

HP c7000 Server BIOS Configuration

Cloud Execution Environment

OPERATING INSTRUCTIONS

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1 Introduction

The procedure described in this instruction is part of a complex procedure. Only perform the steps in this document if it is referred from another instruction or a work order is received.

The document provides instructions on how to configure the server BIOS settings for a newly inserted server in an 1.1 HP c7000 based Cloud Execution Environment (CEE).

1.1 Scope

This document describes how to configure the BIOS settings for a new server in an HP c7000.

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*

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 virtual Cloud Infrastructure Controller (vCIC)
- Kickstart server. A kickstart or LCT server can be created by following the preparation procedure in the document *Preparation of Kickstart Server*.
- An RJ45 cable to connect the kickstart server to the Onboard Administrator (OA). See Figure 1.

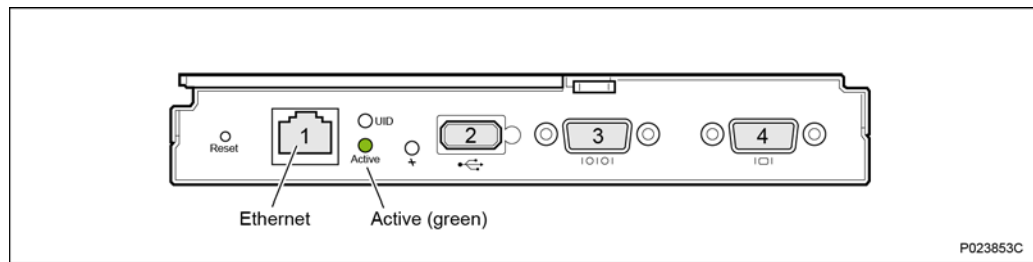


Figure 1 Onboard Administrator Module

1.2.3 Data

A customer-specific IP and VLAN plan, based on Reference [1], is required.

The address variables used in the document *IP and VLAN plan*, Reference [1], are used throughout this document, and are summarized in the following table.

Site-specific data used in the procedure are listed in the following table:

Table 1 Site-specific Data

Resource	Variable Name	Additional Information
Primary OA IP address	<code><primary_oa_ip_address_for_the_enclosure></code>	Primary OA IP address of the relevant enclosure
Secondary OA IP address	<code><secondary_oa_ip_address_for_the_enclosure></code>	Secondary OA IP address of the relevant enclosure
IP address of the first external NTP server	<code><external_ntp_server_1></code>	It is only needed for HP c7000 configuration at CEE installation. It is not needed for server replacement or CEE region expansion.
IP address of the second external NTP server	<code><external_ntp_server_2></code>	It is only needed for HP c7000 configuration at CEE installation. It is not needed for server replacement or CEE region expansion.
External vCIC IP address	<code><vcic_address></code>	
Personal username to the vCIC	<code><personal-user></code>	
Password for the used personal user on the vCIC		
Password for the root user on vFuel		

*Table 1 Site-specific Data*

Resource	Variable Name	Additional Information
A username with administrator privileges to the OA of the enclosure	<code><username></code>	
Password for user <code><username></code>		

1.2.4 Conditions

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

- A work order for the server configuration is received or the document is referred from another procedure.
- The IP address and credentials for SSH connection to the primary OA of the enclosure is known. See also Section 1.2.3 on page 2.
- All keys to the site are available and site access is granted.

2 Procedure

This procedure describes how to configure the BIOS in a HP c7000 server.

The procedure contains the following activities:

1. Setting the boot mode, see Section 2.1 on page 3.
2. Redundant Array of Independent Disks (RAID) configuration, see Section 2.3 on page 5.
3. Concluding routine, see Section 3 on page 9.

Start with Section 2.1 on page 3.

2.1 Boot Mode

Do the following:



1. Connect to the OA and log on to the OA CLI as described in Section 4 on page 9, then continue the procedure with Step 2.
2. Configure power regulator settings and set BIOS boot mode

```
show server list
```

Select the new server number or numbers from the list. For each new server, do the following:

- a. `connect server <server_number>`

Note: Server number is 1 to 16.

- b. `set /system1/oemhp_power1 oemhp_powerreg=max`
- c. `show system1/bootconfig1`

Depending on the command output, perform the relevant action:

- Continue with Step e if the command output contains the following:

```
oemhp_bootmode=Legacy  
oemhp_pendingbootmode=Legacy
```

- Else, continue with Step d.

- d. `set /system1/bootconfig1 ⇒
oemhp_pendingbootmode=Legacy`

- e. `exit`

3. Depending on the procedure from which this instruction was referred, continue with the relevant step:
 - In case of HP C7000 configuration at CEE installation, continue with Section 2.2 on page 4.
 - In case of server replacement or CEE region expansion, continue with Step 4.

4. Log out from the primary OA:

```
exit
```

5. Continue with Section 2.3 on page 5.

2.2 NTP

This section is only applicable to HP c7000 configuration at CEE installation.



Do not perform the steps in this section in case of server replacement or CEE region expansion.

1. Configure NTP settings by using the following commands:

- a. `set ntp primary <external_ntp_server_1>`
 - b. `set ntp secondary <external_ntp_server_2>`
 - c. Enter `help set timezone` for information on time zone string.
 - d. `set timezone <time_zone>`
- Note:** Input `<time_zone>` as UTC. CEE only supports UTC.
- e. `set date <MMDDhhmmYYYY>`

Note: The date corresponds to UTC (GMT).

2. Configure NTP for interconnect by using the following commands:

- a. `set ebipa interconnect ntp primary <external_ntp_server_1>`

The following output is displayed:

```
Entering anything other than 'YES' will result in
the command not executing.
Are you sure that you want to set the primary NTP
server to <external_ntp_server_1>?
```

- b. Enter:
`yes`

- c. `set ebipa interconnect ntp secondary <external_ntp_server_2>`

The following output is displayed:

```
Entering anything other than 'YES' will result in
the command not executing.
Are you sure that you want to set the primary NTP
server to <external_ntp_server_2>?
```

- d. Enter:
`yes`

3. Log out from the primary OA:

`exit`

4. When all enclosures are configured, continue with Section 2.3 on page 5.



2.3 RAID Configuration

Do the following for the new server. If there are more than one new servers, do the following for each new server. In case of CEE installation, these settings must be configured for each server in each enclosures.

1. Log on to the OA GUI as described in Section 4.2.2 on page 11.

Note: If you are not connected to the OA, connect by using Section 4.1 on page 10 before logging on to the GUI.

2. In pane **Systems and Devices**, in **Device Bays**, expand the server you want to configure.
3. In pane **Systems and Devices**, click **iLO**.
4. In pane **Processor Information**, click **Remote Console**.
5. A new window is opened, the warning `This Connection is Untrusted` is shown.
6. Click **I Understand the Risks**.
7. Click **Add Exception ...**
8. Click **Confirm Security Exception**.
9. Click **Resend**.
10. Click **Activate Java(TM)**.
11. Click **Allow and Remember**.
12. A new window is opened, wait until a security warning dialogue window is shown, press **Continue**.
13. A security warning dialogue window warning for **Java integrated Remote Console** is shown. Check **I accept the risk** in the bottom of the dialog box and press **Run**.
14. A new window is shown with the name **Proliant Server - <IP address>**, choose menu **Power Switch**, if only **Momentary Press** is available press it, otherwise press **Reset**.
15. Wait until **F10 Intelligent Provisioning** is displayed in the bottom of the window and press **F10**.



Note: Make sure that the bottom of the window is shown. Scroll down in the window if needed.

It takes about 90 seconds before the output is displayed.

When **F10** is pressed, the **F10** on the screen is highlighted.

If **F10** was not pressed on time, do a **Reset**.

16. When the printout Important information available on errors detected and Press F1 to continue, F2 for more information is shown, press **F1**, if it is not shown, continue with Step 19.

Note: If the printout indicates that the server is restarted and the prompt is displayed, continue the procedure from Step 15.

17. When HP Intelligent Provisioning, HP Smartstorage Administrator, and Scripting Toolkit Windows PE 64 Mode are shown, select HP Smartstorage Administrator with down arrow and press **Enter**.

Note: A 15 second timer starts as soon as the above described screen is shown, and when it times out **HP Intelligent Provisioning** is started.

18. Continue with Step 22.

19. Wait until a screen with Configure and Install and Perform Maintenance is shown.

This takes at least 5 minutes. If needed, do the following:

- a. Check **Accept EULA**.
 - b. Click the bottom right corner that displays **CONTINUE**.
 - c. Select **Enable Smart Provisioning**.
 - d. If **Quick setup for HP Insight Remote Support** is displayed as the next step, select the **Connect later** option.
 - e. Select **Register Later**.
20. Click **Perform Maintenance**.
21. Click the symbol next to **HP Smart Storage Administrator (SSA)**.
22. Click **Smart Array 244br** to the left.
23. Click **Configure** under **Actions**.
24. Click **Arrays** to the left.



Note: If arrays exist, delete them before proceeding.

Do not use **Delete Array** option, **Delete Logical Drive** must be used.

Delete the logical drives in highest number to lowest number order.

Click **Logical Drive <number>** in pane Arrays.

Click **Delete Logical Drive** in pane Action.

Click **Yes** to delete logical drive.

Click **Finish** to remove Operation executed successfully message.

25. Click **Create Array** under **Actions**.

26. Check the **Select All(2)** check box under **All Items**.

27. Click **Create Array**.

28. Choose default values. (RAID 1, 256 KiB, 32 and Maximum Size)

29. If setting battery-backed write caching is also presented, ensure that the relevant setting is configured for the used hardware:

- For RAID controller with battery, set it to **Enable**.

Note: In the certified hardware configuration, the used RAID controller is equipped with battery. Using the battery-backed cache prevents data loss in case of power supply outage and improves disk performance.

- For RAID controller without battery, set it to **Disable**.

Note: Enabling the cache for non-battery-backed disks can cause data loss in case of power supply outage.

30. Click **Create Logical Drive**.

31. Click **Finish**.

32. Click the **X** to the upper right corner to leave the program.

33. Click **OK** to exit the application.

34. Click the **power symbol** in the upper right corner and choose **Shutdown**.

35. Close the **iLO Integrated Remote ...** window.

36. Close the **Java Integrated Remote Console** window.

37. Perform the relevant action:



- If RAID has been configured to all new servers, continue with Step 38.
 - If there are further new servers, configure RAID for them by performing the steps in Section 2.3 on page 5.
38. Sign out from the **HP BladeSystem Onboard Administrator**.
 39. If the OA was reached by using direct cable connection, continue with Step 40, else continue with Section 3 on page 9.
 40. Disconnect the RJ45 cable that is connected from the kickstart server.
 41. Reconnect the RJ45 cable that was disconnected from the active OA at the beginning of the procedure.
 42. Continue with Section 3 on page 9.

3 Concluding Routine

Do the following:

1. Collect all tools and equipment.
2. Report that the BIOS settings for the new servers have been configured.
3. Do any remaining actions according to the work order, if applicable.
4. If this document was referred from another instruction, get back to the referring procedure.
5. The job is completed.

4 Reaching the OA

This section and its subsections are referred in the server BIOS setting procedures.

The section describes how to connect and log on to the OA.



The OA can be reached remotely from the vCIC or with a direct cable connection. Any of the two ways can be used.

When connected, you must log on to the OA GUI by using a browser or log on to the OA CLI.

Use the CLI for setting the boot mode and use the GUI for setting the RAID configuration.

4.1 Connect to the OA

Connect to the OA by using either of the following procedures:

- Remote access, see Section 4.1.1 on page 10.
- Direct cable connection, see Section 4.1.2 on page 10.

4.1.1 Remote Access

Do the following:

1. Log on to the vCIC by using SSH:

```
ssh -X <personal-user>@<vcic_address>
```

Example:

```
ssh -X admin_user@192.168.0.4
```

2. If prompted, provide the user password.
3. Log on to the vFuel by using SSH:

```
ssh -X root@<Fuel (static)>
```

Example:

```
ssh -X root@192.168.0.11
```

4. When prompted, provide the password of the root user on vFuel.
5. Continue with Section 4.2 on page 11.

4.1.2 Direct Cable Connection

Do the following:

1. Identify the active OA. The active OA is indicated by the green **Active** indicator, see Figure 1.
2. Disconnect the RJ45 cable from the active OA in the enclosure.



3. Connect the kickstart server RJ45 cable to the active OA of the enclosure.
4. Continue with Section 4.2 on page 11.

4.2 Log on to the OA

Continue with the relevant section:

- To set the boot mode, connect to the OA CLI as described in Section 4.2.1 on page 11.
- To perform RAID configuration, connect to the OA GUI as described in Section 4.2.2 on page 11.

4.2.1 CLI

To enter the OA CLI, do the following:

1. Log on to the active OA with user `<username>`, by using SSH. In the following example, the primary OA is the active:


```
ssh <username>@<primary_oa_ip_address_for_the_enclosure>
```
2. Verify that you have reached the active OA by checking that the printout, when logging on, includes the text: `OA role active`.

Note: If not the active OA is reached, log on to the other OA.

3. Continue with Step 2 to set the boot mode.

4.2.2 GUI

To enter the OA GUI, do the following:

1. Connect to the active OA with a Firefox browser, using the previously defined IP address.

If the warning `This Connection is Untrusted` is shown, perform the following:

- Select **I Understand the Risks**.
- Select **Add Exception**
- Select **Confirm Security Exception**.

Log on with user `<username>` towards the active OA.

Note: If the **HP BladeSystem Onboard Administrator** page is shown with a text in red stating `This Onboard Administrator is in Standby mode`, you have reached the standby OA. Log on to the other OA.



2. Continue with Step 2 to set the RAID configuration.



Reference List

- [1] *IP and VLAN plan, 2/102 62-CRA 119 1862/5 Uen*