



VMware® ESXi® on Intel® VMD VROC

Revision 1.0

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Document Revision History

Date	Revision	Description
9/1/2021	1.0	Initial document.

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1 Overview

This document is a guide for field application engineers, system engineers, and technicians to install redundant VMware® ESXi® hypervisor images on a RAID1 volume on an Intel Gen 1, 2, 3 Intel® Xeon Scalable platform.

1.1 Software Requirements

Make sure the platform BIOS supports VROC EFI 7.6.

At the time of this writing, VMware® ESXi® does not have native support for RAID1 mirroring. Refer to the link below to create a VMware® ISO that has the out-of-box VMD driver.

https://www.intel.com/content/dam/support/us/en/documents/memory-and-storage/ssd-software/Intel_VMD_NVMe_VMWare_User_Guide.pdf

Drivers	Software Layer
VROC EFI 7.6	Platform BIOS
Intel VMD/NVMe Driver	VMware ESXi

Table 1-1. Required Drivers at Each Software Layer

1.2 Hardware Requirements

The system requires an Intel VROC key and two M.2 NVMe drives. Gen 1 and 2 processors do not support VMD lanes on the PCH.

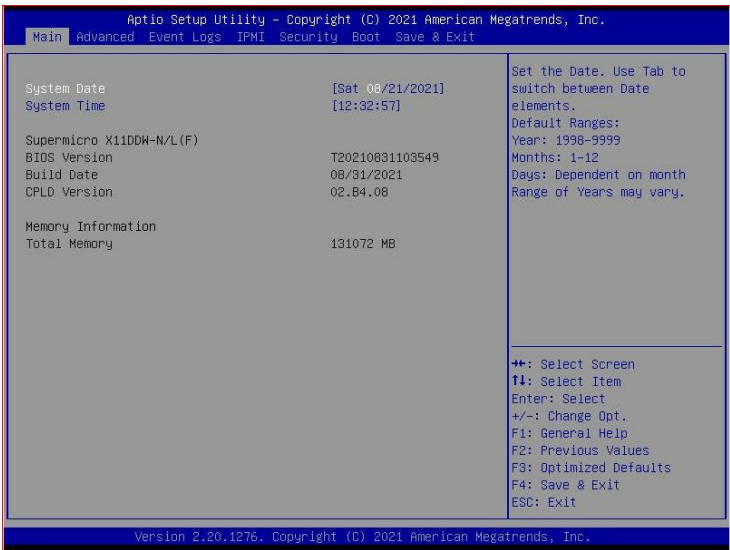
Processor	PCH	CPU	Number of RAID1 Volumes per VMD Lane
Gen 1, 2	No	Yes	One
Gen 3	Yes	Yes	One

Table 1-2. Processor Generation and Supported VMD Lanes

2 Example 1

This example uses SYS-1029P-WTRT with AOC-SLG3-2M2 in slot 2. Follow the system manual to install the M.2 AOC.

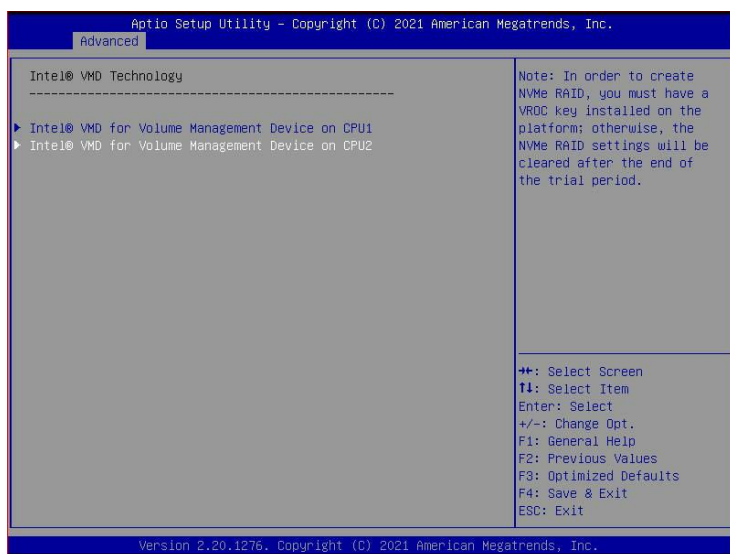
Upgrade to the latest BIOS to enable VROC EFI 7.6 driver support.



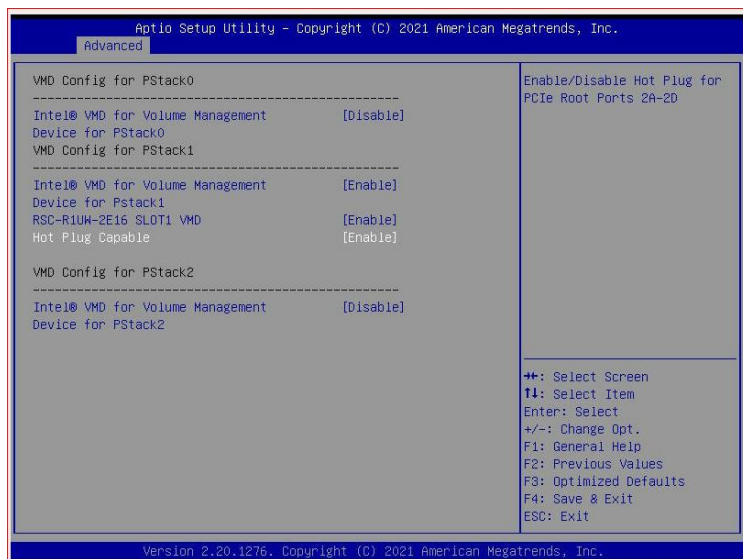
Follow the system manual to find which CPU supports the M.2 AOC. In this example, the AOC is supported by CPU2.

Select "Intel VMD for Volume Management Device on CPU2."

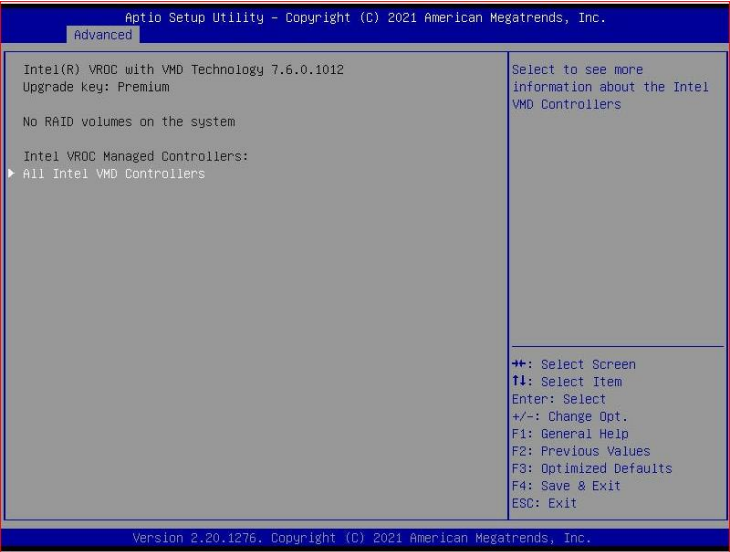
Commented [WT(W1): "Chipset Configuration" -> "North Bridge" -> "IIO Configuration" -> "Intel VMD Technology"]



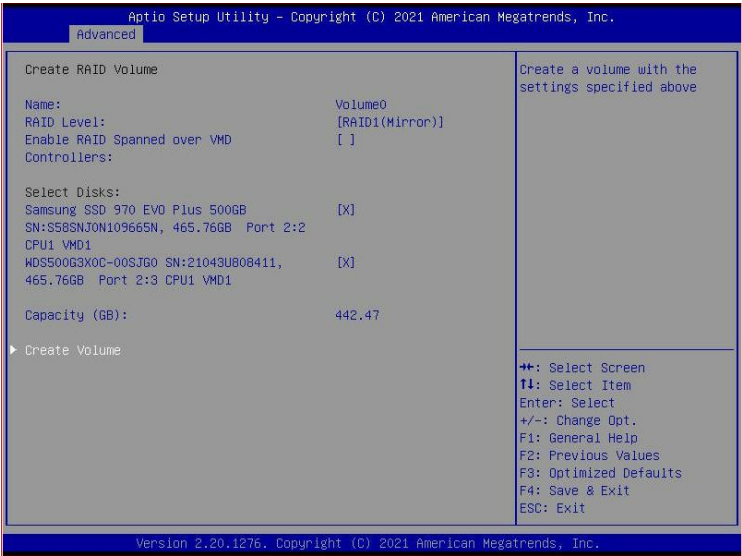
Enable the “VMD” for RSC-R1UW-2E16 that contains the M.2 NVMe devices. The other two VMDs will remain disabled.

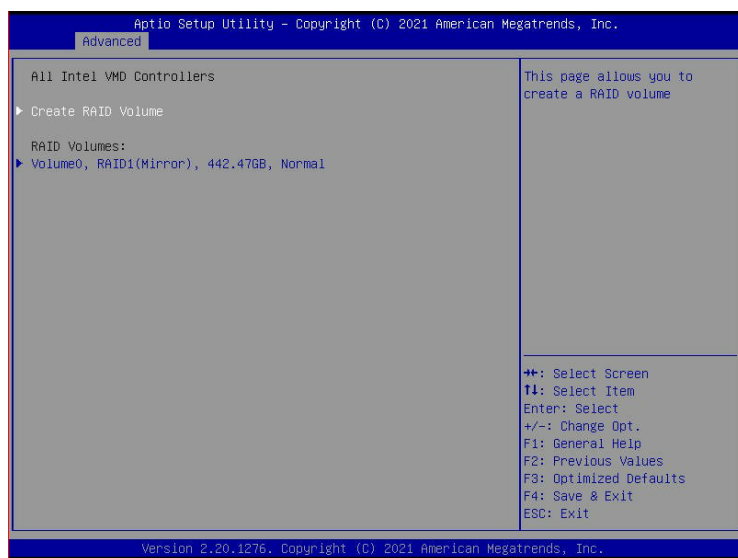


Configure the VMD VROC RAID.

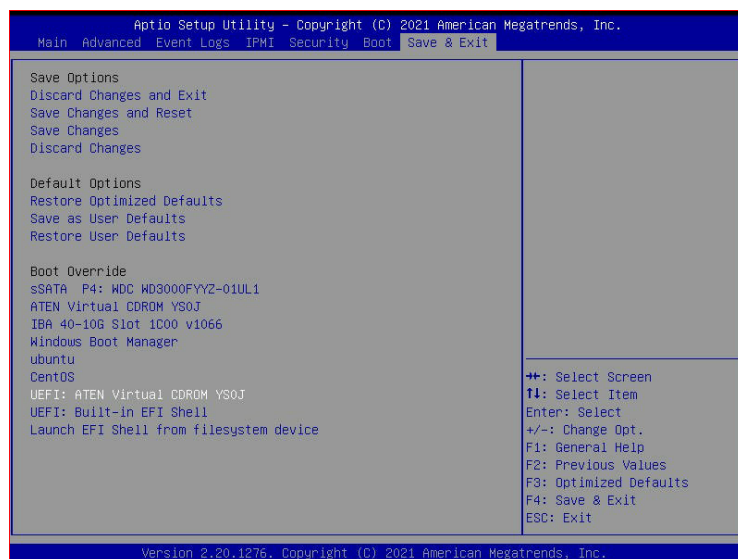


Configure RAID1 for the M.2 NVMe devices.

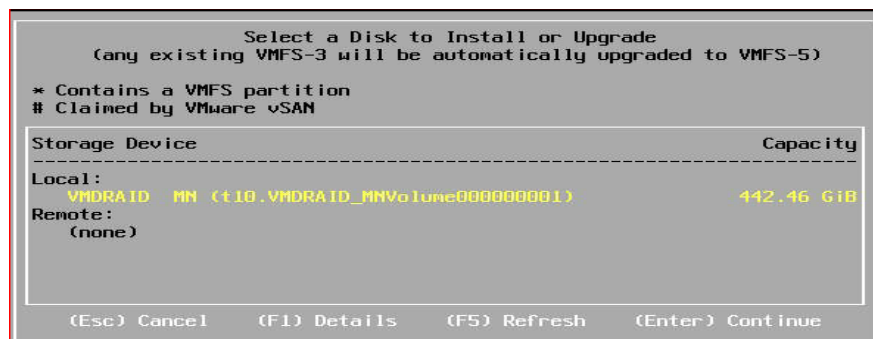




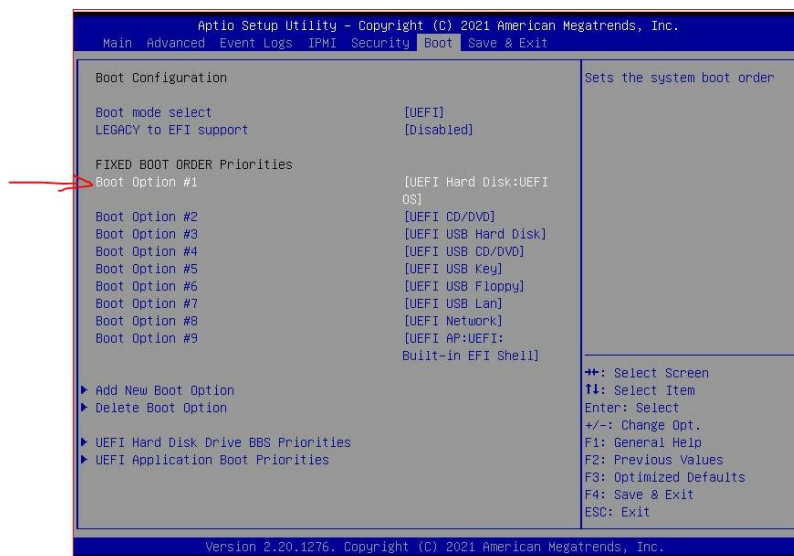
After finishing the VMD VROC configuration, you can use “Boot Override” to select the ISO boot.
 You must boot the ISO in EFI mode in order for VMware to load the VMD EFI and detect the VMRAID.



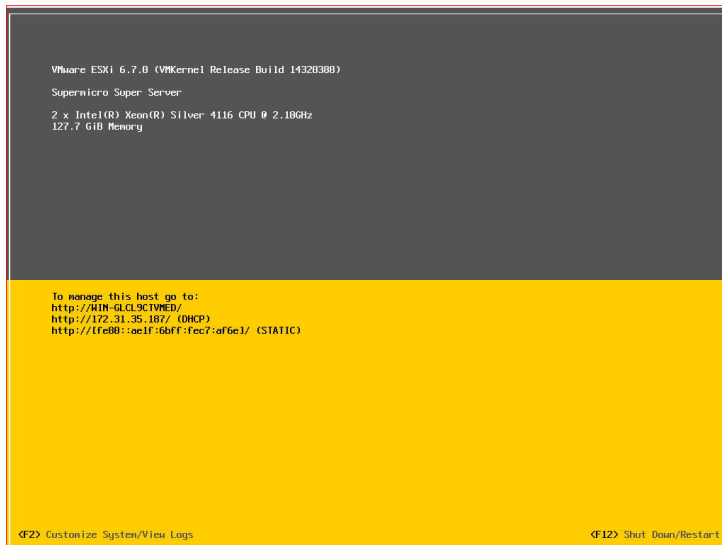
Select the VMRAID as the target VD for VMware ESXi installation.



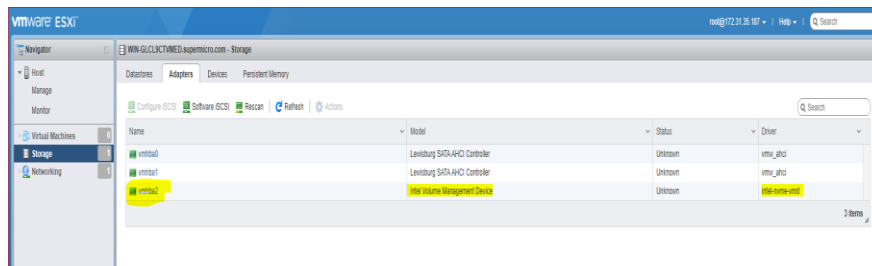
Configure the first boot device as “UEFI Hard Disk: UEFI OS”.



VMWare ESXi will run after OS installation.



Screenshot of the successfully launched ESXi VSphere GUI.



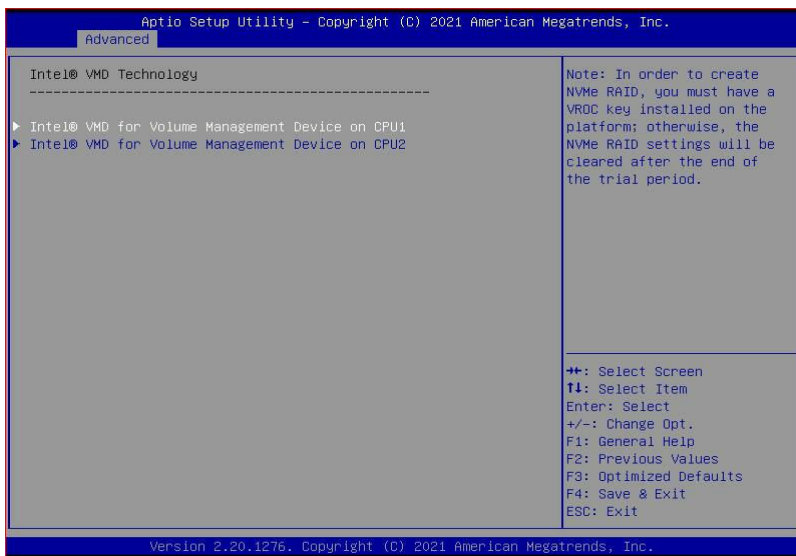
3 Example 2

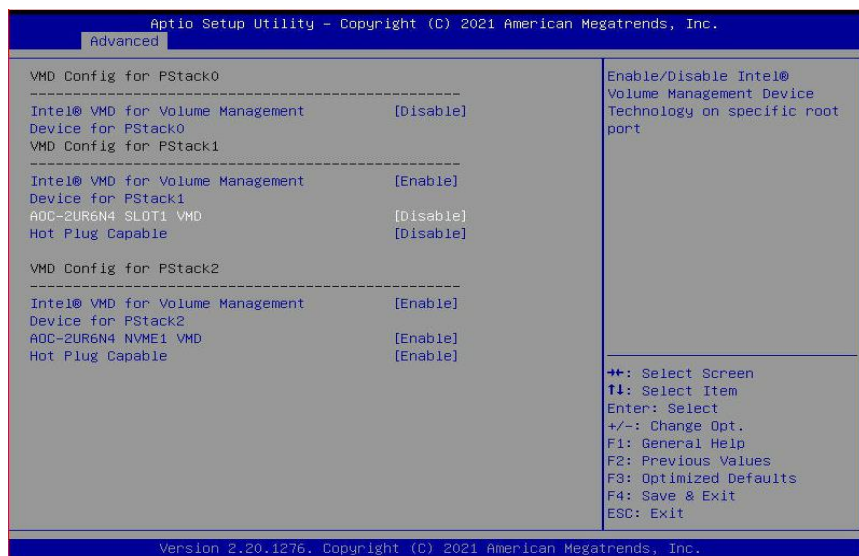
This example uses SYS-2029U-TN24R4T.

Upgrade to the latest BIOS to enable VROC EFI 7.6 driver support.

Disable the VMD lane connected to AOC-2UR6N4 slot 1.

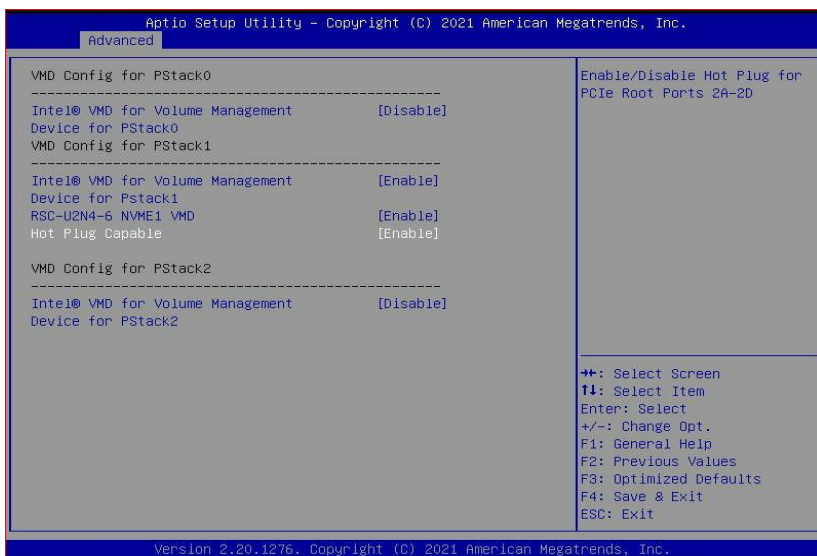
Chipset Configuration > North Bridge > IIO Configuration > Intel VMD Technology > Intel VMD for Volume Management Device on CPU1.



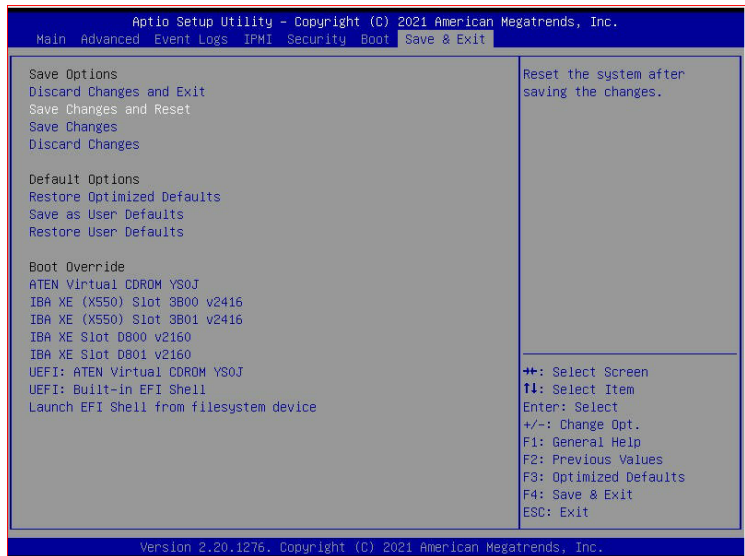


Enable hot-plug on CPU2.

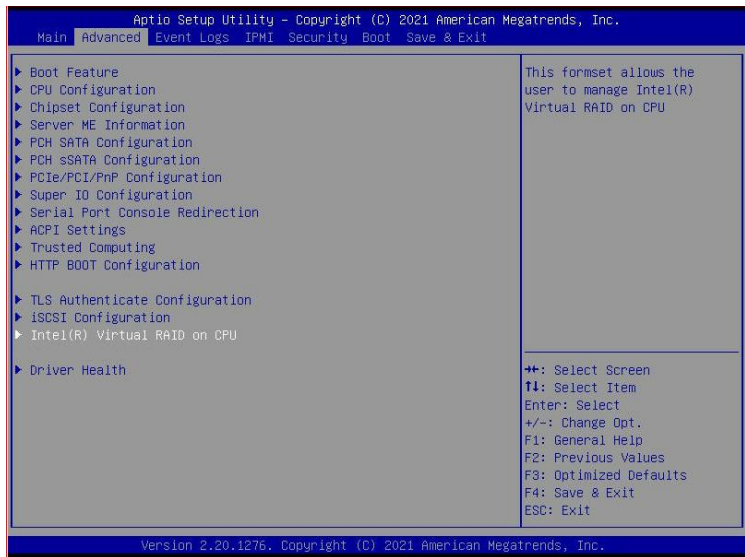
Chipset Configuration > North Bridge > IIO Configuration > Intel VMD Technology > Intel VMD for Volume Management Device on CPU2.

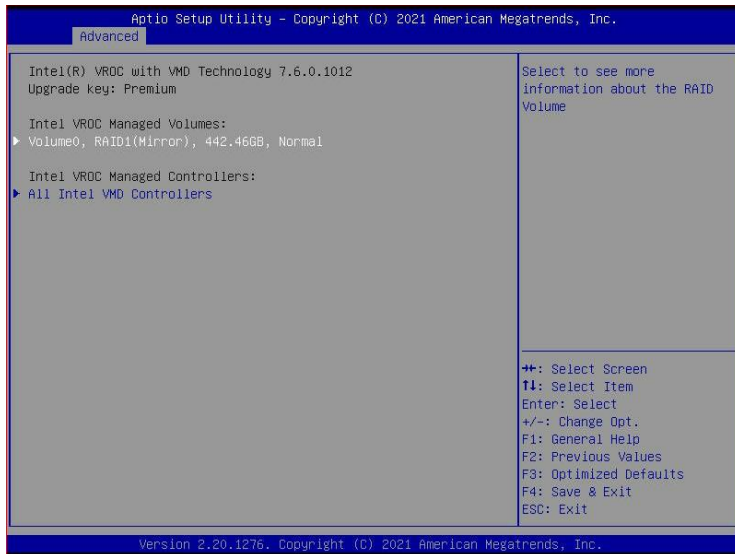


Save changes and reset.

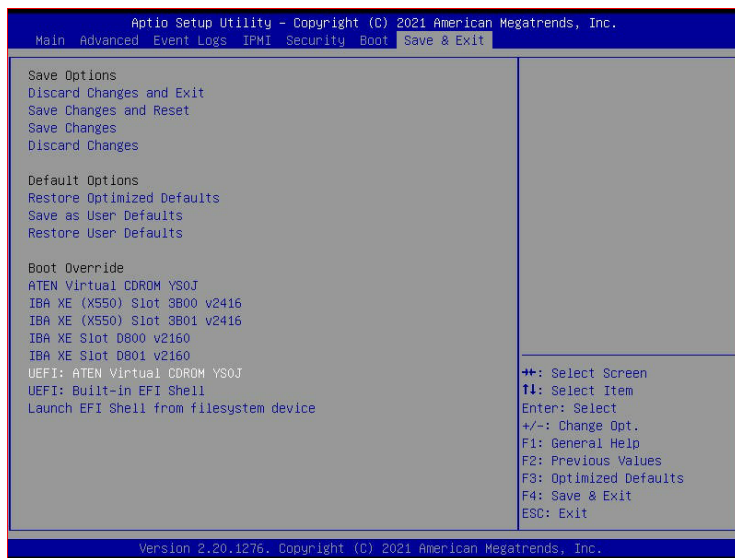


Press the "DEL" key to re-enter the BIOS to configure VROC.





Go to the Save & Exit tab. Select to boot from the UEFI USB, CD, or PXE source that contains the VMware ESXi ISO.



Install the VMware ESXi on to VMRAID as shown in the following example:

