QuickSpecs

Overview

HPE Smart Storage Batteries

The HPE Smart Storage Battery is a lithium-ion, low-halogen centralized backup source and is required to back up the write cache content onto flash memory on the HPE Smart Array Gen9 and newer storage controllers in case of an unplanned server power loss. The battery is also the backup power source for HPE NVDIMMS and allows any data in flight on the DRAM to be moved to the non-volatile NAND flash. Only one battery is required per server as it can support multiple devices.

HPE Smart Array Hybrid Capacitors

The HPE Smart Storage Hybrid Capacitor is a battery-free technology for power storage that provides data protection for cached data while eliminating costs and environmental impact of lithium-ion batteries.

For those running HPE Gen10 servers, the HPE Smart Hybrid Capacitor is a centralized backup power source supporting multiple controllers where the NAND flash memory on HPE Smart Array Performance Class controllers and the HPE Smart Hybrid Capacitor work together to save cached data in the event of unplanned server power loss.

When the hybrid capacitor module detects power loss it keeps critical parts of the controller active long enough to allow data to be copied from the onboard controller cache to the flash memory.

Please note, although the hybrid capacitor module is mechanically compatible with the 96W Smart Storage Battery (P01366-B21 and P01367-B21), the module cannot be used in combination with the Smart Storage Battery. In most cases, only a single Smart Storage Battery or a single Smart Hybrid Capacitor can be used per system. Please check your server platform QuickSpecs for details.

Models

Batteries

HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	P01366-B21
HPE 96W Smart Storage Lithium-ion Battery with 260mm Cable Kit	P01367-B21
HPE 12W Smart Storage Battery	782961-B21

Hybrid Capacitors

HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit	P02377-B21
HPE Smart Storage Hybrid Capacitor with 260mm Cable Kit	P02381-B21

Notes: The HPE Smart Storage Hybrid Capacitor is only supported on Gen10 servers or later.
Before installing the HPE Smart Storage Hybrid Capacitor, verify that the system BIOS meets the minimum firmware requirements to support the hybrid capacitor module.

HPE Smart Storage Battery Key Features
- Supports HPE Smart Array P-class controllers and HPE NVDIMMs
- Supports up to 24 devices
- Low halogen
- Lithium-ion

HPE Hybrid Capacitor Key Features
- High reliability, even in higher temperature environments
- No batteries, not a Class 9 Dangerous Good product (no hazardous material disposal, no battery shipping requirements)
- A single module supports up to three (3) Smart Array Controllers
- Charges to full capacity in ~3 minutes after discharge
- Capable of operating in higher temperatures with no impact to service life

---

Hewlett Packard Enterprise

Standard Features

HPE Smart Storage Battery	
Pack Power	7.2 Volts - 10.8 Watt-hour
Shelf Life	Stored at 25 degrees Celsius, shelf life is 15 months (26-30% State of Charge) Stored at 45 degrees Celsius, shelf life is 6 months (26-30% SOC)
Dimension	139 mm (length) x 19.5mm (width) x 29mm (height)
Server Support	Please see platform QuickSpecs for server support.
HPE Hybrid Capacitor	
Voltage	2.5-3.6v
Discharge/charge	Full capacity in aprox. 3 minutes after discharge
Maintenance	Maintenance-free
Operating Temperature	10° to 60°C environment
Storage Temperature	10° C to 35 °C, less than 65% relative humidity
Notes: Sudden temperature change or high humidity may cause deterioration of its characteristics.	
Shelf Life	When stored at 10 ~ 35°C and less than 65% relative humidity, shelf life is 20 months minimum. (100% State of Charge)
Relative Humidity	65% or less (non-condensing) for storage
Operating Altitude	from sea level, of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft).
Non-operating Altitude	Up to 15,240m (50,000 feet) above sea level
Leakage Current	<2.0 uA in Ship/Storage mode
Safety Conformance or Certifications	UL, CB, KCC, CE
EMC (Class A)	FCC 47 CFR Part 15 Subpart B and AS/NZS CISPR 32
Unit Dimensions (WxDxH)	5.46" (138.65mm)x1.13"(28.8mm)x0.76"(19.36mm)
Unit Weight	P02377-B21 – 85g (+5/-10) P02381-B21 – 90g (+5/-10)
Firmware Support Minimum requirements	HPE servers with Intel processors (BIOS) Min version: 2.00 HPE servers with AMD processors (BIOS) Min version: 1.40 HPE Smart Array SR controllers (firmware) Min version: 1.90 HPE Smart Array MR controllers (firmware) Min version: 24.23.0-0041
Server Support	Please see platform QuickSpecs for server support.

HPE 96W Smart Storage Battery or Smart Storage Hybrid Capacitor?		
	96W Battery	**Smart Storage Hybrid Capacitor**
Gen 10 or newer	Yes	Yes
Controller Support	Yes	Yes
NVDIMM Support	Yes	No
Max. Device Support	Up to 24 NVDIMM and/or Smart Array Controllers	Up to 3 HPE Smart Array Controllers
Discharge to > Charge	Hours	Minutes
Operating Environments	Climate controlled environments	Higher temperature environments such as NEBs, ASHRAE, or Telco
Class 9 Dangerous Goods	Yes	No

Notes: The HPE Smart Storage Hybrid Capacitor is only supported on Gen10 servers or newer. Before installing the hybrid capacitor module, verify that the system BIOS meets the minimum firmware requirements to support the capacitor pack.
Not for use with Server that use NVDIMMs.
For more information on updating firmware, see the Intelligent Provisioning User Guide on the Hewlett Packard Enterprise website (http://www.hpe.com/info/intelligentprovisioning/docs).

To get the latest firmware and software updates, download the Service Pack for ProLiant (SPP) from the Hewlett Packard Enterprise website (**http://www.hpe.com/servers/spp/download**).

Standard Features

Material Safety Data Sheet
Hewlett Packard Enterprise provides battery Material Safety Data Sheets (MSDS) and other battery product information sheets as a service to its customers. For more information please visit: **https://www.hpe.com/us/en/about/environment/msds-specs.html#.WIDLu2bruUk**

Warranty
The warranty for this device is 3 years parts only.
Warranty Upgrade Options
- Response - Upgrade on-site response from next business day to same day 4 hours.
- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days
- Duration - Select duration of coverage for a period of 1, 3, or 5 years.

Notes: Warranty upgrade options can come in the form of HPE Services, which are sold at the HPE System level this product attaches too.

Service and Support

HPE Services
No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.hpe.com/services

Consulting Services
No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.hpe.com/services/consulting

HPE Managed Services
HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.
HPE Managed Services | HPE

Operational services
Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.
https://www.hpe.com/services/operational

HPE Complete Care Service
HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:
- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

HPE Tech Care Service
HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.
https://www.hpe.com/services/techcare

Service and Support

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/services/lifecycle

For a list of the most frequently purchased services using service credits, see the **HPE Service Credits Menu**

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at **https://ssc.hpe.com/portal/site/ssc/**

Service and Support

AI Powered and Digitally Enabled Support Experience
Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms
HPE GreenLake edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"
https://www.hpe.com/us/en/contact-hpe.html

For more information
http://www.hpe.com/services

Related Options

HPE Smart Array SR SmartCache

Single-Server License
Used to purchase a license for one server.

Contains one license per server, a printed license entitlement certificate, end user license agreement, and license key installation card **delivered via physical shipment**. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HPE Software Technical Support Services.

Flexible-Quantity License
Used to purchase multiple licenses with a single activation key.

Contains license(s) for a customer defined quantity of servers, a license entitlement certificate for the quantity of licenses purchased, end user license agreement, and license key installation card **delivered via physical shipment**. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HPE Software Technical Support Services.

Flexible-Quantity Electronic License
Used to purchase multiple licenses with a single activation key.

Contains license(s) for a customer defined quantity of servers, a license entitlement certificate for the quantity of licenses purchased, end user license agreement, and license key installation information **delivered via e-mail.** The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HPE Software Technical Support Services.

Notes: For more information please visit: **http://www.hpe.com/servers/smartcache**

HPE Smart Array SR Secure Encryption

HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU   Q2F26AAE
For use with SmartRAID SR controllers only.

Notes: HPE Smart Array SR Secure Encryption licensing is based on the number of servers requiring encryption for direct attached storage.
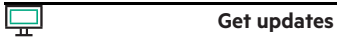
For more information visit: **http://www.hpe.com/servers/secureencryption**

Summary of Changes

Date	Version History	Action	Description of Change
04-Dec-2023	Version 8	Changed	Service and Support Section was Updated
06-Mar-2023	Version 7	Changed	Merged Batteries and Hybrid Capacitors
16-Jan-2023	Version 6	Changed	Obsolete SKUs were removed
04-Oct-2021	Version 5	Changed	Service and Support Section was updated
18-Jan-2021	Version 4	Changed	Related Options section was updated
04-Mar-2019	Version 3	Changed	Related Options section was updated
05-Feb-2018	Version 2	Added	Added 12W Battery SKUs and Gen9 compatibility
04-Dec-2017	Version 1	Added	New QuickSpecs.

Copyright

Make the right purchase decision.
Contact our presales specialists.

Chat now (sales)

Call now

Get updates

Hewlett Packard
Enterprise