

Overview

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Intel VROC for HPE

Intel VROC for HPE 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.

This document contains two sections:

Intel VROC for HPE ProLiant Servers and Intel VROC for Scale Up Servers

Intel VROC for HPE ProLiant Servers

Models

Description	SKU
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 RAID 1 E-RTU for HPE	S3Q39AAE
Intel Virtual RAID on CPU RAID 1 FIO Software for HPE	S3Q19A

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.

Intel VROC for HPE Scale Up Servers

Models

Description	SKU
Intel Virtual RAID on CPU Premium E-RTU for HPE	R7J59AAE
Intel Virtual RAID on CPU Premium FIO Software for HPE	R7J57A

Notes:

- SED is not Supported on HPE Scale Up Servers
- IP and SSA do not support VROC.

Standard Features

Intel VROC for HPE ProLiant

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

Drives supported

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

Performance

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

Description	Intel Virtual RAID on CPU Premium E-RTU for HPE	Intel Virtual RAID on CPU RAID 1 E-RTU for HPE
SKU	R7J59AAE R7J57A	S3Q39AAE S3Q19A
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 1, VMware is RAID 1 only and VMWare is only NVMe support	1, Windows and Linux 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 • NVMe Drive Events (IML, Alert, SNMP, AHS)	• NVMe Drive Fault and Locate LED • 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



Standard Features

Server Compatibility

Please refer to the platform QuickSpecs to confirm compatibility for Intel VROC for HPE

Operating Systems

- Linux

Notes:

- Intel VROC Hybrid RAID does not currently support Windows and VMWare due to an issue that is in process to fix. As this problem is fixed, we will add this compatibility.
 - 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>
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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.

Intel VROC for HPE Scale Up Servers

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 Device Manager (for RAID configuration)
 - Hot Spare and Auto-rebuild
 - Supported with Linux, VMware
-

Drives supported

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

Performance

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



Standard Features

Description	Intel Virtual RAID on CPU Premium FIO Software for HPE
SKU	R7J59AAE, R7J57A
Host Tools	
GUI	None
CLI	Linux MDADM CLI, VMware VMDRCLI
Storage Protocol	
BIOS Support	HII Utility
Key Features	
Maximum Physical Drives (up to)	Up to 32 NVMe
Maximum Logical Drives (up to)	Up to 24 in a single volume
RAID	0, 1, 5, 10 Windows and Linux
	1, VMware is RAID 1 only and VMware is only NVMe support
Boot Mode	UEFI Secure Boot
Other features	
HPE RMC features	• NVMe Drive Fault and Locate LED • NVMe Drive Events (IEL, CAE)
LED support	Activity, Locate, Fault, Predictive Failure
Bootable RAID	Build redundancy to protect your system volume
NVMe Hot insert and Surprise Removal	Expand volume, replace bad drive without system reboot

Server Compatibility

Currently Intel VROC for HPE Scale Up Servers is only supported on HPE Compute Scale-up Server 3200

Operating Systems

- Linux
- VMware 8.0

Notes:

- Customers will need to manually inject the driver when doing an OS install from IP. Please see Intel Virtual RAID on CPU for HPE User Guide 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 VROC 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.



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>

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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/completecure>

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](#)

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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.
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Service and Support

AI Powered and Digitally Enabled Support Experience

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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>



Summary of Changes

Date	Version History	Action	Description of Change
28-Jul-2025	<u>Version 12</u>	Changed	Update survey link.
09-Jun-2025	<u>Version 11</u>	Changed	Standard features section was updated. Below information was removed under Operating systems on page 3 Microsoft Windows Server Microsoft Windows Hyper-V Server VMware 7.0 U1 and U2 Also, this note was added to the same page and under the same title: Intel VROC Hybrid RAID does not currently support Windows and VMWare due to an issue that is in process to fix. As this problem is fixed, we will add this compatibility.
12-May-2025	<u>Version 10</u>	Changed	Standard features section was updated.
10-Mar-2025	<u>Version 9</u>	Changed	Removed WINDOWS support for Scale uP servers
13-Jan-2025	<u>Version 8</u>	Changed	Standard features section was updated.
07-Oct-2024	<u>Version 7</u>	Changed	Overview and Standard Features sections were updated. Series name was updated.
01-Apr-2024	<u>Version 6</u>	Changed	Overview and Standard Features sections were updated.
18-Dec-2023	<u>Version 5</u>	Changed	HPE Services Rebranding
16-Oct-2023	<u>Version 4</u>	Changed	Overview section was updated.
06-Mar-2023	<u>Version 3</u>	Changed	Standard features section was updated.
15-Nov-2021	<u>Version 2</u>	Changed	Service and Support section was updated
06-Apr-2021	<u>Version 1</u>	New	New QuickSpecs



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

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