Overview

For latest information on this product please use <u>HPE Smart Array Gen10 Controllers for HPE ProLiant DL, ML and Apollo Servers</u> QuickSpecs

HPE Smart Array E208i-a SR Gen10 Controller

The HPE Smart Array E208i-a SR Gen10 Controller, supporting 12Gb/s SAS and PCIe 3.0, is an ideal cost-effective solution for RAID 0, 1, 5, and 10 and Software Defined Storage solutions. This controller operates in Mixed Mode which combines RAID and HBA operations simultaneously. It has eight internal SAS lanes, allowing connection to SAS or SATA drives, and offers encryption for data-at-rest on any drive with HPE Smart Array SR Secure Encryption. This type-a flexible/modular controller occupies a dedicated storage slot without occupying a PCIe expansion slot and provides enterprise-class reliability, security and efficiency needed to address your evolving data storage needs.

Models

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller	804326-B21

NOTE: Kit contents include E208i-a controller.

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller	869079-B21

NOTE: Kit contents include E208i-a LH Controller (low-profile heatsink (LH) required in certain servers).

Standard Features

Key Features	Storage interface (SAS/SATA)
	8 SAS lanes across 2 x4 internal Mini-SAS ports
	12Gb/s SAS, 6Gb/s SATA technology
	Mix-and-match SAS and SATA drives to the same controller
	Support for SAS tape drives
	PCI Express 3.0 x8 link
	RAID 0, 1, 5, 10
	Mixed Mode (RAID logic drives and HBA physical drives simultaneously)
	Windows Storage Spaces Direct validated
	VMware Virtual SAN certified
	Legacy and UEFI boot operation
	UEFI System Utilities (storage configuration)
	Up to 238 physical drives
	Up to 64 logical drives
	HPE Smart Array SR Secure Encryption (optional license)
	HPE SSD Smart Path
	Rapid Parity Initialization (RPI)
	Rapid rebuild
	Drive Sanitize
	Performance Optimization-Degraded Reads and Read Coalescing
	Power efficiency
	Seamless upgrades from HPE Smart Array Software RAID
	Seamless upgrades to HPE Smart Array P-class Controllers

Ports	Internal: 8 SAS/SATA lanes across 2 x4 internal Mini-SAS ports

Form Factor	Type-a Flexible/Modular Controller (does not occupy a PCIe Expansion Slot)

Performance	12Gb/s SAS (1200 MB/s theoretical bandwidth per physical lane)
	6Gb/s SATA (600 MB/s theoretical bandwidth per physical lane)
	PCI Express 3.0 x8 link width

Fault Prevention	The following features offer detection of possible failures before they occur, allowing preventive action to be taken:
	Predictive drive failure detects possible drive failure before it occurs, allowing replacement of the component before failure occurs.
	Background surface scan checks drives during inactive periods and automatically remaps bad sectors, ensuring data integrity.
	HPE SmartSSD Wear Gauge reports the amount of lifetime remaining on your SSDs.

Standard Features

Fault Recovery   Minimizes downtime, reconstructs data, and facilitates a quick recovery from drive failure

Recovery ROM: This feature protects the user from a firmware image corruption by storing a redundant copy of the firmware image. If the active firmware image becomes corrupt, the controller will use the redundant firmware image and continue operating.

On-Line Spares: There is no limit to the number of spare drives that can be installed prior to drive failure. If a failure occurs, recovery begins with an On-Line Spare and data is reconstructed automatically.

DRAM ECC detects and corrects data bit errors.

HPE SSD Smart Path   The HPE SSD Smart Path feature included in the Smart Array software stack improves Solid State Disk (SSD) read performance by up to 4x. HPE SSD Smart Path chooses the optimum path to the SSD and accelerates reads for all RAID levels and RAID 0 writes.

HPE Smart Array SR Secure Encryption (optional license)   HPE Smart Array SR Secure Encryption is a Smart Array controller-based data encryption solution that protects sensitive, mission critical data. This is an enterprise-class encryption solution for data-at-rest on any drives attached to the HPE Smart Array controllers including data on the controller cache. Secure Encryption requires an optional license per server (see Related Options for more information on the license).

The solution is available for both local and remote key management mode deployments. Local Key Management Mode is focused on single server deployment where there is one Master key per controller that is managed by the user. Remote Key Management Mode is for enterprise wide deployments from just a few servers to thousands of servers.

For more information on please visit:

http://www.hpe.com/servers/secureencryption

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.
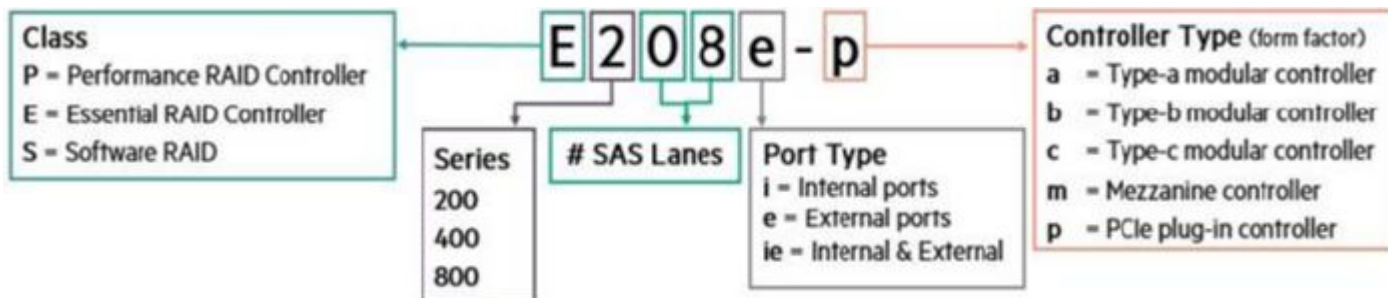
Duration - Select duration of coverage for a period of 1, 3, or 5 years.

Warranty upgrade options can come in the form of Care Packs, which are sold at the HPE System level to which this product attaches.

Standard Features

Naming Framework   The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the **HPE Smart Array Gen10 Controllers Data Sheet**.

Class
P = Performance RAID Controller
E = Essential RAID Controller
S = Software RAID

E 2 0 8 e - p

Series
200
400
800

 # SAS Lanes

Port Type
i = Internal ports
e = External ports
ie = Internal & External

Controller Type (form factor)
a = Type-a modular controller
b = Type-b modular controller
c = Type-c modular controller
m = Mezzanine controller
p = PCIe plug-in controller

Compatibility

Server Support	**HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller**	**804326-B21**
	HPE ProLiant DL360 Gen10	
	HPE ProLiant DL380 Gen10	
	HPE ProLiant DL385 Gen10	
	HPE ProLiant ML350 Gen10	
	HPE ProLiant XL450 Gen10	
	HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller	**869079-B21**
	HPE ProLiant DL360 Gen10	
	HPE ProLiant DL560 Gen10	

NOTE: When GPUs are used in the HPE ProLiant DL360 Gen10 the HPE Smart Array E208i-a SR Gen10 LH Controller (869079-B21) should be used in place of the HPE Smart Array E208i-a SR Gen10 Controller (804326-B21).

Operating Systems
Microsoft Windows Server
Microsoft Windows Hyper-V Server
VMware vSphere ESXi
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
Canonical Ubuntu
CentOS
ClearOS
NOTE: HPE Smart Array controllers are supported by the server operating system. For more information on HPE's server operating systems and virtualization software, please visit: **http://www.hpe.com/info/ossupport**

Storage Management Software Suite
HPE Smart Storage Administrator (SSA) GUI
HPE Smart Storage Administrator (SSA) CLI
HPE Smart Storage Administrator (SSA) Scripting
HPE Intelligent Provisioning
UEFI System Utilities (storage configuration)
UEFI Storage RESTful
NOTE: For additional information see the HPE Smart Array SR Gen10 Configuration Guide at: **http://www.hpe.com/info/SmartArrayGen10-docs**

Service and Support

HPE Support Services	**Protect your business beyond warranty with HPE Support Services** HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Recommended Support	**HPE Proactive Care* with 24x7 coverage, three year Support Service** HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers. **https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf** **HPE Proactive Care* with 6 hour call-to-repair commitment, three year Support Service** HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This Service combines three years' proactive reporting and advice with our highest level of hardware support - HPE's 24x7, six hour hardware call-to-repair. HPE is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers. **https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf** **NOTE:** *HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

HPE Education Services	Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. **http://www.hpe.com/ww/learn**

Service and Support

HPE Support Center
The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.
Learn more **http://www.hpe.com/support/hpesc**

HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.
NOTE: *HPE Support Center Mobile App is subject to local availability

Parts and Materials
Hewlett Packard Enterprise 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.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Related Services
HPE Server Hardware Installation
Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf

HPE Installation and Startup Service provides for the installation and startup of HPE technology including BladeSystems, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

NOTE: The Smart Array controller is covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.
Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre

Service and Support

switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support **HERE**.

For more information

Visit the Hewlett Packard Enterprise Service and Support **website**.

HPE Smart Array Supporting Documents

For additional support documents, including and configuration guide and user guides, please visit: **http://www.hpe.com/info/SmartArrayGen10-docs**.

Related Options

HPE Smart Array SR Secure Encryption	HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU	Q2F26AAE

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

Environment friendly Products and Approach - End-of life Management and Recycling	Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
15-Oct-2018	Version 6	Changed	Overview and Related Options were updated.
04-Jun-2018	Version 5	Changed	SKU description were updated.
05-Mar-2018	Version 4	Changed	Overview, Standard Features, Related Services were updated.
05-Feb-2018	Version 3	Changed	Service Support topic was updated.
25-Sep-2017	Version 2	Changed	Compatible with ML350 Gen10 and XL450 Gen10; VMware Virtual SAN certified; Windows Storage Spaces Direct validated; naming framework
11-Jul-2017	Version 1	Added	New QuickSpecs.

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