



Intel® Volume Management Device (Intel® VMD) Driver for VMware* ESXi* Version 3.0.1.1001

Release Notes

April 2023
Version 1.1



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Driver Revision History

| Date | Driver Version | Description |
|----------------|--|---|
| September 2022 | <ul style="list-style-type: none">Intel VMD release 3.0.0.1038 for VMware® ESXi® 7.0 | <ul style="list-style-type: none">Intel VMD-enabled NVMe driver for Generation 4 Intel® Xeon Scalable Processors Beta Release |
| November 2022 | <ul style="list-style-type: none">Intel VMD release 3.0.0.1038 for VMware® ESXi® 7.0 and 8.0 | <ul style="list-style-type: none">Intel VMD driver for Generation 1, 2, 3, & 4 Intel® Xeon Scalable Processors PV Release |
| April 2023 | <ul style="list-style-type: none">Intel VMD release 3.0.1.1001 for VMware® ESXi® 7.0 and 8.0 | <ul style="list-style-type: none">Intel VMD driver for Generation 1, 2, 3, & 4 Intel® Xeon Scalable Processors Release |



*Intel® Volume Management Device Driver for VMware® ESXi**



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1 Introduction

1.1 Overview

The Intel® Volume Management Device (Intel® VMD) Driver for VMware® ESXi® (also known as vSphere®) package contains the 3.0.1.1001 build release version of the Intel VMD Driver to support Generation 1 through 4 Intel® Xeon Scalable Processors platforms using the VMware® ESXi® Hypervisor. This build is optimized for Generation 4 Intel® Xeon Scalable Processor platforms, and is backward compatible with Intel Generation 1, 2, & 3 Intel® Xeon Scalable Processor platforms.

The Intel VMD driver and utilities provide for storage management of CPU and PCH attached PCIe NVMe SSDs. Features also include ability for PCIe NVMe Surprise Hot Plug, LED Management, and Error handling.

1.2 New in this Release

1.2.1 Compatibility and Performance Enhancements

The Intel VMD driver is optimized, and meets all platform-specific requirements, for the Eagle Stream platform.

The Intel VMD driver meets all requirements for VMware ESXi 8.0 operating system according to platform specific support requirements. APIs in the Intel VMD driver are backward compatible with ESXi 7.0U3.

Intel Memory and Storage Tool. The Intel VMD driver now allows the ability to pass commands sent from Intel Memory and Storage Tool to pass-through and RAID member drives.

The Intel VMD driver provides support for some OEM provided platforms for surprise hot insert and hot removal of SSDs into PCH provided slots. Confirm with respective Intel Application Engineer (AE) for application to a specific OEM.

The Intel VMD driver provides LED blinking support for PCH connected SSDs for some OEM provided servers that support VMD LED on PCH connected slots. Confirm with respective Intel AE for application to a specific OEM.

Minimally Increased RAID1 background operations performance.

For all Generation 1 through 4 Intel® Xeon Scalable Processors platforms, RAID 1 Boot and Data volumes can be created on CPU attached NVMe devices. SATA devices are not supported.

Only VMD enabled NVMe devices can be managed with this driver version. For devices not on VMD enabled lanes, the native VMware NVMe driver will load on SSD PCIe NVMe devices.

Note: the name of the Intel VMD driver was previously updated from “intel-nvme-vmd” to “iavmd”.



1.2.2 Native PCIe Enclosure Management (NPEM) LED Management for Switch attached NVMe

Intel VMD ESXi driver supports NPEM and Legacy LED management on attached NVMe that are enabled for Intel VMD. Switches that support NPEM can enable Intel VMD on their PCIe lanes to manage LED blinking patterns. For NVMe devices directly attached to the platform and enabled by VMD, the Intel VMD LED management method will be used.

1.3 Defect Submission Process

For this release, Intel will support issues reported by customers via the Intel Premier Support (IPS) tool.

To submit an issue, please use the Intel Premier Support (IPS) tool. Information, training, and details can be found at the below website. Your local Intel FAE can also provide the necessary requirements to enable you to submit an IPS issue (also known as a "case") including account setup if needed.

<http://www.intel.com/content/www/us/en/design/support/ips/training/welcome.html>

2 Support

2.1 Supported Operating Systems

VMware® ESXi® version 7.0U3

VMware® ESXi® version 8.0

2.2 Supported Platforms

Intel® Xeon® Scalable platforms Generations 1-4

2.3 Supported Switch and NVMe Levels

Up to 2 level deep switch

Up to 48 PCIe NVMe SSDs

2.4 Supported PCIe NVMe SSD

Intel VMD-enabled NVMe driver supports most shipping enterprise NVMe SSDs.

* Please see your Intel AE for the most current list of supported / validated 3rd party PCIe NVMe SSDs.

***NVMe Dual controller devices not supported in this release**

3 Release Package Contents

3.1 Supported Hypervisors and Driver Components

ESXi® version 7.0U3 on Intel Generation 1–4 Intel® Xeon Scalable Processor platforms

Intel VMD Driver for VMware® ESXi® 7.0 U3

iavmd-3.0.1.1001-1OEM.700.1.0.15843807.x86_64.vib

vmd-vmware-70-3.0.1.1001.tar (bundle)

VMD LED and RAID Management tool for ESXi® 7.0U3

VMW-esx-7.0.0-INT-intel-vmdr-user-3.0-0.0.2229.zip

ESXi® version 8.0 on Intel Generation 1–4 Intel® Xeon Scalable Processor platforms

Intel VMD Driver for VMware® ESXi® 8.0

iavmd-3.0.1.1001-1OEM.800.1.0.20143090.x86_64.vib

vmd-vmware-80-3.0.1.1001.tar (bundle)

VMD LED and RAID Management tool for ESXi® 8.0

INT-esx-8.0.0-intel-vmdr-cli-3.0-0.0.2229.zip

3.2 UEFI Driver(s) Requirement

Intel® VROC UEFI 8.0 drivers are used in conjunction with this package to validate VROC licensing and must be loaded into the BIOS. Driver names are typically:

VMDVROC_1.efi

VMDVROC_2.efi

Optional: RCmpVROC.efi – Utility for verifying system compliance

**Both UEFI drivers are required to perform enumeration and exposure of Intel VMD-enabled attached devices in the pre-boot environment.

3.3 Intel VMD-enabled LED Management

LED Management command line tools compatible with this release:

ESXi 7.0U3: VMW-esx-7.0.0-INT-intel-vmdr-user-3.0-0.0.2229.zip

ESXi 8.0: INT-esx-8.0.0-intel-vmdr-cli-3.0-0.0.2229.zip

4 *Known Issues in this Release*

16018177812 - Deviation in the LED pattern during RAID background operation (rebuild, initialization, verification, and migration) with locate ON and OFF on ESXi 8.0



5 Resolved Issues

14017984058 - When VMD is enabled, observed PSOD, P_CATERR & IERR catastrophic fault on Gen4 Platforms
14016114981 - ESXi 8.0 inbox IAVMD driver - DriverLoadUnloadWithHighMemUsage PSOD
14016115169 - ESXi 8.0 Inbox IAVMD driver - Driver Load/Unload non-empty Heap PSOD
14016212688 - ESXi 8.0 Inbox IAVMD driver - Mismatched metadata causing volume failure
16016097730 - [VMD] Allow to create RAID1 volume with odd count drives and driver continue to perform operations on that volume then PSOD occurs
16016108261 - [VMDR CLI] Help messages correction on Create RAID volume and suggestion to implement Migration command
16016104276 - [EGS] Creating Raid Volume in VMDRCLI getting PSOD error with ESXi OS 7.0.u3D 19311931 Debug build
15011454129 - After NVMe hot-insert, Samsung U.3 drives do not list in VMware Client (ESXi 7.0U3d and 8.0) Binaries Compiled with Official ESXi 8.0 DDK(s)