Overview

Intel VROC for HPE ProLiant Servers

Intel VROC for HPE ProLiant Servers is an enterprise, hybrid RAID solution, specifically designed for NVMe SSDs connected directly to the CPU. Intel® VROC is made possible by the new CPU feature Intel® Volume Management Device, Intel® VMD, a new hardware architecture on Intel® Xeon® Scalable Processors. Intel® VMD enhances drive performance as drives are directly connect to the Intel CPU enabling the lowest latency. Intel® VROC capitalizes on Intel® VMD for a simple software RAID solution that requires no additional hardware.

Models

Intel Virtual RAID on CPU Premium E-RTU for HPE	R7J59AAE
Intel Virtual RAID on CPU Premium FIO Software for HPE	R7J57A
Intel Virtual RAID on CPU Standard E-RTU for HPE	SOE38AAE
Intel Virtual RAID on CPU Standard FIO Software for HPE NVMe SSDs	S0E37A

Notes:

-SED and RAID are specific to Intel and drives cannot migrate to be managed by other vendor controllers.

-IP and SSA do not support VROC.

Drives supported
Up to 32 NVMe drives (depends on platform and CPU type)

Performance
16Gb/s NVMe (up to 32 drives maximum)

Standard Features

Key Benefits
- Use NVMe drives to their full potential
- Fewer hardware queues
- Bootable RAID
- Host Insert/Surprise removal
- Cost-effective and simple

Key Features
- Storage interface (NVMe)
  - Up to 32 NVMe lanes (depends on platform and CPU type)
- RAID 0, 1, 5, and 10 (Premium)
- UEFI System Utilities (storage configuration)
- Hot Spare and Auto-rebuild
- Supported with Windows, Linux, VMware

Description	Intel Virtual RAID on CPU Premium E-RTU for HPE	Intel Virtual RAID on CPU Standard E-RTU for HPE
SKU	**R7J59AAE** **R7J57A**	**SOE38AAE** **S0E37A**
Host Tools		
GUI	Windows only	Windows only
CLI	Windows, Linux MDADM CLI, VMware VMDRCLI	Windows, Linux MDADM CLI, VMware VMDRCLI
Storage Protocol		
BIOS Support	HII Utility, OBSE	HII Utility, OBSE
Key Features		
Maximum Physical Drives (up to)	Up to 32 NVMe	Up to 32 NVMe
Maximum Logical Drives (up to)	Up to 24 in a single volume	Up to 24 in a single volume
RAID	0, 1, 5, 10 Windows and Linux	0, 1, 10 Windows and Linux
	1, VMware is RAID 1 only and VMWare is only NVMe support	1, VMware is RAID 1 only and VMWare is only NVMe support
Boot Mode	UEFI Secure Boot	UEFI Secure Boot
Other features		
HPE iLO features	- NVMe Drive Fault and Locate LED - Redfish Drive Resource - NVMe Drive Events (IML, Alert, SNMP, AHS)	- NVMe Drive Fault and Locate LED - Redfish Drive Resource - NVMe Drive Events (IML, Alert, SNMP, AHS)
Encryption	NVMe SED - Passive and Remote Key Management	NVMe SED - Passive and Remote Key Management
LED support	Activity, Locate, Fault, Predictive Failure	Activity, Locate, Fault, Predictive Failure
Bootable RAID	Build redundancy to protect your system volume	Build redundancy to protect your system volume
NVMe Hot insert and Surprise Removal	Expand volume, replace bad drive without system reboot	Expand volume, replace bad drive without system reboot

Server Compatibility
Please refer to the platform QuickSpecs to confirm compatibility for Intel VROC for HPE ProLiant Servers.

Standard Features

Operating Systems

- Microsoft Windows Server
- Microsoft Windows Hyper-V Server
- Linux
- VMware 7.0 U1 and U2

Notes: *Customers will need to manually inject the driver when doing an O/S install from IP.
Please see **Intel VROC User Guide for Gen11** for more information.
For more information on HPE's server operating systems and virtualization software, please visit:
http://www.hpe.com/info/ossupport

Drivers

Intel VROC is integrated with the HPE BIOS. The Intel VROC solution has two driver components: the pre-boot, or UEFI driver, and the OS driver. The UEFI driver is embedded in the system BIOS and is referred to as the RSTe NVMe UEFI driver, while the OS driver must be loaded at the OS installation time; both contain version numbers. Refer to the Intel VROC User Guide and Installation Instructions for more information.

Notes: On a system with the Windows OS installed and an Intel VROC virtual drive present, the Windows RSTe OS driver version must not be prior to the RSTe NVMe UEFI driver version, otherwise unexpected behavior may occur.
The RSTe OS driver can be downloaded from the HPE Support Center.

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 Complete 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.

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake 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 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

Managed services to run your IT operations

HPE GreenLake Management Services provides 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.

Recommended Services

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care 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 Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care 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 Pointnext Complete Care
HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care 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 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.
Notes: *HPE Support Center Mobile App is subject to local availability.

Additional Service Information
http://www.hpe.com/services

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 QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.
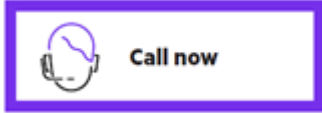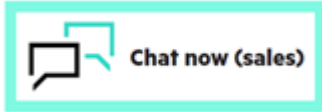The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Summary of Changes

Date	Version History	Action	Description of Change
16-Oct-2023	Version 4	Changed	Overview section was updated.
06-Mar-2023	Version 3	Changed	Standard features section was updated.
15-Nov-2021	Version 2	Changed	Service and Support section was updated
06-Apr-2021	Version 1	New	New QuickSpecs

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Hewlett Packard Enterprise

For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.

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