48b290cd6524c335 Tgt IPs :=>
[0]-192.168.17.80 [1]-192.168.18.80
TGT-ID 0xcd50763300000004 MDM-ID 0x48b290cd6524c335 Tgt IPs :=>
[0]-192.168.17.83 [1]-192.168.18.83
TGT-ID 0xcd50763400000003 MDM-ID 0x48b290cd6524c335 Tgt IPs :=>
[0]-192.168.17.110 [1]-192.168.18.110
```



8 Configure Cinder Backup

This section is only applicable if the `cinder-backup` service is utilized in a CEE region.

8.1 Runtime Installation and Configuration

This section is applicable for the following use cases:

- Enable the `cinder-backup` service
- Configure the storage back end to Swift or NFS

Depending on the storage back end utilized, the required drivers are automatically configured for the service. See Table 1 for Swift and Table 2 for NFS driver configuration values.

- Configure the NFS share path

To configure the `cinder-backup` service on a running environment, do the following:

Note: The `cinder-backup` service is restarted during the procedure.

1. Log on to vFuel. For more information, refer to the [CEE Connectivity User Guide](#).
2. In the `config.yaml` configuration file in the `CEE_RELEASE` directory, modify the relevant configuration attribute of the `ericsson_openstack_config` Fuel plugin in the `fuel-plugins` section:

```
ericsson:
...
  fuel-plugins:
    ...
    -
      name: ericsson_openstack_config
      config_attributes:
        configure_cinder_backup:
        cinder_backup_type:
        nfs_backup_share:
```

For configuration attribute values, refer to the [Fuel Plugin Configuration Guide](#).

Note: If `configure_cinder_backup` is set to `true` and `cinder_backup_type` is not specified, Swift is automatically configured as back end.



3. Validate the updated configuration file by using the following command in vFuel:

```
validate_config_yaml /mnt/cee_config/config.yaml
```

4. If the command output contains errors for some of the parameters, fix the reported problems and repeat Step 3. If the command output does not contain errors, continue with Step 5.

5. Enable the `eri_cinder_backup` task in Fuel:

```
apply_settings /var/lib/ericsson/pre_deploy/⇒  
/mnt/cee_config/config.yaml 1 update⇒  
/etc/cee/eri_deployment_tasks.yaml /etc/cee/repos.yaml
```

6. Update the deployment files with the task information:

```
pre_deploy /var/lib/ericsson/pre_deploy/⇒  
/mnt/cee_config/config.yaml 1 /etc/cee/openstack_config/
```

7. Execute the plugin tasks to update the plugin information in the slave nodes and run the `eri_cinder_backup` task:

```
fuel node --node <node_ids> --tasks⇒  
eri_cinder_backup upload_configuration --force
```

Where `<node_ids>` is a comma-separated list of the node IDs of the vCICs. The following is an example of the command:

```
fuel node --node 7,8,9 --tasks⇒  
eri_cinder_backup upload_configuration0 --force
```

For the node IDs of the vCICs, see the printout of the `fuel node` command.

8. Perform a Fuel synchronization as described in [Fuel Synchronization](#).

Table 1 Configured Values - Cinder Backup Swift Driver

Option = Value	(Type) Description
<code>backup_swift_auth = per_user</code>	(StrOpt) Swift authentication mechanism
<code>backup_swift_auth_version = 1</code>	(StrOpt) Swift authentication version, auth 1.0.
<code>backup_swift_block_size = 32768</code>	(IntgerOpt) The size in bytes that changes are tracked for incremental backups.
<code>backup_swift_ca_cert_file = None</code>	(StrOpt) Location of the CA certificate file to use for Swift client requests
<code>backup_swift_container = volumebackups</code>	(StrOpt) The default Swift container.
<code>backup_swift_enable_progress_timer = True</code>	(BoolOpt) Enable the timer to send the periodic progress notifications to Ceilometer when backing up the volume to the Swift back-end storage.
<code>backup_swift_key = None</code>	(StrOpt) Swift key for authentication



Table 1 Configured Values - Cinder Backup Swift Driver

Option = Value	(Type) Description
backup_swift_object_size = 52428800	(IntgerOpt) The size in bytes of Swift backup objects
backup_swift_retry_attempts = 3	(IntgerOpt) The number of retries to make for Swift operations
backup_swift_retry_backoff = 2	(IntgerOpt) The backoff time in seconds between Swift retries
backup_swift_url = None	(StrOpt) The URL of the Swift endpoint
backup_swift_url = None	(StrOpt) Swift user name
keystone_catalog_info = identity:Identity Service:publicURL	(StrOpt) Info to match when looking for Keystone in the service catalog.
swift_catalog_info = object-store:swift:publicURL	(StrOpt) Info to match when looking for Swift in the service catalog.

Table 2 Configured Values- Cinder Backup NFS Driver

Option = Default Value	Description
backup_container = None	(StrOpt) Custom directory to use for backups.
backup_enable_progress_timer = True	(BoolOpt) Enable the timer to send the periodic progress notifications to Ceilometer when backing up the volume to the back-end storage.
backup_file_size = 1999994880	(IntgerOpt) The maximum size in bytes of the files used to hold backups. If the volume being backed up exceeds this size, then it is backed up into multiple files.
backup_mount_options = None	(StrOpt) Mount options passed to the NFS client
backup_mount_point_base = \$state_path/backup_mount	(StrOpt) Base directory containing mount point for NFS share
backup_sha_block_size_bytes = 32768	(IntgerOpt) The size in bytes that changes are tracked for incremental backups.
backup_share = None	(StrOpt) NFS share hostname and path. Defined in <code>config.yaml</code> in CEE.



9 Configure License Management

Use the procedure described in this section in the following use cases:

- In new CEE deployments, to establish connection to the NeLS server and to install the required certificates
- In running CEE systems, if reconfiguration of the connection to the NeLS server is required
- In running CEE systems, if the related certificates expired or are about to expire

For more information about NeLS certificates, see Section 10.1 on page 16.

Do the following:

1. Log on to vFuel as root. For more information, refer to the [CEE Connectivity User Guide](#).
2. If required, generate certificates according the requirements described in Certificate Management in NeLS CPI, Reference [1]
3. If new certificate is generated, remove old certificates from the vCICs. Execute the following command on vFuel:

```
fuel node --node <node_ids> --task⇒  
eri_sheriff_cert_preparation_on_controllers --force
```

where <node_ids> is a comma-separated list of the node IDs of the vCICs. The following is an example of the command:

```
fuel node --node 7,8,9 --task⇒  
eri_sheriff_cert_preparation_on_controllers --force
```

4. If required, copy the certificate files to the /mnt/cee_config directory on vFuel.
5. Depending on the use case, modify the required `license` parameters in the `config.yaml` configuration file, in the /mnt/cee_config directory on the vFuel node:
 - NeLS Server IP address or hostname
 - port used for communication with the NeLS server
 - Certificate file name

Refer to the [Configuration File Guide](#) for the parameters.



6. Validate the updated configuration file by using the following command in vFuel:

```
validate_config_yaml /mnt/cee_config/config.yaml
```

If the command output contains errors for some of the parameters, fix the reported problems and repeat this step. If the command output does not contain errors, continue with the next step.

7. Update the Ericsson inventory with the required changes:

```
pre_deploy /var/lib/ericsson/pre_deploy/ =>  
/mnt/cee_config/config.yaml 1 /etc/cee/openstack_config/
```

8. Upload the configuration changes to all nodes:

```
fuel node --node <node_ids> --tasks =>  
upload_configuration
```

9. Rerun the Sheriff Fuel plugin tasks:

```
fuel node --node <node_ids> =>  
--start eri_sheriff_controller_install =>  
--end eri_sheriff_restart --force
```

where **<node_ids>** is the comma-separated list of vCIC IDs from the **fuel2 node list** printout.

10. Perform a Fuel synchronization as described in [Fuel Synchronization](#).



10 Appendix

10.1 NeLS Certificates

NeLS certificates include a CA certificate and a client certificate, both issued by Ericsson:

tls_trusted_ca_certificate

Certificate for authentication of the TLS connection between the NeLS server and the CEE region.

tls_nels_client_certificate

Certificate for authentication of the NeLS server.

The client certificate is located in the `/etc/ssl/certs/CEE` directory.



Reference List

- [1] Certificate Management, 1551-CRA 119 1933