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HPE Adaptive Rack Cooling System Web Interface Guide

Abstract

This document is for the person who installs, administers, and troubleshoots servers and storage systems. Hewlett Packard Enterprise assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

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Introduction

The HPE Adaptive Rack Cooling System has a management module with a web interface that analyzes, queries, and manages various measurements and warning and alarm messages from the HPE Adaptive Rack Cooling System.

The management module analyzes measurements provided by the cooling unit, generates any necessary warning or alarm messages, and sends the messages to the web interface.

When a new warning or alarm occurs, the following events occur:

- The warning and alarm messages appear on the operator display and the web interface Alarms menu and Alarm History menu.
- An SNMP trap is sent to one or more trap receivers.
- If enabled, an alarm relay for leak detection is also activated. (The alarm relay is enabled by default.)
- If enabled in the appropriate web interface menu, the HPE Adaptive Rack Cooling System unit internal beeper signals an audible alarm.

Various system values can be set through the web interface and sent to the management module.

Configuration

Configuration overview

The base configuration of the HPE Adaptive Rack Cooling System, including customization of the network settings, can be performed in several ways:

- HTTP connection via the Ethernet interface
- Telnet connection via the Ethernet interface
- Serial connection via a USB cable

An HTTP connection is normally used to view or change the settings. If this is not possible, for example, because access via HTTP or HTTPS has been deactivated, accessing via a Telnet connection is recommended. To do this, you must know the IP address of the HPE Adaptive Rack Cooling System. If the IP address is not known, you can check it using the Network Information link on the display panel on the front of the HPE Adaptive Rack Cooling System.

The following sections assume that no changes have been made to the base configuration of the HPE Adaptive Rack Cooling System. In particular, the "HTTP/HTTPS" and "Telnet" connection types must not be blocked.

HTTP connection

Establishing the HTTP connection

Procedure

1. Connect the device with a network cable using the Ethernet interface on your computer.

   NOTE: Depending on which computer you use, you might need to use a cross-over cable.

2. Change the IP address of your computer to any address in the range 192.168.0.xxx, for example, **192.168.0.191**.

   IMPORTANT: Do not use the default device IP address **192.168.0.190**.

3. Set the subnet mask to the value **255.255.255.0**.
4. If necessary, switch off the proxy server in the browser to permit a direct connection to the device.
5. In the browser, enter `https://192.168.0.190`.

   The device login dialog box appears.

6. Log in as an administrator using the username **admin** and the password **admin**.
7. To display the device website, click the **Login** button.

   The device overview page displays.

   NOTE: You can also log in to a dashboard directly from the **Login** screen by clicking the **Login to Dashboard** button. For more information, see **Calling a dashboard**.

Changing the network settings

Customize the network settings of the HPE Adaptive Rack Cooling System so that it is included in your network structure.

Procedure

1. Click the **Processing Unit** entry in the left-hand navigation area of the overview window and the **Configuration** tab in the right-hand configuration area.
2. Click the TCP/IP button in the Network group frame.

   NOTE: The following sections describe how to make the setting for the IPv4 protocol. For more information, see **TCP/IP Configuration**.

3. In the **IPv4 Configuration** group frame, change the IP address of the device in the TCP/IP Configuration window to an address permitted in the network.
4. If necessary, set the correct net mask and gateway.

   Alternatively, select the **DHCPv4** setting instead of **Manual** for an automatic IP allocation.
5. Click the **Save** button to save the settings.

   NOTE: If the **Save** button is not active, you selected an incorrect input. Check and, if necessary, correct your inputs. For more information, see **Other displays**.

6. Change the IP address and subnet mask network settings on your computer to their original values.
7. Disconnect the network cable from your computer.
8. Connect the HPE Adaptive Rack Cooling System to your Ethernet LAN with a network cable.

   NOTE: If you activated the automatic IP assignment (the **DHCPv4** setting is activated), you can view the IP address of the HPE Adaptive Rack Cooling System using the USB interface.

Configuration settings

For more HPE Adaptive Rack Cooling System settings, see **Operation**.

Telnet connection

To establish a Telnet connection under the Windows XP operating system, use the supplied HyperTerminal program.

To establish a Telnet connection under the Windows 7 or later operating system, use an equivalent utility program such as PuTTY. Alternatively, you can use the Telnet client from Windows, but you must first install it under Windows. To install the Telnet client for Windows, click **Control Panel > Programs > Activate or deactivate Windows function**.

Establishing the Telnet connection

The Telnet connection must be enabled using the HPE Adaptive Rack Cooling System web interface. To establish a connection using HyperTerminal in the web interface:

Procedure

1. Click **Start > All Programs > Accessories > Communications > HyperTerminal**.

2. Create a connection and enter its name or " HPE Adaptive Rack Cooling System".
3. In the **Connect** with dialogue box, under the **Connect using** list, select **TCP/IP (Winsock)**.
4. In the Enter the IP address of the HPE Adaptive Rack Cooling System in the **Host address** field. The default IP address is 192.168.0.190.
5. Enter the port of the Telnet connection in the **Port number** field. The default is 23.
6. To establish the connection, click the **OK** button. The login page appears.

   If you are using the PuTTY program to establish a Telnet connection, use the following settings instead:

   - **Host name (or IP address):** 192.168.0.190
   - **Port:** 23
   - **Connection Type:** Telnet
   - **Load, save, or delete a stored session:** Default Settings
   - **Close window on exit:** Only on clean exit

USB/serial connection

When connecting the HPE Adaptive Rack Cooling System to a Windows 7 or later computer using a USB connection, the USB connection is displayed as a serial COM port (when viewed under Device Manager).

Determining the connection port

After the driver is installed, you must determine on which COM port the HPE Adaptive Rack Cooling System was installed:

Procedure

1. To start the Device Manager, click **Control Panel > System > Hardware > Device Manager**.
2. Expand the **Connections (COM and LPT)** entry.

   After the driver is installed, the COM interface to which the HPE Adaptive Rack Cooling System is connected displays.
3. Note the number of the COM port.

Establishing the connection

Use the following serial connection settings:

- **Bits per second:** 9600
- **Data bits:** 8
- **Parity:** No
- **Stop bits:** 1
- **Flow control:** Hardware

Basic settings

The following descriptions apply to access via Telnet or USB or serial port. Settings for access through the HPE Adaptive Rack Cooling System website are described in **Operation**.

Logging in to the HPE Adaptive Rack Cooling System

Once the connection has been established, the login page appears.

Procedure

1. Enter **`[Hostname] login: _ the user name`**, where **`[Hostname]`** is the stored host name of the HPE Adaptive Rack Cooling System.
2. Enter **`Password: _ the associated password`**.

   NOTE: The default user name and password is **`admin`**.
3. If necessary, press the **`Return`** key once. The HPE Adaptive Rack Cooling System Main Menu appears.

Menu structure

A Telnet or USB/serial connection can be used to make the base settings of the HPE Adaptive Rack Cooling System using the following menu structure.

1	Network Configuration		
	1	IPv4 Network Configuration	
		1	IPv4 Address
		2	IPv4 Subnet mask
		3	IPv4 Gateway
		4	Enable/Disable DHCPv4
	2	IPv6 Network Configuration	
		1	IPv6 Address 1
		2	IPv6 Address 2
		3	IPv6 Configuration
	3	DNS Configuration	
		1	DNS Primary Server
		2	DNS Secondary Server
		3	DNS Mode
		4	Hostname
	4	LDAP Configuration	
		1	LDAP Server

Table Continued

		2	Enable/Disable LDAP
	5	Radius Configuration	
		1	Radius Server
		2	Enable/Disable Radius
	6	Modbus/TCP Configuration	
		1	Change Server Port
		2	Enable/Disable Modbus/TCP
	7	Setting Ethernet Port	
	8	System Name	
	9	System Contact	
	A	System Location	
	B	Actual Date	
	C	Actual Time	
	D	Beeper	
	E	Security	
		Change User Password	
		Enable Web Access	
		Change HTTP Port	
		Change HTTPs Port	
		Enable FTP Access	
		FTP Port	
		Enable SSH Access	
		SSH Port	
		Enable Telnet Access	
		Telnet Port	
	F	SNMP Configuration	
		Enable SNMP V1 & V2	
		Read Community	
		Write Community	
		Trap Community	
		Enable SNMP V3	
	G	Reboot HPE Adaptive Rack Cooling System	
2	Network Info Page		

Table Continued

3	System Info Page	
4	Console Commands	
	1	Command (by DescName)
	2	Command (by VariableName)
	3	RS232 Console
5	Set HPE Adaptive Rack Cooling System Configuration	
	1	Set General Configuration to Default
	2	Set all Tasks to Default
	3	Set all Charts to Default

You can also use the HPE Adaptive Rack Cooling System website to access most of the parameters that can be accessed using the Telnet or USB/serial connection. The associated descriptions are described in **Operation**. Settings not available from the website are described in **Special settings and notes**.

Navigating the menu structure

The individual menu items are selected with the associated number shown before each menu item. Starting at the HPE Adaptive Rack Cooling System Main Menu, for example, it is possible to select the following submenus:

- **Key 1:** Network Configuration submenu
- **Key 2:** HPE Adaptive Rack Cooling System Network Info submenu
- **Key 3:** HPE Adaptive Rack Cooling System System Info submenu
- **Key 4:** HPE Adaptive Rack Cooling System Console Commands submenu
- **Key 5:** HPE Adaptive Rack Cooling System Configuration submenu

Alternatively, you can use the arrow keys, the Return key, and the Esc key to navigate through the menus.

Inputting values

The stored parameter values are displayed within brackets (> and <) at the end of each line. To change a value, select the appropriate parameter using the associated number. To accept a changed value, press the **Esc** key.

Example 1: Changing the network settings for IPv4

Procedure

1. In the HPE Adaptive Rack Cooling System Main Menu, press key **1** to select the **Network Configuration** submenu.
2. Press key **1** again to select the **IPv4 Configuration** submenu.
3. Press key **1** again to select the **IPv4 Address** parameter.

4. Clear the stored default address, and enter a valid network address.
5. Press **Return** to confirm the input.

   The entered address is displayed at the end of the line.
6. Press **Esc** to exit the IPv4 Configuration menu.

   If access to the device was made via Telnet, changing the IP address means that no further communication via the HyperTerminal is possible. To reconnect:

   1. Terminate the current connection.
   2. Establish a new connection using the new IP address.

   Example 2: Changing the name of the contact person

- In the HPE Adaptive Rack Cooling System Main Menu, press key **1** to select the **Network Configuration** submenu.
- Press key **6** to select the **System Contact** parameter.
- Enter the appropriate name of the contact person.
- Press **Return** to confirm the input.

  The entered name is displayed at the end of the line.
- Press **Esc** again to exit the Network Configuration menu.

NOTE: If you switch to another submenu after changing a value, the value is not accepted.

Special settings and notes

The following settings are available only via a Telnet or USB/serial connection.

Parameter	Explanation
Enable Web Access	Activate or deactivate access via HTTP(S) to the HPE Adaptive Rack Cooling System.
Set General Configuration to Default	Reset all HPE Adaptive Rack Cooling System settings to the factory settings.
Setting Ethernet Port	Set the transmission speed and the duplex procedure or the auto-negotiation for the network interface of the HPE Adaptive Rack Cooling System.
RS232 Console	Settings of the RS 232 interface (RJ 12 socket) for connection of a GSM, ISDN, or Display Unit (**Disabled** setting) or for the remote control (**Enabled** setting).
Set All Tasks to Default	Reset all tasks to the delivered state (empty).
Set All Charts to Default	Reset all charts to the delivered state (empty).

NOTE: If the RS232 Console parameter is used to activate the remote control (**Enabled** setting), a connected GSM, ISDN, or Display Unit will not function.

If you select the **Automatic DHCP** value via a Telnet or USB/serial connection for the **DNS Mode** parameter in the **DNS Configuration** submenu, observe the following notes:

- Set the **Enabled** value for the **Enable/Disable DHCPv4** parameter in at least one of the **IPv4 Configuration** or **IPv6 Configuration** submenus.
- Alternatively or additionally, in the **IPv6 Configuration** submenu, set the **IPv6 Configuration** parameter to **DHCPv6**.
- Do not deactivate DHCP for both IPv4 and IPv6 protocols after you have created the DNS configuration.

Performing switch commands

A user with administration rights can use a Telnet connection to switch the outputs for sensors connected to an HPE Adaptive Rack Cooling System (such as the slots of a switchable PSM module).

To switch the outputs, in the HPE Adaptive Rack Cooling System Main Menu, press key **4** to select the **HPE Adaptive Rack Cooling System Console Commands** submenu.

You can now trigger an output using either the name (DescName) assigned to the relay output or the complete variable name.

Switching using the assigned name

Procedure

1. Press key **1** to select the **Command (by DescName)** command.
2. Enter the command in the **`Device.DescName:Command`** format.

Parameter	Explanation
Device	The device index (ID number) that is prefixed to the associated Real Device in the navigation area of the HPE Adaptive Rack Cooling System website.
DescName	The specific description that was assigned to the output or the socket.
Command	The command to be performed. The following commands are supported: **`Off`**, **`On`**, **`Off 10 s`**, **`Off 30 s`**, **`Off 60 s`**

3. Press **Return** to confirm the input.

   If the switching command succeeded, an appropriate message displays (for example, "Device 3.Output 'Plug 1' switched to 'Off'"). If an error occurred, an error message displays (for example, "Device 3 not available").

   Switching using the complete variable name

   1. Press key **2** to select the **Command (by Variable-Name)** command.

2. Enter the command in the **`Device.Variable-Name:Command`** format.

Parameter	Explanation
Device	The device index (ID number) that is prefixed to the associated Real Device in the navigation area of the HPE Adaptive Rack Cooling System website.
Variable-Name	The variable name of the output or the socket that consists of three components, each separated with a period.
Command	The command to be performed. The following commands are supported: **`Off`**, **`On`**, **`Off 10 s`**, **`Off 30 s`**, **`Off 60 s`**

3. Press **Return** to confirm the input.

If the switching command succeeded, an appropriate message displays (for example, "Device 3.Output 'PSM_P1_1.Plug1.Relay' switched to 'Off'"). If an error occurred, an error message displays (for example, "Device 3 not available").

Logging out of the HPE Adaptive Rack Cooling System

Once you have updated all required settings on the HPE Adaptive Rack Cooling System, be sure to log out. To log out of the HPE Adaptive Rack Cooling System:

Procedure

1. Press the **Esc** key repeatedly until you return to the HPE Adaptive Rack Cooling System Main Menu.
2. Press the **Esc** key again. The following message appears at the lower screen edge:

   `Logout? [Y = Yes]`
3. Press **Y** to log out.

   Press any other key if you do not want to log out.

Operation

Operation overview

This section describes all settings made available via an HTTP gateway.

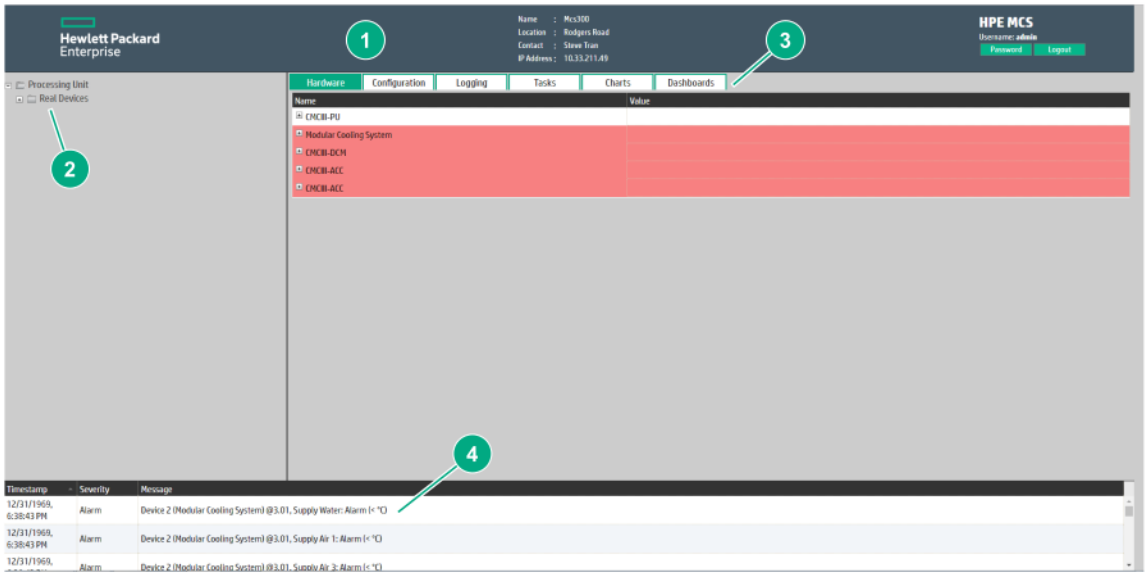
NOTE: If the HPE Adaptive Rack Cooling System is deployed in an environment subject to high EMC loading, parts of the website might display incorrectly. If this happens, reload the website from the browser.

General operation

Screen structure

After logging in to the HPE Adaptive Rack Cooling System, the web user interface for operation of the device is displayed. The screen is divided into four different areas:

- **Upper area:** Displays general information about the device; change the password and log the current user out in this area. For more information, see **Logging out and changing the password**.
- **Left-hand area (navigation area):** Use this area to select the complete system or the associated component. Information about the selected system or component is then displayed in the right-hand area of the screen. For more information, see **Navigation area in the left-hand pane**.
- **Right-hand area (configuration area):** Composed of six tabs with input possibilities for all settings. For more information, see **Tabs in the configuration area**.
- **Lower area:** Display messages. For more information, see **Message display**.



Key

1	General information
2	Navigation area

Table Continued

3	Configuration area with tabs
4	Message display

Navigation area in the left-hand pane

The complete system, including all installed components, is displayed as a tree view in the navigation area of the screen.

The processing unit, which includes the complete system, is located at the top of the navigation area. Two subgroups are displayed below the complete system:

- **Real Devices:** This group lists the HPE Adaptive Rack Cooling System itself as well as all hardware-installed devices and sensors.
- **Virtual Devices:** This group displays all virtual devices that were created in the HPE Adaptive Rack Cooling System. For more information, see **Virtual Devices**.

Each device, whether it is a real device or a virtual device, can assume various states. To quickly determine the current status, the symbol in front of the associated device is color-coded as follows.

Symbol	Explanation
	OK status. No warning or alarm messages are pending.
	Warning status. At least one warning message is pending.
	Alarm status. At least one alarm message is pending.
	OK status. The additional information flag indicates that additional status information is available. This symbol displays only when the logged-on user has at least read access to data for the associated device. For more information, see **Device Rights**.
	"Detected" status. The sensor has been added, but has not been confirmed. To confirm this sensor, go to the left-hand navigation pane, right-click, and select **Acknowledge**.
	"Lost" status. Communication with a sensor is no longer possible. The connection must be checked. Alternatively, the sensor can also be deactivated by confirmation.
	"Changed" status. The sequence of the sensors has been changed but has not been confirmed. To confirm this configuration change, go to the left-hand navigation pane, right-click, and select **Acknowledge**.

Tabs in the configuration area

There are six tabs in the right-hand area of the screen:

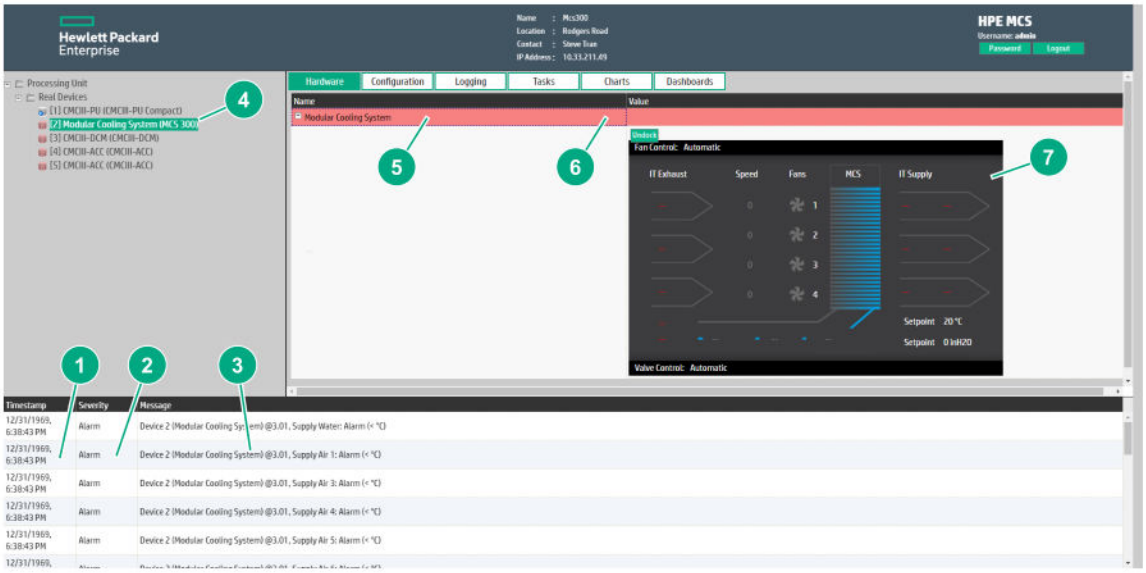
- **Hardware:** The current data of the HPE Adaptive Rack Cooling System or the connected devices. For more information, see **Hardware tab**.
- **Configuration:** Configuration of the basic settings. For more information, see **Configuration tab**.
- **Logging:** The message archive for the HPE Adaptive Rack Cooling System or the connected devices. For more information, see **Logging**.
- **Tasks:** Creation of the links for various values and the associated actions. For more information, see **Tasks**.
- **Charts:** Charts for the chronological trend of the variable values. For more information, see **Charts**.
- **Dashboards:** Creation of different views as dashboards. For more information, see **Dashboards**.

The content of the **Hardware** and **Configuration** tabs depends on whether the complete system (Processing Unit entry) or a single component (such as the HPE Adaptive Rack Cooling System entry) has been selected in the left-hand area of the screen.

Message display

Messages that are currently pending display in the lower area of the screen. The message display has the following structure:

- **Timestamp:** Date and time when the error occurred
- **Severity:** The severity of the error. A differentiation is made between warnings and alarms.
- **Message:** Error message in plain text



Key

1	Date and time
2	Error class
3	Error message in plain text
4	Component with error message

Table Continued

5	Component
6	Visualization or tree view icons (displays when hovered over)
7	Parameter

When an error occurs, it is displayed as follows:

- **Left-hand screen area (navigation area):** The symbol in front of the component on which the error occurred is color-coded (red for an alarm, yellow for a warning).
- **Right-hand screen area (configuration area):** The complete component and the special parameters for which the warning or alarm is pending is colored red or yellow on the **Hardware** tab.
- The multi-LED on the front of the HPE Adaptive Rack Cooling System lights red or orange.
- Depending on the settings, the alarm relay latches and the HPE Adaptive Rack Cooling System issues an acoustic signal.

Depending on the selected alarm configuration, once the cause of an error message is corrected, the associated message can be automatically deleted from the message display. The status of the associated component can also be reset and all other displays caused by the error can disappear. For more information, see **Alarm Configuration**. Error messages and the status may remain in the overview until they have been acknowledged by pressing the **C** key on the HPE Adaptive Rack Cooling System.

If a permanent configuration change is made to the device (such as a new sensor connected to the HPE Adaptive Rack Cooling System), an alarm error message will appear in the message display. In this case, the multi-LED in the front of the HPE Adaptive Rack Cooling System flashes cyclically green–orange–red. Such a configuration change is deleted from the message display once it has been confirmed by the operator.

Example: Excessive temperature value

If the temperature sensor integrated on the HPE Adaptive Rack Cooling System measures a temperature above the value set in **SetPtHighWarning**, a warning message displays.

In this case, the following changes occur in the representation:

- The symbol in front of the HPE Adaptive Rack Cooling System component in the navigation area is highlighted yellow.
- The complete component as well as the **Temperature** and **Status** lines have a yellow background on the **Hardware** tab. The **High Warn** warning message displays.
- The appropriate warning message appears in the message display.

When the temperature falls below the **SetPt-HighWarning** value plus the hysteresis value, depending on the alarm configuration, the message might be deleted automatically from the message display and the associated status displays are reset. For more information, see **Alarm Configuration**.

Other displays

The operator inputs in the web user interface are checked automatically using specified rules depending on the entered parameter. This means changes can be saved only when all values have been previously entered correctly in a dialog box.

The following changes result after an incorrect input in the dialog box (for example, an incorrectly entered IP address):

- A red prohibit symbol appears behind the faulty entry in the field Netmask.
- When you hover the pointer over the prohibit symbol, a notice with additional information about the error appears.
- The **Save** button is deactivated so that the currently stored values cannot be saved.

To correct the error:

1. Use the notice to check which incorrect input is present.

   For example, the value entered does not have the format of an IP address.
2. Correct the incorrect value. For example, enter the value **255.255.255.0**.

   The prohibit symbol is hidden and the **Save** button is activated.
3. To save the values, click the **Save** button.

Changing parameter values

The list representation of the **Hardware** tab displays the various parameters of the associated component. While the operator can change some of these parameters, others have fixed values. For parameters that can be changed, an edit icon (a notebook with pencil) appears behind the associated parameter when you place the cursor in the appropriate row. If this icon does not appear, the associated value cannot be changed.

Example:

1. **HPE Adaptive Rack Cooling System** entry in the navigation area.
2. Click the **Hardware** tab in the right-hand part of the screen.
3. Expand the **HPE Adaptive Rack Cooling System** and then the **Device** entries by clicking the plus symbol in front of the entry.
4. Place the cursor at the end of the first column in the **Location** row.

   An edit icon appears and the cursor changes to a hand icon.
5. Click the edit icon.

   The **Write Values** dialog box with the **Device.Location** parameter appears.
6. Enter the location of the HPE Adaptive Rack Cooling System. (For example, **HPE Adaptive Rack Cooling System Rack 1**.)
7. Confirm the entry by clicking the **Write** button.

   The dialog box closes, and the new value appears in the **Location** row.
8. Place the cursor at the end of the first column in the **Type** row.

   No edit icon appears, indicating that you cannot change the HPE Adaptive Rack Cooling System value stored here.

To change several values at once, or if you do not know under which entry the parameter value is stored, you can display all parameter values of the lower level entries in a shared window. To do this:

Procedure

1. Expand the **HPE Adaptive Rack Cooling System** entry by clicking the plus icon in front of this entry.

2. Place the cursor at the end of the first column in the **Device** row.

   An edit icon appears and the cursor changes to a hand icon.

3. Click the edit icon.

   The **Write Values** dialog box showing the **Device.Description** and **Device.Location** parameters appears.

4. Save the changed values for all changed parameters.

5. Confirm the entries by clicking the **Write** button.

   The dialog box closes.

6. Expand the **Device** entry by clicking the plus icon in front of this entry.

7. View the changed values.

   The **Write Values** dialog box displays all the parameters that can be changed below the previously selected level. For example, if you click the edit icon in the uppermost HPE Adaptive Rack Cooling System level, all parameters that can be changed for the complete component are displayed.

   NOTE: If too many variables are to be changed, an error message appears. In this case, you must switch to the next lower level.

Undock function

A graphic overview for some sensors is displayed on the HPE Adaptive Rack Cooling System website. This overview can be remote from the current browser window and viewed in its own window.

NOTE: The Undock function is not available for Internet Explorer.

To undock:

1. Select the associated sensor in the navigation area.

2. In the right-hand part of the screen, select the **Hardware** tab.

3. Expand the associated entry by clicking the plus icon in front of it.

4. If the subordinate entries **Device**, **General**, and so on are displayed after selecting the HPE Adaptive Rack Cooling System level, switch to the graphical representation by clicking the graphic icon after the HPE Adaptive Rack Cooling System entry.

   The display changes to the graphical representation.

5. Click the **Undock** button in the graphical representation.

   The **Power Unit** window is remote from the HPE Adaptive Rack Cooling System website, and the *Visualization is undocked* message appears in the main window.

The remote window can be moved and altered in size independent of the window with the actual HPE Adaptive Rack Cooling System website. This function can be used by several sensors, so a complete overview is created on the PC screen.

To display the overview in the main window, click the **Dock** button in the separate window, or close the window.

NOTE: If a value is in edit mode in the main window, all remote windows are grayed out, and no further actions can be performed there.

Logging out and changing the password

For each user or user group, a time can be specified after which the user will be logged out automatically in case of inactivity. For more information, see **Security**. Alternatively, a user can log out from the web user interface.

NOTE: After a direct login from the dashboard, the user is not logged out automatically after the predefined time. The user remains logged in to HPE Adaptive Rack Cooling System while the dashboard is open.

To log out, click the **Logout** button on the right-hand side of the upper area of the screen. The logout is performed immediately, and the **Login** window appears.

Users can also change their own password in the web user interface. To change a password:

Procedure

1. Click the **Password** button on the right-hand side of the upper area of the screen.

   The **Set new password for user XXX** dialogue box appears.

2. Enter the new password of at least three characters in the **Password** field, and then re-enter it in the **Re-enter password** field.

   When both entries match, you must use the new password the next time you log in to the system.

   NOTE: A user with the appropriate rights can change the passwords of all users from the user administration. For more information, see **Users**.

Reorganizing the connected components

When new components are installed on the HPE Adaptive Rack Cooling System, they can be added in the navigation area at the next free location, and then receive the appropriate ID number. Multiple upgrades or changes to the connected components can mean there is no association between the position of the components on the CAN bus and the associated ID number.

The Reorganize function renumbers all connected components. The numbering begins with the components on CAN bus connection 1 of the HPE Adaptive Rack Cooling System. They are then numbered in the sequence in which they are connected. Finally, all components on CAN bus connection 2 are processed similarly.

Procedure

1. Click the **Processing Unit** entry in the navigation area, or right-click any other connected component.
2. Left-click the **Reorganize** entry in the context menu.
3. Click **Acknowledge** to accept the change.

   A message appears stating that the reorganization has caused the components to be re-indexed. This can cause access problems to these components (for example, via SNMP), so this access must be reconfigured. The Alarm Configuration of the individual sensors is retained.

   After reconfiguration, the sensors are automatically registered again on the HPE Adaptive Rack Cooling System.

NOTE: The reorganization of the components removes all components with a **Lost** status from the navigation area.

Hardware tab

The **Hardware** tab is used to make all settings for the individual components of the system, such as limit values for warning and alarm messages. The display in the right-hand screen depends on which component was selected in the navigation area:

- If you select the **Processing Unit** (uppermost node) entry in the navigation area, all Real Devices and Virtual Devices are available for selection.
- If you select the **Real Devices** or **Virtual Devices** entry in the navigation area, only those components that belong to the appropriate group are available for selection in the **Hardware** tab.
- If you select a special component in the navigation area (for example, the HPE Adaptive Rack Cooling System entry), the **Hardware** tab contains only those components for selection.

NOTE: It is not possible to change parameters for different components together.

Only those parameters for which you can make changes are described in detail in this section. Display values are used for information purposes only.

Device

General settings for the HPE Adaptive Rack Cooling System or the associated selected component are made at the **Device** level.

Parameter	Explanation
Description	Individual description of the HPE Adaptive Rack Cooling System
Location	Installation site of the HPE Adaptive Rack Cooling System

Parameters are also displayed that provide detailed information about the selected component, such as the version of the deployed software and hardware.

Temperature

Settings for the integrated temperature sensor are performed at the **Temperature** level.

Parameter	Explanation
DescName	Individual description of the temperature sensor
Offset	The offset value used to correct the measured temperature
SetPtHigh-Alarm	Upper limit temperature which causes an alarm message to be issued when exceeded

Table Continued

SetPtHigh-Warning	Upper limit temperature which causes a warning message to be issued when exceeded
SetPtLow-Warning	Lower limit temperature which causes a warning message to be issued when undershot
SetPtLow-Alarm	Lower limit temperature which causes an alarm message to be issued when undershot
Hysteresis	Required percentage deviation for undershooting or overshooting the limit temperature for a status change

The following parameters are also displayed for the temperature sensor.

Parameter	**Explanation**
Value	Currently measured temperature value corrected with the offset value
Status	Current status of the sensor

NOTE: If the value "0" is entered for all limit values at the **Temperature** level, the status of the integrated temperature sensor is always **OK**.

Door (Access)

Settings for the integrated access sensor are performed at the **Door (Access)** level.

Parameter	**Explanation**
DescName	Individual description of the access sensor
Sensitivity	Sensor separation to door (1 = small, 3 = large). Inputting "0" deactivates the integrated access sensor
Delay	Time delay with which the status message is changed.

The following parameters are also displayed for the access sensor:

Parameter	**Explanation**
Value	Current value of the access sensors (0 = door open, 1 = door closed)
Status	Current status of the access sensor taking into account the delay value ("Open" or "Closed")

Input_1 or Input_2

The separate settings for both integrated digital inputs are made at the **Input_1** and **Input_2** levels.

Parameter	Explanation
DescName	Individual description of the associated input
Logic	Selection of the input circuit logic. The following options are available: • 0: Off / 1: On • 0: On / 1: Off • 0: OK / 1: Alarm • 0: Alarm / 1: OK
Delay	Time delay with which the status message is changed.

The following parameters are also displayed for the two digital inputs.

Parameter	Explanation
Value	Current value of the associated input (0 or 1)
Status	Current status of the associated input taking into account the delay value and the set logic

Alarm Relay (Output)

The description for the integrated alarm relay can be changed at the **Alarm Relay (Output)** level.

Parameter	Explanation
DescName	Individual description of the alarm relay

The following parameters are also displayed for the alarm relay.

Parameter	Explanation
Relay	Current value of the alarm relay ("On" or "Off"). If the alarm relay is disabled, the relay can also be switched manually via the website.
Logic	Circuit logic of the alarm relay 0: Off / 1: On
Status	Current status of the output ("On" or "Off")

NOTE: The circuit logic of the alarm relay can be switched in the **General Configuration** dialogue box. For more information, see **General**.

System

The following additional information concerning the HPE Adaptive Rack Cooling System is displayed in the individual sublevels of the **System** level.

V24 Unit (V24 Port) sublevel

The following information is for a connected GSM unit, ISDN unit, or display unit.

Parameter	Explanation
DescName	Individual description of the connected unit.

The following parameters are also displayed for the unit.

Parameter	Explanation
Message	The current status of the unit. One of the messages below is displayed here, depending on the status of the unit.
Signal	Current signal strength
Status	The current status of the unit ("OK" or "n.a." if not unit is connect). When these variables are changed (a connected unit is removed), a task can be used to send an appropriate message by email or SNMP.

The **Message** parameter in the **V24 Unit (V24 Port)** sublevel can assume the following values.

Parameter	Explanation
GSM unit found	GSM unit is connected. The unit is signed onto the network.
GSM unit OK	GSM unit is ready.
ISDN unit found	ISDM unit is connected. The unit is signed onto the network.
ISDN unit OK	ISDN unit is ready.
GSM unit: PIN is missing	No PIN entered.
GSM unit: Service number missing	No service number entered.
GSM unit: Wrong PIN	Incorrect PIN entered.
GSM unit: PUK needed	The PUK must be entered.
GSM unit: not registered	The GSM unit is not signed onto the network.
MSN missing	No MSN entered.
ISDN no Line	ISDN not connected.
Display Unit OK	Display Unit connected.

CAN1 Current and CAN2 Current sublevels

Settings for both CAN bus interfaces can be performed at these sublevels.

Parameter	Explanation
DescName	Individual description of the associated CAN bus interface.
SetPtHigh-Alarm	Upper limit for the current value which, when overshot, causes the alarm message to be issued.
SetPtHigh-Warning	Upper limit for the current value which, when overshot, causes a warning message to be issued.
Hysteresis	Required percentage deviation for undershooting the limit values for a status change.

The following parameters are also displayed for the CAN bus interfaces.

Parameter	Explanation
Value	Currently measured value.
Status	Current status of the CAN bus interface.

Sys Temp sublevel

Settings for the system temperature of the HPE Adaptive Rack Cooling System are performed here.

Parameter	Explanation
DescName	Individual description of the system temperature.

The following parameters are also displayed for the system temperature.

Parameter	Explanation
Value	Currently measured system temperature.
Status	Current status of the system temperature.

The status of the system temperature changes when predefined limit temperatures are overshot or undershot.

Supply 24V sublevel

Settings for the supply voltage of the HPE Adaptive Rack Cooling System are performed here. All values apply to the actually used connection (power pack connection or direct connection).

Parameter	Explanation
DescName	Individual description of the supply voltage.
SetPtHigh-Alarm	Upper limit for the voltage value which, when overshot, causes an alarm message to be issued.
SetPtHigh-Warning	Upper limit for the voltage value which, when overshot, causes a warning message to be issued.

Table Continued

SetPtLow-Warning	Lower limit for the voltage value which, when undershot, causes a warning message to be issued.
SetPtLow-Alarm	Lower limit for the voltage value which, when undershot, causes an alarm message to be issued.
Hysteresis	Required percentage deviation for undershooting or overshooting the limit values for a status change.

The following parameters are also displayed for the supply voltage.

Parameter	Explanation
Value	Currently measured voltage value.
Status	Current status of the supply voltage.

Supply 5V0 and Supply 3V3 sublevels

Settings for the power supply of the USB interface (Supply 5V0) and of the digital inputs (Supply 3V3) for the HPE Adaptive Rack Cooling System are changed here.

Parameter	Explanation
DescName	Individual description of the associated supply voltage.

The following parameters are also displayed for the power supplies.

Parameter	Explanation
Value	Currently measured voltage.
Status	Current status of the voltage.

The status of the power supplies changes when predefined limit temperatures are overshot or undershot.

Memory

At the **Memory** level, you can view information concerning the HPE Adaptive Rack Cooling System installed external storage media (USB stick or SD card). These storage media may have maximum 32 GB total storage capacity, must have been formatted in the FAT32 file system, and are used for recording charts. For more information, see **Charts**.

USB stick sub-level

Information about an installed USB stick is displayed.

Parameter	Explanation
DescName	Name of the USB stick. This name is also displayed direction on the USB stick sub-level.

Table Continued

Size	Name of the USB stick. This name is also displayed directly on the USB stick sub-level.
Usage	Used storage capacity on the USB stick as a percentage of the total storage capacity.
Command	The **Eject** command signs off the USB stick from the system. It can then be removed without any data loss.
Status	Current status of the USB stick. **OK:** USB stick is installed and operational. **Inactive:** USB stick is installed but not signed on. **n.a.:** No USB stick installed. **High Warn:** Warning message when more than 80% of the storage capacity is assigned. **Too High:** Alarm message when more than 90% of the storage capacity is assigned.

You must sign off the storage medium on which chart data is stored from the HPE Adaptive Rack Cooling System before removing it. Alternatively, the associated charts can be deactivated manually beforehand. For more information, see **Configuring a chart**.

CAUTION: If an external storage medium is removed directly for activated charts, loss of chart data might occur.

SD Card sub-level

The same information as in the **USB stick** sub-level for a USB stick is displayed for an installed SD card. Prior to removing an installed SD card from the HPE Adaptive Rack Cooling System, use the **Eject** command to prevent loss of chart data.

Configuration tab

The content of the **Configuration** tab depends on which component was selected in the navigation area. Selecting the **Processing Unit** (uppermost node) complete system provides the following configuration options:

- **Network** group frame
  - TCP/IP
  - SNMP
  - HTTP
  - Filetransfer
  - Console
  - SMTP

    - Modbus/TCP
    - OPC-UA
- **System** group frame
    - Syslog
    - Units and Languages
    - Details
    - Date/Time
    - General
    - Firmware Update
    - Display
- **Security** group frame
    - Groups
    - Users
    - Access Configuration
    - LDAP
    - RADIUS

These configuration options are described in detail in the Network, System, and Security sections.

When a lower-level real device is selected, such as the HPE Adaptive Rack Cooling System, the following configuration options are available using the associated icons:

- Configure All Alarms
- Configure Device Rights

When a virtual device is selected, the **Configure Inputs and Outputs** option is available. This configuration option is described in detail in the Device Rights, Alarm Configuration, and Inputs and Outputs sections.

If the **Processing Unit** complete system is selected, the two buttons in the lower area of the **Configuration** tab can be used to display (left-hand button) or print (right-hand button) a summary of the current settings.

Network

CAUTION: In its delivered state, all protocols are activated as standard without SSL encryption. For applications with enhanced safety requirements, please note the following:

- Do not operate the system directly on the internet. Operate only in internal networks (intranet), and be sure to provide suitable external protection via firewalls.
- Do not use the default passwords. Instead, be sure to use secure, long passwords containing numbers, a mix of uppercase and lowercase letters, symbols, and no repetitions. For SNMP, overwrite the default community strings "public".
- Only use secure, encrypted protocols, or deactivate unsecure protocols such as Telnet, FTP, and so on.

TCP/IP configuration

The basic network settings for the TCP/IP protocol are made in the **TCP/IP Configuration** dialog box, separately for IPv4 and IPv6.

Parameter	Explanation
IP address	IP address of the HPE Adaptive Rack Cooling System
Netmask	IP subnet mask
Gateway	IP address of the router
DHCP	Activate (**DHCPv4** entry) or deactivate (**Manual** entry) DHCP to automatically assign an IP address for a server. No further inputs can be performed in this group frame when DHCP is activated.
IP address 1	First IPv6 address of the HPE Adaptive Rack Cooling System
IP address 2	Second IPv6 address of the HPE Adaptive Rack Cooling System
Auto	Displays an IPv6 address obtained automatically from the network
Link local	Displays the permanently assigned Link Local address of the HPE Adaptive Rack Cooling System
DHCP	Basic settings for IPv6: • **Disable:** Deactivate IPv6 • **Manual:** Manual specification of the IPv6 addresses • **Stateless Auto Configuration:** Activate the Autoconfiguration (in Linux networks). • **DHCPv6:** The address is specified using DHCPv6 (in Windows networks).

In addition to the basic network settings of the HPE Adaptive Rack Cooling System, the address or the server name for as many as two DNS servers for the name resolution can be entered in the **DNS Configuration** group frame.

Parameter	Explanation
Name Server	IP address or name of a server for the name resolution
DHCP	Activate (**Automatic by DHCP** entry) or deactivate (**Manual** entry) DHCP to automatically assign an IP address to the DNS server. If the DHCP is activated, no further inputs can be performed in this group frame. However, DHCP must be activated for at least one of the IPv4 or IPv6 DHCP protocols.
PU-Host-Name	DNS name of the HPE Adaptive Rack Cooling System. If a DNS server is used for the name resolution, the HPE Adaptive Rack Cooling System can also be accessed using its name rather than the IP address.

SNMP configuration

The basic settings for the SNMP protocol are made in the **SNMP Configuration** dialog box.

Observe the following notes when making settings for the SNMP protocol:

- The MIB for the HPE Adaptive Rack Cooling System is called **`cpqwcrm.mib`**.
- If the HPE Adaptive Rack Cooling System is included in an infrastructure management system via the MIB, only the variable name should be used to identify the variables. An identification using the ObjectID is not recommended.

NOTE: The associated current version of the **`cpqwcrm.mib`** file can be found on the **HPE website**. Click the Support link, and then search for "HPE System Insight Manager - MIB Kit". Select the appropriate MIB kit based on your OS platform. For more information, see **Saving supplementary information locally**.

All trap receivers are entered and generally enabled for sending in the **Traps** group frame.

NOTE:

- Any Trap Receivers that are not enabled in this group frame (**Use** column) will not receive any traps, even if enabled in the **Alarm Configuration** tab.
- All Trap Receivers that are enabled in this group frame must also be enabled in the **Alarm Configuration** tab. For more information, see **Trap receivers**.

Parameter	Explanation
Enable Authentication Trap	Activate or deactivate the trap messages for queries with an invalid community ("Authentication Trap").

Table Continued

Trap Receivers	As many as 16 IP addresses or host names as possible recipients of trap messages. The address of another HPE Adaptive Rack Cooling System to which a GSM or ISDN unit is connected can also be specified.
Use	Activate or deactivate individual recipients.

You can specify special host addresses in the **Allowed Hosts** group frame that can be used to make contact with the HPE Adaptive Rack Cooling System via SNMP.

Parameter	Explanation
Host	As many as 12 IP addresses or names can make contact with the HPE Adaptive Rack Cooling System as possible hosts. If no IP address or host name is entered here, all hosts in the network can make contact.
Use	Activate or deactivate individual hosts.

NOTE: Once a host has been entered in the **Allowed Hosts** group frame, any other host that is not entered there can no longer query values via the SNMP protocol.

You can make special specifications for the SNMP protocol in versions 1 and 2c in the **SNMPv1/v2c** group frame.

Parameter	Explanation
Enable	Activate or deactivate individual hosts.
Read Community	Name of the community with read access to the HPE Adaptive Rack Cooling System.
Write Community	Name of the community with write access to the HPE Adaptive Rack Cooling System.
Trap Community	The name of the community with the trap receivers. Trap messages can be sent only to the members of this community.

You make special specifications for the SNMP protocol in the version 3 of the **SNMPv3** group frame.

Parameter	Explanation
Enable	Activate or deactivate SNMPv3.
SNMPv3 Username	User name for access via SNMP.
SNMPv3 Password	Associated password for access via SNMP. The password must contain at least eight characters.

NOTE: When using SNMP management systems, the status of the HPE Adaptive Rack Cooling System "Overload (current too high)" message in the MIB is not currently supported.

HTTP configuration

All settings for access to the HPE Adaptive Rack Cooling System via HTTP are performed In the **HTTP Configuration** dialog box, subdivided into standard access without SSL and the secure access with SSL. In addition, you can specify whether or not the user has HTTP access to the HPE Adaptive Rack Cooling System for each. For more information, see **Users**.

Parameter	Explanation
Port	Web server port in the HPE Adaptive Rack Cooling System.
Enable	Activate or deactivate the access via the HTTP protocol.
SSL Port	Secure web server port in the HPE Adaptive Rack Cooling System.
Enable	Activate or deactivate the access via the HTTPS protocol.

NOTE: You cannot deactivate both with SSL and without SSL access via the web user interface. This is possible only via a Telnet connection This is possible only via a Telnet connection or a connection using the USB interface.

File transfer configuration

All settings for access to the HPE Adaptive Rack Cooling System via FTP are performed in the **File Transfer Configuration** dialog box. For more information, see **Updates and data backup**. In addition, you can specify whether or not each user has FTP access to the HPE Adaptive Rack Cooling System. For more information, see **Users**.

Parameter	Explanation
Port	FTP server port in the HPE Adaptive Rack Cooling System.
Enable FTP Server	Activate or deactivate access via the FTP protocol.
Enable SFTP Server	Displays the access via the SFTP protocol. To ensure access to the HPE Adaptive Rack Cooling System is always possible, this access cannot be deactivated.

Console

All settings for access to the HPE Adaptive Rack Cooling System via Telnet and SSH (Secure Shell) are performed in the **Console Configuration** dialog box. For more information, see **Telnet connection**. In addition, you can specify whether or not each user has Telnet or SSH access to the HPE Adaptive Rack Cooling System. For more information, see **Users**.

SSH group frame

Parameter	Explanation
Port	Port for access via Secure Shell (SSH) to the HPE Adaptive Rack Cooling System.
Enable	Activate or deactivate the access via Secure Shell.

Telnet group frame

Parameter	Explanation
Port	Port for access to the HPE Adaptive Rack Cooling System via Telnet.
Enable	Activate or deactivate the access via Telnet.

SMTP configuration

The basic settings for sending mail are made in the **SMTP Configuration** dialog box. All settings for the mail server are specified in the **Server Parameters** group frame so that the HPE Adaptive Rack Cooling System can send an appropriate email in case of pending alarms.

Parameter	Explanation
Server	IP address or name of the mail server used for sending emails.
Port	Mail server port
Authentication	Setting authentication on the mail server. **No:** Authentication deactivated. **Yes:** Authentication activated. **Yes/TLS:** Authentication activated with additional encrypted transmission of emails.
User name	User name for login to the mail server.
Password	Associated password for login to the mail server.
Sender address	Email address of the HPE Adaptive Rack Cooling System (sender address).
Reply to address	Reply address when a recipient responds to an email from the HPE Adaptive Rack Cooling System.

Telnet group frame

Parameter	Explanation
Port	Port for access to the HPE Adaptive Rack Cooling System via Telnet.
Enable	Activate or deactivate the access via Telnet.

All recipients of email messages are entered and generally enabled for sending in the **Email** group frame.

NOTE:

- All email text receivers that are not enabled in this group frame (**Use** column) will not receive any emails, even if enabled in the **Alarm Configuration** group frame.
- All email recipients activated in this group frame must also be activated in the Alarm Configuration group frame. For more information, see **Email receivers**.

Parameter	Explanation
Send device message	Determines whether status changes such as Lost, Detected, Changed, and so forth will be sent as email (checkbox activated or deactivated).
Email address	Up to 16 email addresses can be set up as possible recipients of email from the HPE Adaptive Rack Cooling System.
Use	Activate or deactivate individual recipients.

Modbus/TCP configuration

NOTE:

- The HPE Adaptive Rack Cooling System processing unit supports only the Modbus/TCP protocol.
- The list of all variables that can be queried via Modbus can be found in the **ModbusMap.cmc3** file via FTP access from the **download/docs** folder of the HPE Adaptive Rack Cooling System and stored on a local PC. For more information, see **Saving supplementary information locally**.

The **Modbus/TCP Configuration** dialog box is used to make the basic setting for the Modbus/TCP protocol. The following settings are made in the **Service Parameters** groups frame.

Parameter	Explanation
Enable	Enable or disable access via the Modbus/TCP protocol.
Port	Port of the Modbus server in the HPE Adaptive Rack Cooling System. Port 520 is set as the default.

The special host addresses defined in the **Allowed Hosts** group frame can be used to make contact with the HPE Adaptive Rack Cooling System using the Modbus/TCP protocol.

Parameter	Explanation
Host	Up to 12 IP addresses or names of possible hosts that can make contact with the HPE Adaptive Rack Cooling System. If no host is entered here, all hosts in the network can make the connection.
Access Rights	Authorization of the associated host for access via Modbus/TCP. Possible settings are read-only access ("read" setting) or read and write access ("read/write" setting). If access via Modbus/TCP is disabled, this setting has no effect.

NOTE: Once a host has been entered in the **Allowed Hosts** group frame, any other host not entered there can no longer query values via the Modbus protocol.

OPC-UA configuration

The OPC-UA protocol is a network management protocol that can be used in control room technology. This protocol allows the sensor data from the **Hardware** tab to be requested. However, it does not provide any access to the **Configuration**, **Logging**, or **Tasks** tabs. The **OPC-UA Configuration** dialog box is used to make the basic settings for this communication protocol.

Parameter	Explanation
Enable	Enable or disable access via the OPC-UA protocol.
Port	Port of the OPC-UA server in the HPE Adaptive Rack Cooling System. Port 4840 is set as the default.

System

Syslog

The basic settings for sending log messages to the Syslog server are made in the **Syslog Configuration** dialog box.

Parameter	Explanation
Server 1	The IP address or name of a server to which alarm and event logs are sent.
Server 2	The IP address or name of a second server to which alarm and event logs are sent.
Facility	A digit between 0 and 7 (inclusive) for prioritizing the sent logs.
Enable Syslog	Activate or deactivate sending log messages.

Units and languages

The **Units and Language Configuration** dialog box can be used in the **Units** group frame to switch the unit for all temperature values between Celsius and Fahrenheit.

Parameter	Explanation
Temperature Format	Select the preferred temperature unit (Celsius or Fahrenheit).
Volume Format	Select the preferred volume unit (Gallon or Liter)

After switching the unit, check all temperature setting values, such as those for the integrated temperature sensor and virtual devices.

The language for the HPE Adaptive Rack Cooling System website can be selected in the **Language** group frame.

1. Select the required language from the pull-down menu.
2. Sign off from the HPE Adaptive Rack Cooling System website. For more information, see **Logging out and changing the password**. Then sign in again.

Although the names of the levels and the parameters continue to be displayed in English when the language is switched, tooltips can be displayed in the associated selected language. Place the cursor on the **Hardware** tab, from the Device level under the HPE Adaptive Rack Cooling System main level. A tooltip with the Device translation appears.

Details

Detailed information concerning the HPE Adaptive Rack Cooling System is displayed in the **Details Configuration** dialog box. Individual parameters can be used to differentiate between multiple installations.

Parameter	Explanation
Name	Name of the HPE Adaptive Rack Cooling System (for exact identification).
Location	Installation location of the HPE Adaptive Rack Cooling System (for exact identification).
Contact	Contact address, typically an e-mail address.
Hardware revision	Display of the HPE Adaptive Rack Cooling System hardware version.
Software revision	Display of the HPE Adaptive Rack Cooling System software version.
Serial Number	Display of the HPE Adaptive Rack Cooling System serial number.

Date/Time

The HPE Adaptive Rack Cooling System system date and time can be changed in the **Date and Time Configuration** dialog box.

Time Zone group frame

Parameter	Explanation
Time Zone	Select the time zone. The time zone is required when an NTP server is used.

Date/Time group frame

Parameter	Explanation
Time	Current time of day.
Date	Current date.

CAUTION: Changing the system date or the system time can cause data loss. For more information, see **Charts**.

The Network Time Protocol can be activated in the NTP group frame. The associated NTP server can also be defined here. These settings can be used to synchronize the local HPE Adaptive Rack Cooling System date and time settings with a server.

Parameter	Explanation
Use NTP	Activate or deactivate the NTP function for time and date synchronization with an NTP server.
NTP Primary Server	IP address or name of the primary NTP server.
NTP Secondary Server	IP address or name of the secondary NTP server.

General

The basic settings for the HPE Adaptive Rack Cooling System are made in the **General Configuration** dialog box.

Audio Alarm group frame

Parameter	Explanation
Enable Audio Alarm	Activate or deactivate the audio alarm installed in the HPE Adaptive Rack Cooling System.

NOTE: If the integrated audio alarm is deactivated, it cannot be activated for individual alarm messages in the **Alarm Configuration** dialog box.

The basic settings for the alarm relay are specified in the **Alarm Relay** group frame.

Alarm Relay group frame

Parameter	Explanation
Alarm Relay Behavior	Behavior of the alarm relay on occurrence of a leak alarm. Possible settings are the opening of the contact (**Open on Alarm** setting) or the closing of the contact (**Close on Alarm** setting). Alternatively, the alarm relay can also be deactivated completely (**Disabled** setting). If the alarm relay is disabled, this relay contact, like every other variable, can be set manually from the website, SNMP, or Tasks.
Switch on	Set the alarm relay only for warnings, only for alarms, or for warnings and alarms.
Quit Alarm Relay	Reset the alarm relay only after an alarm has been confirmed.
Switch on Device Errors	Activate or deactivate the alarm relay for configuration changes on the HPE Adaptive Rack Cooling System.

NOTE: If the alarm relay is deactivated, it cannot be activated for individual alarm messages in the **Alarm Configuration** group frame.

Firmware update

NOTE: Observe all advanced notes for performing an update described in **Performing an update**.

The **Firmware Update** dialog box can be used to update the HPE Adaptive Rack Cooling System directly from the website. Alternatively, you can update firmware using a USB storage medium (for more information, see **Updating via USB**) or through an (S)FTP connection (for more information, see **Updating via FTP or SFTP**). To update the firmware using the web interface:

1. Browse to the HPE Adaptive Rack Cooling System and log in as administrator.
2. Browse to the **Configuration** tab.
3. Under **System**, select **Firmware Update**.

   The update process starts automatically after a few seconds. This process is indicated by the multi-LED flashing red, alternately long and short, on the HPE Adaptive Rack Cooling System.

   Once the firmware update has completed, the HPE Adaptive Rack Cooling System controller automatically restarts and the currently logged-in user session closes.

Mobile

The representation (dashboard) displayed on a mobile terminal is specified in the **Display Configuration** dialog box in the **Mobile Phone** group frame. For more information, see **Dashboards**.

Mobile Phone group frame

Parameter	Explanation
Dashboard	Select the dashboard displayed for the login with a mobile terminal.

The representation of a dashboard on a mobile terminal normally differs from the configured representation. The title lines of the individual components of the dashboard are initially displayed stacked on a mobile terminal. Clicking a title line displays the associated content of the component, such as a variable list.

NOTE: Before selecting a dashboard for a mobile terminal, ensure the dashboard has been configured properly.

Security

All basic settings for user groups and individual users can be specified in the **Security** group frame. These settings can be changed for individual components. If the default standard setting is used for the individual components, these values will be used.

Groups

Up to 32 different user groups can be defined in the **Groups Configuration** dialog box. The 33 users who can be created can be assigned to these groups in the **Users** dialog box. For more information, see **Users**.

Groups Configuration dialog box

Parameter	Explanation
Name	Name of the user group.
Description	Detailed description of the user group.
Initial Data Rights	Authorization of the user group with regard to the parameters of the **Data** type of the devices. For more information, see **Data types**. Possible settings are no rights (**No** setting), read-only rights (**Read** setting), and read and write rights (**Read/ Write** setting). The authorizations set here are automatically transferred for newly signed-on devices.
Initial Config Rights	Authorization of the user group with regard to the parameters of the **Config** type of the devices. For more information, see **Data types**. Possible settings are no configuration rights (**No** setting), configuration parameters can be read (**Read** setting), and parameters can be changed (**Read/ Write** setting). The authorizations set here are automatically transferred for newly signed-on devices.

Table Continued

Admin	Show or hide the **Configuration** and **Tasks** tabs. The general information for the sensors can be changed under the **Device** item by an administrator only.
Auto Logout [sec]	The duration after which a user of this group with no activity is automatically logged out from the HPE Adaptive Rack Cooling System. For the set value of **0**, no automatic sign-off is performed for this user.

NOTE: The duration specified for the **Auto Logout** parameter does not apply when a user logs in directly on a dashboard. The user remains logged into the HPE Adaptive Rack Cooling System while the dashboard is open.

For restricted user groups, use the setting in the **Admin** column to prevent access to the **Configuration** and **Tasks** tabs (checkbox is deactivated). Otherwise, it is possible that users could reassign their own rights, change the settings for tasks, or create new tasks.

NOTE: The **admin** group cannot generally be changed.

If subsequent changes are made in the **Initial Data Rights** or **Initial Config Rights** columns, after clicking the **Save** button in the **Groups Configuration** dialog box, the **Initial Rights Changed** dialog box opens with a prompt.

- Click the **Yes** button to transfer the changes made in the access authorization to the available sensors.
- Click the **No** button to retain the current access authorizations for the sensors and their parameters. The newly set access rights are then used only for sensors signed-on in the future.

Users

Up to 33 different users can be defined in the **Users Configuration** dialog box.

Users Configuration dialog box

Parameter	Explanation
Enabled	Activate or deactivate a user.
User	User name for login to the HPE Adaptive Rack Cooling System.
Group	User group to which the user belongs.
File Transfer	User authorization for access via FTP. Possible settings are no access, read access, and read/write access. If access via FTP is generally deactivated, this setting has no effect. For more information, see **File transfer configuration**.

Table Continued

Parameter	Explanation
HTTP	User authorization for access via HTTP. If the checkbox is selected, access via HTTP is possible. If the checkbox is not selected, access via HTTP is not possible. If access via HTTP(S) is generally deactivated, this setting has no effect. For more information, see **HTTP configuration**.
Console	User authorization for access via Telnet or SSH. If the checkbox is selected, access via Telnet or SSH is possible. If the checkbox is not selected, access via Telnet or SSH is not possible. If access via Telnet and SSH is generally deactivated, this setting has no effect. For more information, see **Console**.

NOTE: If the access type via a specific protocol is generally deactivated, it cannot be activated for an individual user.

A user with the appropriate access rights can use the **Set Password** button to assign a password for another user. To do this, the user must be selected beforehand. Otherwise, the button is inactive. In addition, users can change their own passwords after login. For more information, see **Logging out and changing the password**.

Access configuration

The stored access codes and transponder cards are displayed in the **Access Configuration** dialog box. Use the **Edit**, **Add**, and **Delete** buttons to change existing entries.

LDAP configuration

The **LDAP Configuration** dialog box can be used to transfer the user administration from an LDAP server. If the access to an LDAP server is configured and activated during the login, the user data is always checked first on the local user administration in the HPE Adaptive Rack Cooling System. If the user data is not found there, the LDAP server is then searched.

The basic settings for the LDAP server are specified in the **Server** group frame.

Server group frame

Parameter	Explanation
Enable LDAP	Enable or disable access to the LDAP server.
Hostname	The IP address or name of the LDAP server.
Bind DN	The Distinguished Name for login on the LDAP server.
Bind PW	The password for authentication on the LDAP server.

The settings for requesting the group frame are specified in the **Group Search** group frame.

Group Search group frame

Parameter	Explanation
Search Filter	The filter for requesting the group names on the LDAP server. The expression **`(&(objectClass=group)(member=%U))`** is stored as standard.
Base DN	The root directory in which the information for the group administration is stored.
Attribute	The attributes returned from the LDAP server for the request.

NOTE: **`%U`** can be used as placeholder for the LDAP user in the search filter mentioned above.

The settings for requesting the user names are specified in the **User Search** group frame.

User Search group frame

Parameter	Explanation
Search Filter	The filter for requesting the user names on the LDAP server. The expression **`(&(objectClass=user)(sAMAccountName=%L))`** is stored as standard.
Base DN	The root directory in which the information for the user administration is stored.
Attribute	The attributes for the request returned from the LDAP server.

NOTE: **`%L`** can be used as placeholder for the login name in the search filter mentioned above.

Whereas the users stored in the LDAP server do not need to exist in the local user administration of the HPE Adaptive Rack Cooling System, the groups must also be created locally. To avoid the need to use the same group names in the LDAP server and the HPE Adaptive Rack Cooling System, the associated names on the LDAP server can be assigned to the local group names of the HPE Adaptive Rack Cooling System in the **Group Alias Configuration** group frame.

Group Alias Configuration group frame

Parameter	Explanation
Group Name	The name of the group in the HPE Adaptive Rack Cooling System.
LDAP Alias	The associated name of the group in the LDAP server.

Radius configuration

The **Radius Configuration** dialog box performs the user administration for a Radius server. If the access to a Radius server is configured and enabled during the login, the user data is always checked first on the

Radius server. If the user data is not found there, the local user administration in the HPE Adaptive Rack Cooling System is searched.

The basic settings for the Radius server are specified in **Server** group frame.

Server group frame

Parameter	Explanation
Enable Radius	Enable or disable access to the Radius server.
Hostname	The IP address or name of the Radius server.
Port	The port of the Radius server. Port 1812 is set as the default.
Secret	The password for authentication on the Radius server.
Authentication Method	Deployed encryption method.

The rights for a user stored on the Radius server for login to the HPE Adaptive Rack Cooling System are specified in the **Group Search** group frame.

Group Search group frame

Parameter	Explanation
Group Selection	Assignment of the user to a group. **Manual:** Each user is logged in with the user group selected in the **Group Name** field. **By Server Attribute:** The user is logged in with the user group stored for the **cmcgrou**p attribute in the Radius server. This user group must also exist in the HPE Adaptive Rack Cooling System.
Group Name	The selection of the associated user group for all users for login via a Radius server and a manual assignment to a user group (**Manual** setting).

Device rights

After selecting the HPE Adaptive Rack Cooling System component from the **Real Devices** category in the navigation area, you can specify the access rights for individual user groups on the **Configuration** tab.

1. Select the HPE Adaptive Rack Cooling System entry in the navigation area.
2. Select the **Configuration** tab in the right-hand area of the screen page.

   The various parameters for the currently selected component are displayed in the list view of the **Configuration** tab. The access rights of these parameters can be customized by the operator.
3. Click the **Configure Device Rights** icon.

   The **Device Rights Configuration** dialog box opens.

The current device for which the **Device Rights Configuration** is performed is displayed above the table. The names of the user groups are listed in the **Group** column.

Groups column

Parameter	Explanation
Group	The names of all user groups previously created. For more information, see **Groups**.

The access to the parameters of the data device type is specified in the **Data Right** column on the **Hardware** tab. Assignment of the parameters to the data type can be obtained on the **Configuration** tab from the database icon prefixed to the associated parameter. For more information, see **Data types**. The following settings can be selected.

Data Right column

Parameter	Explanation
No	Members of the group have neither read nor write access to parameters of the data type.
Read	Members of the group have read access to parameters of the data type.
Read/Write	Members of the group have read and write access to parameters of the data type. This setting acts only when the software is permitted to change parameters of the data type.

The access to the parameters of the **Config** type of the device is specified in the **Config Right** column on the **Hardware** tab. The assignment of the parameters to the **Config** type can be obtained on the **Configuration** tab from the gear wheel icon prefixed to the associated parameter. For more information, see **Data types**. The following settings can be selected.

Config Right column

Parameter	Explanation
No	Members of the group have neither read nor write access to the limit values. If the "no" entry is also selected in the **Data Right** column, only the **Device** level can be viewed. If some other entry is selected in the **Data Right** column, the **Value** and **Status** values can be viewed in the other levels.
Read	Members of the group have read access to the limit values. For example, this means they can view the temperature limit values for alarms and warnings.
Read/Write	Members of the group have read and write access to the limit values. For example, this means they can view and change the temperature list values for alarms and warnings.

If a field does not have any caption, the **Device Rights** sublevels are different. For more information, see **Inheriting device rights**.

NOTE: Such defined access rights always apply only for access to the associated component via the website. Access rights at door handles are controlled by the general user administration and the Access Configuration. For more information, see **Access configuration**.

Inheriting device rights

The rights assignment for the individual sensors is constructed parallel to the representative **Hardware** tab. A change to a node point is also automatically transferred to all variables subordinate to this node point.

1. Select the HPE Adaptive Rack Cooling System entry in the navigation area.
2. Select the **Configuration** tab in the right-hand area of the screen page.
3. Click the Device Rights icon suffixed to the HPE Adaptive Rack Cooling System entry.
4. The **Device Rights Configuration** dialog box opens.

If a change is made in this dialog box and a different access authorization is made to the variables assigned to a user group, this user group also has the same access rights for all variables subordinate to the HPE Adaptive Rack Cooling System node point.

If a node point has a further node point with different subordinate variables, the inheritance also acts here. A configuration change is transferred automatically to the second node point and the subordinate variables there. However, if the second node point is changed, only the access rights for those variables subordinate to this node point will change.

If an individual subordinate parameter is customized, it can be selected and edited individually.

1. Click the Plus icon to open the complete structure.
2. Click the Device Rights icon directly behind the variable to be edited.

If the access rights of the individual parameters for a node point differ in the **Device Rights Configuration** dialog box, an empty field is shown in the **Device Rights Configuration** dialog box of the complete sensor. Changing this empty field causes the settings there to be transferred for all subordinate parameters.

Data types

The parameters of the sensors are differentiated into two types:

- Data
- Config

A variable of the Data type provides status information and can be changed only for those sensors that permit changes. A variable of the Config type contains configuration information and can be changed by a user when the software permits.

An icon indicates the associated type. Parameters of the Data type are represented as a Database icon (with stacked blue cylinders). Parameters of the Config type are represented as two diagonal gear wheels.

The associated icons are displayed when a sensor is selected on the **Configuration** tab and is expanded down to the lowest level. The icons are also displayed in the **Device Rights Configuration** dialog box. The icons emphasize the assignment to the Data and Config data types.

Alarm configuration

After selection of the HPE Adaptive Rack Cooling System entry or another component under **Real Device** or **Virtual Device**, you can individually specify the alarm notification for each measured value on the **Configuration** tab.

1. Select the HPE Adaptive Rack Cooling System entry in the navigation area.
2. Click the **Configuration** tab in the right-hand part of screen.
3. Click the Configure All Alarms icon.

   The **Alarm Configuration** dialog box appears.
4. In the listing, click the row of the sensor or the input/output for which you want to specify the HPE Adaptive Rack Cooling System behavior.
5. Click the **Edit** button.

Example: When the temperature sensor is selected, the **Alarm Configuration: Temperature.Status** dialog box appears.

NOTE: The dialog box for the access sensor as well as the inputs and outputs have a similar form.

Notifications

To determine the output of a pending alarm, use the settings in the **Notifications** group frame.

Parameter	Explanation
Use Audio Alarm	Activate or deactivate the audio alarm when the alarm occurs.
Use Relay	Activate or deactivate the alarm relay.
Acknowledge Required	If this setting is activated, the alarm message displays until it has been acknowledged. Therefore, even when the cause of the alarm is no longer present, the Alarm status remains set. Only the transition to the **OK** status is blocked. If this setting is activated, other alarms or a transition to the **Warning** status will also display.
Delay	Delay time between measured value overshot and switching to the alarm or warning status. This delay time does not apply to switching to the **OK** status.

NOTE: If the integrated audio alarm or the alarm relay is generally deactivated, the audio alarm or alarm relay cannot be activated for individual alarm messages. For more information, see **General**.

Email receivers

Use the **Email Receivers** group frame to determine which recipients receive an email when an alarm occurs.

All appropriate recipients created previously are displayed. For more information, see **SMTP configuration**. These recipients are deactivated by default.

Email Receivers group frame

Parameter	Explanation
Email Address	Email addresses created in the HPE Adaptive Rack Cooling System configuration.
Use	Activate or deactivate the associated recipient.

NOTE: If an email receiver was generally disabled previously, although it might be enabled for individual alarm messages, emails are still not sent to this receiver. For more information, see **SMTP configuration**.

Trap receivers

Use the **Trap Receivers** group frame to determine which recipients receive trap messages.

All appropriate recipients created previously are displayed. For more information, see **SNMP configuration**. These recipients are activated by default.

Trap Receivers group frame

Parameter	Explanation
Trap Host	The trap receiver created in the HPE Adaptive Rack Cooling System configuration.
Use	Activate or deactivate the associated recipient.

NOTE: If a trap receiver was generally disabled previously, although it might be enabled for individual alarm messages, trap messages are still not sent to this receiver. For more information, see **SNMP configuration**.

Alarm simulation

After completing an alarm configuration, the notifications set in the **Alarm Configuration** dialog box can be verified. To verify the notifications, simulate a pending alarm, such as by testing the alarm with the actual stored limit values.

1. In the listing, click the line of the sensor or the input/output for which you want to simulate the alarm.
2. Click the **Simulate Alarm** button.

   Example: If the temperature sensor is selected, the **Simulate Alarm: Temperature.Status** dialog box opens.

   NOTE: The dialog box for the access sensor and the input/outputs has a similar structure.

3. Specify which type of alarm and for how long it is to be simulated.

   Simulate Alarm dialog box

Parameter	Explanation
Duration	The duration for which the alarm will be simulated.
Simulation Value	The status to be simulated. The possible values depend on the type of the selected sensor or input/output.

4. To simulate the alarm and to check all settings, click the **OK** button.

NOTE: The **Alarm simulation** entry created in the log information allows the simulation to be differentiated from an actual alarm.

5. After the interval for a simulated alarm expires, you can simulate other alarms similarly.

NOTE: Only one alarm simulation can be active at a time.

Inputs and outputs

If a Virtual Device is selected in the navigation area, an additional Configure Inputs and Outputs icon appears on the **Configuration** tab. For more information, see **Virtual devices**. In addition to the configuration of the access rights and the behavior on occurrence of an alarm, the inputs and outputs must be configured for a virtual device.

1. Select the virtual device in the navigation area.
2. Click the **Configuration** tab in the right-hand part of screen.
3. Click the Configure Inputs and Outputs icon.

   The **Input/Output Configuration** dialog box appears.
4. For a virtual device of the **Two-level controller** type, select the variable in the **Control Variable** drop-down list.

Inputs group frame

Parameter	Explanation
Control Variable	Variable whose value should be monitored.

NOTE: For a virtual device of the **Access Controller** type, the **Inputs** group frame does not exist.

5. In the **Output** drop-down list, select the output that should be switched for a specified change of the variable value defined above.

Outputs group frame

Parameter	Explanation
Output	Output to be switched.

NOTE: The alarm relay integrated in the HPE Adaptive Rack Cooling System cannot be defined as output.

6. The device list is then reloaded automatically, and you can further configure the virtual device. For more information, see **Virtual devices**.

Logging

The log information for the HPE Adaptive Rack Cooling System can be viewed on the **Logging** tab. Because this log information is generally valid, the information displayed on the **Logging** tab is independent of the component selected in the left-hand area of the screen.

NOTE: The associated current version of the `Logging.cmc3` log file can be fetched via an FTP access from the download folder of the HPE Adaptive Rack Cooling System and stored on external storage (USB stick or SD card). The external storage device must be inserted into the controller for logging to work. For more information, see **Saving supplementary information locally**.

Procedure

1. Click the **Logging** tab in the right-hand part of the screen.

   A message is initially displayed, and you have two options:

   - Define a filter to display only selected events.
   - Load the complete history into the display with all events.

2. Use the icons in the toolbar below the tabs to perform either action.

Defining a filter

To receive only a specific section from all messages, you can define a filter.

Procedure

1. Click the Define a filter icon (first icon on the left).

   The **Set Logging Filter** dialog box appears. The following parameters are available.

   Set Logging Filter dialog box

Parameter	Explanation
Date	Messages from a specific date.
Type	Error type. For example, selecting **Alarm** causes only alarm messages to be displayed.
Device Inbox	Messages of a specific device. The (internal) number of the device assigned during the initial connection is selected.

Table Continued

User	Messages initiated by a specific user. For example, messages are displayed when the user logs in or out.
IP Address	Messages that can be assigned to a specific IP address. All addresses used to access the HPE Adaptive Rack Cooling System are listed.

The first entry in each column is **All items**. When you select this entry, the entries in the associated column are not filtered.

Example: All information messages on 19.01.2012.

2. Select the date "19.01.2012" in the **Date** column.
3. In the **Type** column, select the **Info** entry.
4. In the next three columns, select the **All items** entry.
5. Click the **OK** button.

   The filter is used and only those messages that satisfy these criteria are displayed in the list.

NOTE: You can mark several entries in the individual columns by pressing and holding the **Ctrl** key.

Refreshing the view

After the definition of a filter, all messages stored up to this time that satisfy the filter criterion are displayed. No subsequent automatic refresh of the display occurs when new messages arrive, so you must refresh the display manually.

Procedure

To refresh the view, click the Reload Information icon (second icon on the left).

It takes a moment for all events to reload from the HPE Adaptive Rack Cooling System, and then the refreshed list with all events is displayed.

NOTE: After each refresh, only those messages that satisfy the currently stored filter criterion are displayed.

Printing the view

You can print the complete history or the results selected using a filter.

Procedure

1. If necessary, define a suitable filter to display only a subset of all results. For more information, see **Defining a filter**.
2. Click the Printing the display icon (fourth icon from the left).

   It takes a moment for all events to reload from the HPE Adaptive Rack Cooling System, and then the refreshed list with all events is displayed in a separate window, and the **Print** dialog box opens.
3. Print the view, or save it as a PDF file.

Deleting the display

You can delete the current display at any time.

To delete the display, click the Delete the display icon (third icon on the left).

All entries from the display are deleted, and a message allowing you to either define a filter or load a complete history of events appears.

NOTE: The entries are only removed from the display. The log file remains unchanged.

Tasks

Tasks can be used to query the status of all connected components and logically link them with each other. Date values can also be included in the links. Different actions can be initiated for a status change of the trigger expression. For more information, see **Specifying the trigger expression**. For example, an alarm message occurrence of the integrated access sensors on a specific weekday causes an appropriate email to be sent. The current status of a task cannot be queried via SNMP. This is possible only for virtual devices. For more information, see **Virtual devices**.

Because tasks are generally valid, the information displayed on the **Tasks** tab is independent of the components selected in the left-hand area of the screen.

Tasks tab

The following information is displayed on the Tasks tab for up to 16 tasks.

Parameter	Explanation
ID	Unique ID of the task. This ID is defined by the system and cannot be changed.
Name	Designation of the task.
Description	Detailed description of the task.
Enabled	Display "Yes" or "No" as to whether the appropriate is activated, indicating whether or not the associated action will be performed.

The settings of the individual tasks can be changed by clicking the **Edit** button in the **Task Configuration** dialog box.

Specifying the trigger expression

To specify a trigger expression, click the **Edit** button of the task whose configuration you want to change or create.

The **Task Configuration** dialog box appears.

Details group frame

You can change the following settings in the left-hand Details group frame.

Parameter	Explanation
Enable	Activate or deactivate the task.

Table Continued

Name	Designation of the task.
Description	Detailed description of the task.
Delay	Delay time of a task in seconds. If the value **0** is entered here, no delay occurs regardless of the selected Delay Mode.
Delay Mode	Type of delay.
Drop-down List	Select an action to be performed when the associated expression is true. Alternatively, a parameter value can also be selected.
Setup	Definition of the action to be performed.

Delaying a task

A task can also be controlled with a delay time. This delay time is specified using the **Delay[s]** parameter and can be selected as necessary in the range of 0 to 9999 seconds.

The delay time is configured using the drop-down list in the **Delay Mode** parameter.

Parameter	Explanation
Switch On Delay	If the associated expression is true, the system first waits the defined delay time before the set action is performed.
Switch Off Delay	If the associated expression is true, the set action is performed immediately. If a status changes and the expression becomes false, the system waits the defined delay time before the set action is undone.
Pulse	If the associated expression is true, the system performs the set action for the duration of the defined delay time. After expiration of this time, the action is stopped and reset to the associated origin.

NOTE: In general, the selected action is performed only when the trigger expression is always true after the expiration of the delay time. However, if a value changes during the delay time and the trigger expression is no longer true, the selected action is not performed.

Trigger Expression group frame

In the right-hand **Trigger Expression** group frame, specify the expression to be verified. For this purpose, variables can be linked to each other using the Boolean operators "Or" ("|"), "And" ("&"), "Not Or" ("~|"), "Not And" ("~|"), "Equal to" ("=") and "Not equal to" ("<>").

Parameter	Explanation
Operator Type	Boolean operator with which the subordinate expressions should be linked or the variables checked.

Table Continued

Nature	Selection of the time used to check a time value or a variable used to check a variable value.
Device	Selection of the device for which a value should be checked.
Variable	Variable whose value should be checked. This list displays only those variables made available for the previously checked device.
Value	Value for which the variable should be checked. This list displays only those values made available for the previously selected variable.

The drop-down lists for selecting setting options are displayed after clicking the default specified values "=", "No Variable Selected", or "No Value". For more information, see **Example for creating a task**.

The "=" and "<>" operators can be used to check variables of the HPE Adaptive Rack Cooling System itself or the connected devices for a specific status. Alternatively, time details (weekday) can also be checked.

The two "|" and "&" operators are used to link subordinate expressions appropriately with each other. To create an expression:

1. If several expressions should be checked, specify whether both subordinate expressions must supply the value "true" (operator "&") or only one value suffices to initiate the action (operator "|").
2. Specify separately for all subordinate expressions whether the expression supplies the value "true" when the variable or the time specification corresponds to the value (operator "=") or not (operator "<>").

Selecting an action

Assign to the task an action from the drop-down list when the complete expression switches to the value "true."

NOTE: The action stored for a task is always performed only after a status change. If the definition of a task is changed (for example, the logic of a switching output is changed), the output is not switched directly when the change is accepted. It is switched when the status of an input changes.

Details group frame

Choose from the following settings.

Parameter	Explanation
Send Status Email	Send a status email.
Suppress Alarm Email	Suppress sending the email to the selected recipients.
Suppress Alarm Trap	Suppress sending the trap to the selected recipients.

Table Continued

Suppress Alarm Message	Suppress the alarm message of the selected status variable.
Set Variable Value	Set a variable value.

After selecting the appropriate action, you must still configure it appropriately. To configure the action, click the **Setup** button.

Depending on the previously selected action, enter in the appropriate dialog box to which, for example, a status email will be sent ("Send Status Email" action), for which status an alarm message should be suppressed ("Suppress Alarm Message" action), and so on.

Set Variable Value action

For selection of the **Set Variable Value** action, switchable variables, such as the digital outputs of a connected IO unit, can be set. Alternatively, you can opt for no action. ("Do nothing." For this action, select "--".)

NOTE: In the **Config Set Variable Value** dialog box, in the Device drop-down list, you must select a device with a switchable variable so that the associated selection options are displayed in the fields below.

After clicking the **Setup** button, the **Configure Set Variable Value** dialog box appears.

Configure Set Variable Value dialog box

Parameter	Explanation
Device	Device on which the variable should be set.
Variable	Variable that should be set.
Value on True	The value of the variable when the expression specified previously in the **Trigger Expression** group frame has the value "true."
Value on False	The value of the variable when the expression specified previously in the **Trigger Expression** group frame has the value "false."

NOTE: Ensure that different values are selected in the two **Value on True** and **Value on False** drop-down lists. Otherwise, the variable retains this value even when the value of the expression in the **Trigger Expression** group frame changes.

Grouping of the outputs

The assignment of an output to a group makes it possible to switch several outputs (or different components) with a single task or switching command in the same manner via the website, Telnet, or SNMP. This avoids the need to create a separate appropriate task for each of these outputs.

If you have assigned several outputs the same group number, selecting one of these outputs also switches all other outputs of this groups accordingly.

Example for creating a task

You want to define a task that sends a status email when a rack is opened on the weekend.

1. To display the **Operator Type** drop-down list, click the operator "=".
2. In the drop-down list, select the "&" operator to link the **weekend** and **door open** events with each other.
3. Click the **No Variable Selected** entry below the first "=" operator.
4. In the **Nature** drop-down list, select the **Time** entry.
5. Click the first **Never** tab.
6. In the **Day of the Week** list box, select the **Saturday** entry.
7. Press and hold the **Ctrl** key, and select the **Sunday** entry in this list.
8. Click the **No Variable Selected** entry below the second "=" operator.
9. In the **Nature** drop-down list, select the **Variable** entry (pre-selected by default).
10. In the **Device** drop-down list, select the **[1] HPE Adaptive Rack Cooling System** entry.
11. In the **Variable** drop-down list, select the **Access.Status** entry.
12. Click the **Closed** entry below the **[1] Access.Status** variable.
13. In the **Value** drop-down list, select the **Open** entry.
14. In the **Details** group frame, select the **Send Status Email** entry from the drop-down list.
15. Click the **Setup** button to specify the email recipient by activating them in the **Use** column.
16. Be sure that the **Enable** checkbox is activated.

Deactivating or deleting a task

Tasks that are no long needed can be deactivated or deleted. To deactivate or delete a task:

Procedure

1. Open the configuration menu for the associated task.
2. To deactivate a task:
   a. Deactivate the **Enable** checkbox.
   b. Click the **Save** button to save the configuration.
3. To delete a task:
   a. Click the **Clear** button. The task settings are reset to their default values.
   b. Click the **Save** button to save the configuration.

Virtual devices

Virtual Devices are displayed below the Real Devices in the left-hand area of the screen. The devices must first be created on the right-hand side by clicking the **Configuration** tab.

Sensors and output devices can be coupled to form a new, predefined type of virtual device. For example, when a specified temperature measured with the integrated temperature sensor is overshot, a fan will be switched on.

A virtual device is treated as a dedicated component, for which, for example, the status can also be queried via SNMP. Although such a status query is not possible for a task, tasks can be configured more specifically. For more information, see **Tasks**.

Types of virtual devices

You can select the following types as virtual devices:

- Two-level controller
- Access controller

Two-level controller

A two-level controller can be used to switch an output on or off (for example, an output of a connected IO unit) using a specified threshold value (for example, a limit temperature). The threshold value is specified directly in the virtual device and is independent of the limit values defined in the actual sensor.

In contrast to a task, a two-level controller cannot evaluate the status of the assigned sensor. This is possible only with a task for which combinations of status and time conditions can be set and one or more actions performed.. For more information, see **Tasks**.

Access controller

An access controller can be used to switch a switchable output using a reader (transponder reader or number combination lock). This allows, for example, a room access door to be monitored and opened.

Creating a virtual device

Procedure

1. In the navigation area of the screen, select the **Virtual Devices** entry.
2. In the right-hand area of the screen, click the **Configuration** tab.
3. In the **List of Virtual Devices** group frame, click the **New** button.
4. In the **Virtual Device Type** drop-down list, under the **Create new Virtual Device** dialog box, select the type of virtual device.
5. Click the **OK** button to confirm the selection.

   The configuration change causes the list of all devices to be reloaded. A new component, marked with a green + icon appears in the navigation area under Virtual Devices. The multi-LED on the HPE Adaptive Rack Cooling System flashes cyclically green - orange - red.
6. Confirm the message for the configuration change.

   The device list reloads. The entry under Virtual Devices now has a yellow background and the LED on the HPE Adaptive Rack Cooling System illuminates orange continuously, unless another alarm is pending.
7. Specify the input and output of the virtual device. Depending on the virtual device type, only the output of the virtual device can be specified. For more information, see **Inputs and outputs**.

   The device list reloads. A blue information icon is displayed in the entry under Virtual Devices and the LED on the HPE Adaptive Rack Cooling System illuminates green continuously, unless another alarm is pending.
8. Configure all settings on the **Hardware** tab. For more information, see **Configuring a virtual device**.

Configuring a virtual device

Procedure

1. In the navigation area of the screen, select the appropriate virtual device.
2. Click the **Hardware** tab to change the settings.

   On the **Device** level, general settings for the virtual device are performed or parameters displayed that provide detailed information about the virtual device. For more information, see **Device**. The **Production Date** parameter shows the calendar week in which the virtual device was created in the HPE Adaptive Rack Cooling System.

   Depending on the virtual device type, various parameters are displayed on the **Virtual Device** level.
3. In the **List of Virtual Devices** group frame, click the **New** button.
4. In the **Virtual Device Type** drop-down list, under the **Create new Virtual Device** dialog box, select the type of virtual device.

   Two-level controller

Parameter	Explanation
DescName	Individual description of the virtual device.
InputValue	Current value of the virtual device input.
OutputValue	Current value of the output taking into account the settings for OutputValueOnStatusOn or OutputValueOnStatusOff.
Setpoint	Switching point of the input for a status change of the output.
Hysteresis	Required percentage deviation for undershooting or overshooting the switching point for a status change.
OutputValueOnStatusOn	Value of the output when the input value lies above the switching point ("On" status).
OutputValueOnStatusOff	Value of the output when the input value lies below the switching point ("Off" status).
Status	Current status of the two-level controller. **Status "On":** Input value lies above the switching point. **Status "Off":** Input value lies below the switching point.

   Access controller

Parameter	Explanation
DescName	Individual description of the virtual device.
Command	Selecting the **Switch** command switches the output of the virtual device. It then switches the durations stored in the **Delay** field status stored in the **AccessLogic** field.
OutputValue	The current value of the switchable output that has been assigned to the access controller ("On" or "Off").
Delay	Duration for which the output of the virtual device changes its status. After expiration of this time, the output switches back to its original status. This parameter acts only when the **Toggle Output** entry is not selected in the **AccessLogic** drop-down list.
AccessLogic	Status to which the output of the virtual device switches for permitted access. **"Delayed On":** Activate the output. **"Delayed Off":** Deactivate the output. **"Toggle Output":** Switch the output to the other status (from "On" to "Off" or vice versa).
Status	Current status of the access controller.

5. Ensure that the configuration of an access controller has the following sequence:
   a. Select the status in the **AccessLogic** drop-down list into which the access controller should switch. (For example, "Delayed Off.")
   b. Use the **Delay** parameter to create the duration with which the output is switched into the previously selected status.
   c. In the **Value** drop-down list, activate the **Switch** entry.

      The access controller switches into the previously selected status (for example, "Off") for the entered duration, and then into the other status (for example, "On").
   d. In the access configuration, specify with which access codes or which transponder cards the access controller can be activated. For more information, see **Access configuration**.

Deleting a virtual device

Procedure

1. In the navigation area of the screen, select the **Virtual Devices** entry.
2. In the right-hand area of the screen, click the **Configuration** tab.
3. In the **List of Virtual Devices** group frame, select the virtual device to be deleted.
4. Press and hold the **Ctrl** key, then select any other virtual devices that you also want to delete.

5. Click the **Delete** button.

   A prompt appears asking if you really want to delete the virtual device.

6. Confirm deleting the virtual device by clicking the **OK** button or cancel the action by clicking the **Cancel** tab.

7. Confirm the message for the configuration change.

Charts

As many as 16 charts displaying the chronological trend for up to six variable values can be viewed on the **Charts** tab. The data from these charts can be downloaded for separate evaluation with a spreadsheet program such as Microsoft Excel as CSV files. For more information, see **Evaluating the CSV files**.

NOTE: Chart data must be stored on external storage (USB stick or SD card). The external storage device must be inserted into the controller for charts to work. For more information, see **Saving supplementary information locally**.

1. In the right-hand area of the screen page, select the **Charts** tab.

2. To display or hide the associated chart and configuration buttons, click on the title line of the associated chart.

Configuring a chart

Prerequisites

Before recording the variable values for the first time, each chart must first be configured and activated.

Procedure

1. If the buttons for configuring and navigating the chart are not displayed, click the title line.

   The chart expands, and it can be configured.

2. Click the **Configuration** button.

   The **Chart Configuration** dialog box opens.

3. In the left-hand **Details** group frame, make the following settings.

Parameter	Explanation
Enable	Enable or disable the chart.
Name	Chart designation. This designation is displayed in the title line of the chart.
Description	Chart description.
Destination	Select the external storage medium on which the chart data will be stored.

Table Continued

Interval	The time interval in seconds in which the current value is stored.
Visibility	Activates the user groups that can view and configure the associated chart.

CAUTION: The associated charts must be deactivated before removing the external storage device on which chart data is stored. If the charts are not deactivated, the files with the chart data might be corrupted. Alternatively, sign off the external storage device from the system, which deactivates the charts automatically. For more information, see **Memory**.

In the right-hand **Variables** group frame, as many as six variables are specified per chart, and these values can be shown graphically.

NOTE: Changing the settings of existing charts might lead to data loss. Therefore, the associated CSV files should be saved before changing chart settings. For more information, see Evaluating the CSV files.

4. Select one of the six lines.

   If the **None** entry is not present in a line, this variable has already been assigned to the chart.

5. Click the **Edit** button.

   The **Variable Selection** dialog box opens. The following parameters are available.

Parameter	Explanation
Device	Select the device for which a value should be recorded.
Variable	The variable whose value should be recorded. This list shows only those variables available for the previously selected device.

6. To accept the selected settings, click the **OK** button, or to terminate the action, click the **Cancel** button.

   The **Chart Configuration** dialog box reopens.

7. If necessary, add further variables to the chart.

8. To display the chart with the selected settings, click the **Save** button.

   Alternatively, to re-set all chart setting to their default values, click the **Clear** button. All previously stored values of the chart will be deleted.

   If variables with different units (for example, temperature in "C" and voltage in "V") are assigned to a chart, multiple ordinate axes (Y axes) will be created.

Chart view

By default, the left-hand boundary of the time axis (X axis) is fixed to the time when the chart was activated. The right-hand boundary grows each time you refresh the chart after the time entered in the interval parameter. Similarly, the ordinate axes are adapted so that all measured values can be displayed.

By default, the values of all represented variables at the time the chart is activated and the associated time stamp (date and time) are displayed on the right-hand side of the chart.

Displaying measured values at a specific time

If the chart is activated, you can display the exact measured values for a specific time. To do so, position the cursor in the chart. A vertical line displays.

The values of all represented variables at the selected time are displayed in plain language together with the associated time stamp on the right-hand side of the chart.

Adapting the displayed time period

The displayed time period can be reduced, for example, to more exactly investigate the trend of a specific time.

1. Click the **Zoom In** button.

   The complete trend from activation of the chart to the current time is displayed. Each click of this button reduces the displayed time period.

2. Click the **Shift Forward** button to move the start time of the displayed area nearer to the closer time.
3. To move the start time of the displayed area nearer the activation time of the chart, click the **Shift Back** button.
4. To increase the displayed time period, click the **Zoom Out** button.

Undocking charts from the browser window

By default, charts are displayed directly below the associated title line in the browser window. Each chart can also be displayed in a separate window.

NOTE: Decoupling from the website is not available for Internet Explorer. The **Undock** button is absent.

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1. Click the **Undock** button for the chart you want to display in a separate window.

   The chart is now displayed in a separate window. A *Chart is undocked* messages appears below the title in the main window.

   Similar to the displacement of windows for various connected sensors, the separate chart windows can be moved independent of the actual HPE Adaptive Rack Cooling System website and changed in size. This function can be used by several charts, allowing a complete overview to be shown on the PC screen. For more information, see **Undock function**.

2. Click the **Dock** button in the separate window, or close the window to display the chart below the title line in the main window again.

Evaluating the CSV files

The charts are created using data from the CSV files. This data can be downloaded via FTP from the HPE Adaptive Rack Cooling System and then evaluated separately (for example, with a spreadsheet such as Microsoft Excel).

The maximum size of a CSV file is 4GB. If this limit is reached, the CSV file will be saved as a backup file and a new CSV file will be automatically created. If this second file also reaches the 4GB limit, the first bakcup file will be overwritten when a new backup file is created.

Download the CSV files

Procedure

1. Establish a connection between a PC and the HPE Adaptive Rack Cooling System. For more information, see **Establishing an FTP connection**.
2. In the left-hand window on the PC, switch to the folder where you want to store the CSV files.

3. In the right-hand window on the HPE Adaptive Rack Cooling System, switch to the download folder and to the usb-stick/records or sd-card/records subfolder (depending on where the CSV files are stored, as specified by the configuration of the associated chart).
4. Right-click the CSV file and click **Download**.

   The CSV files are named using the schema **`chart.##.json.csv`**, where **`##`** represents the number of the associated chart (**`01`** to **`16`**).

   Import the CSV files into Excel

   NOTE: In general, the CSV files can also be imported into another spreadsheet program, although the procedure might differ.

   a. Create an empty table in Excel.
   b. In Excel, click **Data > From text**, and select the CSV file to be imported.
   c. Follow the instructions in the conversion wizard.
   d. Observe the following settings:

      Step 1 of 3:

      - **Data type:** Separated
      - **Import begins in line:** 1
      - **File origin:** Windows (ANSI)

      Step 2 of 3:

      Separator: Tab stop

      Step 3 of 3:

      Data format of the columns: Standard

5. In Step 3 of 3, click the **Next...** button to specify the decimal separator (setting "point") and the 1000's separator (setting "comma") used in the CSV file. Depending on the country-specific settings, these settings might already be the defaults.

   NOTE: If different separators are set for numeric data, the time details in column 2 cannot be converted correctly later.

   The CSV file display is divided into three areas.

- **Area 1:** General chart information in accordance with the configuration is shown in line 1 (chart name, description, and start time).
- **Area 2:** Starting at line 3, information about the variables recorded in the chart is output separated by a blank line. The first two lines are particularly important.
  - **Column 1:** Variable designation. These designations are used as the header in area 3.
  - **Column 2:** The exact designation of the recorded measured values.
- **Area 3:** The time stamp and all recorded measured values are output separated by a blank line.
  - **Column 1 (Time0):** The UNIX time (number of elapsed seconds since 01.01.1970). Unless reformatted, this time cannot be used in Excel.
  - **Column 2 (Time1):** The time value that can be used in Excel.
  - **Columns 3 to maximum 8:** The actual measured values are output in these columns.

The time value in column 2 must be converted as follows to produce a format that can be read:

a. Mark all time values in column 2.

b. Right-click the marking and select the **Format cells** entry in the context menu.

c. In the **Category** columns. in the **Format cells** dialog box on the **Numbers** tab, select the **User-defined** entry.

d. In the **Type** field, enter the `DD.MM.YYYY hh:mm:ss` number format.

The time stamp is then output as date and time so that it can be used in a chart.

Dashboards

NOTE: Changes made in the dashboards can only be made by users who belong to the Admins user group.

As many as 12 flexibly configurable websites can be created on the **Dashboards** tab. This makes it possible to define different views for different purposes and display only the required information. For example, viewing a graphical representation in multiple columns similar to the structure of multiple racks monitored by the HPE Adaptive Rack Cooling System is possible.

NOTE: After logging in directly on a dashboard, the user is not automatically logged out after the predefined time. The user remains logged in to the HPE Adaptive Rack Cooling System as long as the dashboard is open.

Basic dashboard settings

1. In the right-hand area of the screen page, select the **Dashboards** tab.

The following information is displayed.

Parameter	Explanation
Name	Dashboard name

Table Continued

Description	Extended description of the dashboard
Enabled	Flag whether the dashboard can be enabled ("Yes") or not ("No").

This information can be changed in the **Dashboard Configuration** dialog box.

2. Move the cursor to the line of the dashboard whose information you want to change.

   An edit icon appears at the end of the **Name** column, and the cursor changes to a hand icon. If the dashboard can be enabled, the green start icon suffixed to the edit icon can be used to enable the dashboard.

3. Click the edit icon.

   The **Dashboard Configuration** dialog box opens.

4. Enter the required values for the named parameters.

5. To confirm your entry, click the **Save** button, or to reset all input to their default values, click the **Clear** button.

Configuring a dashboard

Prerequisites

Before using a dashboard for the first time, the contents of the dashboard must be configured. The dashboard must first be enabled and then started.

Procedure

1. **Enable the dashboard**

   a. In the **Enabled** column, verify that the **Yes** entry is displayed indicating that the dashboard can be configured.

      If the **Yes** entry is not displayed, enable this setting in the **Dashboard Configuration** dialog box. For more information, see **Basic dashboard settings**.

   b. Move the cursor to the line of the dashboard to be configured.

      At the end of the **Name** column, a start icon appears next to the edit icon, and the cursor changes to a hand icon.

   c. Click the start icon.

      The **Auto-Logout is Enabled** dialog box opens.

   d. Read the notification text, and click the **OK** button to confirm.

      A new browser window opens with the actual dashboard. The dashboard is empty because no boards have been selected yet.

      NOTE: The **Logout** button is displayed only when the login is made directly from a dashboard. For more information, see **Calling a dashboard**.

      The following information is displayed on the header line.

Parameter	Explanation
Username	Name of the user currently logged in.
"?"	Open the **Board Details** dialog box where the basic dashboard settings are displayed.
Selected Board	Select the dashboard from a drop-down list. The names of the dashboards that can be enabled are displayed.
Edit icon	Select the components to be displayed on the dashboard.
Save icon	Save the dashboard. The configured components and the window layout are displayed for each login as they were configured when they were saved. The actual display in a window is not saved.
Number of Columns	The number of columns in which the information to be displayed can be assigned. Maximum number of columns is nine.

Selectable representations

The representations to be displayed on the dashboard are selected using the edit icon. The following representations can be selected, depending on the type and number of components connected to the HPE Adaptive Rack Cooling System.

Parameter	Explanation
Visualizations	Graphical representations
Device Tree	Navigation area with all connected components. For more information, see **Navigation area in the left-hand pane**.
Logging View	Logging tab. For more information, see **Logging**.
Message View	Currently pending messages. For more information, see **Message display**.
Charts	Created charts. For more information, see **Charts**.
Variable List	Current value of individual variables, such as the current temperature value of the integrated temperature sensor.

2. **Adding representations to a dashboard**

a. In the **Selected Board** column, select the dashboard you want to add information to.

b. In the **Number of Columns** column, select the number of columns into which the dashboard should be divided.

NOTE: The number of columns can be changed later. To reduce the number of columns, the columns to be deleted must not contain any representations.

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c. Click the edit icon and select successively all representations to be displayed on the dashboard. Each representation added to the dashboard is added at the end of the first column. You can then move it to another location within the dashboard.

3. **Moving representations on a dashboard**

   Representations are moved using the drag-and-drop principle.

   a. Place the cursor on the title line of a representation.

      The cursor changes to a cross arrow.

   b. Press and hold the left mouse button, and drag the representation to the appropriate column.

      Before being stored, the position is shown with a dashed line. The other representations are moved down accordingly.

      It is not possible to place a representation totally free on the dashboard. If a representation is set at the lower edge of a column, it will automatically move as far as possible upwards, to the upped edge of the dashboard, or to the lower edge of a representation already placed there.

4. **Expanding and collapsing representations**

   Every representation can be expanded and collapsed via the title line. The representation remains available. Only the details are hidden.

   a. Click the collapse icon in the title line of a representation.

      The representation on the title line is reduced.

   b. To redisplay the representation, click the expand icon in the title line.

      The representation reappears with all information. Representations below on the dashboard are moved accordingly.

5. **Adapting a list with variables**

   Multiple, separate representations with individual variables are created. Alternatively, multiple variables can be displayed in a representation.

   a. Click the C icon in the title line of a Variable List type representation.

      The **Select Variables** dialog box is displayed.

   b. Enter a meaningful name for the variable list in the Title field.

   c. To change or delete an existing variable, click the line in which it is listed.

      The **Variable Selection** dialog box is displayed.

   d. In the **Device** field, select the component whose variable value you want to display.

   e. In the **Variable** field, select the variable you want to display.

f. Alternatively, if you want to delete the variable from the representation, in the **Device** field, select the **None** entry.

g. To add another variable, click on the line with the **None** entry.

   The **Variable Selection** dialog box opens, and you can select the variable to be displayed.

h. To transfer the variable list to the representation, in the **Select Variables** dialog box, click the **OK** button.

NOTE: If you have the appropriate user rights, you can also change changeable variable values directly from the dashboards.

6. **Changing column widths**

   Within certain limits, the width of the individual columns can be changed. A maximum width is prescribed for certain columns, particularly for graphical representations.

   a. Place the cursor between two columns.

      The cursor changes to a double arrow, and the separator line between columns is represented with a line.

   b. Press and hold the left mouse button, and drag the separator line to the preferred position.

      If the minimum column width is undershot, the width is automatically changed appropriately.

7. **Removing representations**

   Every representation can be removed completely from the dashboard via the title line. To remove a representation, at the far right of the title line of a representation, click the X icon. The representation is removed directly from the dashboard without a prompt.

Saving a dashboard

To retain all changes permanently on a dashboard, the current view must be saved.

Procedure

1. Click the Save icon in the header line of the dashboard.

   The **Success** dialog box appears when the dashboard has been saved.

2. Click the **OK** button.

   The previously saved dashboard is displayed again.

IMPORTANT:

- The current display of the individual components is not saved when a dashboard is saved. For example, the **Device Tree** initially appears collapsed for each call, except for the **Real Devices** and **Virtual Devices** levels.
- When a dashboard is saved, all other dashboards are also automatically saved.
- If dashboards are being edited concurrently by multiple users, the changes of all other users will be lost on all dashboards when saved. This is true even for different dashboards.

Calling a dashboard

After a login, a dashboard can be called on a website. In this case, the dashboard opens in an additional browser window. The actual website also remains open after leaving the dashboard. The **Logout** button is then no longer displayed in the header line.

Alternatively, the login can be made directly on a dashboard when establishing an HTTP connection. For more information, see **Establishing the connection**.

Procedure

1. After entering the login information, click the **Login to Dashboard** button.

   A dashboard view consisting only of the header line is displayed in the browser window.

2. In the **Select Dashboard** field, select the dashboard to be displayed.

   The **Select Dashboard** column can be used to switch between the dashboards that can be enabled. If changes have been made but not yet saved to the most recently selected dashboard, the **Dashboard was Modified** dialog box opens when the dashboard is switched.

   - Click the **Yes** button if you do not want to save the changes, and switch directly to the newly selected dashboard.
   - Click the **No** button to return to the still unsaved dashboard, and then save it. For more information, see **Saving a dashboard**.

Calling the website on a mobile terminal

The dashboard that was stored in the configuration is used to represent the HPE Adaptive Rack Cooling System website on a mobile terminal. For more information, see **Mobile**.

Procedure

1. In the browser of your mobile terminal, call the address of the HPE Adaptive Rack Cooling System. For more information, see **Establishing the connection**.
2. Log in with your user data.

   The dashboard that was saved for the mobile terminals opens.

NOTE:

- If multiple variable lists with many variables are defined on the dashboard, delays when calling the mobile website can occur. This is independent of the mobile terminal power.
- If a dashboard is changed, all users logged in through a mobile terminal will be logged out.

Exiting a dashboard

Exit a dashboard by closing the browser window. If the dashboard view was enabled directly during the login by clicking the **Login to Dashboard** button, the **Logout** button is displayed in the header line to the left of the **Username** column.

Click the **Logout** button to log out completely from the HPE Adaptive Rack Cooling System.

To prevent an inadvertent logout from the website, logging out in this manner is not possible when the dashboard view was called to configure a dashboard.

Updates and data backup

It is a best practice to block FTP access and activate it only when it is being used to perform software updates and data backup. For more information, see **File transfer configuration**.

Establishing an FTP connection

Prerequisites

To establish an FTP connection, you need the HPE Adaptive Rack Cooling System IP address.

- If this address is not known because, for example, the DHCP function is activated, you must establish a connection using the USB interface. For more information, see **Establishing the connection**.
- When you make this access directly, you can use this connection to determine the IP address of the HPE Adaptive Rack Cooling System.
- An appropriate FTP client program is also required to establish an FTP or SFTP connection.

Procedure

1. To establish the FTP connection to the HPE Adaptive Rack Cooling System, install an FTP client program on the computer.
2. Establish the network connection between the HPE Adaptive Rack Cooling System and the computer.
3. Ensure that the HPE Adaptive Rack Cooling System and the computer have the same address space.
4. Enter the appropriate access data in the FTP program. The following access data is entered by default:
   - **Host:** `192.168.0.190`
   - **Username:** `admin`
   - **Password:** `admin`
   - **Port:** `21` (FTP) or `22` (SFTP)
5. Start the connection between the computer and the HPE Adaptive Rack Cooling System. You might need to activate the **Bypass Proxy settings** setting.

   The left-hand subwindow now shows the folder structure and the content of the PC. The right-hand subwindow contains the equivalent content for the HPE Adaptive Rack Cooling System.

Performing an update

Notes for performing an update

Observe the following security notes for performing an update.

NOTE:

- The user is responsible for performing the update in the associated network environment.
- Before starting an update, ensure that the security application connected to the HPE Adaptive Rack Cooling System can be interrupted for the duration of the update.
- Ensure that you have access to the HPE Adaptive Rack Cooling System, because, for example, you will need to check the current status on-site.
- During the update process, the power to the HPE Adaptive Rack Cooling System must not be interrupted under any circumstances.
- If the update is performed using the USB connection, the USB device must not be removed during the update process.
- None of the connected components for the HPE Adaptive Rack Cooling System can be disconnected during the update process.
- Under some circumstances, an update can reset the HPE Adaptive Rack Cooling System settings to their factory state.
- Hewlett Packard Enterprise recommends recording the current settings before performing an update.

In addition to the two possibilities described in this section to update via USB or (S)FTP, an update is also possible via the HPE Adaptive Rack Cooling System website. For more information, see **Firmware update**.

Downloading the software update

Download the current software version from the website and save it to your computer.

Updating via web interface

To perform the update:

CAUTION: Be sure that the HPE Adaptive Rack Cooling System will not lose power or the network connecting the computer to the HPE Adaptive Rack Cooling System is not disrupted during the upgrade process.

1. To access the HPE Adaptive Rack Cooling System web interface, browse to **https://ip_address** where **ip_address** is **192.168.0.190** (if you are using the default IP address). If DHCP is enabled and is available on the connected HPE Adaptive Rack Cooling System network, go to the HPE Adaptive Rack Cooling System Display screen under **Network Information** to locate the current HPE Adaptive Rack Cooling System IP address.
2. On the left pane, select **Processing Unit**, and then select the Configuration tab in the right pane.
3. Under the **System** category, select **Firmware Update**.
4. In the dialog box, select the disk icon to select the new firmware image file to be updated.
5. Click **OK**.
6. Verify that the new firmware image file name is shown in the **Filename** field of the **Firmware Update** dialog box.
7. Click **Start Update**.

When the upgrade process is complete, the HPE Adaptive Rack Cooling System controller automatically reboots, and the existing web login session ends.

Updating via USB

NOTE: Observe the following notes for updating the HPE Adaptive Rack Cooling System via USB:

- The USB storage medium used for the update must be formatted as FAT.
- In addition to the file for the software update, any other data may be present on the USB storage medium.

1. Copy the downloaded tar file into the root directory of the USB storage medium.
2. If necessary, start the HPE Adaptive Rack Cooling System.
3. Wait until the multi-LED on the front of the HPE Adaptive Rack Cooling System CMC controller turns green, orange, or red continually, or is flashing.
4. Insert the USB storage medium in the appropriate USB slot at the rear of the HPE Adaptive Rack Cooling System.

The update process starts automatically after a few minutes. When the multi-LED flashes red, alternately long and short, the update process has started. If the current software version (or a later version) is already installed on the HPE Adaptive Rack Cooling System, no update will be performed.

Depending on the number of connected sensors that are also updated, the complete update process takes approximately 15 minutes.

pdating via FTP or SFTP

1. Establish a connection between a PC and the HPE Adaptive Rack Cooling System. For more information, see **Establishing an FTP connection**.
2. Switch to the **update** folder in the right-hand subwindow of the HPE Adaptive Rack Cooling System.
3. In the left-hand window (PC), switch to the folder in which you stored the update file previously.
4. Right-click the update file and select the **Upload** action.

The update process starts automatically after a few seconds. This is indicated when the multi-LED flashes red, alternately long and short.

Performing the update

The system reboots when the HPE Adaptive Rack Cooling System update is complete. Once the reboot is complete, the LED on the front indicates the HPE Adaptive Rack Cooling System CMC controller status: green, orange, or red.

You can then update the connected sensors. During this process, the status sensor LED flashes fast, and the HPE Adaptive Rack Cooling System status LED flashes white. The sensor currently being updated also flashes violet.

IMPORTANT: Under no circumstances may the sensors be disconnected from the HPE Adaptive Rack Cooling System during the update.

The update of the HPE Adaptive Rack Cooling System is completed when the following conditions are satisfied:

- The LED on the front of the HPE Adaptive Rack Cooling System CMC controller lights to indicate the status: green, orange, or red.
- The LEDs on the bus connection of the sensors light green.
- The multi-LEDs of the sensors behind the front cover flashes blue.

Example

The progress of the update is logged in the **`*.status`** file. Depending on the type of the update process, this file is located either in the root directory of the USB storage medium or in the Update folder of the HPE Adaptive Rack Cooling System. The status file is a text file that can be opened with an editor or a text processing program.

- **For an update via (S)FTP or the website:** Transfer this file using an FTP connection from the Update folder of the HPE Adaptive Rack Cooling System to a PC.
- **For an update via USB:** Copy the file from the USB storage medium to a PC.
- Open the file with an editor and check whether the update was performed successfully or whether error messages have been issued.

NOTE: To reload the complete website from the HPE Adaptive Rack Cooling System, press the **Ctrl + F5** key combination in the browser.

Performing a data backup

Hewlett Packard Enterprise recommends that you perform data backup of the HPE Adaptive Rack Cooling System configuration regularly. For more information, see **Performing an update**.

To perform a data backup:

1. Establish an FTP connection between a PC and the HPE Adaptive Rack Cooling System. For more information, see **Establishing an FTP connection**.
2. In the left-hand subwindow (PC), switch to any folder where you want to store the data backup.
3. Switch to the **download** folder in the right-hand subwindow (HPE Adaptive Rack Cooling System).
4. Right-click the **cmcIIIsave.cfg** (as of software version V3.11.00) file and select the **Download** action.

The settings and configurations of all connected components as displayed currently for the individual sensors on the **Hardware** and **Configuration** tabs are stored in this file. For more information, see **Hardware tab** and **Configuration tab**.

For a second HPE Adaptive Rack Cooling System, this configuration file can also be placed in the upload directory for transfer. All general settings other than the TCP/IP settings are then taken from this file. If the same sensors and so on are also installed in the same sequence on the second HPE Adaptive Rack Cooling System, all limit values of these sensors are also transferred.

NOTE: A configuration file which was saved by an HPE Adaptive Rack Cooling System with an older software version cannot be transferred to an HPE Adaptive Rack Cooling System with a more recent software version.

Saving supplementary information locally

Download folder

Similar to a data backup, you can download files from the download folder to the PC. The download is a text file with the following content:

- **Devices.cmc3:** The configurations of all connected components as displayed for the individual sensors on the Hardware and Configuration tabs. For more information, see **Hardware tab** and **Configuration tab**.
- **Logging.cmc3:** Complete (unfiltered) log information for the HPE Adaptive Rack Cooling System. For more information, see **Logging**.
- **cmcIIIsave.cfg:** Settings and configurations for all connected components. For more information, see **Performing a data backup**.
- **syslog.cmc:** File for transferring the syslog information.

After download the files to the PC, if necessary, rename them to uniquely identify the various file versions.

Download/docs folder

More files can be downloaded from the download/docs folder. These files are also text files with the following content:

- **Configuration.cmc3:** Configuration of the Processing Unit (complete system) as displayed on the Configuration tab. For more information, see **Configuration tab**.
- **Configuration.cmc3.history:** List of all configuration changes. Every change is identified with the revision version and the date and time of the previous version and the current version.
- **sysinfo.txt:** Information on the software versions of both file systems in the HPE Adaptive Rack Cooling System, and which of the two file systems is active.
- **system.log:** Log information on all system actions, such as configuration changes.

Download/docs/Configuration.cmc3.repository folder

This folder additionally contains individual files for all the configuration changes implemented (patch files).

Download/docs/lists folder

The download/docs/lists folder contains CSV files, which can be viewed after downloading with a spreadsheet program such as Microsoft Excel.

- **cmcIIIDevList.csv:** List of all sensors and units connected to the system.
- **cmcIIIVarList.csv:** List of all variables provided by the system.

Download/usb-stick or download/sd-card folder

If you have connected an external storage medium (USB stick or SD card) to the HPE Adaptive Rack Cooling System, data from the charts will be recorded here. For more information, see **Charts**.

Download the data from these directories for further evaluation.

Storage and disposal

Storage

If the device is not used for a long period, HPE recommends that it is disconnected from the main power supply and protected from dampness and dust.

Disposal

Because the HPE Adaptive Rack Cooling System consists mainly of the housing and circuit board parts, the device must be given to the electronic waste recycling system for disposal.

Technical Specifications

Technical Specifications		HPE Adaptive Rack Cooling System Processing Unit	
Model No.		DK 7030.000	
W x H x D (mm)		138 x 40 (1 U) x 120 + 12 (front)	
Temperature range		0 °C to +45 °C	
Operating humidity range		5% to 95% relative humidity, non-condensing	
Degree of protection		IP 30 to IEC 60 529	
Sensors/CAN bus connection units		Max. 32	
Max. overall cable length for CAN bus		2 x 50 m	
Interfaces	Network interface (RJ 45)	Ethernet in accordance with IEEE 802.3 via 10/100BaseT with PoE[1]	
	USB interface (front)	Mini USB for setting the system	
	USB interface (rear)	For USB stick for data recording[2] and SW updates up to 32 GB	
	Front SD-HC slot*	1 GB to 32 GB for data recording	
	Rear serial RS232 (RJ12)	One for connecting the display unit (7320.491), GSM unit (DK 7320.820 or DK 7030.570), or ISDN unit (DK 7320.830 or DK 7030.580)	
Inputs and outputs	Digital inputs (terminal)	2	
	Relay output (terminal)	1 (floating contact, 24 V, 1 A)	
	CAN bus (RJ 45)	One for maximum four sensors	Two, each with maximum 16 sensors = 32 sensors in total
Operation/ signals	Keys	One acknowledge key	
	Hidden reset key	One service key	
	Piezo signal generator	1	
	LED display	OK / warning / alarm / network status	
	Rear LED	One for the network status	
Protocols	Ethernet	TCP/IPv4, TCP/IPv6, SNMPv1, SNMPv2c, SNMPv3, Telnet, SSH, FTP, SFTP, HTTP, HTTPS, NTP, DHCP, DNS, SMTP, XML*, Syslog, LDAP	
Redundant power supply	Input 24 V (socket)	One for connecting the CMC III power pack	
	Input 24 V (terminals)	One for direct connection or for connecting the CMC III power pack	
	Power over Ethernet	1	

Table Continued

Technical Specifications		HPE Adaptive Rack Cooling System Processing Unit
Functions	Time function	Clock with backup battery (24 hours), without battery/accumulator with NTP
	User administration	LDAP
	User interface	Integral web server
	Control desk connection	Integral OPC server
Integrated sensors	Temperature sensor	NTC sensor in the housing front; as alternative, an external temperature sensor (optional) is provided in the scope of supply.
	Access sensor	Infrared technology in the housing front

[1] A limited number of devices are supported when powered by PoE.

[2] Available as a software update.

Frequently asked questions

Question	Answer
How many sessions are supported at one time?	Only one user session is supported at a time. Sessions can be terminated if a second session is initiated or if a console session timeout occurs.
How many Admin sessions are supported at one time?	Only one Admin session is supported at a time. Sessions can be terminated if a second session is initiated or if a console session timeout occurs.
Why does my Admin session keep getting disconnected?	If a second Admin session is initiated, the existing session is terminated and the login screen appears.
Why can't I log in using my FTP user name and password?	FTP Admin and Users are blocked until the Admin assigns passwords and FTP is enabled in the Management menu of the Remote Access tab.
How do I upgrade my firmware?	For more information, see the Support Pack instructions included with the firmware upgrade.
How do I change the management module IP address?	You can change the management module through the Network menu or through the serial interface. For more information on changing the management module IP address through the serial interface, see the *HPE Adaptive Rack Cooling System System User Guide*.
Why do I get an extra line feed sent from Windows® when I access the serial interface connected through a HPE 16- and 48-Port Serial Console Server?	You must assign this command to the HPE 16- and 48-Port Serial Console Server, where port X is the port where the HPE Adaptive Rack Cooling System is connected. **`port x set out If=strip`** **`port x set flow=Xonxof`**
Why aren't FTP admin and user logins recorded in the FTP.log?	Only FTP file uploads are recorded in the FTP.log.
Can I assign the SSL default port 443 as a non-SSL port?	Yes, you can configure any port, including port 443.
Why isn't the restored configuration file appearing in the FTP upload directory?	The configuration file is restored in another directory.
Why are active alarms appearing after I power-cycle my management module?	The alarms are updated every 30 minutes. If you power-cycle the management module in-between this time frame, the alarms are still active and appear. After power-cycling the first time, clear the alarms, wait 30 minutes, and power-cycle again.
Why aren't my event.log and alarm.logs formatted correctly when I download them in .bin mode?	The event.log and alarm.log are not formatted to be downloaded in .bin mode. Use ASCII mode.

Table Continued

Is there a confirmation that my system is being restarted after I select the Restore to Factory Defaults or Restart buttons, or after I restore a configuration?	No, there is no confirmation that the system is being restarted.
Why isn't the web browser responding when I enter the management module IP address?	• SSL might be enabled. Enter **`https://hostname[:port number]`** where hostname is the IP address of the management module and port number is the port you assign for SSL. • You might have assigned a port number other than 80 or changed the port number in the Remote Access tab. Enter **`http://hostname[:port number]`** where hostname is the IP address of the management module and port number is the port you assigned in the Remote Access tab.

Obtaining replaceable parts

For more information on replaceable parts, see the *HPE Adaptive Rack Cooling System Maintenance and Service Guide*.

Procedure

1. Go to the **HPE website**.
2. From the top of the screen, select **Support**.
3. Select **HPE Support Center**.
4. In the product field, enter **`HPE Adaptive Rack Cooling System`**, and click **Enter**.
5. From the Resources section, select **Manuals**.
6. From the Quick jump to manuals section, select **Service and maintenance information**.

Websites

General websites

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

www.hpe.com/storage/spock

Storage white papers and analyst reports

www.hpe.com/storage/whitepapers

For additional websites, see **Support and other resources**.

Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  http://www.hpe.com/assistance

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  http://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

  www.hpe.com/support/hpesc

  Hewlett Packard Enterprise Support Center: Software downloads

  www.hpe.com/support/downloads

  Software Depot

  www.hpe.com/support/softwaredepot

- To subscribe to eNewsletters and alerts:

  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:

  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.

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

http://www.hpe.com/support/selfrepair

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

www.hpe.com/services/getconnected

HPE Proactive Care services

www.hpe.com/services/proactivecare

HPE Proactive Care service: Supported products list

www.hpe.com/services/proactivecaresupportedproducts

HPE Proactive Care advanced service: Supported products list

www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

Proactive Care central

www.hpe.com/services/proactivecarecentral

Proactive Care service activation

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

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

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:

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:

www.hpe.com/info/reach

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

www.hpe.com/info/ecodata

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

www.hpe.com/info/environment

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (**docsfeedback@hpe.com**). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.