

Overview

Intel® VROC for NVMe (Virtual RAID on CPU)

Standard
Premium

3FJ80AA
3FJ81AA

Introduction

Intel® VROC stands for Intel® Virtual RAID on CPU. It is an enterprise RAID solution specifically designed for NVMe*-based Solid State Drives (SSDs). The biggest advantage of Intel® VROC is the ability to manage RAID volumes with NVMe-based SSDs directly connected to CPU PCIe* lanes without using a RAID host bus adapter (HBA). As a result, Intel® VROC unleashes NVMe SSD performance potential without the complexity and power of a traditional Hardware RAID HBA.

Key feature list for Workstations:

- Premium (L04570-001): Boot RAID (0, 1, 5, 10) on CPU attached NVMe RAID volumes
- Standard (L04569-001): Boot RAID (0, 1, 10) on CPU attached NVMe RAID volumes
- Close the RAID write hole – Helps to recover writes that may not have been written during a power loss condition while the system is in a RAID5 rebuild
- Spanning data RAID volumes across VMD Domains

For NVMe RAID, Intel® VROC is architected to use Intel® VMD to provide the following new features that Intel® RSTe legacy NVMe RAID does not have:

- Bootable RAID
 - RAID5 Double Fault Protection
 - Support for HP qualified SSDs as well as Intel® SSDs
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Compatibility

The Intel® VROC for NVMe is compatible with the HP Z4 G4, Z6 G4 and Z8 G4 Workstations.

Supported Operating Systems:

Windows 10, Windows 7 SP2 (UEFI installations)

Supported Platforms:

Intel® Xeon® Skylake-W, Intel® Xeon® Skylake-SP
Z4 G4, Z6 G4, Z8 G4

Requires: Intel® RSTe 5.2 PV Release package

Features

Intel® VROC for NVMe Features

- No need for battery backup / RAID maintenance free backup unit
- Protected write back cache – software and hardware that allows recovery from a double fault
- Isolated storage devices from OS for error handling
- Protected R5 data from OS crash
- Boot from RAID volumes based on NVMe SSDs within a single Intel® VMD domain
- 3 VMD domains per CPU provide for boot from one domain and data RAID spanning across the other 2 domains.
- RAID / storage management using representational state transfer (RESTful) application programming interfaces (APIs)
- Graphical user interface (GUI) for Linux
- 4K native NVMe SSD support

NOTE: Enabling Intel® VROC support requires installation of an optional upgrade key on the motherboard

Intel® VROC upgrade key options

NVMe RAID Major Features	Standard Intel® VROC (L04569-001)	Premium Intel® VROC (L04570-001)
CPU attached NVMe SSD – high perf.	✓	✓
Boot on RAID volume	✓	✓
Third party vendor SSD support	✓	✓
Intel® RSTe 5.0 RAID 0/1/10	✓	✓
Intel® RSTe 5.0 RAID 5	-	✓
RAID write hole closed (BBU replacement)	-	✓
Hot plug / surprise removal (2.5" SSD form factor only; Add-in card form factor not supported)	✓	✓
Enclosure LED management	✓	✓

NOTE: Intel® VROC upgrade keys are used for PCIe NVMe SSDs in CPU PCIe slots only

Summary of Changes

Date of change:	Version History:		Description of change:
	From v1 to v2		

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