QuickSpecs

Overview

HPE Smart Array P824i-p MR Gen10 Controller

The HPE Smart Array P824i-p MR Gen10 Controller, a 12 Gb/s SAS RAID controller with 24 SAS lanes, provides enterprise-class storage scalability to meet your growing capacity needs. It delivers data protection with advanced RAID levels and includes 4 GB Flash-Backed Write Cache (FBWC). It also offers enterprise-level performance and scalability for up to 24 internally attached SAS and SATA drives without the need for the SAS Expander Card providing point to point connectivity to SSDs for lower latency.

The P824i-p MR Controller uses a new, user-friendly web-based interface called HPE MR Storage Administrator (MRSA) that makes it easy to configure, monitor, maintain, and troubleshoot drives.

For those customers familiar with MegaRAID technology the P824i-p also uses a different CLI Management Tool called StorCLI.
NOTE: HPE MegaRAID Storage Administrator can only be used on the P824i-p. You will not be able to manage any SR based controllers in your environment with this management tool.

For more information on MR Storage Administrator see the MR Storage Administrator section below.
For more information on StorCLI see the Store CLI section below.

HPE Smart Array P824i-p MR Gen10 Controller

Models

HPE Smart Array P824i-p MR Gen10 (24 Internal Lanes/4GB Cache/CacheCade) 12G SAS PCIe Controller   870658-B21
NOTE: An HPE Smart Storage energy pack (available in both battery and Hybrid capacitor options) is required with the P824i-p MR Performance RAID controller. See below for energy pack options.

Hewlett Packard Enterprise

Overview

Compatibility

Server Support
- HPE ProLiant DL360 Gen10
- HPE ProLiant DL380 Gen10
- HPE ProLiant DL385 Gen10
- HPE ProLiant DL560 Gen10
- HPE ProLiant DL580 Gen10
- HPE ProLiant ML350 Gen10

Operating Systems
- Microsoft Windows Server
- Microsoft Windows Hyper-V Server
- Red Hat Enterprise Linux (RHEL)
- SUSE Linux Enterprise Server (SLES)
- VMware ESXi

NOTE: For more information on the HPE server operating systems and virtualization software, please visit:
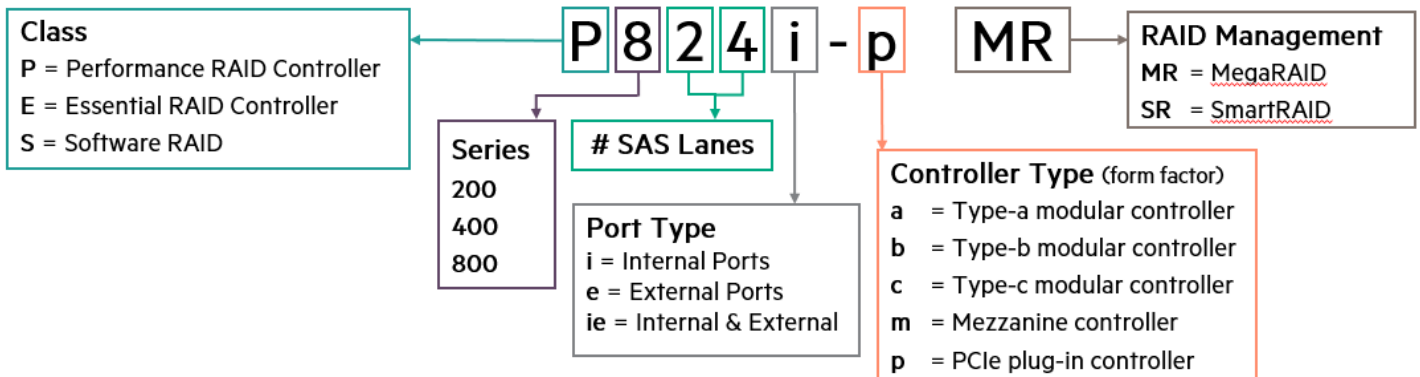**http://www.hpe.com/info/ossupport**

Storage Management Software Suite
- HPE MR Storage Administrator
- HPE StorCLI
- UEFI System Utilities (storage configuration)

NOTE: For additional information see the HPE MR Storage Administrator User Guide at: **http://www.hpe.com/info/P824i-pdocs**

Naming Framework
The Gen10 controller naming framework has been updated to simplify identification as depicted below.

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

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

RAID Management
MR = MegaRAID
SR = SmartRAID

Standard Features

MR Storage Administrator

The MR Storage Administrator is a web-based application that enables you to monitor, maintain, troubleshoot, and configure MegaRAID (MR) storage controllers. The MR Storage Administrator graphical user interface (GUI) helps you to view, create, and manage storage configurations.

- **Monitoring and Configuring:** MR Storage Administrator enables you to monitor the controllers and configure the drives on the controller. It displays the status of the controller cards, logical drives, and drives on the controller. The device status icons are displayed on their respective pages to notify you in case of drive failures and other events that require your immediate attention. Real-time email notifications on the status of the server are sent based on your alert settings. The system errors and events are recorded and displayed in an event log file. Additionally, you can also import or clear foreign configurations.
  NOTE: Limited alerting and monitoring is available via iLO when HPE Agentless Management Service is installed
- **Maintaining:** Using MR Storage Administrator, you can perform system maintenance tasks, such as updating the controller firmware
- **Troubleshooting:** MR Storage Administrator displays information related to drive failures, device failures, and so on. It also provides recommendations and displays contextual links, helping you to easily locate the drives/devices that have issues and troubleshoot them. You can also download a complete report of the all the devices and their configurations, properties, and settings and send it to the Support Teams for further troubleshooting.

Please refer to the **MR Storage Administrator User Guide** for more detailed information.
NOTE: The HPE P824i-p MR storage controller is managed through the HPE MegaRAID Storage Administrator only.

MegaRAID StorCLI

The Storage Command Line Interface (StorCLI) tool is the command line management software designed for the MegaRAID product line. The StorCLI tool is a command line interface that is designed to be easy to use, consistent, and easy to script. This chapter provides information on how to install and use the StorCLI tool and explains the various features of the StorCLI tool.
Please refer to the **StorCLI User Guide** for more detailed information.

Know your choices when it comes to HPE ProLiant and data storage

	MR Gen10 Controllers	**SR Gen10 Controllers**
Type	MegaRAID	SmartRAID
GUI Management Tool	✔ HPE MR Storage Administrator	✔ HPE Smart Storage Administrator
CLI Management Tool	✔ StorCLI	✔ SSACLI

NOTE: You will not be able to see any SR based controllers in your environment through this management tool. HPE recommends choosing either MR controllers or SR controllers to meet your storage controller needs.

Standard Features

Key Features
- Storage interface (SAS/SATA)
    - 24 SAS lanes across 6 x4 internal Mini-SAS HD ports
    - 12Gb/s SAS, 6Gb/s SATA technology
    - Mix-and-match SAS and SATA drives to the same controller
- 4 GB Flash-Backed Write Cache (FBWC)
- PCI Express 3.0 x8 link
- RAID 0, 1, 5, 6, 10, 50, 60
- Mixed Mode (RAID logic drives and HBA physical drives simultaneously)
- UEFI System Utilities (storage configuration)
- Up to 240 physical drives
- Up to 64 logical drives
- HPE Smart Array MR CacheCade (SSD caching)
- HPE SSD Fast Path (SSD acceleration)
- Online firmware updates
- Online capacity expansion
- Automatic drive rebuilds
- Adjustable task rates
- Consistency checks
- Fast initialization
- Patrol read
- Global spare and dedicated spare support

NOTE: HPE Smart Array P824i-p MR Gen10 Controller does not support the same tools or features as the HPE Smart Array SR Gen10 Controllers such as HPE SSA and HPE Smart Array SR Secure Encryption.

Ports
- Internal: 24 SAS/SATA lanes across 6 x4 Mini-SAS HD ports

Form Factor
- PCIe Plug-in Controller (occupies a PCIe Expansion Slot)

Performance
- 12Gb/s SAS (1200 MB/s theoretical bandwidth per SAS lane)
- 6Gb/s SATA (600 MB/s theoretical bandwidth per SAS lane)
- PCI Express 3.0 x8 link width
- 4 GB 72-bit wide DDR3-1600 Flash-Backed Write Cache provides up to 12.8 GB/s maximum cache bandwidth

What's in the box
Controller documentation information card, warranty statement, battery required card, and controller backup power cable.

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 HPE Pointnext operational, which are sold at the HPE System level to which this product attaches

Additional Info
For more detailed information on the various features please see the **HPE Smart Array P824i-p MR Gen10 User Guide**. For a more detailed breakout of the available Gen10 Smart Array controllers visit the **HPE Smart Array Gen10 Controllers Data Sheet.**

Related Options

Required Accessories for MR Storage Controllers

Energy pack Options Sold Separately

HPE 96W Smart Storage Battery (up to 20 Devices) with 145mm Cable Kit	P01366-B21
HPE 96W Smart Storage Battery (up to 20 Devices) with 260mm Cable Kit	P01367-B21
HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit	P02377-B21
HPE Smart Storage Hybrid Capacitor with 260mm Cable Kit	P02381-B21

NOTE: The Smart Storage 96W Battery supports multiple devices. See server QuickSpecs for compatibility.
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.

Cable Options Sold Separately

HPE DL38X/560/580/ML350 Gen10 P824i-p Cable Kit	P00614-B21

NOTE: Supported on HPE ProLiant DL380, DL385, DL560, DL580, and ML350 Gen10 servers.

HPE DL360 Gen10 P824i-p Cable Kit	867992-B21

NOTE: Supported on HPE ProLiant DL360 Gen10 server.

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. Hewlett Packard Enterprise 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 Hewlett Packard Enterprise, 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 Hewlett Packard Enterprise, 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 – the HPE 24x7, six hour hardware call-to-repair. Hewlett Packard Enterprise 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**

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 Hewlett Packard Enterprise experts, access support resources or collaborate with peers.
Learn more **http://www.hpe.com/support/hpesc**

The HPE 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

Service and Support

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).

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 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**.

Summary of Changes

Date	Version History	Action	Description of Change
23-Sep-2019	Version 6	Changed	Overview, Standard Features,
15-Jul-2019	Version 5	Added	Standard Features section was updated
15-Oct-2018	Version 4	Changed	Overview were revised.
01-Oct-2018	Version 3	Changed	Overview were revised.
06-Aug-2018	Version 2	Changed	Added DL360 Cable Kit (867992-B21) **and** support for DL360 Gen10, DL385 Gen10, and VMware ESXi support.
04-Jun-2018	Version 1	New	New QuickSpecs.

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