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HPE Edgeline EL300 Converged Edge System UEFI User Guide

Abstract

This guide details how to access and use the most commonly needed parts of the Unified Extensible Firmware Interface (UEFI) that is embedded in the system ROM of the HPE Edgeline EL300 Converged Edge System. This document is for the person who installs, administers, and troubleshoots servers and storage systems.

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UEFI System Utilities

The UEFI System Utilities is embedded in the system ROM. Its features enable you to perform a wide range of configuration activities, including:

- Configuring system devices and installed options.
- Enabling and disabling system features.
- Displaying system information.
- Selecting the primary boot controller or partition.
- Configuring memory options.
- Launching other preboot environments.

HPE servers with UEFI can provide:

- Support for boot partitions larger than 2.2 TB. Such configurations could previously only be used for boot drives when using RAID solutions.
- Secure Boot that enables the system firmware, option card firmware, operating systems, and software collaborate to enhance platform security.
- UEFI Graphical User Interface (GUI)
- An Embedded UEFI Shell that provides a preboot environment for running scripts and tools.
- Boot support for option cards that only support a UEFI option ROM.

What is UEFI?

Unified Extensible Firmware Interface (UEFI) defines the interface between the operating system and platform firmware during the boot or start-up process. Compared to BIOS, UEFI supports advanced pre-boot user interfaces. The UEFI network stack enables implementation on a richer network-based OS deployment environment while still supporting traditional PXE deployments. UEFI supports both IPv4 and IPv6 networks. In addition, features such as Secure Boot enable platform vendors to implement an OS-agnostic approach to securing systems in the pre-boot environment.

The ROM-Based Setup Utility (RBSU) functionality is available from the UEFI interface along with additional configuration options.



Setup Utility Overview

Launching the Setup Utility

Procedure

1. Start an iSM remote console session:

- a. Open a browser and enter `https://<iSM host name or IP address>` to log on to the iSM web interface.

When you access the iSM web interface, use HTTPS (HTTP exchanged over an SSL encrypted session).

The iSM login page displays. If a login security banner is configured, the banner text is displayed above the username and password fields.

- b. On the login page, enter a local user account name and password, and then click **Log In**.
- c. Select **Remote Console** in the iSM navigation tree.
The Launch tab is displayed.
- d. Click the launch button.

2. Restart or power on the server.

The server restarts and the POST screen appears.

3. Press **F9**.

The **Setup** screen appears.

Navigating the Setup Utility

Procedure

1. Launch the Setup Utility.

2. To navigate the screens and modify settings, press any of the navigational keys. Key functions are shown at the right of every Setup Utility screen.

3. To exit the Setup Utility:

- a. Press **Esc** until the **Exit Without Saving** menu is displayed, and then select **Yes**.
- b. Press the right or left arrow keys to display the **Save & Exit** tab—Select an option from the **Save Options**, **Default Options**, or **Boot Override** sections.

The screen displays the boot process, and the POST screen appears. Toward the end of the boot process, the boot options screen is displayed. It is visible for several seconds before the system attempts to boot from a supported boot device.



Setup Utility key functions

- **Up or down arrow:** Selects a menu option. When selected, the color of a menu option changes from blue to white text.
- **Left or right arrow:** Selects a tab (if not in a submenu).
- **Enter:** Selects an entry. When a submenu is available, the submenu appears.
- **Esc:** Returns to the previous screen.
- **+/-:** Changes a selection without opening a submenu.
- **F1:** Displays online help about a selection.
- **F2:** Reloads the configuration options on the tab to the last saved values.
- **F3:** After pressing this key, and confirming **Yes**, the optimized defaults for the tab are set.
- **F4:** Saves all configuration changes and continues the boot process with the first available boot device.
- **ESC:** Closes a submenu. Pressing **ESC** on a main tab gives you the option to exit without saving.

Required reboot

For certain configuration changes to take effect, a reboot might be required. In such cases, a prompt appears on the applicable Setup Utility screen informing you to do so.



Setup Utility screen tabs

This section of the guide covers each screen tab available in the Setup Utility, and the available configuration item on each tab. The tabs include the following:

- **Main tab**
- **Advanced tab**
- **Chipset tab**
- **Security tab**
- **Boot tab**
- **Save & Exit tab**

NOTE: Available Setup Utility options can vary by server platform and available options. You might not see some of the options that are documented in this guide.

The Setup Utility screen displays the Main tab by default. You will always start from the Main tab when accessing the Setup Utility.

Main tab

The Main tab displays the following sections:

- **BIOS Information:** Information about the currently installed BIOS, including details like the BIOS vendor, core version, compliancy, and the access level of the current user.
- **Board Information:** The items in this section identify specifics about the main board installed in the system.
- **Processor Information:** Information about the currently installed CPU, including details like the name, the speed, total memory, and memory frequency.
- **Other items:** Near the bottom of the tab, you can find firmware versions, the system language, and the system date. The only items on this tab that can be modified are the system language and system date.

Advanced tab

The Advanced tab displays the following:

- **Intel RC ACPI Settings:** System ACPI parameters (Intel RD)
- **CPU Configuration:** CPU configuration parameters
- **Power & Performance:** Power and performance options
- **PCH-FW Configuration:** Configure management engine technology parameters.
- **Thermal Configuration:** Thermal configuration parameters
- **Intel ICC:** Intel ICC
- **T1s Auth Configuration:** Select T1s Auth Configuration.
- Network connection and configuration for VLANs and installed NICs



- **Driver Health:** Provides health status for the drivers/controllers.
- **Trusted Computing:** Trusted computing settings
- **ACPI Settings:** System ACPI parameters
- **Serial Port Console Redirection**
- **AMI Graphic Output Protocol Policy:** Select monitor output by Graphic Output Protocol.
- **USB Configuration:** USB configuration parameters
- **CSM Configuration:** Enable/disable, option ROM execution settings.
- **HDD Secure Erase:** All the HDDs listed that support Secure Erase function
- **NVMe Configuration:** NVMe device options settings

Chipset tab

The Chipset tab displays two options:

- **System Agent (SA) Configuration:** This submenu provides options for configuring the way the SA uses memory and graphics.
- **PCH-IO Configuration:** The submenus available provide options for configuring:
 - PCI Express
 - SATA and RST Configuration
 - USB Configuration

NOTE: An option to enable or disable the PCH LAN controller is also available. Keep it enabled to establish the internal connectivity with iSM and allow the AMT/KVM feature to work properly.

Security tab

The Security tab provides two options for configuring passwords:

- **Administrator Password:** Set administrator password
- **User Password:** Set user password

Scroll down to see available options to:

- Configure the security per HDD drive
- Configure the system for Secure Boot
 - Restore Factory Keys
 - Reset to Setup Mode
 - Key Management



Passwords and associated UEFI access

The administrator password and user password control access to different features when only one or the other are configured:

- If only the administrator password is set, then this limits access to setup (UEFI) and is only asked for when entering setup.
- If only the user password is set, then this is a power on password and must be entered to boot or enter setup. In setup, the user has administrator rights.

The password length must be in the following range:

- Minimum password length: 3 characters
- Maximum password length: 20 characters

Boot tab

The Boot tab provides boot configuration options, including:

- **Setup Prompt Timeout:** Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.
- **Bootup NumLock State:** Set the keyboard NumLock state.
- **Quiet Boot:** Enables or disables Quiet Boot option.
- **Fast Boot:** Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect on BBS boot options.
- **New Boot Option Policy:** Controls the placement of newly detected UEFI boot options.
- **Boot mode select:** Select boot mode LEGACY/UEFI.
- **FIXED BOOT ORDER Priorities:**

NOTE: Fixed boot order does not imply that the priorities are unchangeable. You can use the arrow keys to select the entry to be modified, and then press enter to select from a list of boot devices.

- Boot Option #1 - Hard Disk: *installed operating system*
- Boot Option #2 - Network: UEFI: PXE IP4 Intel(R) I210 Gigabit Network Connection
- Boot Option #3 - NVMe
- Boot Option #4 - VIRTUAL MEDIA
- Boot Option #5 - SD
- Boot Option #6 - UEFI AP:UEFI: Built-in EFI Shell
- Boot Option #7 - USB Device
- **UEFI Network Drive BBS Priorities:** Specifies the Boot Device Priority sequence from available UEFI NETWORK Drives.
- **UEFI Hard Disk Drive BBS Priorities:** Specifies the Boot Device Priority sequence from available UEFI Hard Disk Drives.



NOTE: This entry may not appear when only one HDD is installed.

- **UEFI Application Boot Priorities:** Specifies the Boot Device Priority sequence from available UEFI Application.

Save & Exit tab

The Save & Exit tab provides the following options:

- **Save Options:**
 - Save Changes and Exit
 - Discard Changes and Exit
 - Save Changes and Reset
 - Discard Changes and Reset
 - Save Changes
 - Discard Changes

NOTE: Using an Exit option quits UEFI and continues with the boot process. Using a Reset option quits UEFI and then reboots the host.

- **Default Options:**
 - Restore Defaults
 - Save as User Defaults
 - Restore User Defaults
- **Boot Override:**
 - Red Hat Enterprise Linux (P2: ATP I-Temp M.2 2280)
 - Red Hat Boot Manager (P2: ATP I-Temp M.2 2280)
 - UEFI: PXE IP4 Intel(R) I210 Gigabit Network Connection
 - UEFI: PXE IP4 Intel(R) I210 Gigabit Network Connection
 - UEFI: PXE IP4 Intel(R) Ethernet Connection I219-LM
 - UEFI: Built-in EFI Shell
 - Launch EFI Shell from file system device

NOTE: These options are only an example of boot overrides. Available options are dependent on your environment. Note however that the EFI shell options are always present.



Frequently used functions

This section of the guide covers the procedures most often used when accessing the Setup Utility.

Change boot order

To change boot order:

1. Power on the EL300 unit.
2. Press **F9** to go to start the Setup Utility.
3. Navigate to the **Boot** tab.
 - a. Navigate to **FIXED BOOT ORDER Priorities**.
 - b. Navigate to each general boot option (#1-#4), press **Enter**, use the arrow keys to highlight an available option and then press **Enter** to select it. To control the specific hard disk, network entry, SD card, or UEFI AP, do the following:
 - To select a specific hard disk, go to **UEFI Hard Disk BBS Priorities** and select the drive
 - To select a specific network adapter, go to **UEFI NETWORK Drive BBS Priorities** and select the network
 - To select a specific SD card, go to **UEFI SD Drive BBS Priorities** and select the SD card.
 - To select a specific inbuilt application, go to **UEFI NETWORK Drive BBS Priorities** and select the **Built in EFI Shell**.
4. Press **F4** when you are finished making changes and are ready to save and quit.

Restore BIOS factory defaults

To restore BIOS factory defaults:

1. Power on the EL300 unit.
2. Press **F9** to go to the Aptio Setup Utility and access BIOS.
3. Navigate to the **Save and Exit** tab.
4. Scroll down to **Restore Defaults** and press **Enter**.
5. Press **F4** to save and exit.

View BIOS version

To view BIOS version:

1. Power on the EL300 unit.
2. Press **F9** to go to the Aptio Setup Utility and access BIOS.
3. Navigate to the **Main** tab.
4. View the BIOS and its component versions.



Websites

General websites

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

Hewlett Packard Enterprise Edgeline Documentation

www.hpe.com/info/edgeline-docs

Hewlett Packard Enterprise Edgeline Information

www.hpe.com/info/edgeline

Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:
<https://www.hpe.com/info/assistance>
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:
<https://www.hpe.com/support/hpesc>

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

Hewlett Packard Enterprise Support Center

<https://www.hpe.com/support/hpesc>

Hewlett Packard Enterprise Support Center: Software downloads

<https://www.hpe.com/support/downloads>

My HPE Software Center

<https://www.hpe.com/software/hpesoftwarecenter>

- To subscribe to eNewsletters and alerts:
<https://www.hpe.com/support/e-updates>
- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:
<https://www.hpe.com/support/AccessToSupportMaterials>





IMPORTANT: Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

Remote support and Proactive Care information

HPE Get Connected

<https://www.hpe.com/services/getconnected>

HPE Proactive Care services

<https://www.hpe.com/services/proactivecare>

HPE Datacenter Care services

<https://www.hpe.com/services/datacentercare>

HPE Proactive Care service: Supported products list

<https://www.hpe.com/services/proactivecaresupportedproducts>

HPE Proactive Care advanced service: Supported products list

<https://www.hpe.com/services/proactivecareadvancedsupportedproducts>

Proactive Care customer information

Proactive Care central

<https://www.hpe.com/services/proactivecarecentral>

Proactive Care service activation

<https://www.hpe.com/services/proactivecarecentralgetstarted>

Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

<https://www.hpe.com/support/ProLiantServers-Warranties>

HPE Enterprise and Cloudline Servers

<https://www.hpe.com/support/EnterpriseServers-Warranties>

HPE Storage Products

<https://www.hpe.com/support/Storage-Warranties>

HPE Networking Products

<https://www.hpe.com/support/Networking-Warranties>

Regulatory information

To view the regulatory information for your product, view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the Hewlett Packard Enterprise Support Center:

<https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts>



Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

<https://www.hpe.com/info/reach>

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

<https://www.hpe.com/info/ecodata>

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

<https://www.hpe.com/info/environment>

Documentation feedback

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