

Intel VROC for HPE QuickSpecs

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 connected 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.

Overview

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**

	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.
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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.
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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

16 GB/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, 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 – NVMe Drive Events (IML, Alert, SNMP, AHS)	– NVMe Drive Fault and Locate LED – NVMe Drive Events (IML, Alert, SNMP, AHS)

Standard Features

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

Operating Systems

- Linux

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>
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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
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Standard Features

Drives supported

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

Performance

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

Description	Intel Virtual RAID on CPU Premium E-RTU 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>
- Ubuntu 24.04, RHEL 9.7 and SLES 15 SP7 are not currently supported by VROC 9.3 based on issues currently under investigation.

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 Intel 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.

Summary of Changes

For the most up-to-date information on HPE Services, please refer to the [HPE Services – Supplemental QuickSpecs](#), which provides a comprehensive and regularly updated overview of available services.

Date	Version History	Action	Description of Change
20-Jul-2026	Version 16	Changed	- Updated GreenLake references to align with current branding and terminology standards. - Updated Supplemental Services QuickSpecs content for consistency and accuracy.
16-Mar-2026	Version 15	Changed	Added note indicating that Ubuntu 24.04, RHEL 9.7, and SLES 15 SP7 are not currently supported by VROC 9.3 due to issues under investigation.
16-Feb-2026	Version 14	Changed	Visual rebranding only—updated typography, colors, and design elements to align with new HPE brand standards. No technical specifications or content were modified.
02-Sep-2025	Version 13	Changed	Removed Windows / VMware not supported note on Gen12 as fix is in place
28-Jul-2025	Version 12	Changed	Update survey link.
09-Jun-2025	Version 11	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	Version 10	Changed	Standard features section was updated.
10-Mar-2025	Version 9	Changed	Removed Windows support for Scale uP servers
13-Jan-2025	Version 8	Changed	Standard features section was updated.
07-Oct-2024	Version 7	Changed	Overview and Standard Features sections were updated. Series name was updated.
01-Apr-2024	Version 6	Changed	Overview and Standard Features sections were updated.
18-Dec-2023	Version 5	Changed	HPE Services Rebranding
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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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.

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