

Region Expansion

Cloud Execution Environment

OPERATING INSTRUCTIONS

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1 Introduction

The document provides instructions on how to expand the Cloud Execution Environment (CEE) with one or more compute hosts or ScaleIO Data Servers (SDSs). Throughout this document compute host and SDS hardware are referred to as server.

1.1 Scope

This document describes how to add one or more new servers to the CEE hardware configurations.

The document does not include the steps for expanding the configuration outside the limits of the already deployed switches.

This document is only applicable for the following hardware configurations:

- Systems using Extreme switches configured dynamically by CEE
- Systems using manually configured switches. In this case, the correct configuration of the switches is the responsibility of the user.
- BSP systems
- HDS systems

Refer to the [Configuration File Guide](#) for more information about the CEE configuration types.

Note: Systems with user-specific Neutron configuration are outside the scope of this document.

Expansion of the virtual Cloud Infrastructure Controller (vCIC) cluster is outside the scope of this document.

ScaleIO Meta Data Managers (MDMs) added to the system are automatically assigned Standby role.

1.2 Prerequisites

This section provides information on the documents, tools, and conditions that apply to the procedure.



1.2.1 Documents

Before starting this procedure, ensure that the following documents have been read and understood:

- Personal Health and Safety Information
- System Safety Information

The following documents are referred and used in this procedure:

- Depending on the used hardware environment, use the relevant document from the ones referred in Section 2.1 on page 4. The documents contain further prerequisites.
- Refer to the Limitations and Workarounds for Cloud Execution Environment (CEE), Reference [4], for any limitation or workaround that applies to the procedures described in this document.
- Configuration File Guide
- Data Collection Guideline
- Extreme X670V Configuration or Extreme X770 Configuration
- BSP Hardware Installation, Reference [2]
- Dell PowerEdge R630 HW Installation
- Dell PowerEdge R630 Server Configuration
- Dell PowerEdge R630 Server BIOS Configuration for CEE

1.2.2 Tools

The following tools are needed:

- An Electrostatic Discharge (ESD) wrist strap (part number LYB 250 01/14)
- A computer with the ability to do a Secure Shell (SSH) logon to the CEE vCIC

1.2.3 Data

A site-specific IP and VLAN plan is required.

The address variables used in the document IP and VLAN plan are used throughout this document, and are summarized in the following table.



Table 1 IP Variables Based on IP and VLAN plan

VLAN	Variable Name	Factory Default IP Address Allocation
fuel_ctrl_sp	<vFuel (static)>	192.168.0.11

Other site-specific data is listed in the following table:

Table 2 Other Variables Used

Resource	Variable Name
External IP address of the vCIC	<vcic_address>
Personal username to the vCIC	<personal-user>
Password for the personal username to the vCIC	
Password for the root user on vFuel	

1.2.4 Conditions and Limitations

Before starting this procedure, ensure that the following conditions are met:

- A work order for the expansion is received or the document is referred from another procedure.
- The IP addresses and credentials for SSH connections to the following devices are known. See also Section 1.2.3 on page 2.
 - vCIC
 - vFuel
- If the system contains manually configured switches, connectivity for the new server or servers is configured by the user.
- If the `cscadm` password has been changed in ODL since deployment, it must be propagated in the CEE region. For more information, refer to the relevant section in the [Security User Guide](#).

BSP Systems

- Verify that there are enough unused slots for each new server, including whether there is a need for adding new enclosures, subracks, or cabinets. If a new subrack or cabinet needs to be added, and is available, verify visually that it is undamaged. Follow the instructions in [BSP Cabinet Management, Reference \[1\]](#), to add the new subrack or cabinet.
- The new server or servers are available and it has been verified visually that the new server or servers are undamaged.



- All keys to the site are available and site access is granted.

Dell Systems

- Verify that there are enough unused slots for each new server, including whether there is a need for adding new enclosures, subracks, or cabinets. If a new enclosure needs to be added, and is available, verify visually that it is undamaged. Follow the instructions in supplier documentation to add the new enclosure.
- The new server or servers are available, and it has been verified visually that the new server or servers are undamaged.
- Cabling is done for the slot or slots in the existing enclosures to be used for the new server or servers according to supplier documentation.
- All keys to the site are available, and site access is granted.

HDS Systems

No platform-specific prerequisites

2 Procedure

This procedure describes how to add one or more servers.

The procedure contains the following activities:

1. Hardware installation of the new server or servers, see Section 2.1 on page 4
2. Executing the installation command, see Section 2.2 on page 6
3. Backup of vFuel, see Section 2.4 on page 7
4. Concluding routine, see Section 2.5 on page 7

Start the procedure with Section 2.1 on page 4.

2.1 Hardware Installation and Server Configuration

Perform the following steps:

1. Depending on the used HW infrastructure, refer to the relevant instruction indicated below and perform the steps provided for hardware installation of the server including BIOS configuration:



- BSP-based systems: CPI documentation of the Blade Server Platform (BSP). Use the instruction Increase BSP Tenant Capacity, Reference [3].
 - Dell-based systems:
 - Dell PowerEdge R630 HW Installation
 - Dell PowerEdge R630 Server Configuration
 - Dell PowerEdge R630 Server BIOS Configuration for CEE
 - HDS-based systems: see Section 2.1.1 on page 5
 - Other HW: documentation provided by the manufacturer
2. In case of unmanaged servers, continue with Section 2.1.2 on page 5. Else, continue with Section 2.2 on page 6.

2.1.1 Expansion of HDS-Based System

Note: In case of CEE on HDS with SDN, if SR-IOV is used, attach one additional Ethernet Interface per switch physical interface to the OVSDb Interface. For more information, refer to [CEE on HDS Installation](#).

1. Order the expansion of the CEE vPOD with the required new server or servers from the data center owner (DCO).
2. Make sure that the new server or servers are assigned to the CEE vPOD, and that the UUID of the new server or servers is available.
3. Configure the required L2 networks in the CEE vPOD for the new servers, according the section on L2 network configuration in the document [CEE on HDS Installation](#).
4. Continue with Section 2.2 on page 6.

2.1.2 vFuel Discovery for Unmanaged Servers

In the case of unmanaged servers, before the execution of the installation command, the new server needs to be discovered in vFuel. After the new server has been configured, do the following:

1. Set the boot device to PXE.
2. Force restart the server.
3. Log on to vFuel using ssh. For more information, refer to [CEE Connectivity User Guide](#).
4. Check from vFuel if the new server or servers have been discovered, using the command `fuel node`. Depending on the result, do one of the following:
 - If all new servers are discovered in vFuel, continue with Section 2.2 on page 6.



- If some or all of the new servers are not discovered by vFuel after 10 minutes, repeat Step 1 and Step 2 on the remaining servers.
- If some or all of the new servers are not discovered by vFuel after multiple attempts, continue with Section 2.3 on page 7.

2.2 Executing Installation Command

Perform the following steps:

1. If not yet logged on, log on to vFuel using `ssh`. For more information, refer to [CEE Connectivity User Guide](#).

Perform the following steps at the vFuel node:

2. Add the new server or servers in the `/mnt/cee_config/config.yaml` file. Refer to the [Configuration File Guide](#) for more information.
3. Change the working directory to `/opt/ecs-fuel-utils` with the following command:

```
cd /opt/ecs-fuel-utils
```

4. Start a screen session with the following command:

```
screen -S expand
```

Note: The `screen` command starts a session that is independent from the current terminal window. During the expansion process, vCIC restarts, and connection to vFuel is therefore terminated.

When vCIC is rebooted, wait until it is back online, log back to vCIC and Fuel with the steps above, and reattach the screen session with the command: `screen -r expand`

5. Use the `expandcee` command to start the installation.

If applicable, this command causes reconfiguration of the switches.

Note: Verification of the functions of the newly added server or servers is also performed by the command.

6. Do the relevant action:
 - If the installation ends without issues, continue with Step 7.
 - If the command execution fails, continue with Section 2.3 on page 7.
7. Log out from the screen session:

```
exit
```



8. Log out from vFuel:

exit

9. Continue with Section 2.4 on page 7.

2.3 Data Collection

1. Collect the console printout.
2. Log out from the screen session:

exit

3. Log out from vFuel:

exit

4. Collect all logs by referring to [Data Collection Guideline](#).
5. Consult the next level of maintenance support. Further actions are outside the scope of this instruction.

2.4 Fuel Synchronization

In order to backup vFuel, follow the instructions in [Fuel Synchronization](#).

Continue with Section 2.5 on page 7.

2.5 Concluding Routine

Do the following:

1. If the configuration files have been updated, it is recommended to perform a backup of the configuration files for disaster recovery purposes. For more information, refer to [Disaster Recovery](#).
2. Collect all tools and equipment.
3. Report that the new compute host or hosts have been added.
4. Carry out any remaining actions according to the work order, if applicable.
5. The job is completed.



Reference List

- [1] BSP Cabinet Management, 1553-CRA 119 1772
- [2] BSP Hardware Installation, 1/1531-CRA 119 1772
- [3] Increase BSP Tenant Capacity, 12/1543-APP 111 01
- [4] Limitations and Workarounds for Cloud Execution Environment (CEE) 6.6, 5/109 21-AZE 102 01/5-12 Uen
- [5] Hyperscale Datacenter System 8000 Customer Documentation, 2/1551-LZN 901 5032