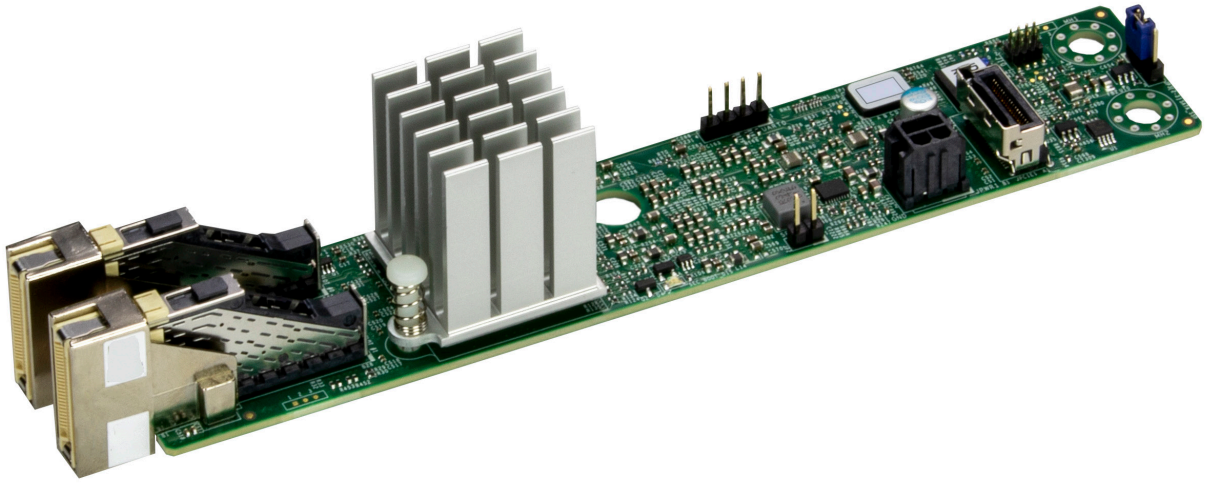
AOC-SMG4-2M2



USER'S MANUAL

Revision 1.0

The information in this user's manual has been carefully reviewed and is believed to be accurate. The manufacturer assumes no responsibility for any inaccuracies that may be contained in this document, and makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our website at www.supermicro.com.**

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Manual Revision 1.0

Release Date: June 04, 2025

Preface

About This Manual

This user's guide is written for system integrators, IT technicians, and knowledgeable end users. It provides information for the installation and use of the AOC-SMG4-2M2 add-on module.

About This Add-On Card

The AOC-SMG4-2M2 is an OS Boot PCIe Gen 4.0 x4 M.2 SSD carrier card that enables the user to add up to two NVMe/SATA with RAID 0 and RAID 1. Leveraging the cutting-edge power of PCI Express 4.0 technology, the M.2 solid state technology is an optimized, high-performance, scalable storage solution.

An Important Note to the User

All graphic images and layout drawings shown in this user's guide are based upon the latest PCB revision available at the time of publishing this user's guide. The add-on card you have received may or may not look exactly the same as the graphics shown in this user's guide.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete. For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse, or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Conventions Used in the Manual

Special attention should be given to the following symbols for proper installation and to prevent damage done to the components or injury.

Warning! Indicates important information given to prevent equipment/property damage or personal injury.

Warning! Indicates high voltage may be encountered while performing a procedure.

Important: Important information given to ensure proper system installation or to relay safety precautions.

Note: Additional information given to differentiate various models or to provide information for proper system setup.

Important Links

For your system to work properly, follow the links to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: http://www.supermicro.com/support/manuals/
- Product drivers and utilities: https://www.supermicro.com/wdl/driver
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm
- A secure data deletion tool designed to fully erase all data from storage devices can be found at our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9_Secure_Data_Deletion_Utility/
- If you have any questions, contact our support team at: support@supermicro.com
- Frequently Asked Questions: https://www.supermicro.com/FAQ/index.php
- If you have any feedback on Supermicro product manuals, contact our writing team at: Techwriterteam@supermicro.com

This manual may be periodically updated without notice. Check the Supermicro website for possible updates to the manual revision level.

Naming Convention

AOC-	S	M	G4	-	2	M2		
Prefix	1st	2nd	3rd	-	4th	5th	-	6th

Character (Set)	Representation	Options (NVMe AOC)
Prefix	Product Family	• AOC = Add On Card
1st	Interface Type	• S = Standard PCI-E
2nd	Tray Height / Form Factor	• M = Proprietary size • L = Low Profile • H = Full Height
3rd	Generation	• G3 = PCI-E Gen3 • G4 = PCI-E Gen4 • G5 = PCI-E Gen5
4th	Number of Ports	• 2 = 2 ports • 4 = 4 ports • 8 = 8 ports
5th	HBA Type and Connector	• E4 = Switch, Mini-SAS HD • E4R = Redriver, Mini-SAS HD • E4T = Retimer, OCuLink (PCI-E Gen3) or SlimSAS (PCI-E Gen4) • E2P = Switch, OCuLink • X4P = Switch, External Mini-SAS HD • X4T = Retimer, External Mini-SAS HD • M2 = Pass Thru and RAID HBA, M.2 M-Key Socket • H8M2 = Hybrid NVMe/SATA, M.2 M-Key Socket • SM2 = SATA, M.2 M-Key Socket • NM2 = NVMe, M.2 M-Key Socket • M2P = Switch, M.2 M-Key Socket • E1S = E1.S/E3.S Socket
6th	Form Factor	• B/BW = BigTwin™ form factor (1U node height) • BW2 = BigTwin™ form factor (2U node height) • U = Ultra form factor • F = Unique form factor

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Website:	www.supermicro.com.tw

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Chapter 1

Introduction

1.1 Overview

Congratulations on purchasing your add-on card from an acknowledged leader in the industry. Supermicro products are designed with the utmost attention to detail to provide you with the highest standards of quality and performance. For product support and updates, refer to our website at https://www.supermicro.com/en/products/storage/cards.

1.2 Key Features

The key features of this add-on card include the following:

- OS Boot Storage Adapter
- Broadcom® SAS3808N RAID Controller: RAID 0/1
- PCIe Gen 4.0 x4 Host interface
- MCIO x4
- Micro-Hi 2x2 (+12 V only) power connectors
- Auto-detect SATA3 or NVMe Gen 4 M.2 with converter MCP-220-12108-0N
- Supports 22110 and 2280 M.2 SSD form factor
- Supports MCTP over PCIe
- Supports Secure Erase
- Supports Hardware Secure Boot
- Supports on-board LEDs for SAS3808N Activity and Status
- Supports the following managment utilities:
  - UEFI Configuration Utility
  - StorCLI
  - LSA

- BMC-Enabled Management

- Thermal operating range: System dependent (55°C/131°F or higher with enough airflow)

1.3 Specifications

OS Support

- Windows
- Linux
- VMWare

Physical Dimensions

- Card PCB dimensions: 6.215” x 1.18” (157.861 mm x 29.972 mm) (L x W)

Note: This product is only sold as part of an integrated solution with Supermicro server systems.

Chapter 2

Hardware Components

2.1 Add-On Card Image and Layout

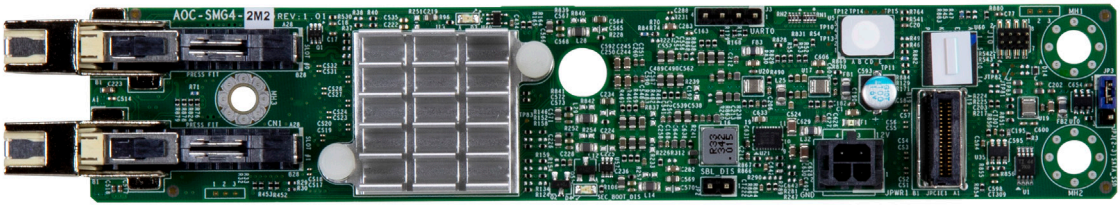


Figure 2-1: AOC-SMG4-2M2 Top View

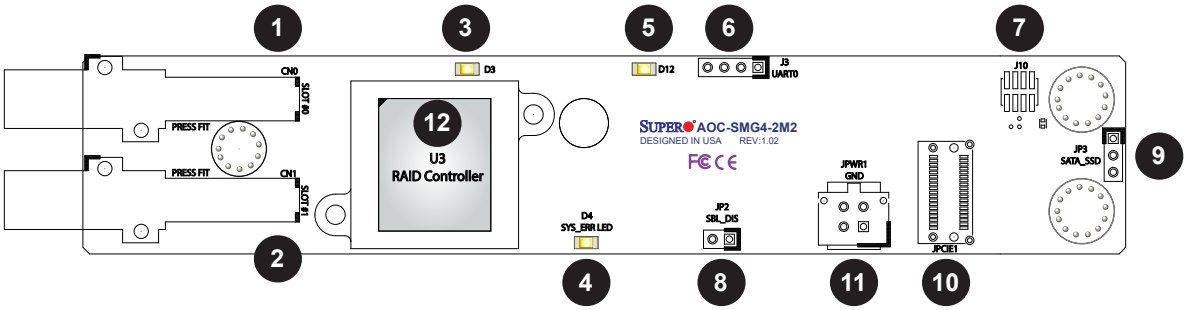


Figure 2-2: AOC-SMG4-2M2 Top Layout

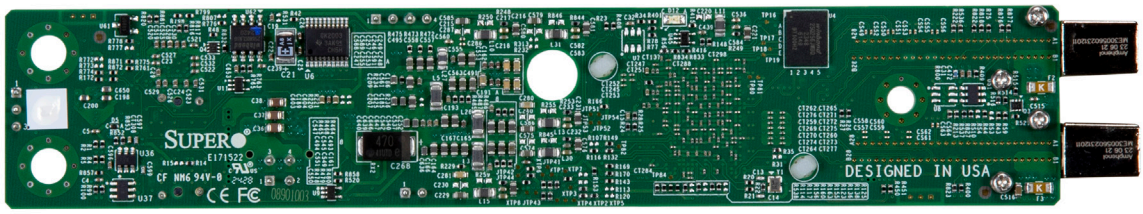


Figure 2-3: AOC-SMG4-2M2 Bottom View

2.2 Major Components

The following major components are installed on the AOC-SMG4-2M2:

AOC-SMG4-2M2 Major Components		
No.	**Component Name**	**Definition**
1	CN0	M.2 Tray Connector 0
2	CN1	M.2 Tray Connector 1
3	D3 (SYS_HB LED)	System Heartbeat LED
4	D4 (SYS_ERR LED)	System Fault LED
5	D12	Overtemp LED
6	J3 (UART0)	UART Header
7	J10 (CPLD_JTAG)	CPLD JTAG Header
8	JP2 (SBL_DIS)	SBL Disable Jumper
9	JP3 (SATA_SSD)	SATA SSD Jumper
10	JPCIE1	PCIe Bus Cable Connector
11	JPWR1	Power Cable Connector
12	U3	RAID Controller Chip

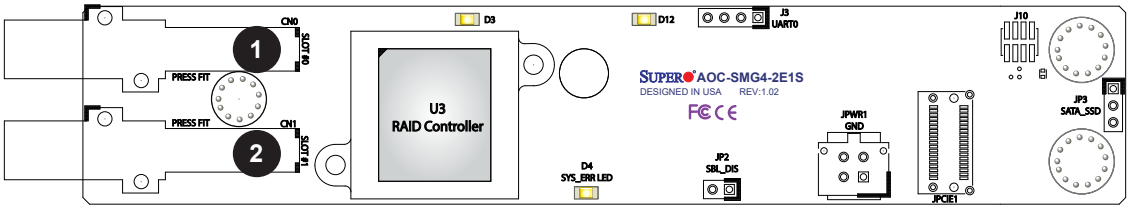
2.3 M.2 Connectors

M.2 Tray Sockets

This controller card has two M.2 tray sockets (CN0/CN1) for the two corresponding M.2 slots. CN0 supports Slot 0 while CN1 supports Slot 1. Each slot supports two types of M.2 SSD lengths, labeled 2280 (22 mm x 80 mm) and 2210 (22 mm x 110 mm).

M.2 Connector Definitions		
Connector Location	**Function**	**M.2 Slot**
CN0	M.2 Tray Socket (support 22110 and 2280)	0
CN1	M.2 Tray Socket (support 22110 and 2280)	1

1. M.2 Connector 0
2. M.2 Connector 1

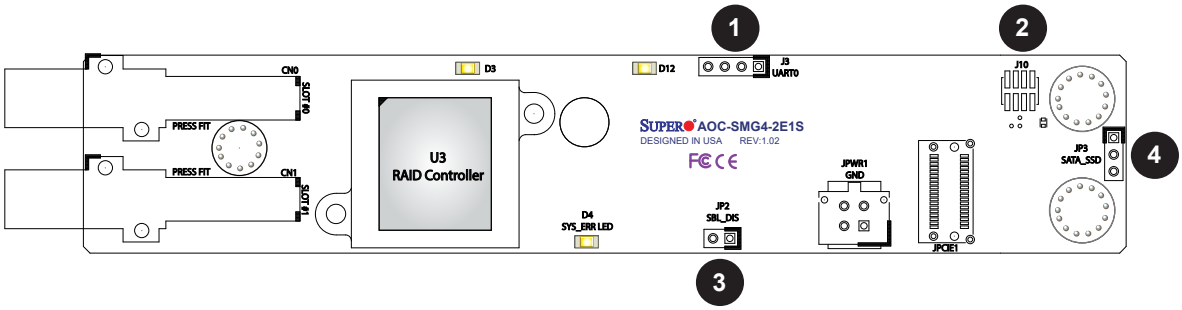


Headers and Jumpers

There are two headers and two jumpers on the AOC-SMG4-2M2. The UART header that serves as the debug console is located at J3 (UART0). The 8-pin CPLD JTAG header, located at J10, is used to program the complex-programmable logic devices. Connect a cable to J10 for programming code onto the CPLD chip. The Serial Boot Loader (SBL) disable jumper installed on JP2 disables the controller firmware boot loader and allows complete firmware file download to the controller chip through the PCIe bus. The jumper for Serial Advanced Technology Attachment Solid State Drive (SATA SSD) jumper is located at JP3. When the SATA jumper pins are in the JP3 (1–2) position, this is the default position and enables the NVMe sideband protocol implemented for NVMe SSD installation. When the jumper pins are in the JP3 (2–3) position, this feature locks down the SGPIO sideband protocol implemented for SATA SSD in power-up and remains active, even if a SATA SSD is later inserted.

Header/Jumper Descriptions		
Header/Jumper Location	**Definition**	**Purpose**
J3	UART0: UART Header	Debug Console
J10	CPLD JTAG Header	Program CPLD code
JP2	SBL Disable Jumper	Loads embedded controller firmware through host PCIe bus
JP3	SATA SSD Jumper	Enables the NVMe sideband protocol or locks down the SGPIO sideband protocol

1. UART Header
2. CPLD JTAG Header
3. SBL Disable Jumper
4. SATA SSD Jumper



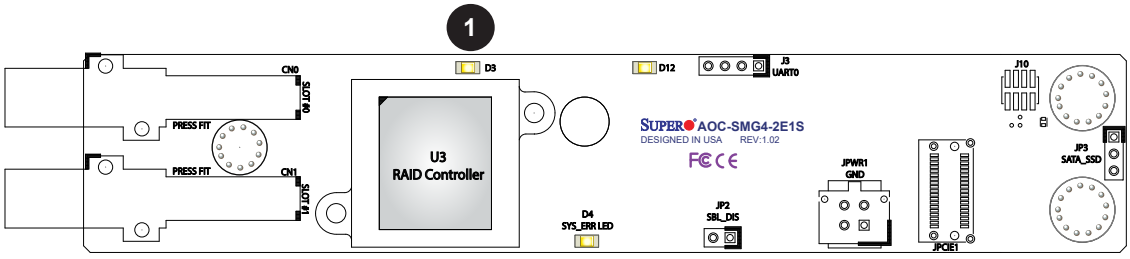
2.4 LED Indicators

System Heartbeat LED

The System Heartbeat (SYS_HB) LED is located at D3 on the add-on card. When the LED is blinking green at 1 Hz, the controller is operational and functioning normally.

System Heartbeat LED Status	
Color/State	**Definition**
Green Blinking	Controller: Normal
Off	Power failure on controller

1. System Heartbeat LED

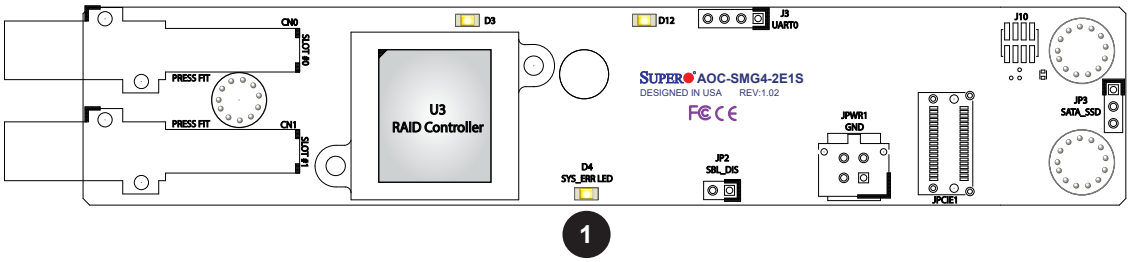


System Fault LED

The System Fault (SYS_ERR) LED is located at D4 on the add-on card. When a fault has occurred with the controller chip, LED1 will illuminate red.

System Fault LED Status	
Color/State	**Definition**
Red Solid	Controller: Fault
Off	Controller: Normal

1. System Fault LED

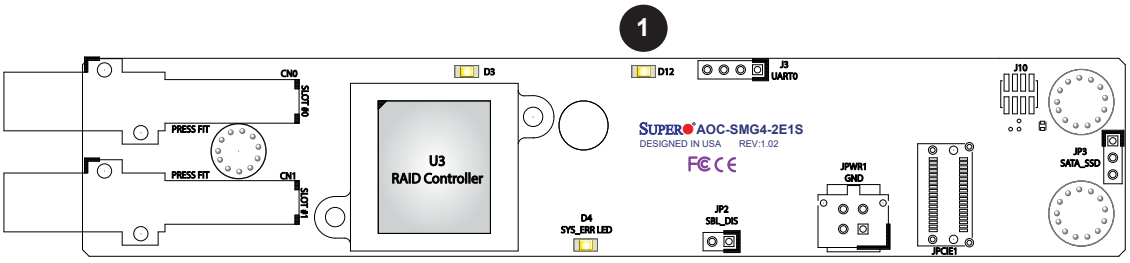


Overtemp LED

The overtemp LED is located at D12 on the add-on card. When the controller chip temperature exceeds the threshold for the operating temperature, LED2 will illumate yellow.

Overtemp LED Status	
Color/State	**Definition**
Yellow: Solid	Controller: Overheat

1. Overtemp LED



2.5 BPN Address Configuration

The CPLD JTAG header is located at J10, and the 2x4 pins header serves as JTAG header for programming the CPLD and allows jumper options to configure the scanning sequence of the system backplanes. Do not change the configurations without following the settings arranged with the backplanes installed. Pins 1–2 and 7–8 are two separate shorting jumpers indicating the shorting pins position for the BPN address configuration. Refer to the following table for configuration information and the scanning sequences numbers.

BPN Address Configuration					
BPN Scan Sequence Number	**BMC A1 (CPLD_TCK, B6) (JTAG Pin2)**	**BMC A0 (M.2#_SEL, A3) (JTAG Pin8)**	**Register/ UpdateFW Address**	**PCB Rev. 1.01 (No FRU)**	**PCB Rev. 1.02 (FRU)**
#1	High	Low J10 (7–8)	66/64	No Support	Support
#2	High	High	6e/6c	Support	Support
#3	Low J10 (1–2)	High	76/74	Support	Support
#4	Low J10 (1–2)	Low J10 (7–8)	7e/7c	No Support	Support

Chapter 3

Installation

3.1 Overview

As a part of an integrated solution, your system came with the adapter pre-installed. We do not recommend removing and reinstalling any part of your system components. If you need to remove or re-install a system component, including this add-on card, follow the instructions in this chapter to ensure proper system setup.

3.2 Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To avoid damaging your add-on card, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing the add-on card from the antistatic bag.
- Handle the add-on card by its edges only; do not touch its components or peripheral chips.
- Put the add-on card back into the antistatic bags when not in use.
- Be sure to remove the power cord first before adding, removing, or changing any hardware components to avoid damaging the system or components.
- For grounding purposes, make sure that your system chassis provides excellent conductivity between the power supply, the cage, the mounting fasteners, and the add-on card.

Unpacking

The add-on card is shipped in antistatic packaging to avoid static damage. When unpacking your component or system, make sure you are static protected.

Note: To avoid damaging your components and to ensure proper installation, always connect the power cord last, and always unplug it before adding, removing, or changing any hardware components.

3.3 Before Installation

To install the add-on card properly, be sure to follow the instructions:

1. Power down the system.
2. Remove the power cord from the wall socket.
3. Use industry-standard antistatic equipment (such as gloves or wrist strap) and follow the instructions listed on page 19 to avoid damage caused by ESD.
4. Familiarize yourself with the server, motherboard, and/or chassis documentation.
5. Confirm that your operating system includes the latest updates and hot fixes.

3.4 Installation

The AOC-SMG4-2M2 module supports two M.2 SSDs of 80 mm or 110 mm in length. Visit the Supermicro website for a current list of supported M.2 SSDs.

Installing Cables

To connect the power and MCIO cables and install the PCIe and BPN cards, refer to the following steps:

1. Connect MCIO cable CBL-MCIO-1465QQM5 on a motherboard's dedicated PCIe bus connector to CN1 (AOC).

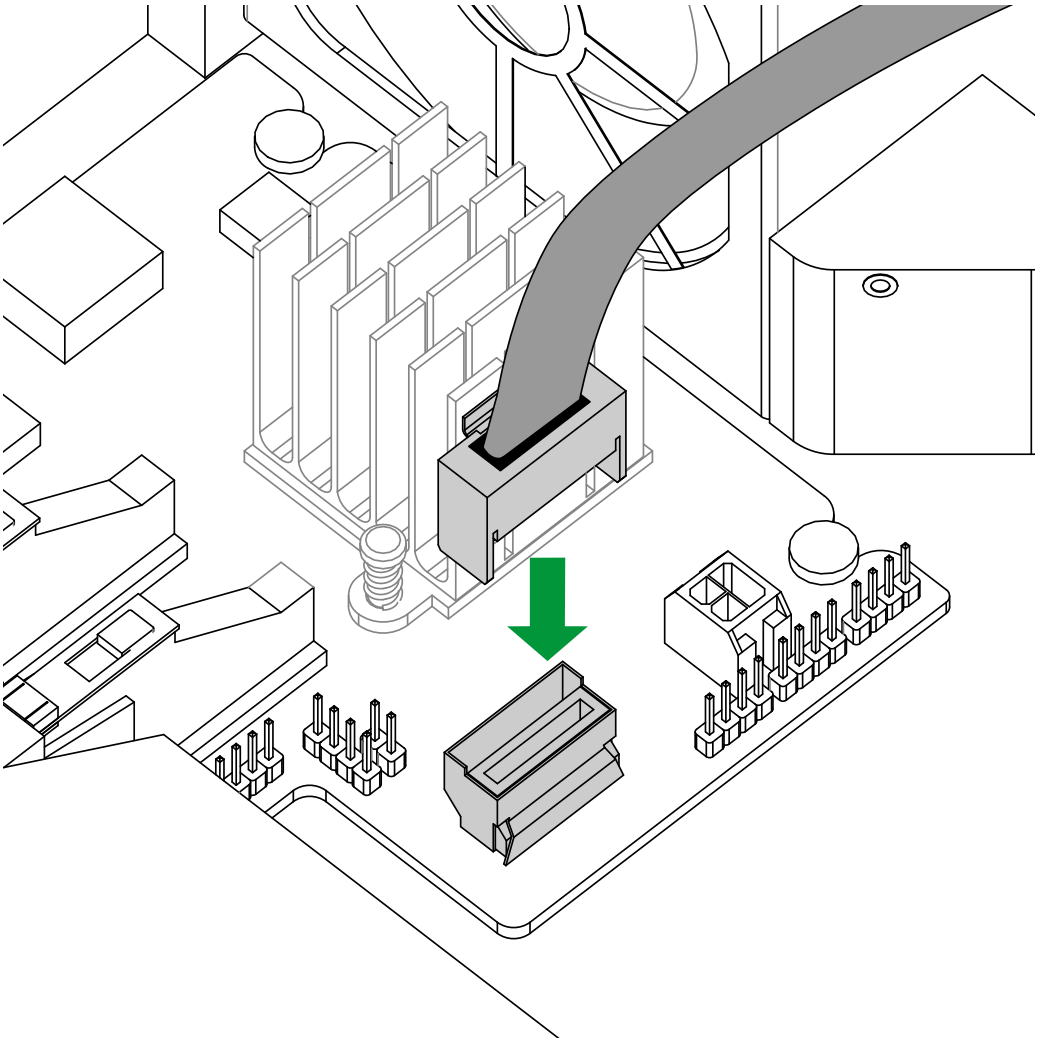


Figure 3-1: Connect MCIO Cable

2. Connect power cable CBL-PWEX-1136YB-25 on JPWR3 (motherboard) to JPWR1 (AOC).

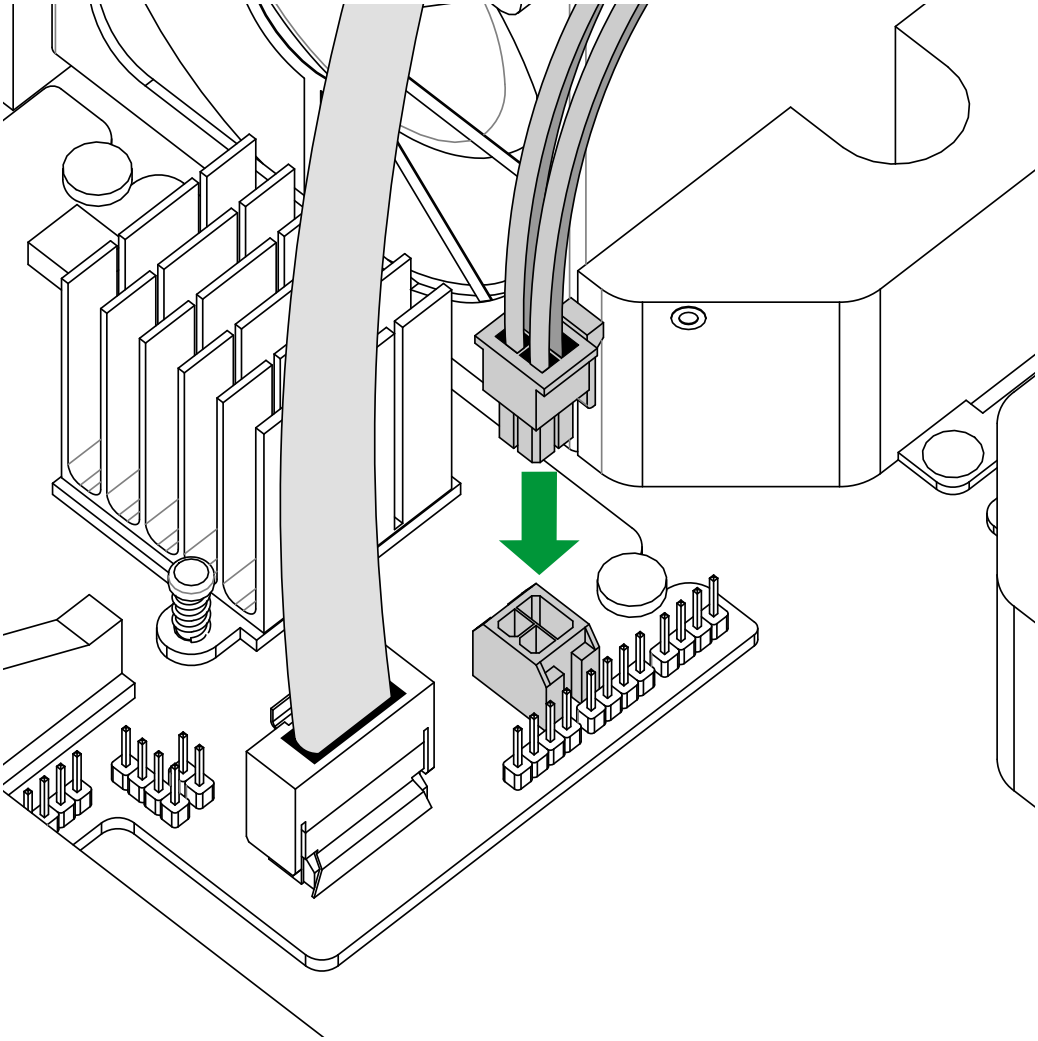


Figure 3-2: Connect Power Cable

3. Install two PCIe Gen4 x4 M.2 on MCP-220-12108-0N-01_R1.00.

4. On AOC-SMG4-2M2, Install two MCP-220-12108-0N-01_R1.00 on J1/J2.

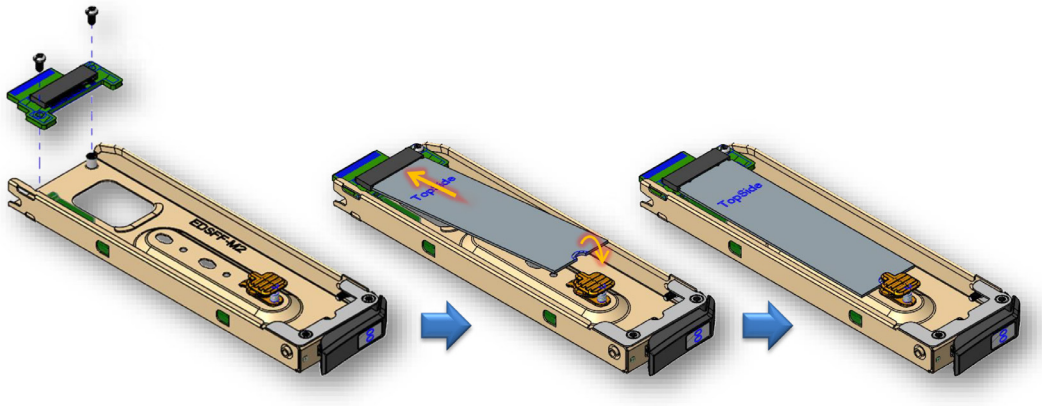


Figure 3-3: Installing an M.2 Card

3.5 Installing the Drivers in Windows

Refer to the instructions that came with your M.2 SSD and follow the manufacturer's recommended steps for installing the NVMe driver. Download the latest drivers from the Supermicro project board at https://www.supermicro.com/wdl/driver.

3.6 Uninstalling the Drivers

To Uninstall the Drivers in Windows

Follow the instructions provided by your M.2 SSD manufacturer.

To Uninstall the Drivers in Linux

Run the following command to uninstall the NVMe drivers.

```
./RemoveService.sh
```

Chapter 4

Firmware Update

4.1 Update Firmware in BIOS

This chapter provides instructions on how to update the firmware in the BIOS. Use the arrow keys to highlight the chosen option, and click <Enter> to select. Click <Esc> to exit an option menu or return to the previous page.

1. Navigate to the **Advanced** tab, where you can manage RAID Controller configurations.
2. Navigate to and select **BROADCOM <SAS 3808N> Configuration Utility**.

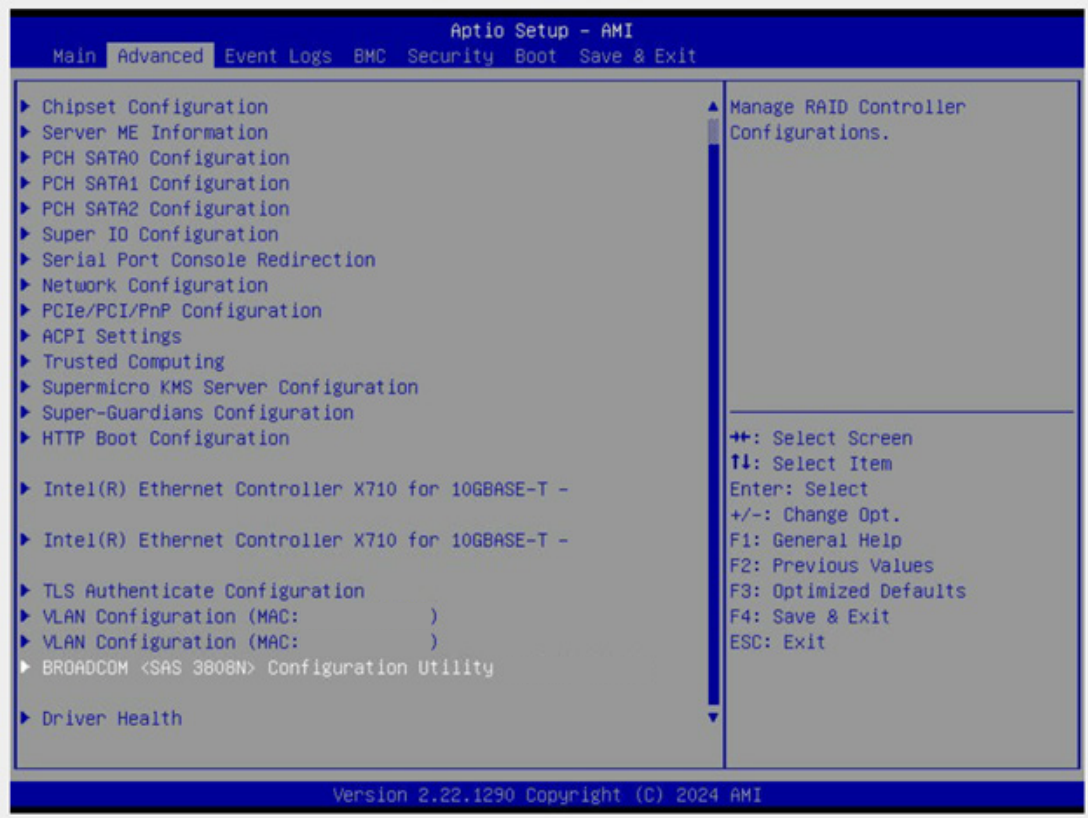


Figure 4-1: BROADCOM <SAS 3808N> Configuration Utility Selected

3. Select **Update Firmware**, which will allow you to update the controller firmware to the necessary newer version.

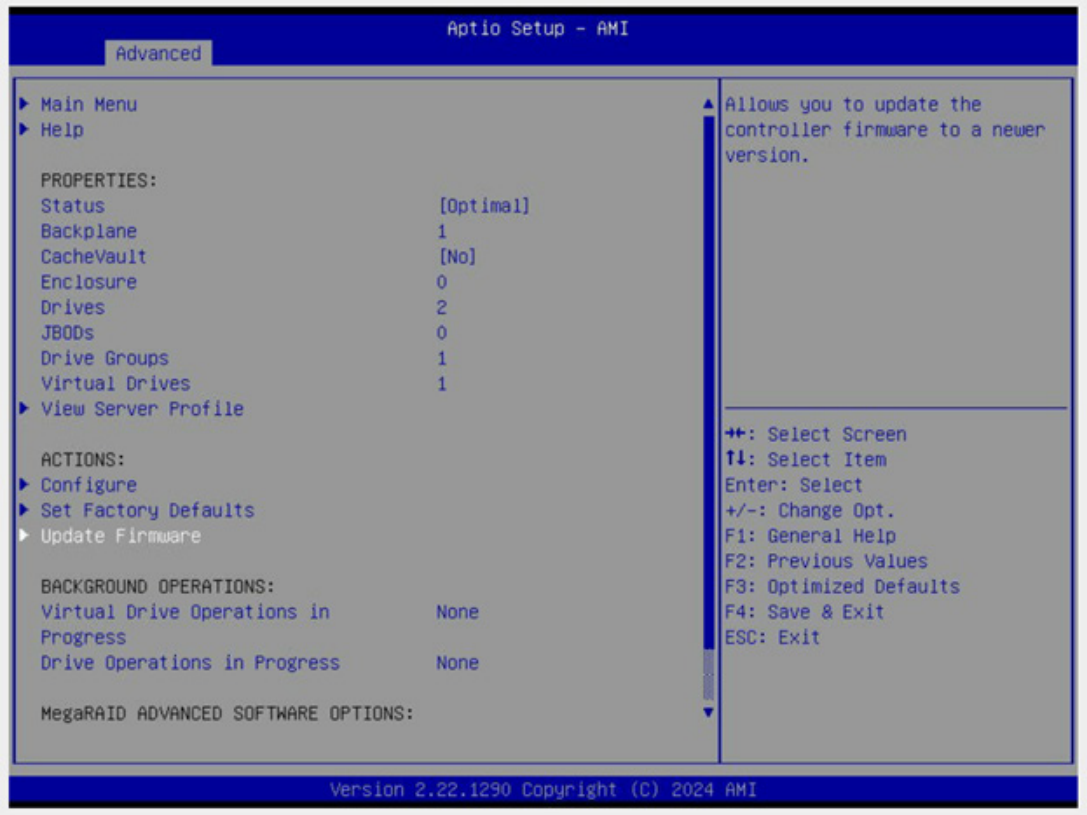


Figure 4-2: Update Firmware Selected

4. Ensure that **Select Directory** is set to the **bin** option.

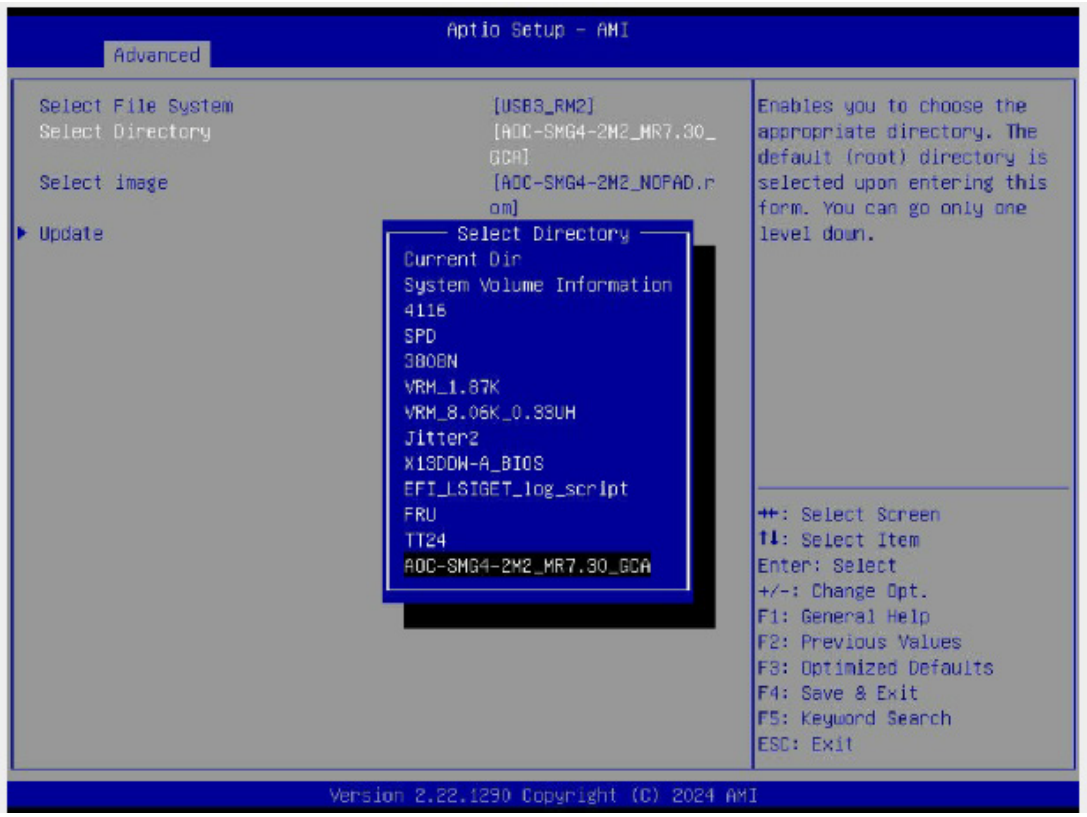


Figure 4-3: bin Option Selected

5. Navigate to **Select Image**.

Figure 4-4: Select Image Selected

6. Select the appropriate firmware image. Be aware that the applicable image size restriction depends on the controller type.

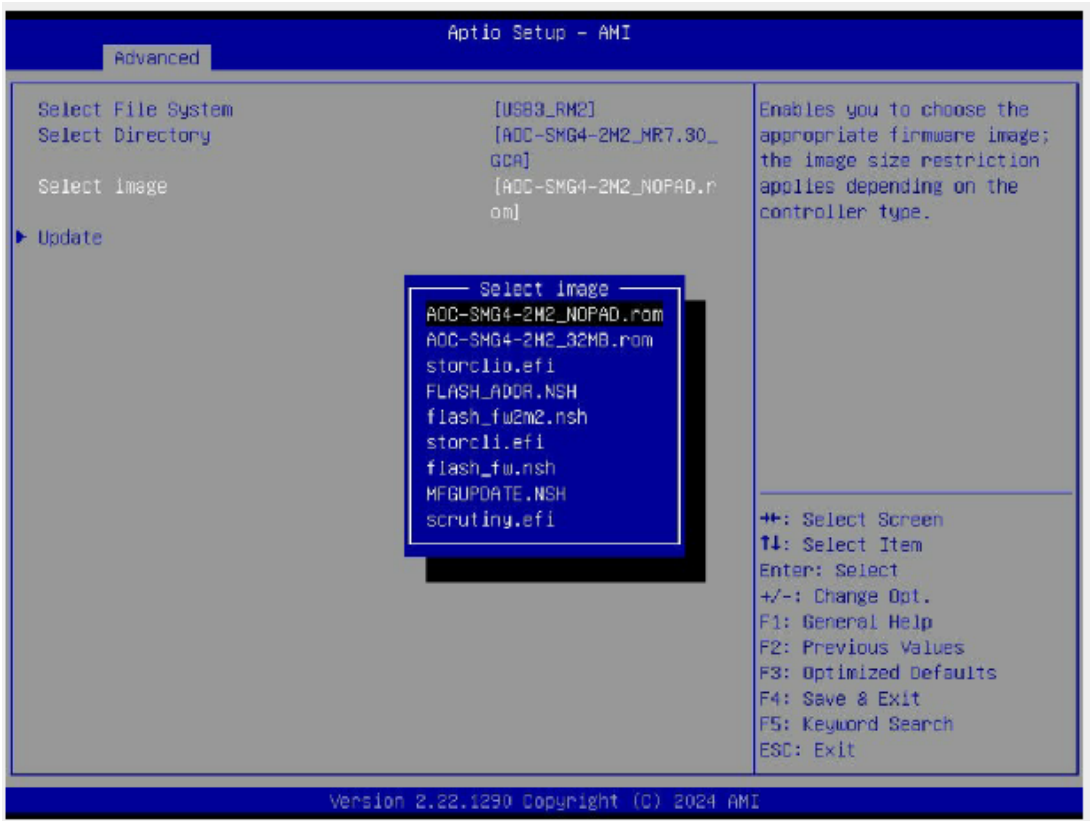


Figure 4-5: Appropriate Firmware Selected

7. Once all chosen options are in place, select **Update**.

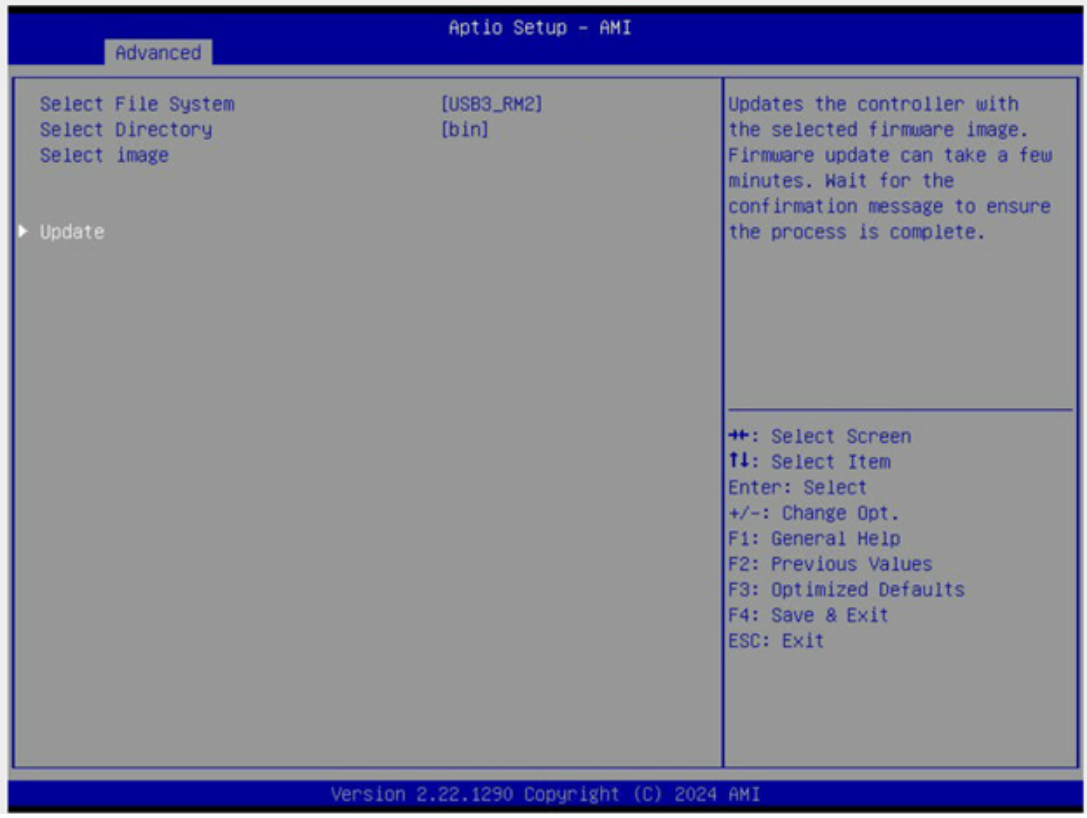


Figure 4-6: Update Selected

8. There will be a confirmation window where you can review the current and selected firmware versions. To proceed and make the **Yes** option available, select **Confirm** and ensure that it is set to **Enabled**.

9. Once the **Confirm** option is enabled, select **Yes** to proceed with update.

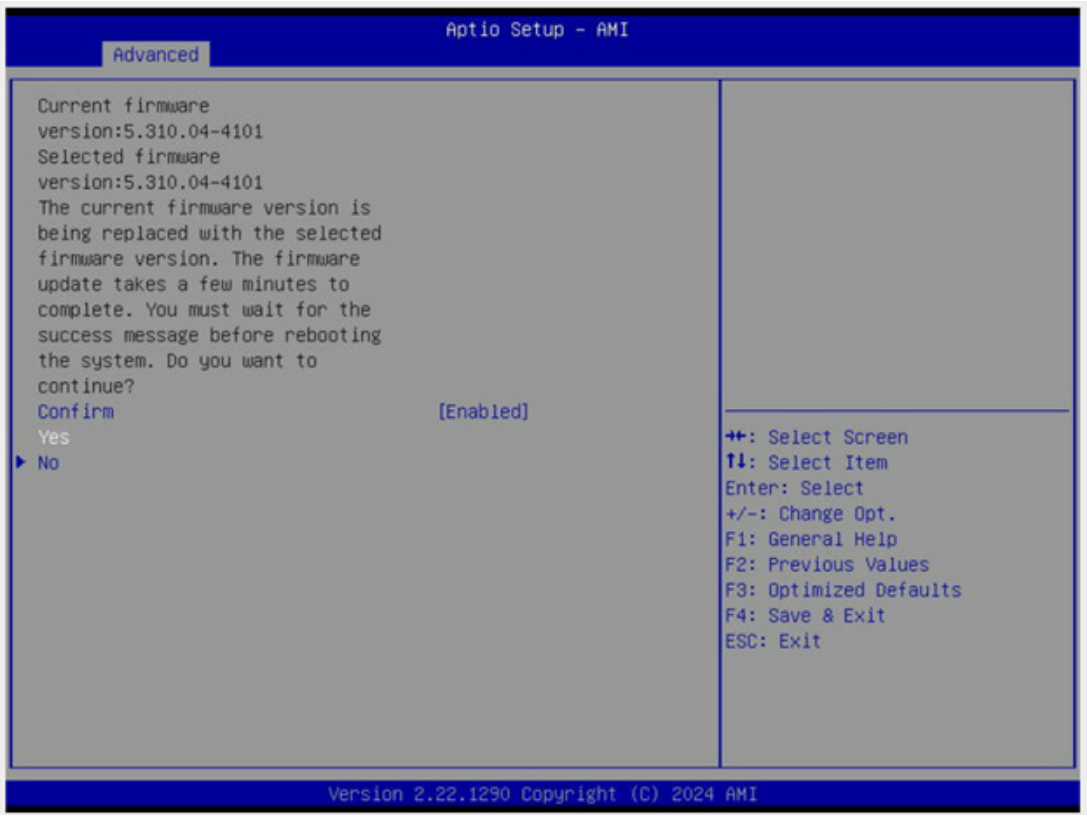


Figure 4-7: Confirm Enabled and Yes Option Selected

10. There will be a window confirming that the operation has been performed successfully. Select **OK** to proceed and return to the main menu.

> **Note:** Updates may take a few minutes to complete. Be sure you see the confirmation window *first* before rebooting the system.

11. To save this update, navigate to the **Save & Exit** tab.
12. Navigate to and select the updated component.
13. Select **Yes** to save the updated configuration of setup values. If you do not wish to save the configuration as it currently is, select No to cancel and exit the confirmation menu.

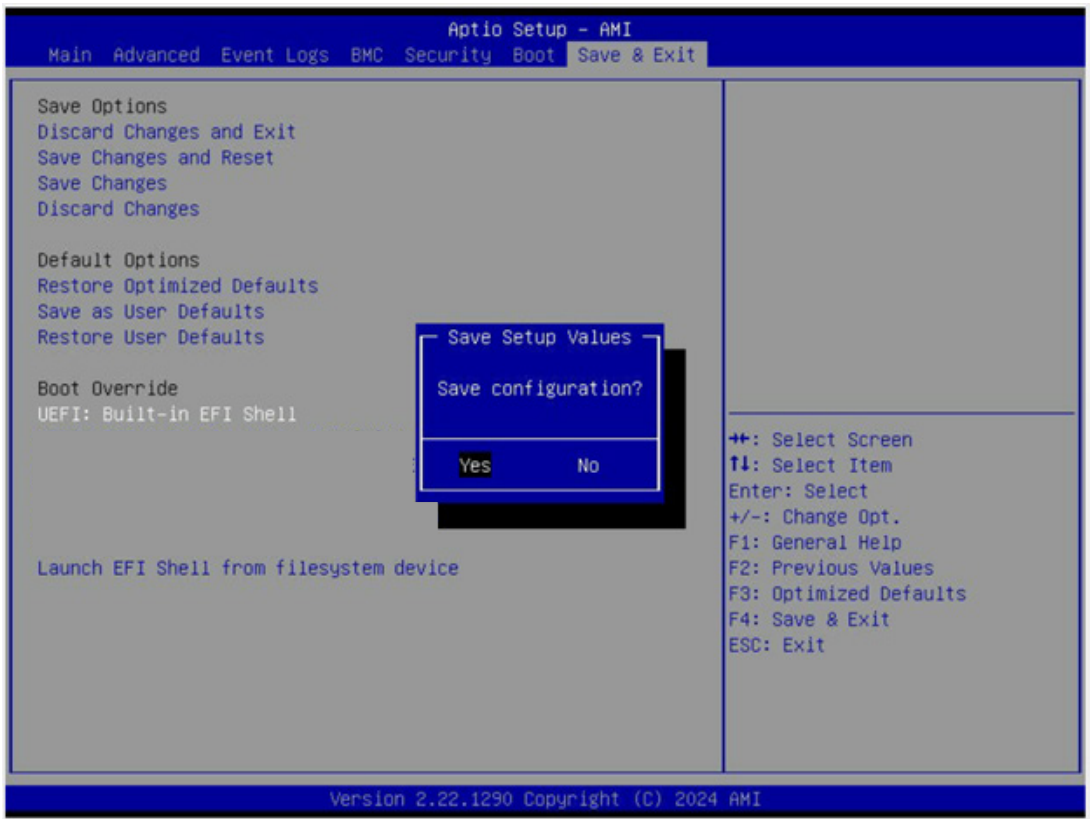


Figure 4-8: Yes Option to Save Configuration Selected

4.2 Update Firmware in UEFI

The section shows how to update the firmware in UEFI.

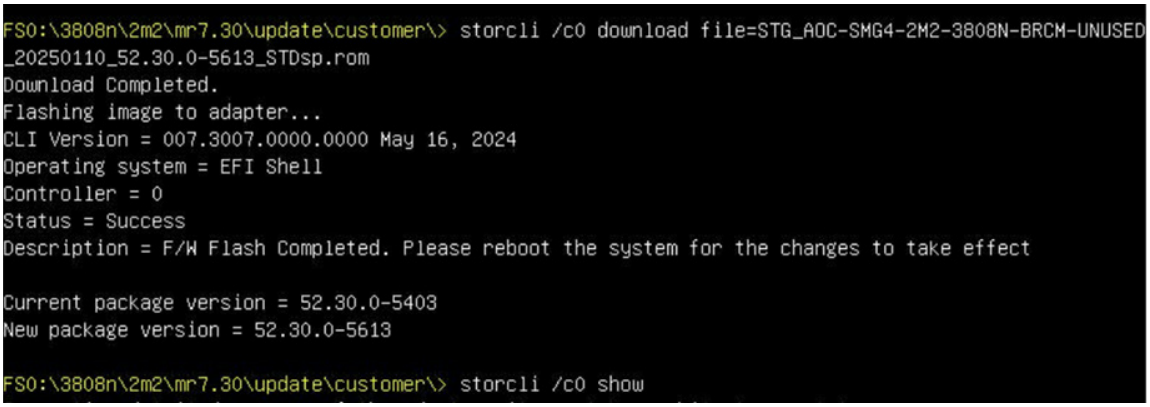


Figure 4-9: Flash Firmware in UEFI

4.3 Update Firmware in BMC

The section provides instructions on how to update the firmware in the BMC.

Note: License is needed for SMC BMC support.

1. Select the **Dashboard** tab on the left navigation menu after entering the BMC.
2. On the Dashboard page, select the blue **Firmware Update** option at the top of the page.

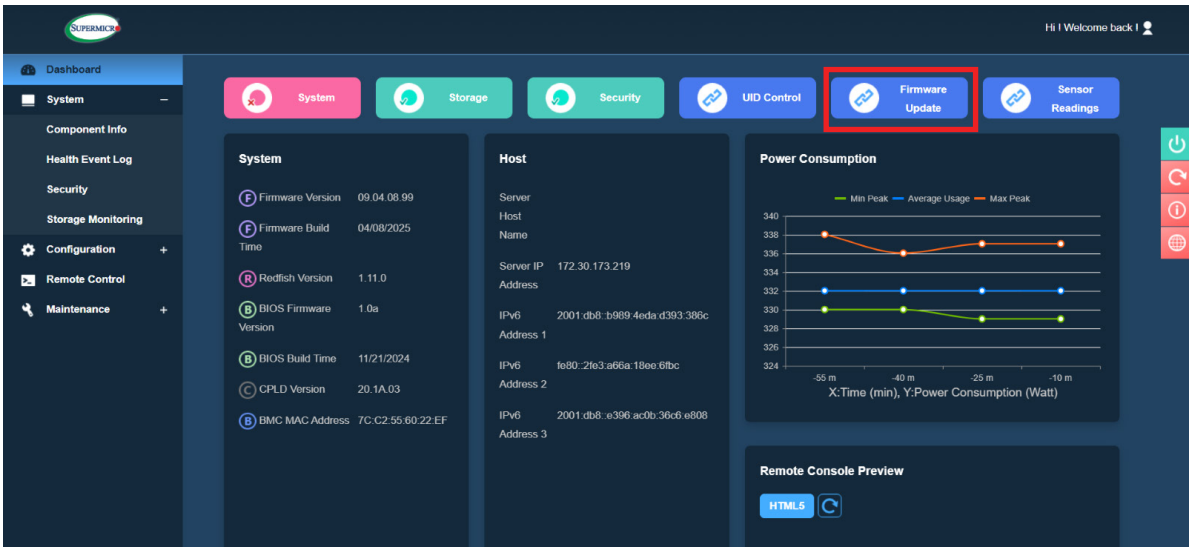


Figure 4-10: Dashboard Page Firmware Update Selected

3. Among the file format types, select **SAS3808N**.

4. Once the option is selected, click **Next**.

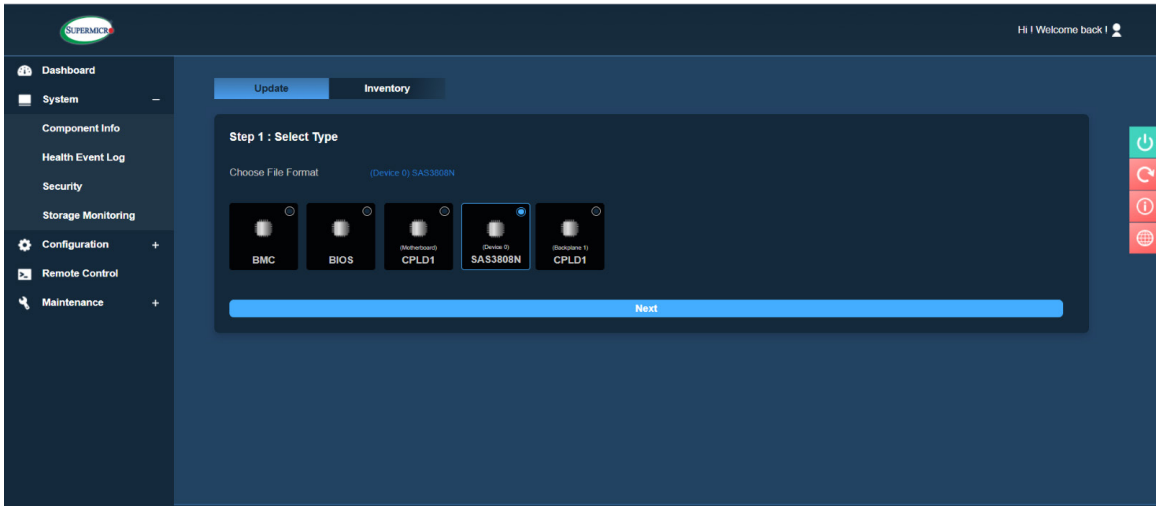


Figure 4-11: Firmware Update Step 1

5. This will make Step 2 available. **Select File** to upload the chosen firmware file.
6. Once the file is selected and appears listed, click **Upload**. Loading the firmware might take a few minutes.

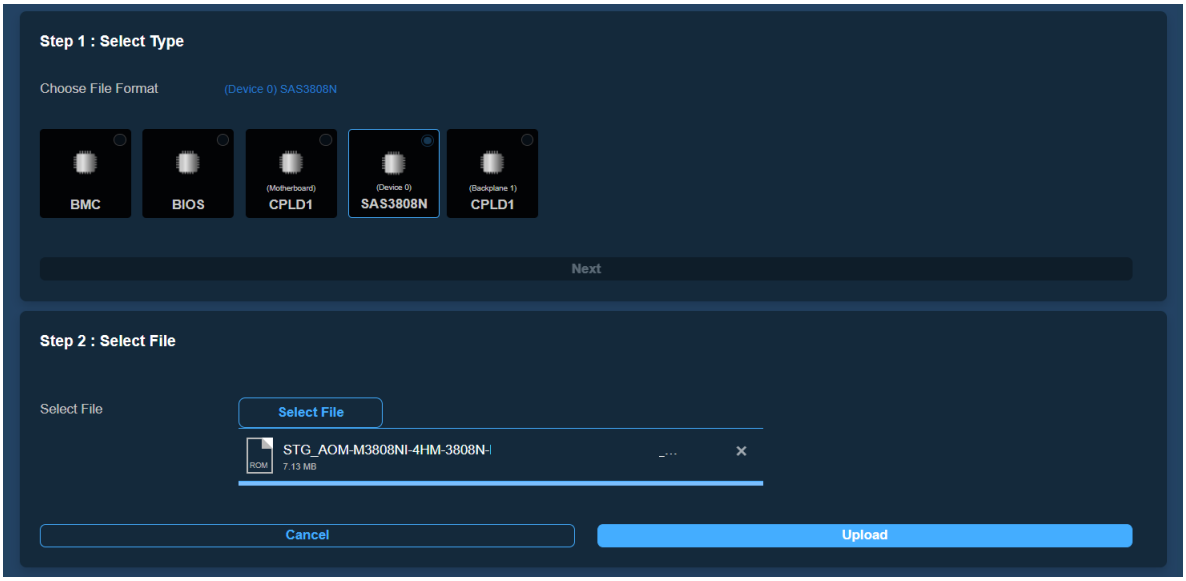


Figure 4-12: Firmware Update Step 2

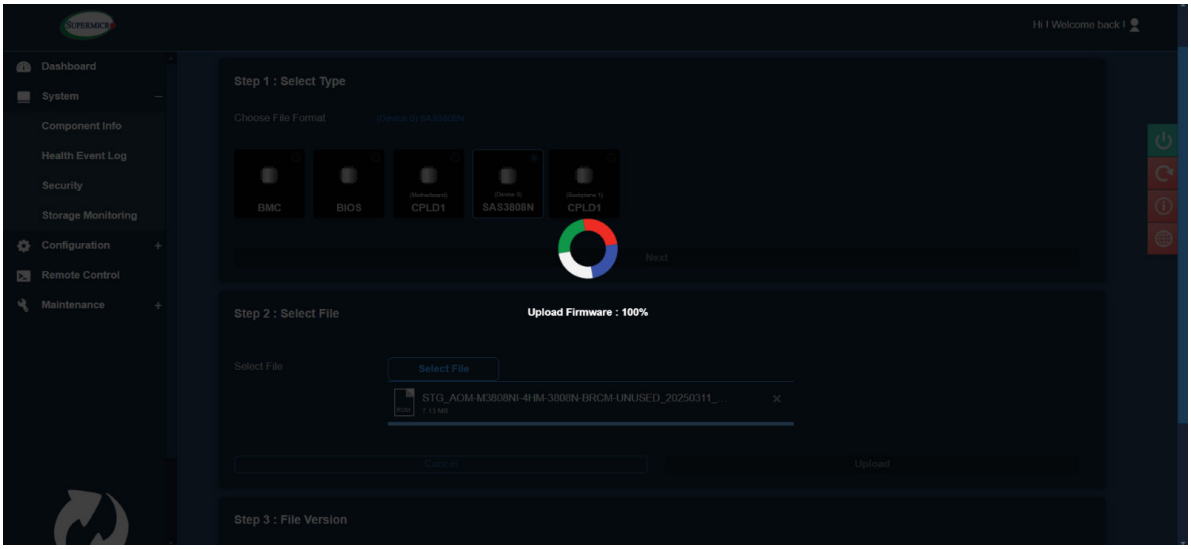


Figure 4-13: Upload Loading

7. This will make Step 3 available with the uploaded firmware file info listed. Review to ensure that it is the correct file version.

8. Click **Update** to proceed with updating the firmware. The update process might take a few minutes.

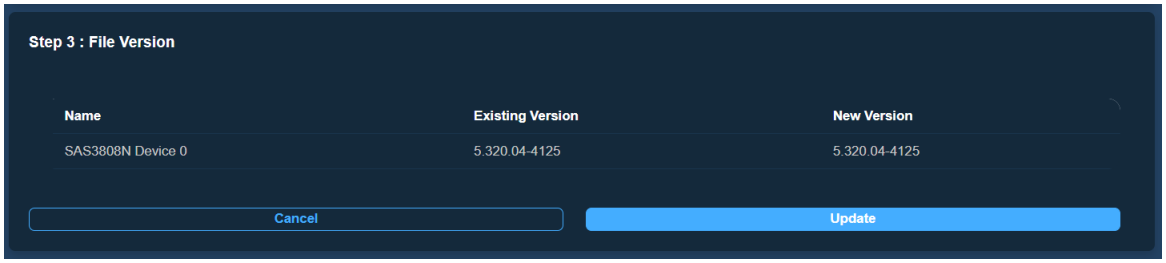


Figure 4-14: Firmware Update Step 3

To review if the firmware update is successful, take the following steps:

1. Select the **System** tab on the left navigation menu.
2. Select the **Storage Monitoring** tab from the System tab's drop-down submenu.

Figure 4-15: Dashboard Page System and Storage Monitoring Selected

3. Select the **Controller View** tab at the top of the page.
4. Be sure to be on the correct device. It will be listed in the scroll-down menu below **Broadcom**. This will allow you to view the device information.
5. Scroll to find the **View-Broadcom** item. It should display the new firmware file's version number.

Chapter 5

Drive Management

This chapter provides instructions on how to configure RAID using the BROADCOM <SAS 3808N> Configuration Utility and reference FAQ regarding managing the AOM with BMC IPMI WebGUI or Broadcom 3rd Party Utility. If you do not wish to configure the RAID settings, you may skip this section and go directly to OS installation.

5.1 RAID Minimum Drive Requirements

The AOC-SMG4-2M2 add-on card supports up to two M.2 SSDs with RAID 0 and RAID 1. Use the table to determine the minimum number of hard drives needed to set up a RAID environment.

RAID	Minimum Hard Drives
RAID 0	2
RAID 1	2

5.2 Managing Physical Drive

Follow the steps below to manage the available physical drives through BIOS. Use the arrow keys to highlight the chosen option, and click <Enter> to select. Click <Esc> to exit an option menu or return to the previous page.

1. Navigate to Controller to enter the **Main Menu**.

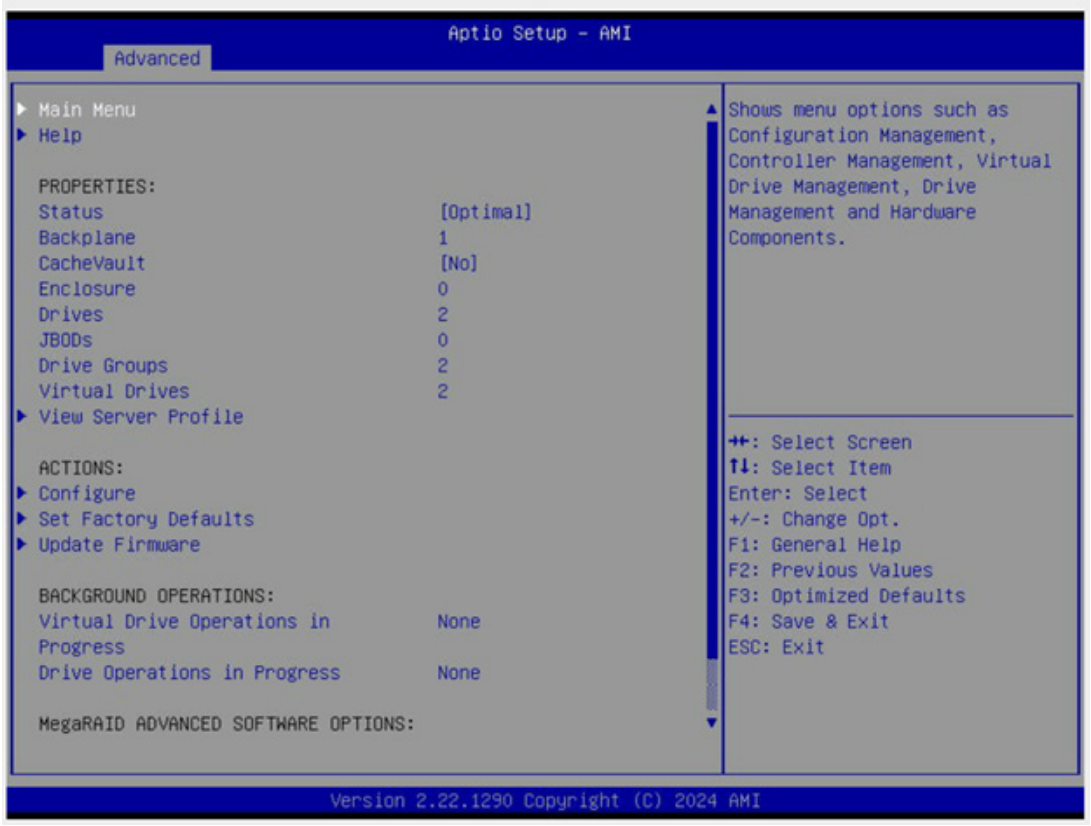


Figure 5-1: Main Menu Selected

2. Select **Drive Management**.

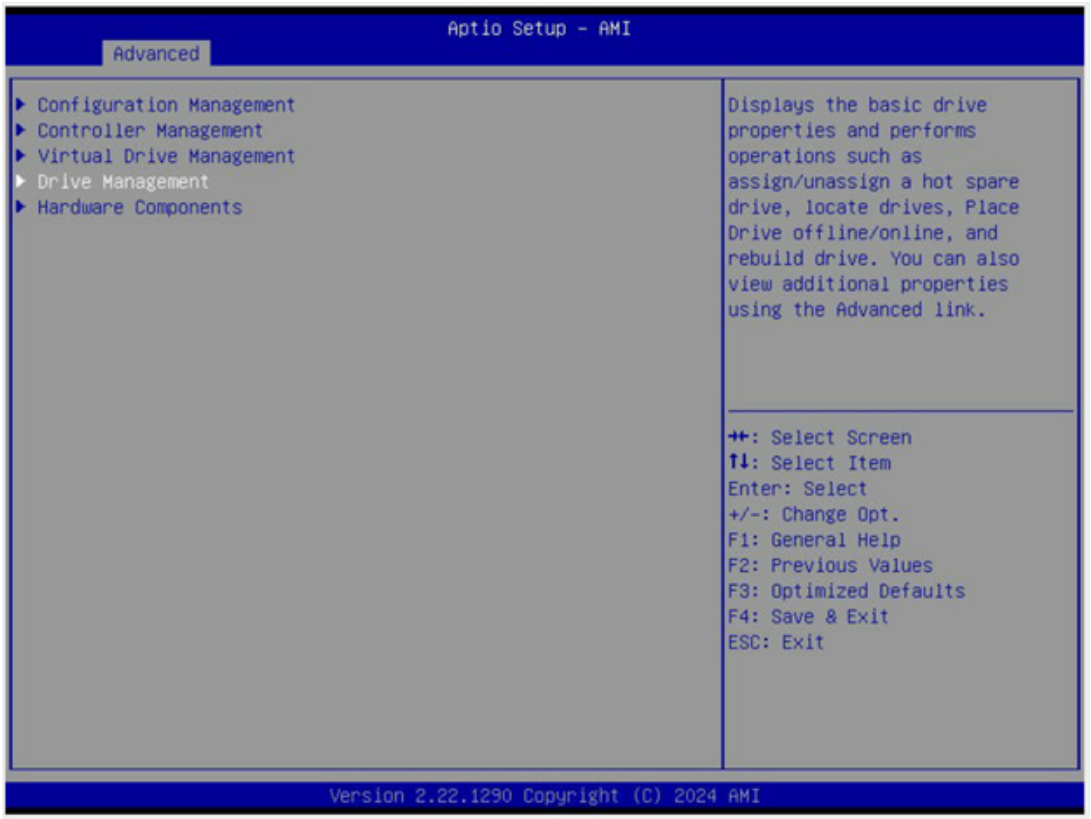


Figure 5-2: Drive Management Selected

3. Select a physical drive from the list. This menu can be used to perform several operations (including **Rebuild** and **Initialize drive**), view basic properties of the drive, and navigate to view additional advanced properties.

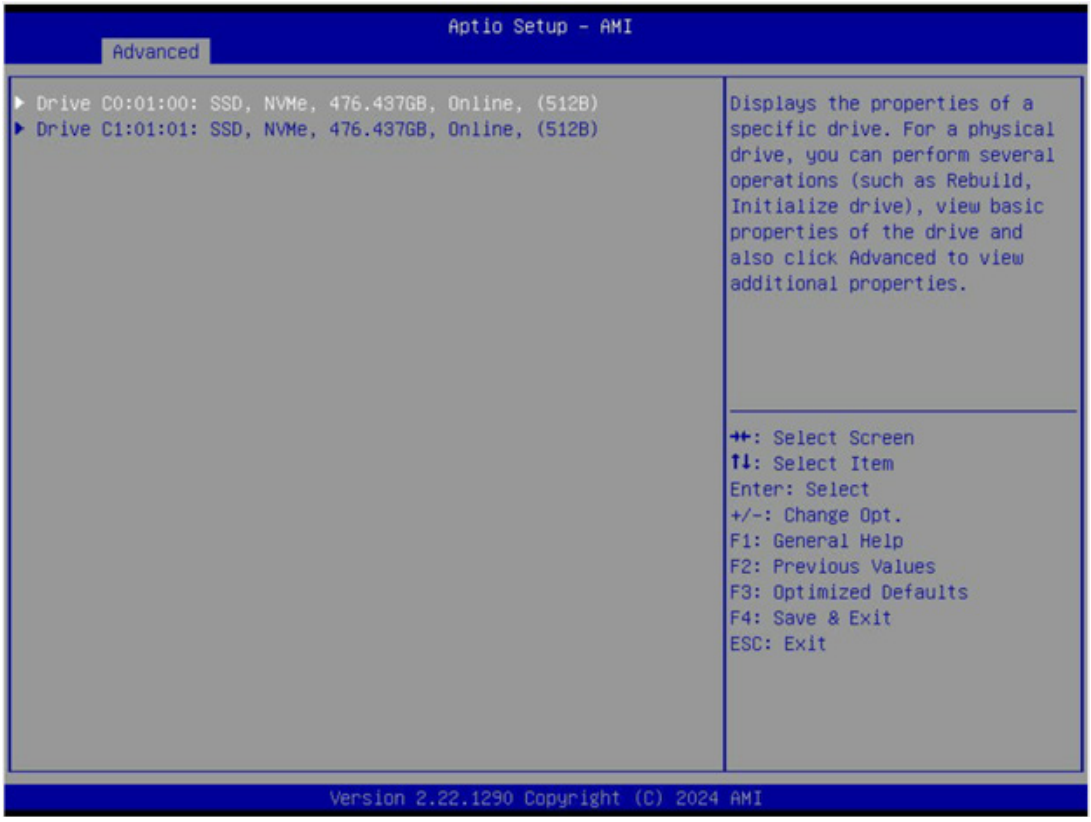


Figure 5-3: Physical Drive Selected

5.3 Creating RAID

Follow the steps to create a virtual drive through BIOS. Use the arrow keys to highlight the chosen option, and click <Enter> to select. Click <Esc> to exit an option menu or return to the previous page.

1. Reset the system.
2. Press **<Del>** to enter the BIOS Setup Utility.
3. Select **<Advanced>** and **BROADCOM <SAS 3808N> Configuration Utility**.

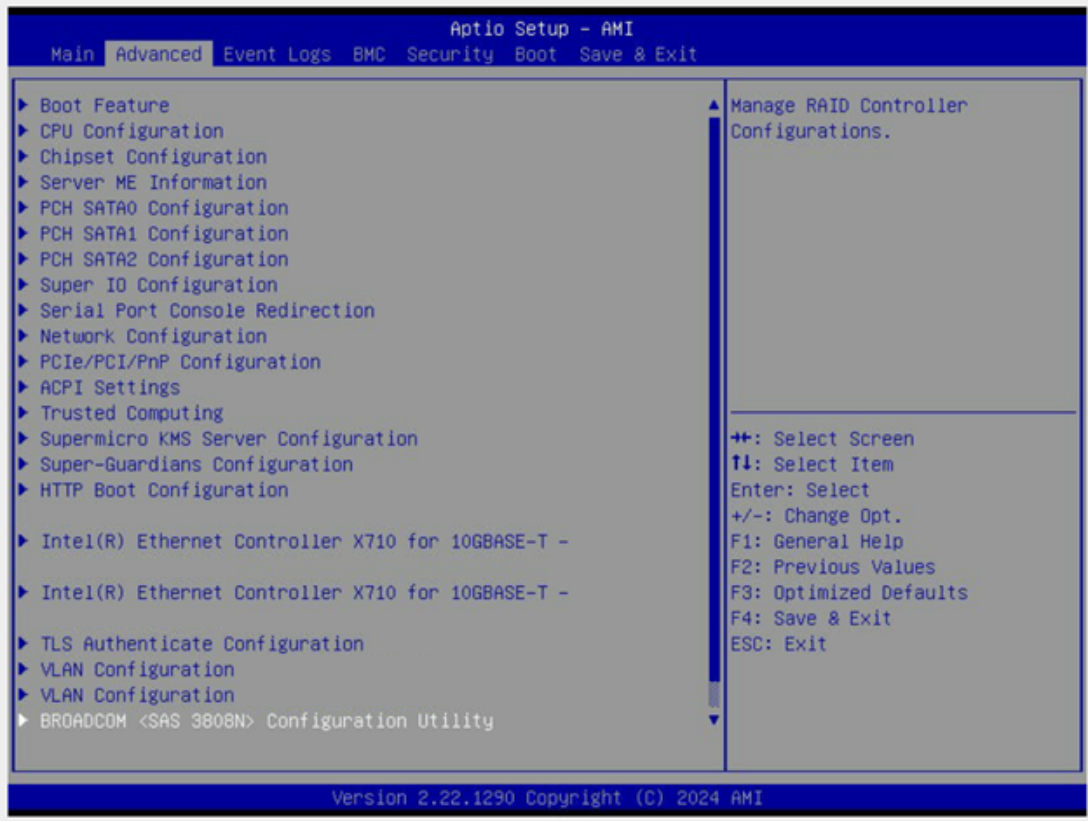


Figure 5-4: BROADCOM <SAS 3808N> Configuration Utility Selected

4. Enter the **Main Menu** page.

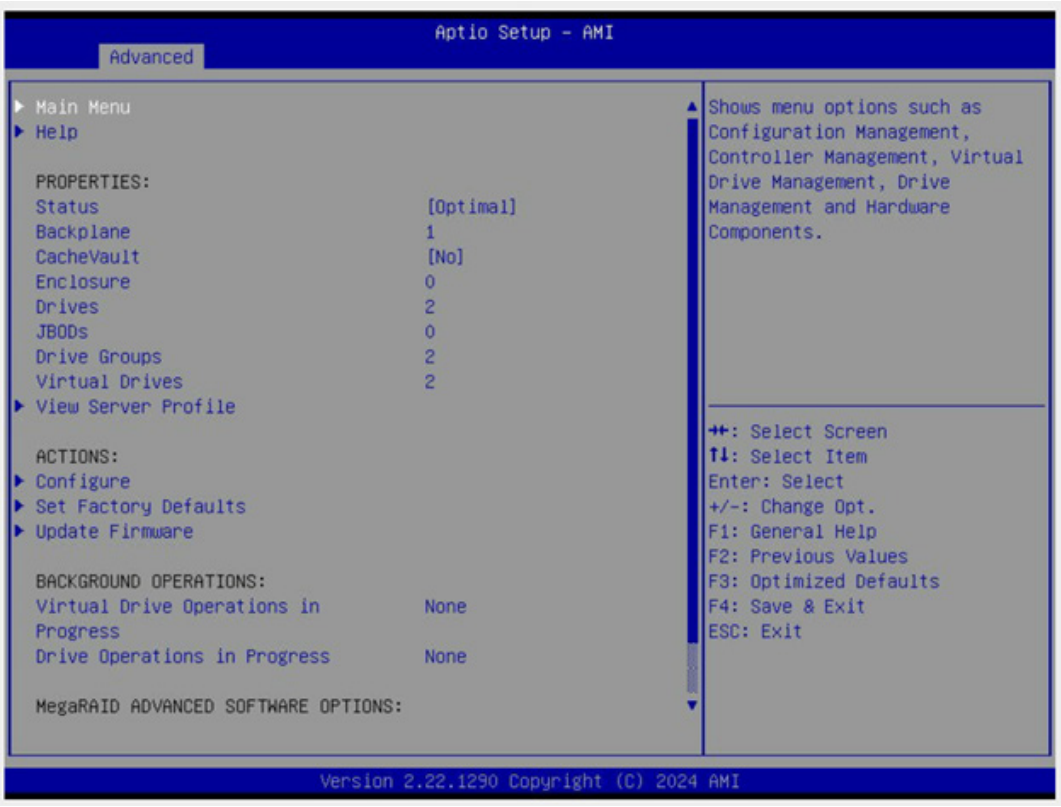


Figure 5-5: Main Menu Selected

5. Select **Configuration Management** from the Main Menu's submenu.

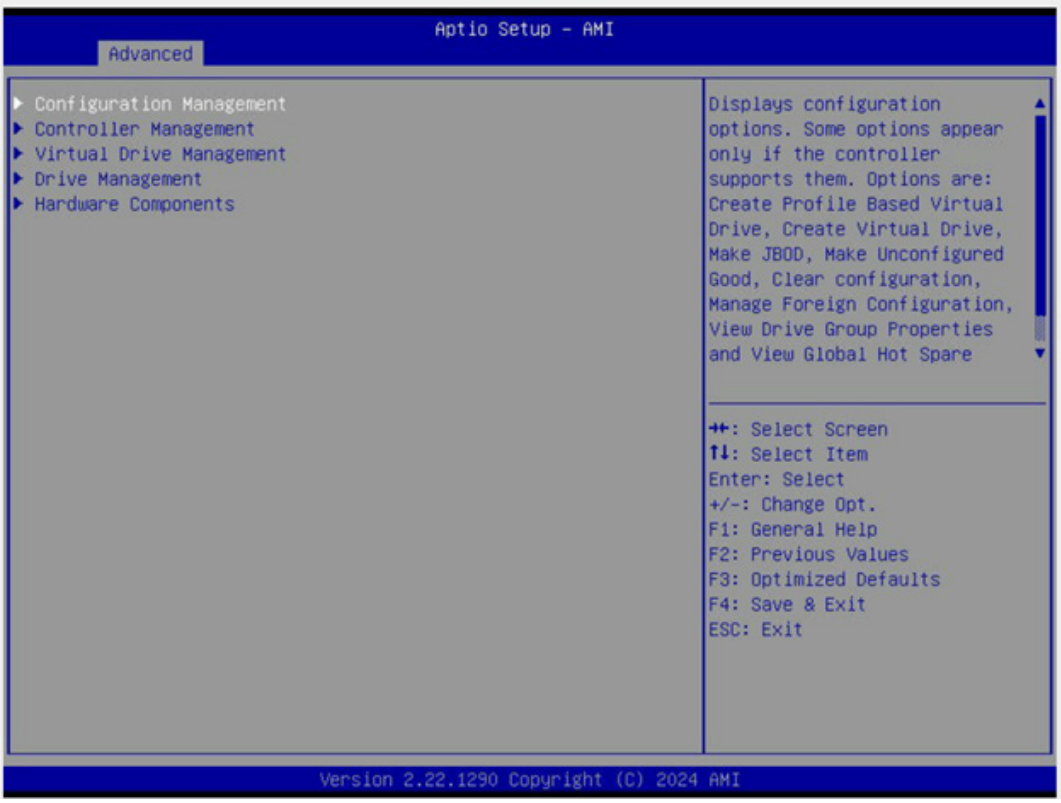


Figure 5-6: Configuration Management Selected

6. Select **Create Virtual Drive**.

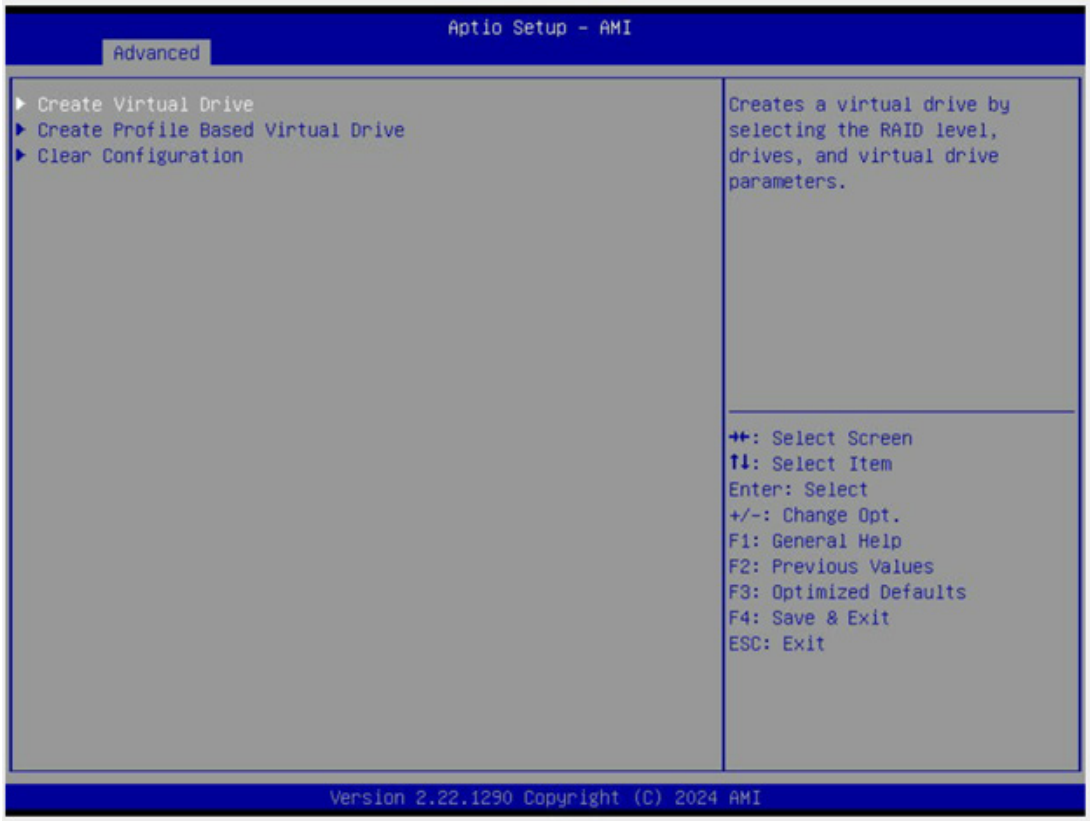


Figure 5-7: Create Virtual Drive Selected

7. On the **Create Virtual Drive** menu, navigate to **Select RAID Level**.

8. Select a RAID level.

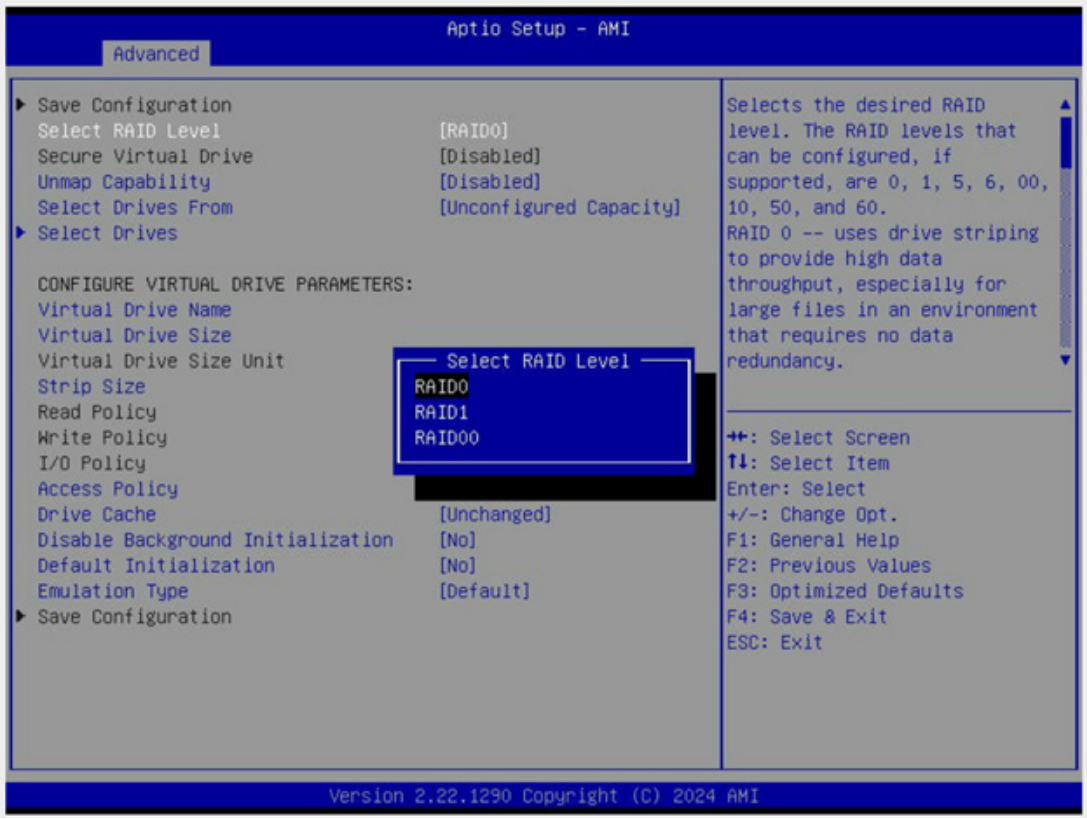


Figure 5-8: RAID Level Selected

9. Navigate to **Select Drives**.

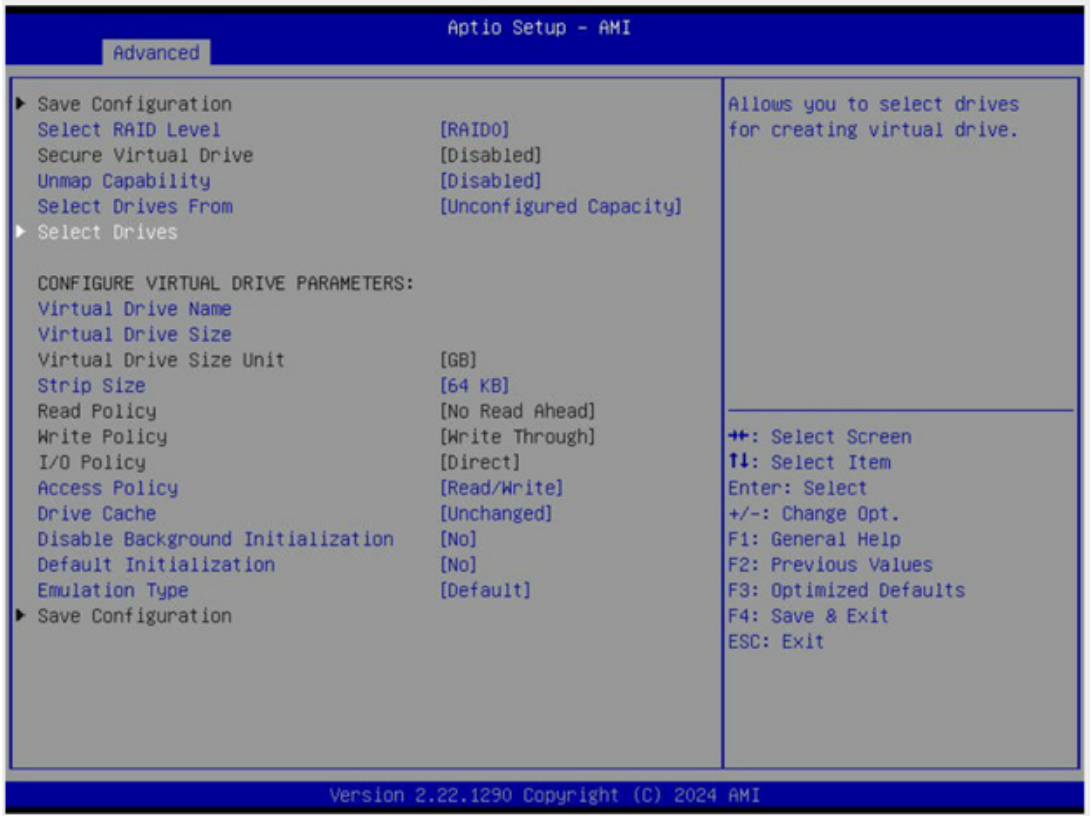


Figure 5-9: Select Drives Selected

10. On the **Select Drives** menu, select an unconfigured drive.
11. Choose **Enabled**.

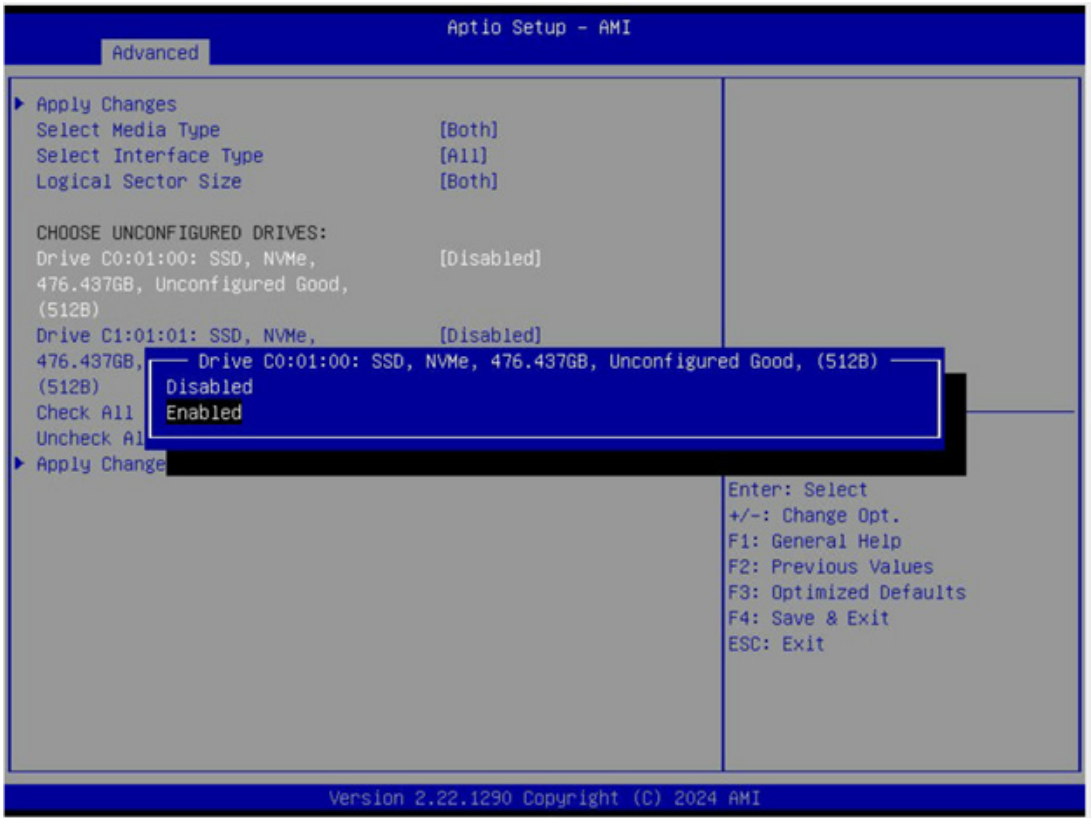


Figure 5-10: Enabled Selected

12. Select **Apply Changes**.

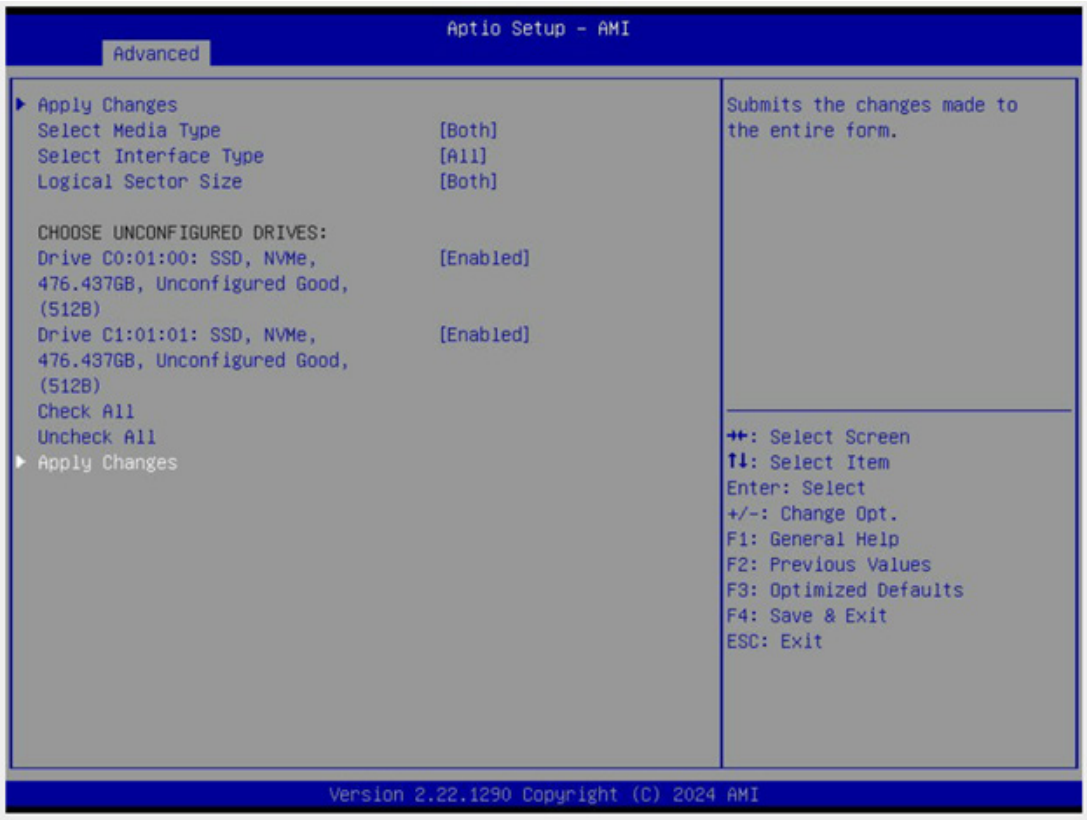


Figure 5-11: Apply Changes Selected

The virtual drives were saved successfully and there will be a prompt message confirming that the operation was performed successfully.

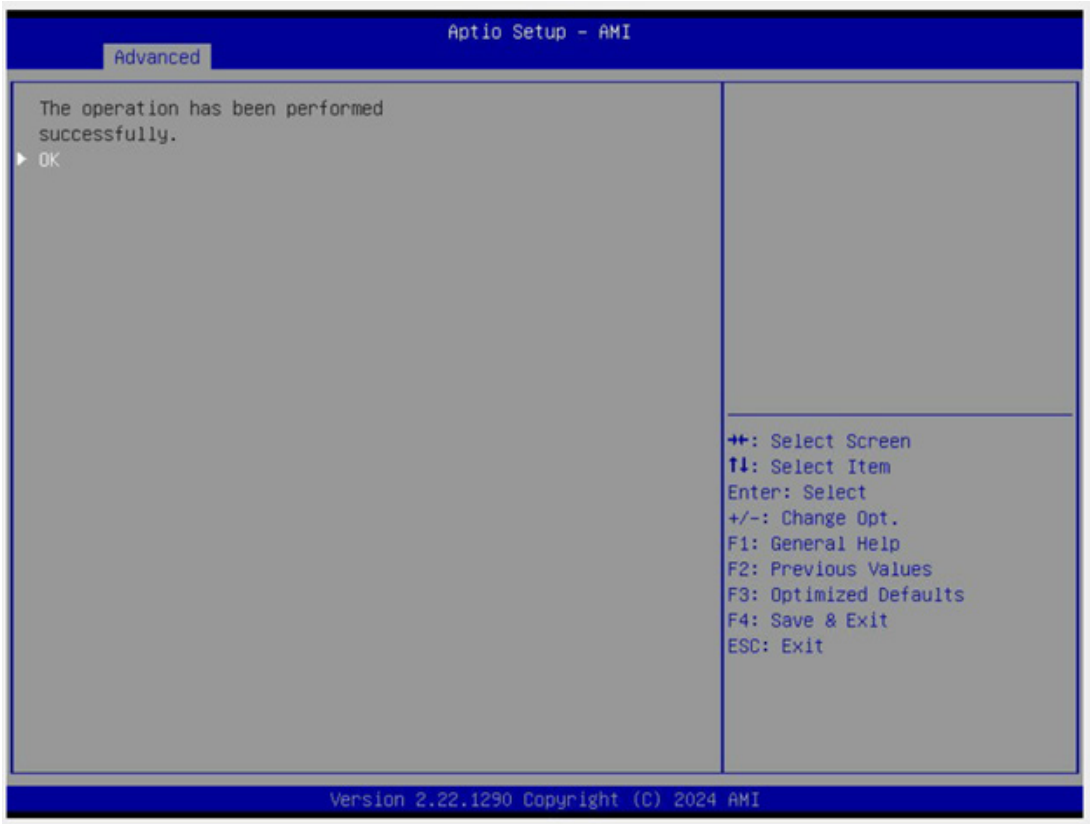


Figure 5-12: OK Option Selected

The system configuration will need to be saved. To do so, take the following steps:

1. On the **Create Virtual Drive** menu, navigate to **Save Configuration**.

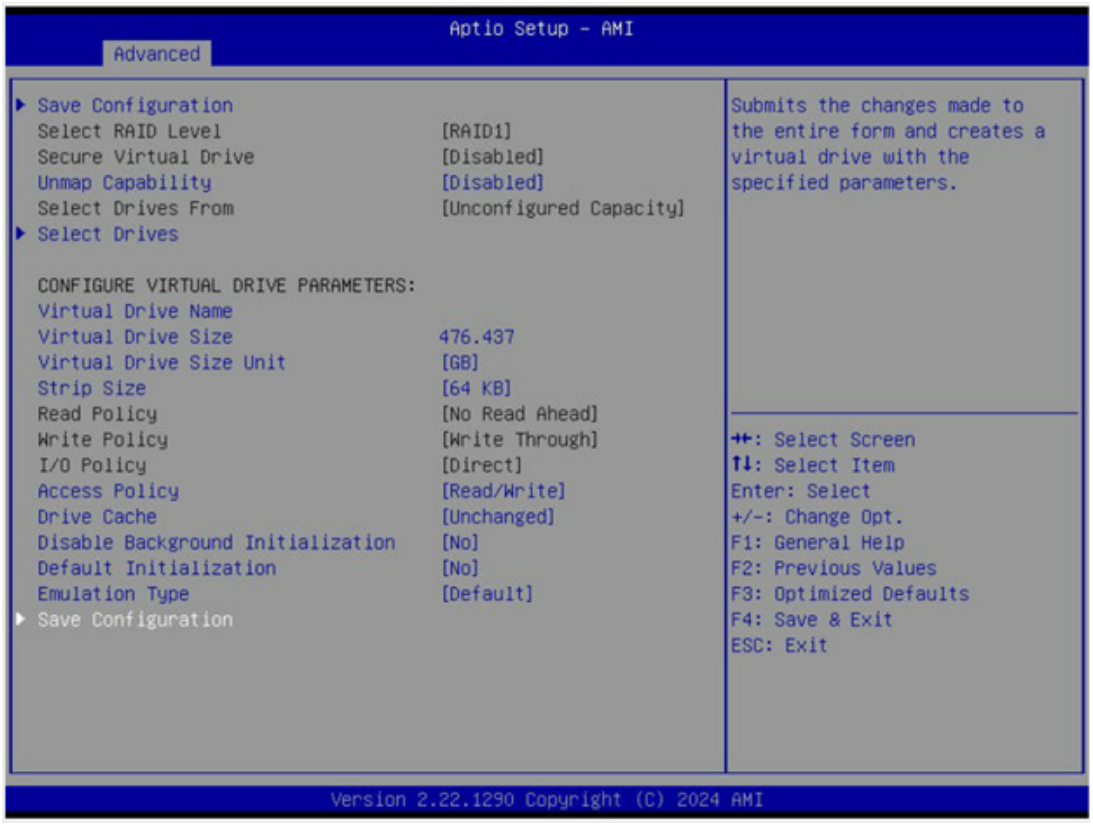


Figure 5-13: Save Configuration Selected

2. To proceed and make the **Yes** option available, first select **Confirm**.
3. Select **Enabled** to enable the **Yes** option.
4. Select **Yes**. If you do not want to proceed with changes, select **No**.

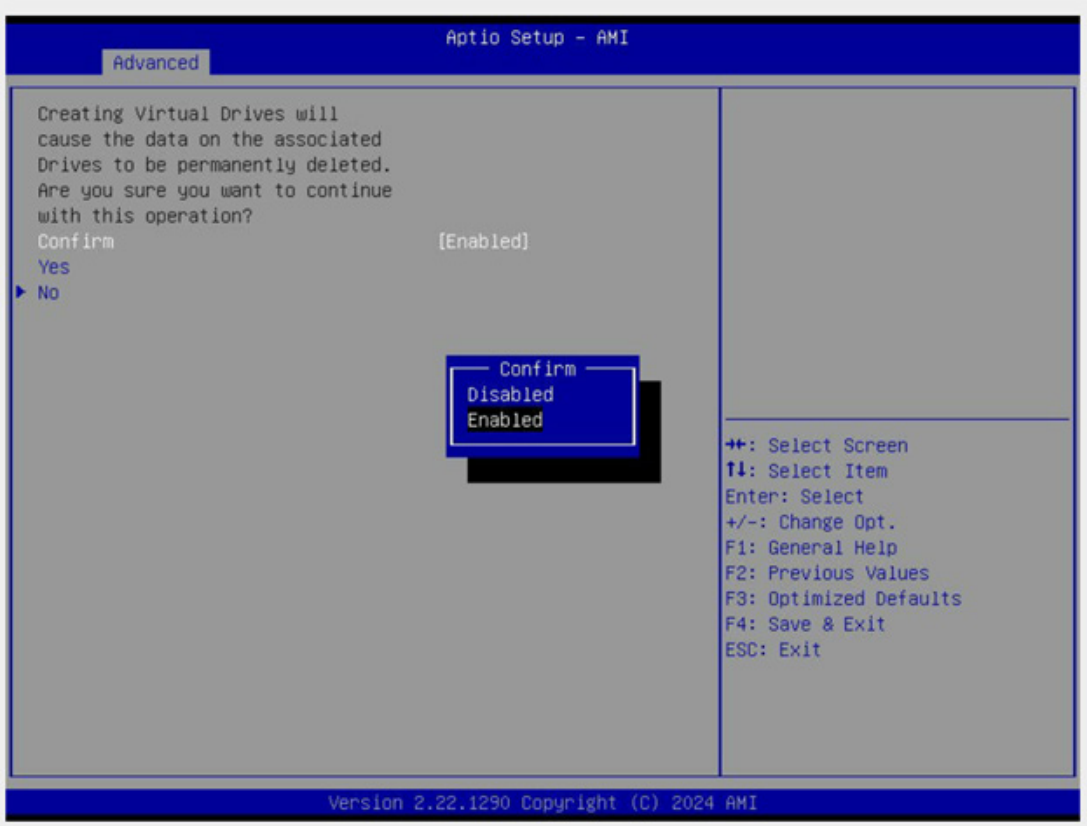


Figure 5-14: Confirm State Menu

5. Select **OK** to proceed.

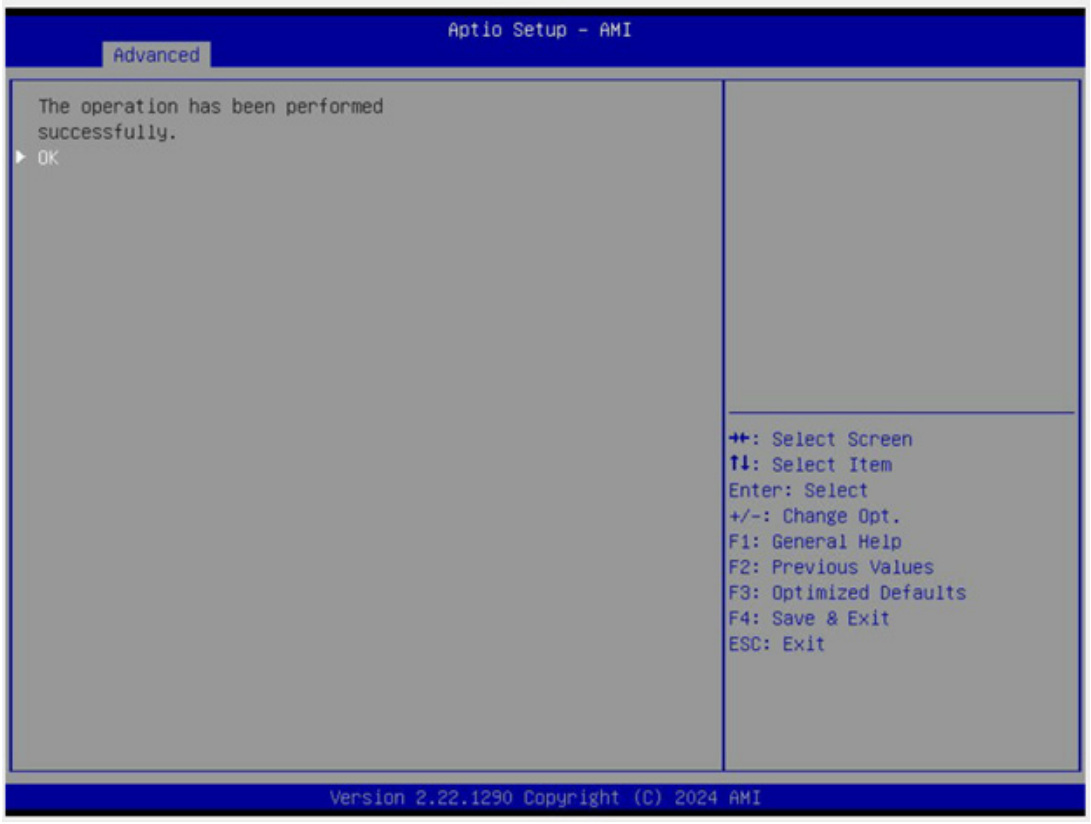


Figure 5-15: OK Selected

A prompt message will appear once the virtual drive creation is successful.

Figure 5-16: Prompt Message

5.4 Deleting RAID in BIOS

Follow the steps to delete RAID through BIOS. Use the arrow keys to highlight the chosen option, and click <Enter> to select. Click <Esc> to exit an option menu or return to the previous page.

1. Navigate to the **Advanced** tab, RAID Controller configurations can be managed.
2. Navigate to and select **BROADCOM <SAS 3808N> Configuration Utility**.

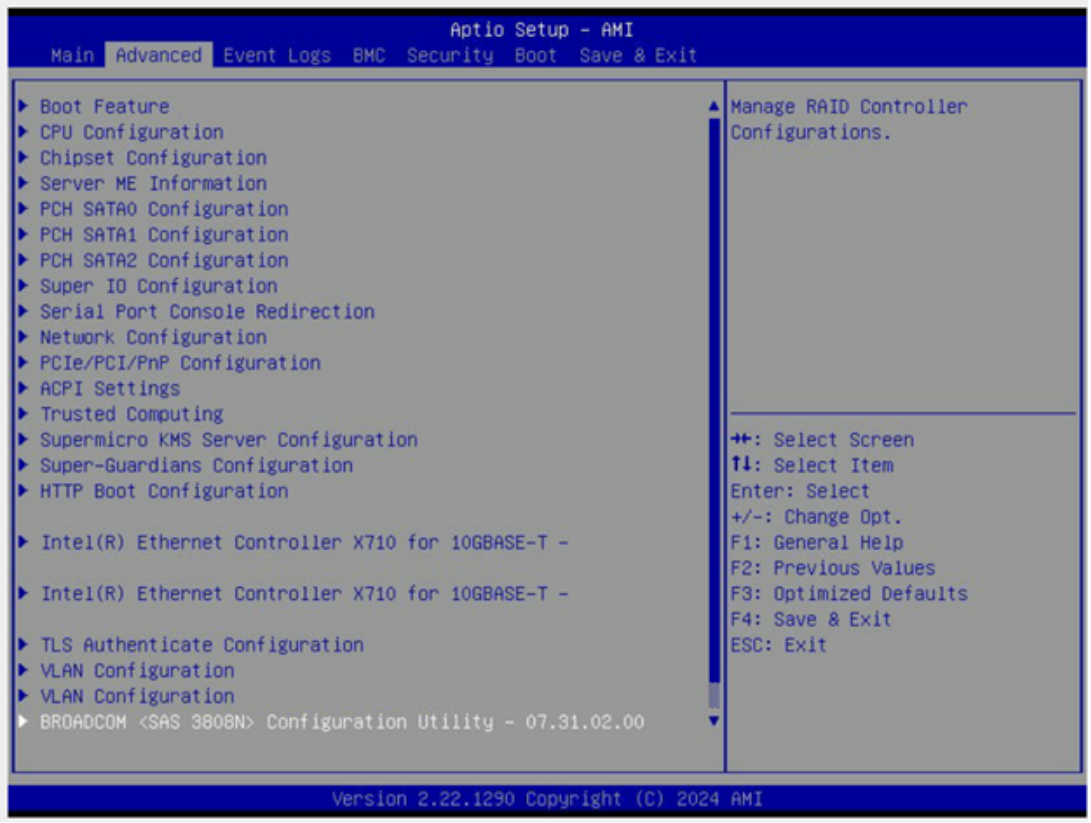


Figure 5-17: BROADCOM <SAS 3808N> Configuration Utility Selected

3. Select **Main Menu**.

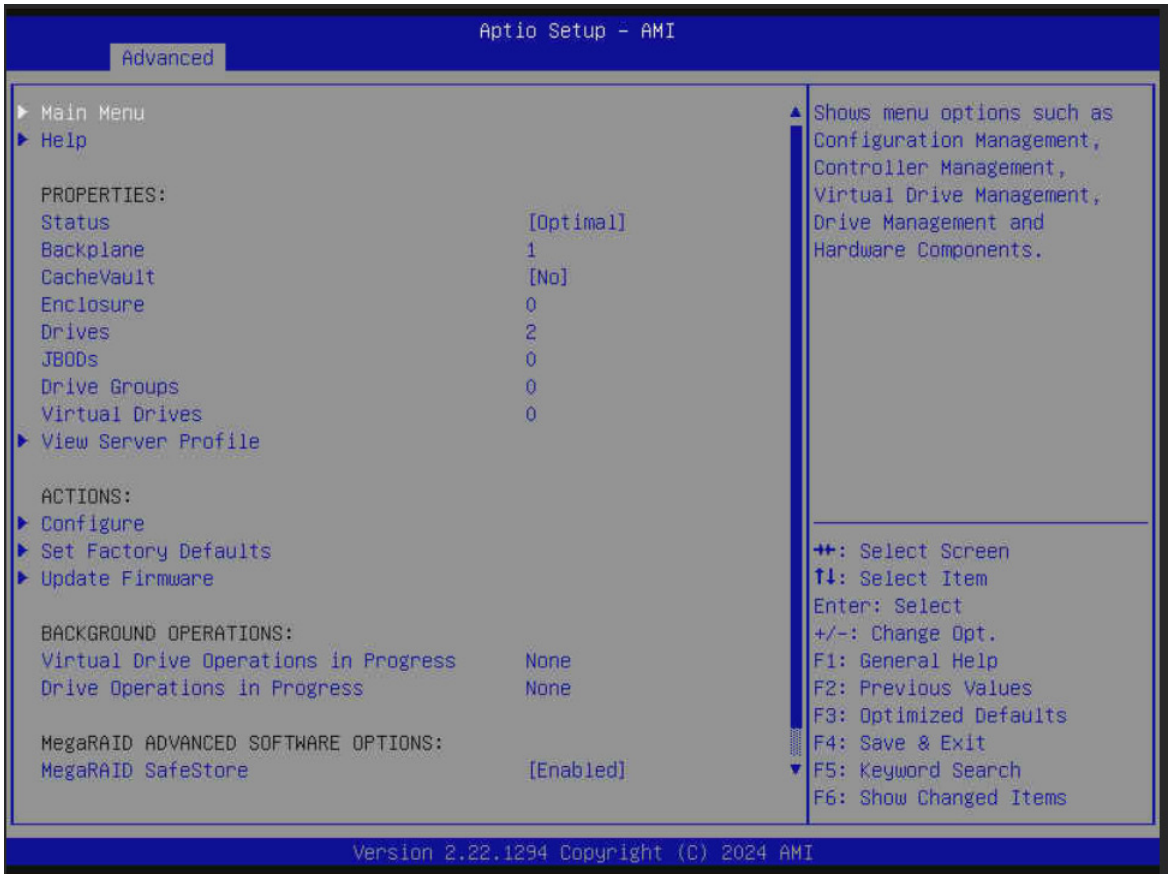


Figure 5-18: Main Menu Selected

4. Select **Configuration Management**.

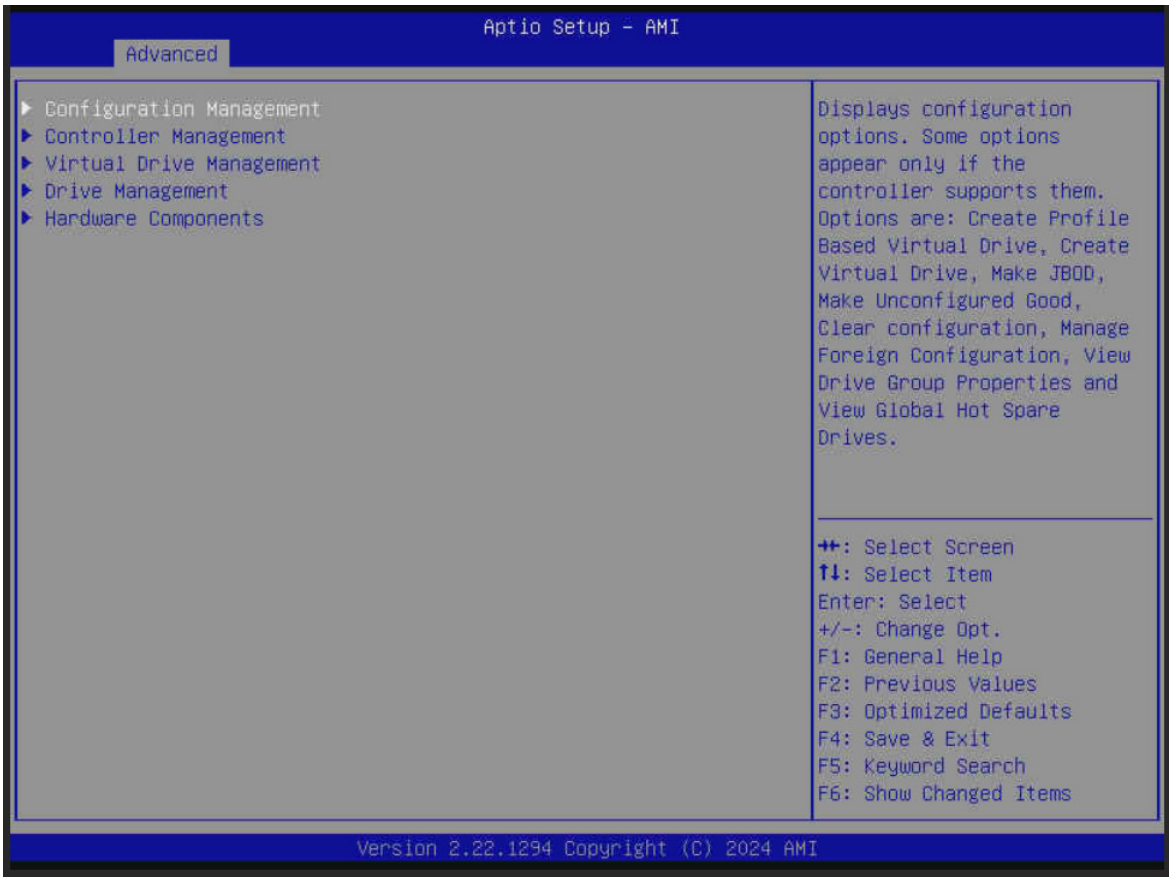


Figure 5-19: Configuration Management Selected

5. Select **Clear Configuration**.

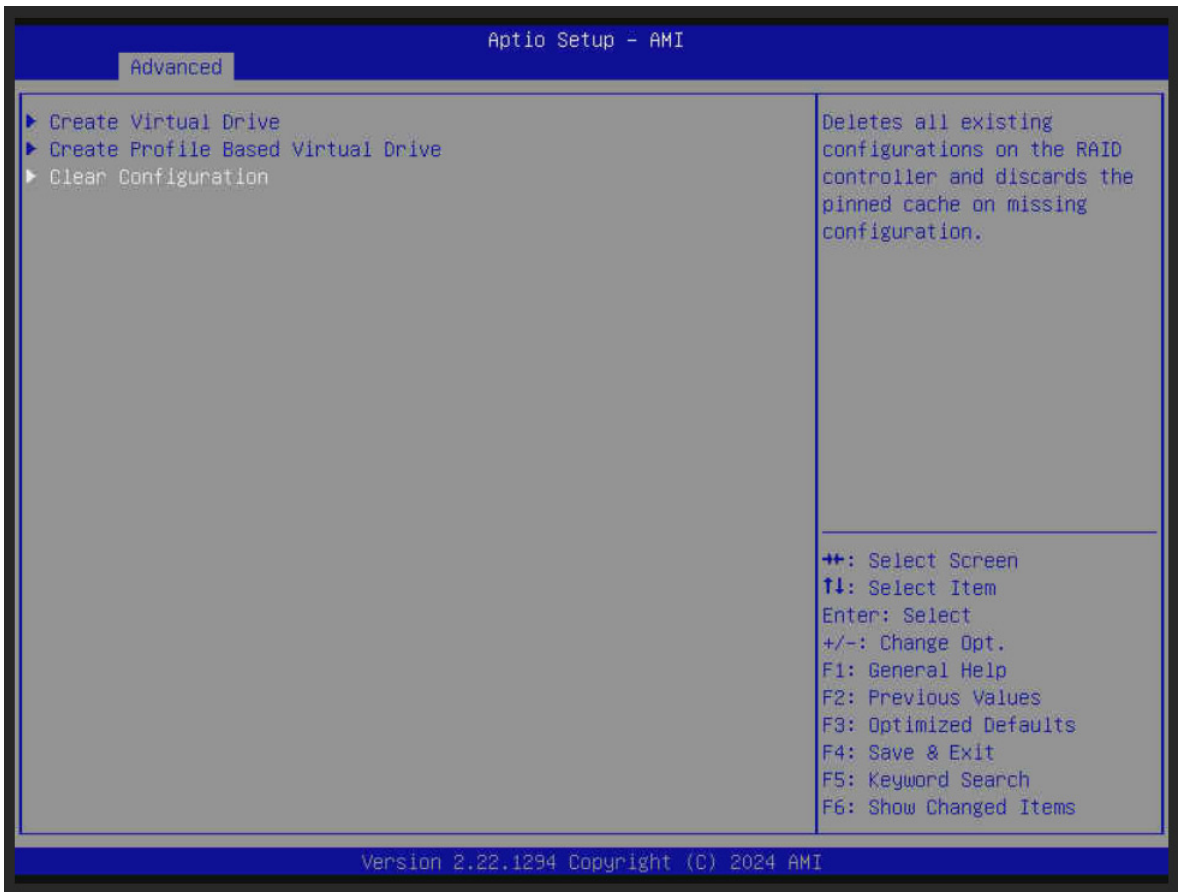


Figure 5-20: Clear Configuration Selected

6. There will be a confirmation window to delete all virtual drives, hot spare drives, pinned caches, and applicable JBODs attached to this controller. To proceed and make the **Yes** option available, select **Confirm** and ensure that it is set to **Enabled**.

7. Once the **Confirm** option is enabled, select **Yes** to confirm the update. If you do not want to proceed with deleting all virtual drives, hot spare drives, pinned caches, and applicable JBODs attached to this controller at this time, select **No**.

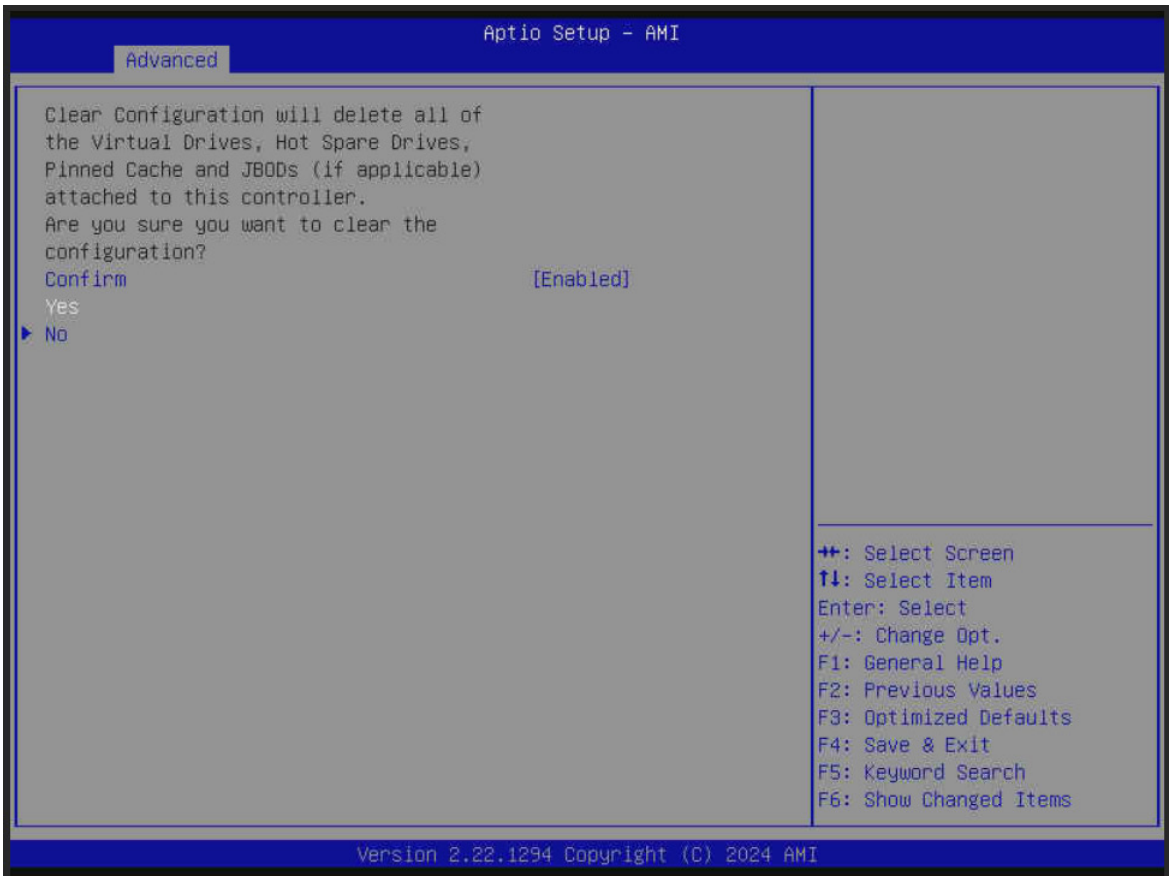


Figure 5-21: Yes Option Selected

8. There will be presented with a window confirming that the operation has been performed successfully. Select **OK** to proceed and return to the main menu.

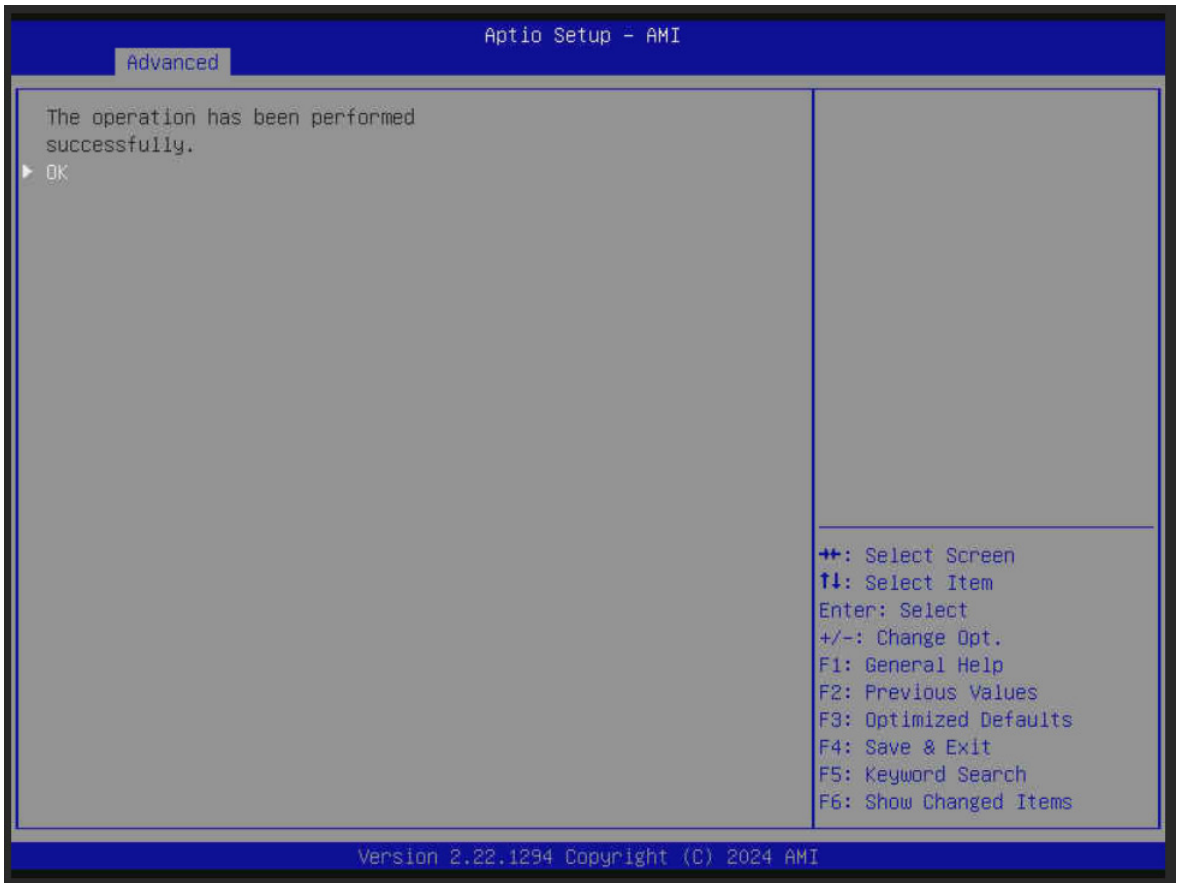


Figure 5-22: OK Option Selected

Note: Updates may take a few minutes to complete. Be sure you see the confirmation window *first* before rebooting the system.

The RAID has been deleted.

5.5 Managing JBOD State

This add-on card is based on a SAS 3808N iMR controller, and therefore supports a JBOD mode. Under certain conditions, such as when the add-on card is in JBOD mode, the drive state will then also change to JBOD. Use the arrow keys to highlight the chosen option, and press <Enter> to select. Click <Esc> to exit an option menu or return to the previous page. Take the following steps to enable/disable JBOD mode:

1. Navigate to **Controller** to enter the **Main Menu**.

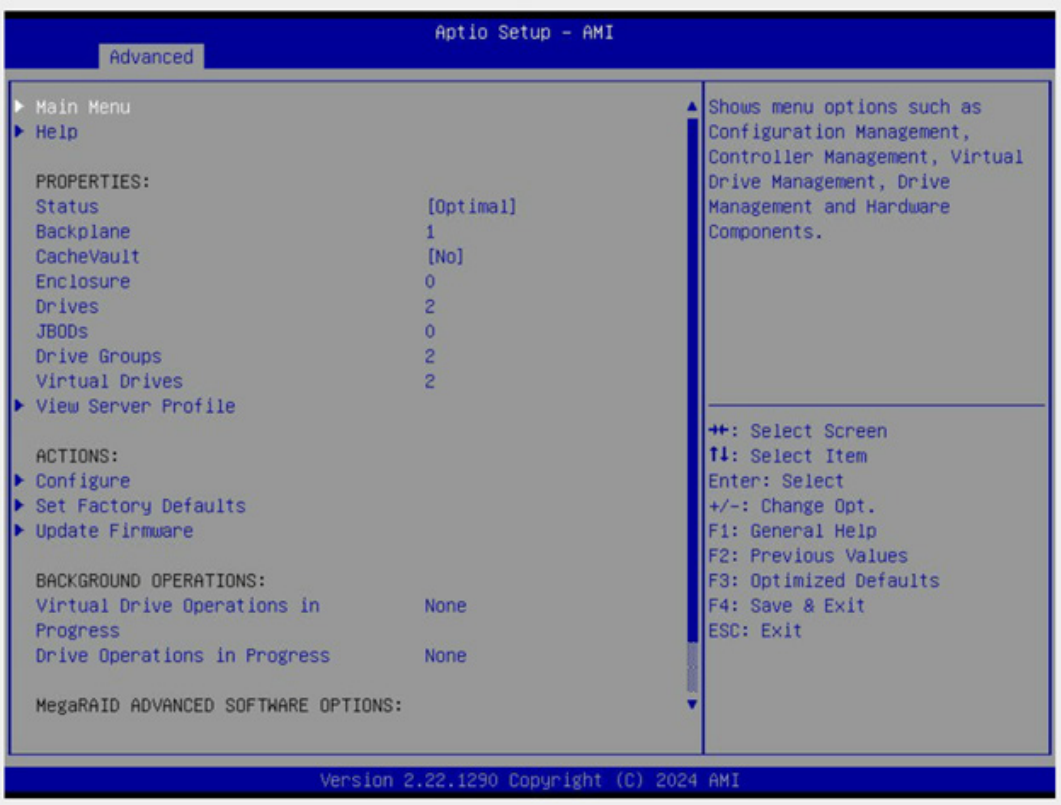


Figure 5-23: Main Menu Selected

2. Select **Controller Management**.

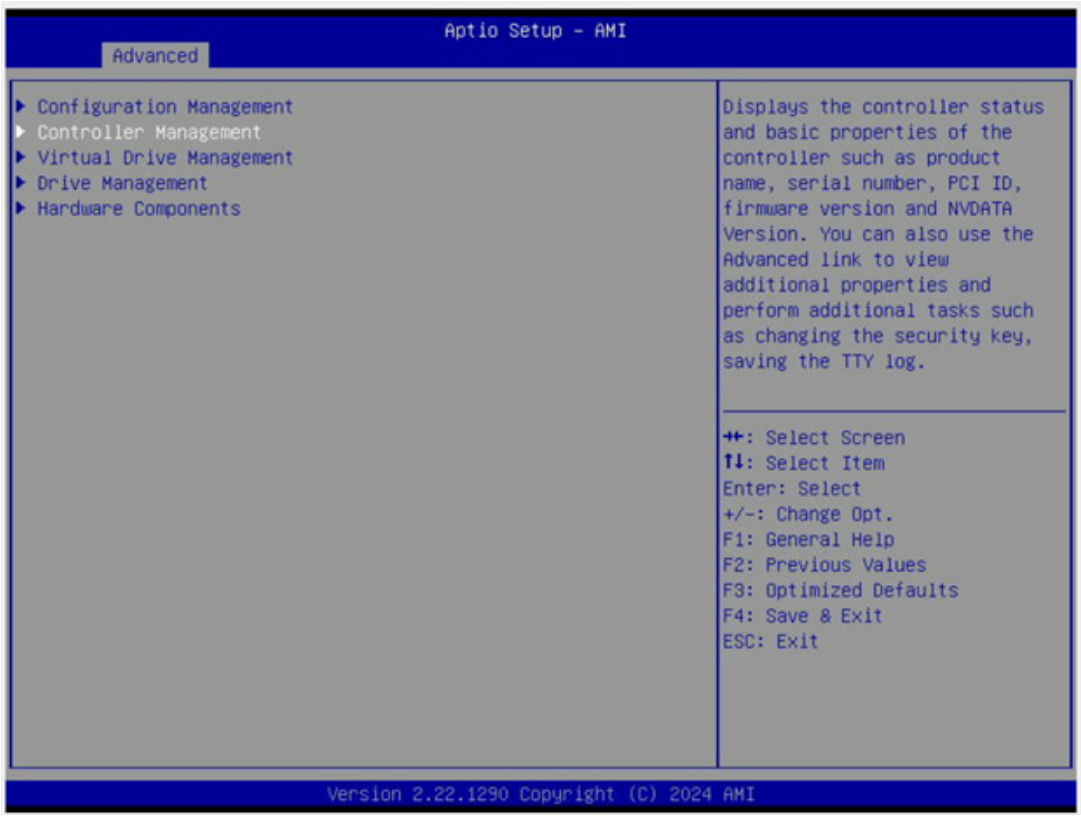


Figure 5-24: Controller Management Selected

3. Select **Advanced Controller Properties** to view and modify advanced controller properties.

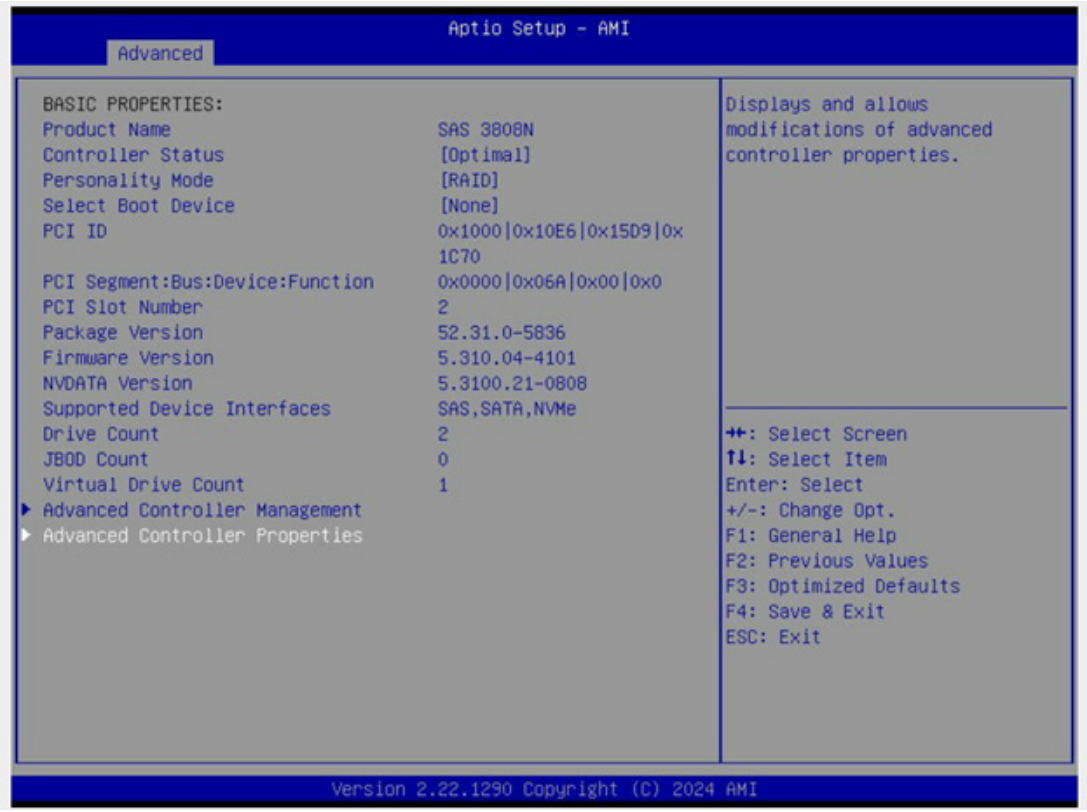


Figure 5-25: Advanced Controller Properties Selected

4. Select **JBOD Mode**.
5. Change the settings to **Disabled** or **Enabled**.

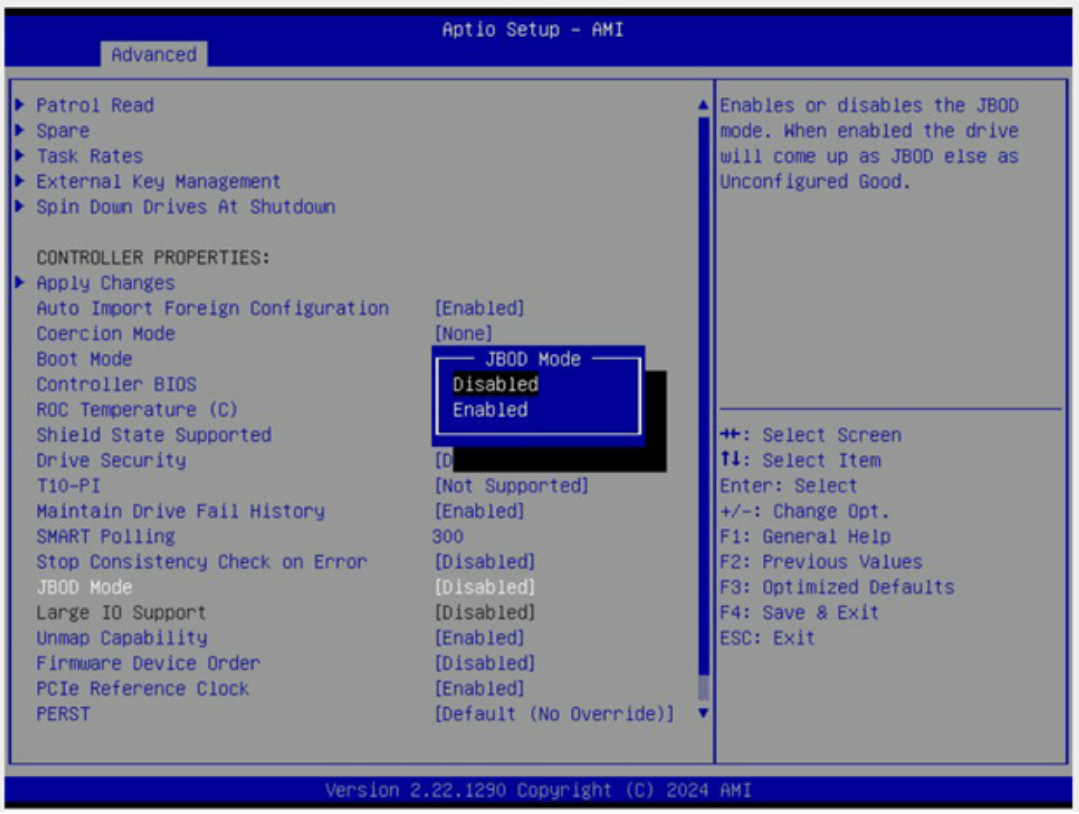


Figure 5-26: JBOD Mode State Menu

6. Confirm by selecting to **Apply Changes**. If you do not want to proceed with changes, select **Cancel**.

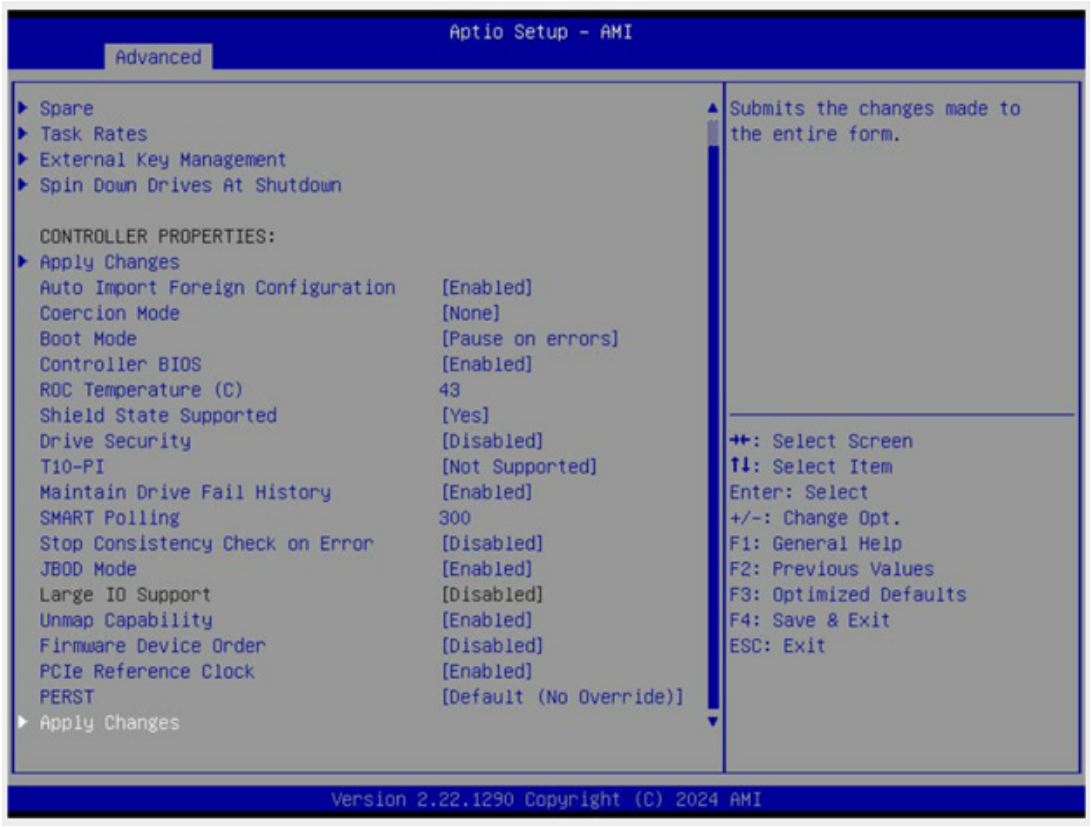


Figure 5-27: Apply Changes Selected

Note: JBOD Mode can also be enabled or disabled by entering the following StorCLI commands.

```
storcli /cx set JBOD=on

storcli /cx set JBOD=off
```

7. Once the JBOD mode is enabled for the add-on card, JBOD can be configured by selecting **Configure** (under the **Advanced** tab).

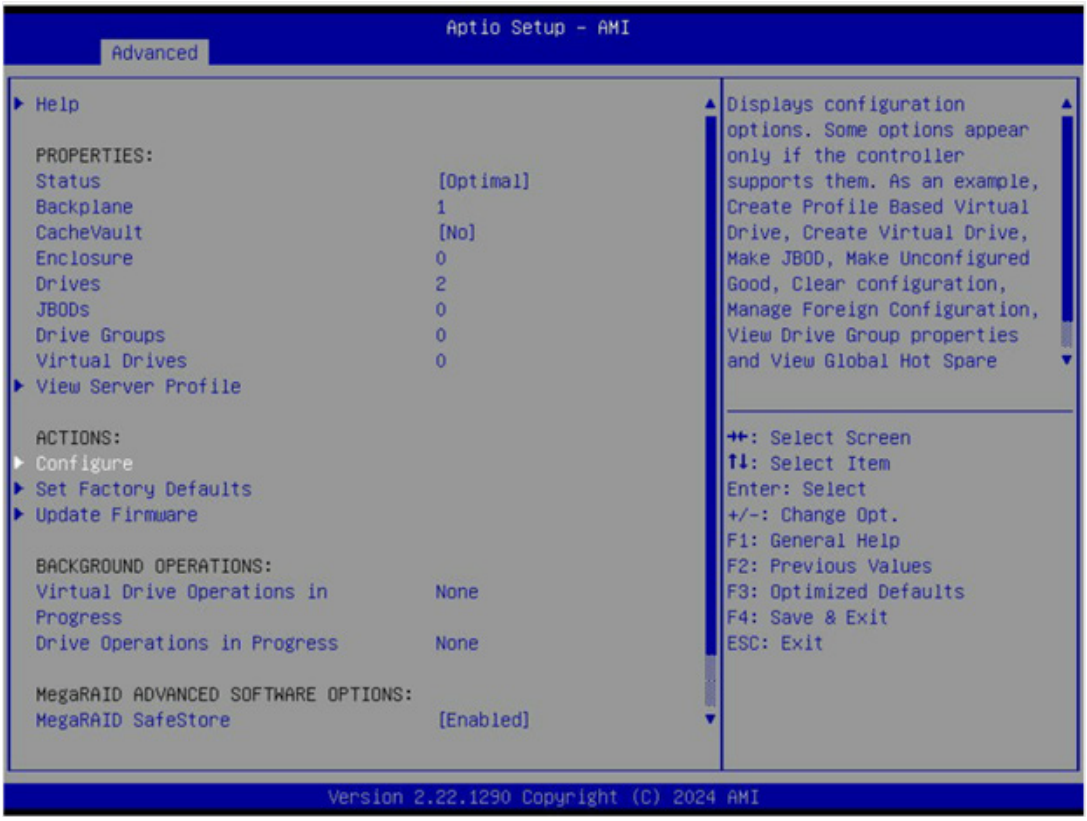


Figure 5-28: Configure Selected

8. Select **Make JBOD**.

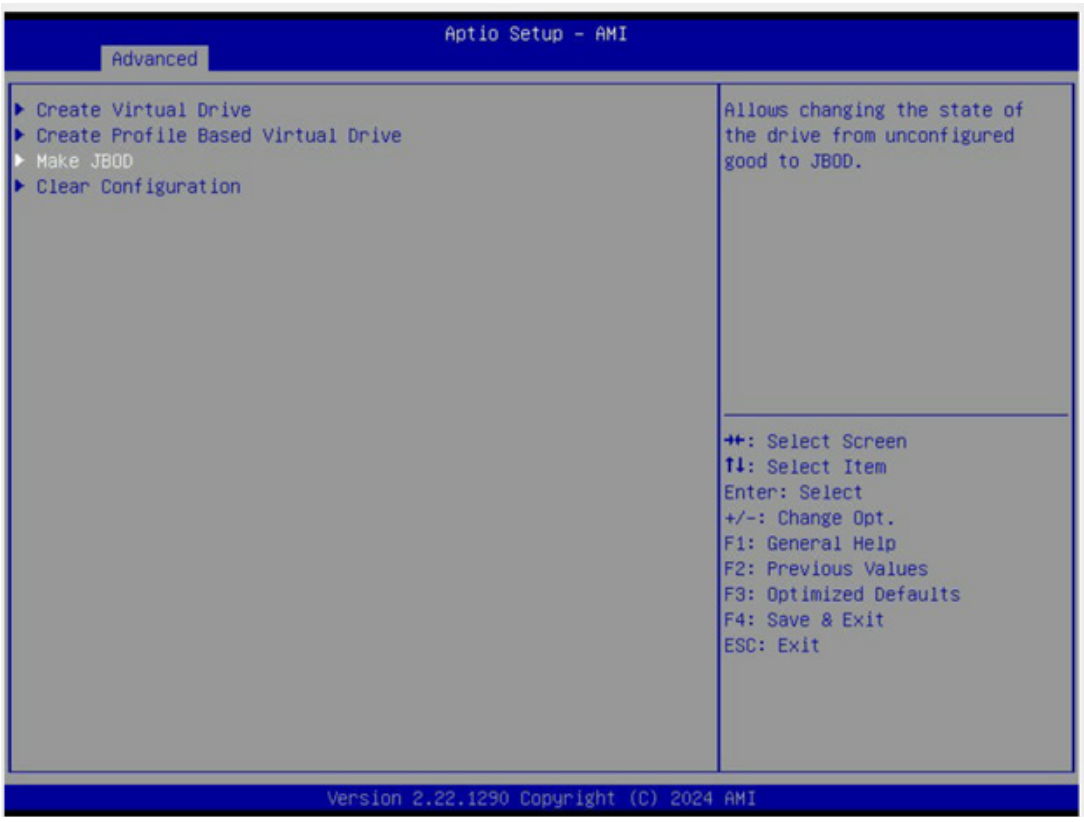


Figure 5-29: Make JBOD Selected

9. Select drive.
10. Choose **Enabled**.

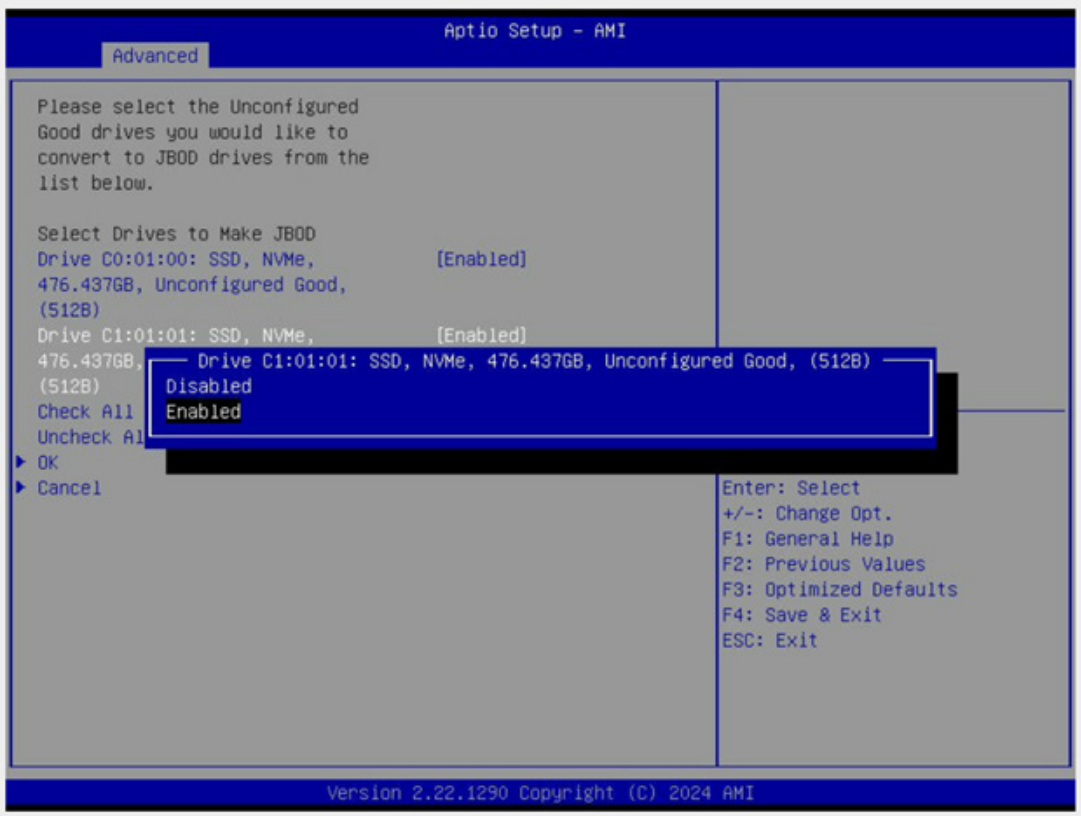


Figure 5-30: Enabled Selected

11. Select **OK** to commit to the changes.

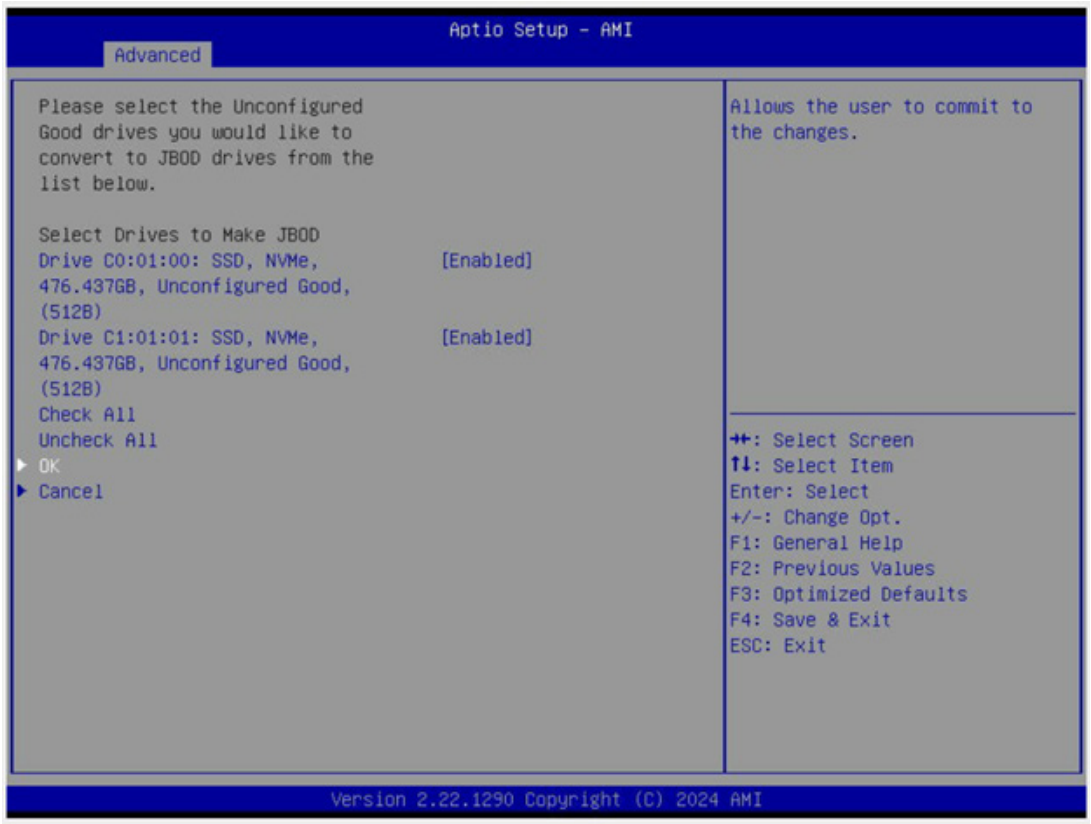


Figure 5-31: OK Option Selected

12. Select **OK** to proceed.

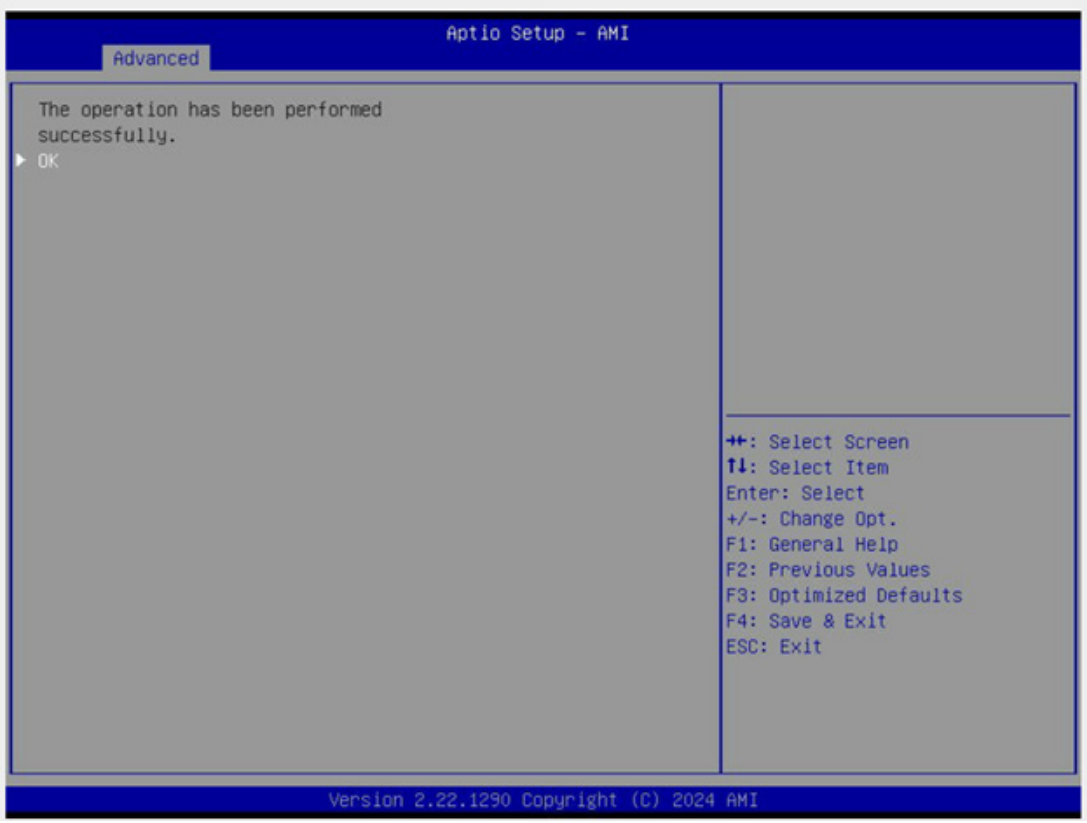


Figure 5-32: OK Option Selected

The drives will display the JBOD state in the listings.

Figure 5-33: Drive Selected

5.6 Managing Unconfigured Good State

Under certain conditions, such as when the add-on card has been in JBOD mode, the drive state will change to JBOD. To build a Virtual Drive (VD) or RAID, the drive state must be reset as **Unconfigured Good**. To do so, JBOD Mode must first be disabled. Follow these steps to change the drive state to **Unconfigured Good**. Use the arrow keys to highlight the chosen option, and press <Enter> to select. Click <Esc> to exit an option menu or return to the previous page.

1. Navigate to **Controller** to enter the **Main Menu**.
2. Select to enter **Drive Management**, which will list all drives. When **JBOD Mode** is enabled, the drive state will be **JBOD**.

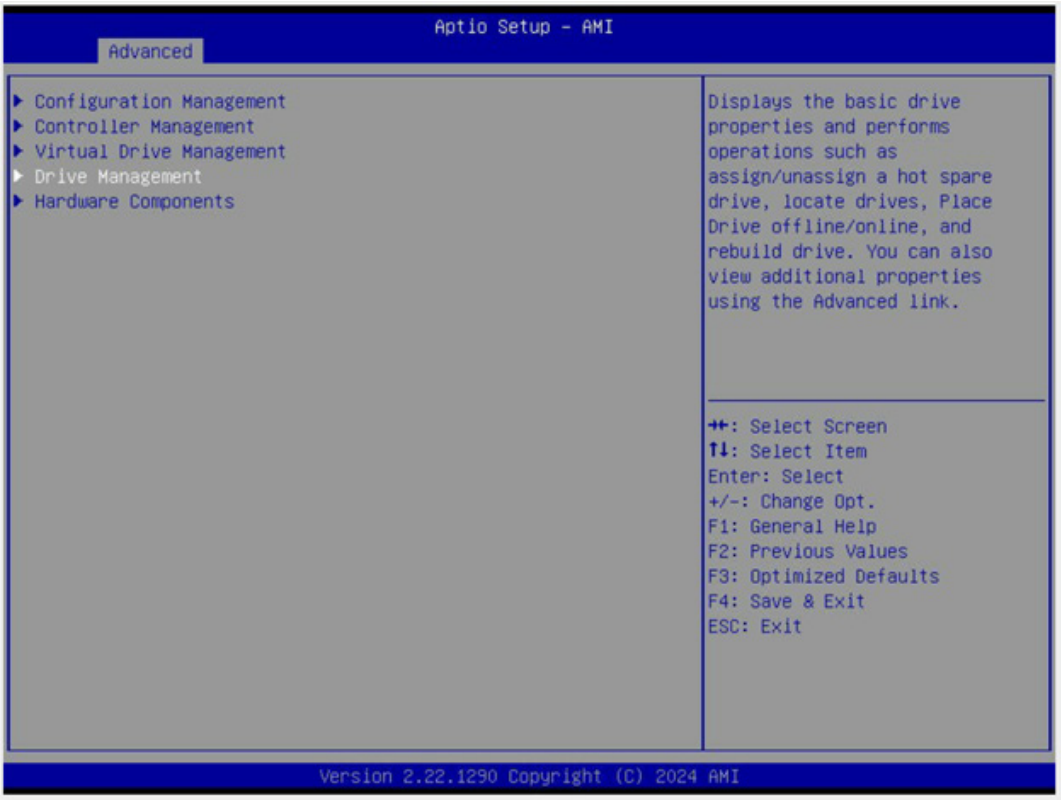


Figure 5-34: Drive Management Selected

Figure 5-35: Drive Selected

3. Once the drive is chosen, select **Operation**. The options will include **Select operation**, **Start Locate, Stop Locate, Make Unconfigured Good**, and **Make Bootable Drive**.

4. Select **Make Unconfigured Good**.

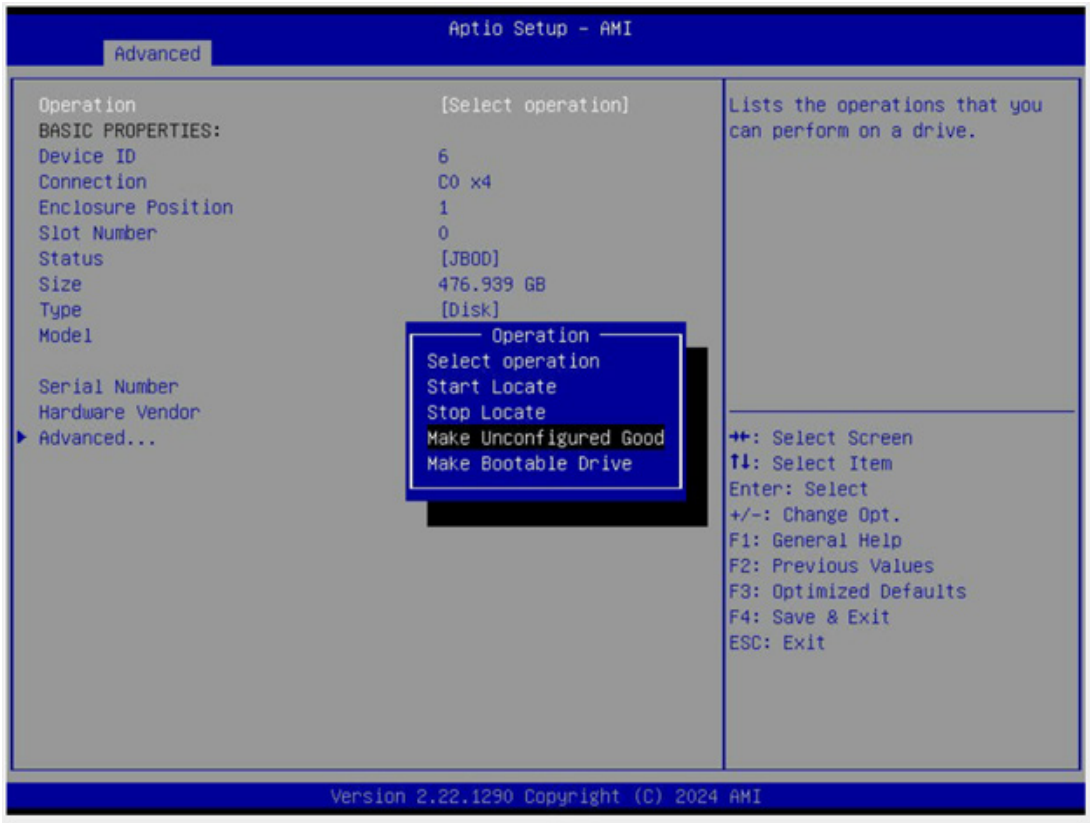


Figure 5-36: Make Unconfigured Good Selected

5. Select **Go**.

Figure 5-37: Go Option Selected

6. There will be a warning message that any existing data in the JBOD drive will be lost if you proceed. To proceed and make the **Yes** option available to select, first select **Confirm**.
7. Select **Enabled** to enable the **Yes** option.
8. Select **Yes**. If you do not want to proceed with changes, select **No**.

Figure 5-38: Yes Option Selected

Note: Unconfigured Goods can also set the drive state by entering the following StorCLI command.

```
storcli /cx/ex/sx set good force
```

9. Select a drive.

Chapter 6

Secure Boot Settings

Secure boot is a Unified Extensible Firmware Interface (UEFI) feature that ensures boot loaders are digitally signed and validated. This chapter provides instructions on how to enable the secure boot features. Use the arrow keys to highlight the chosen option, and press <Enter> to select. Click <Esc> to exit an option menu or return to the previous page.

6.1 Boot Mode Select Feature

1. Press **<DEL>** during system boot to enter the **BIOS Setup Utility**.
2. Navigate to the **Boot** tab.
3. Select **Boot Mode Select**. The options are **LEGACY**, **UEFI**, and **DUAL**.
4. Set **Boot Mode Select** to **UEFI**.
5. For the changes to take effect, press **<F4>** to save the settings.
6. Exit the BIOS Setup Utility.

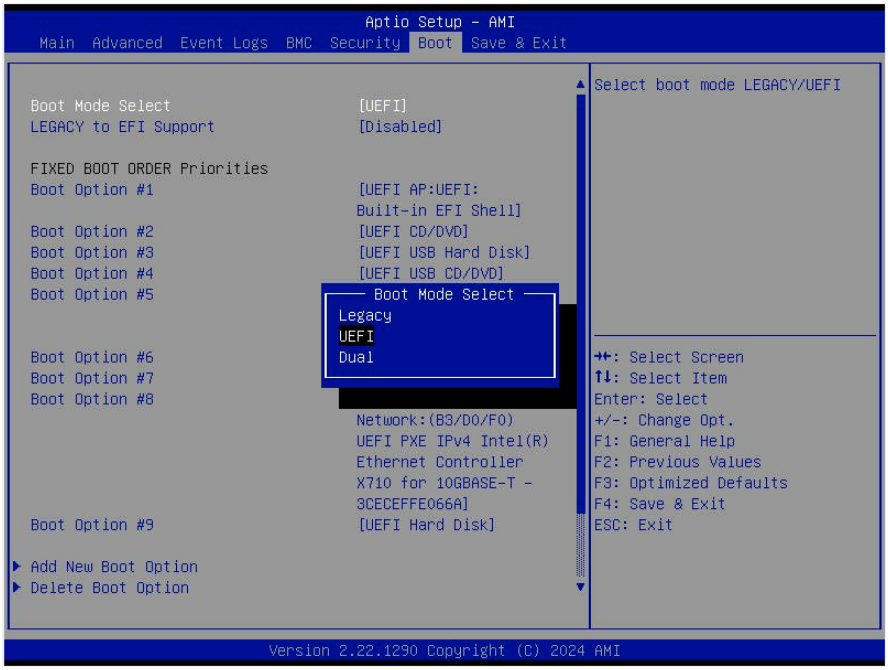


Figure 6-1: Boot Mode Select Menu

6.2 Secure Boot/Secure Boot Mode/CSM Support Features

1. Press **<DEL>** during system boot to enter the **BIOS Setup Utility**.
2. Navigate to the **Security** tab.

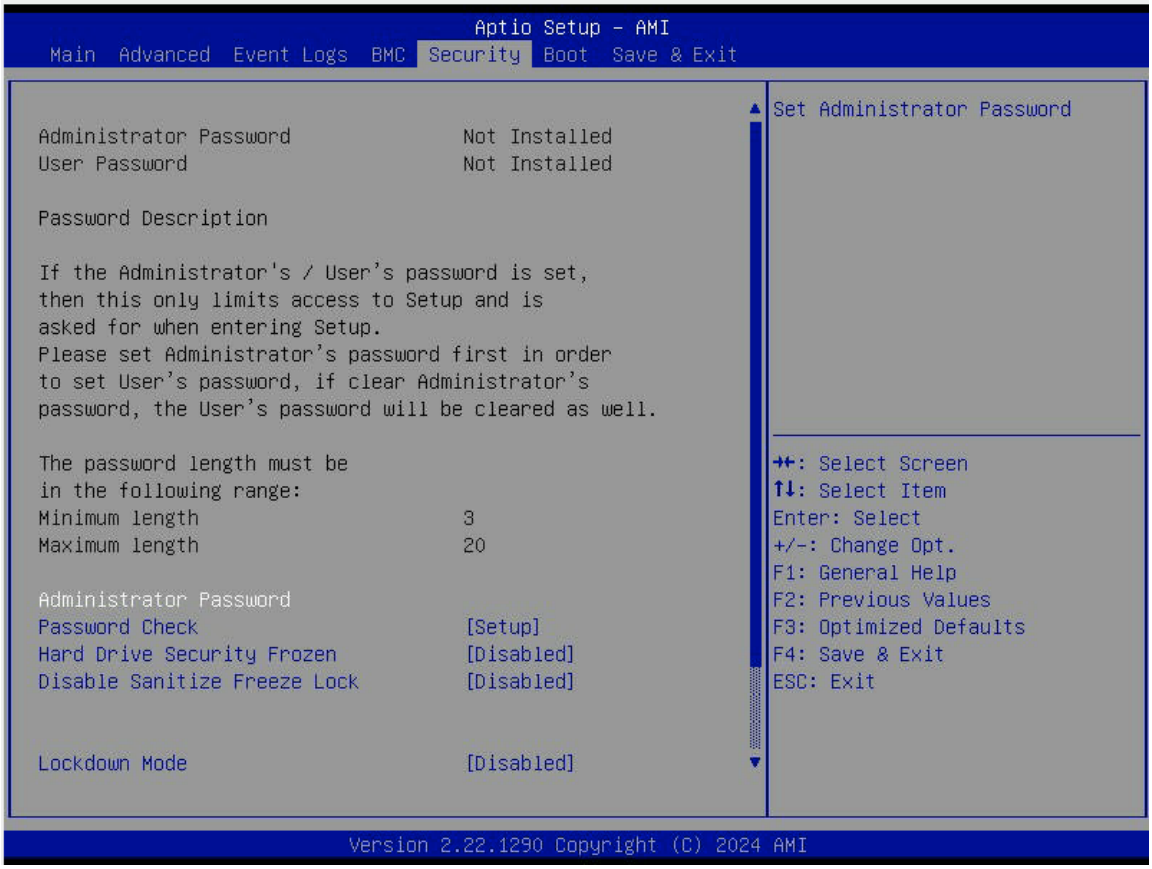


Figure 6-2: Security Tab

3. Select **Secure Boot** to access the menu items.

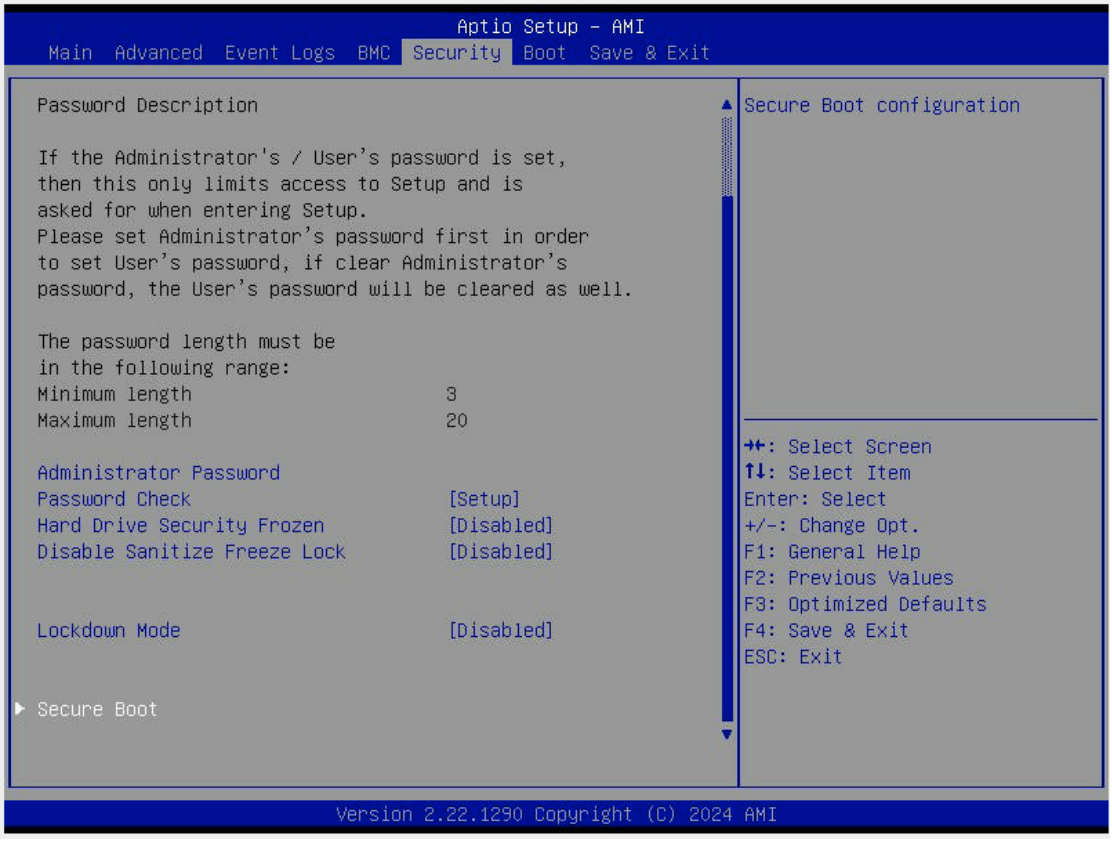


Figure 6-3: Secure Boot Selected

Secure Boot

This feature is available when the Platform Key (PK) is pre-registered where the platform operates in the User mode and Compatibility Support Module (CSM) support is disabled in the BIOS Setup Utility. Select Enabled for secure boot flow control. The options are **Disabled** and Enabled.

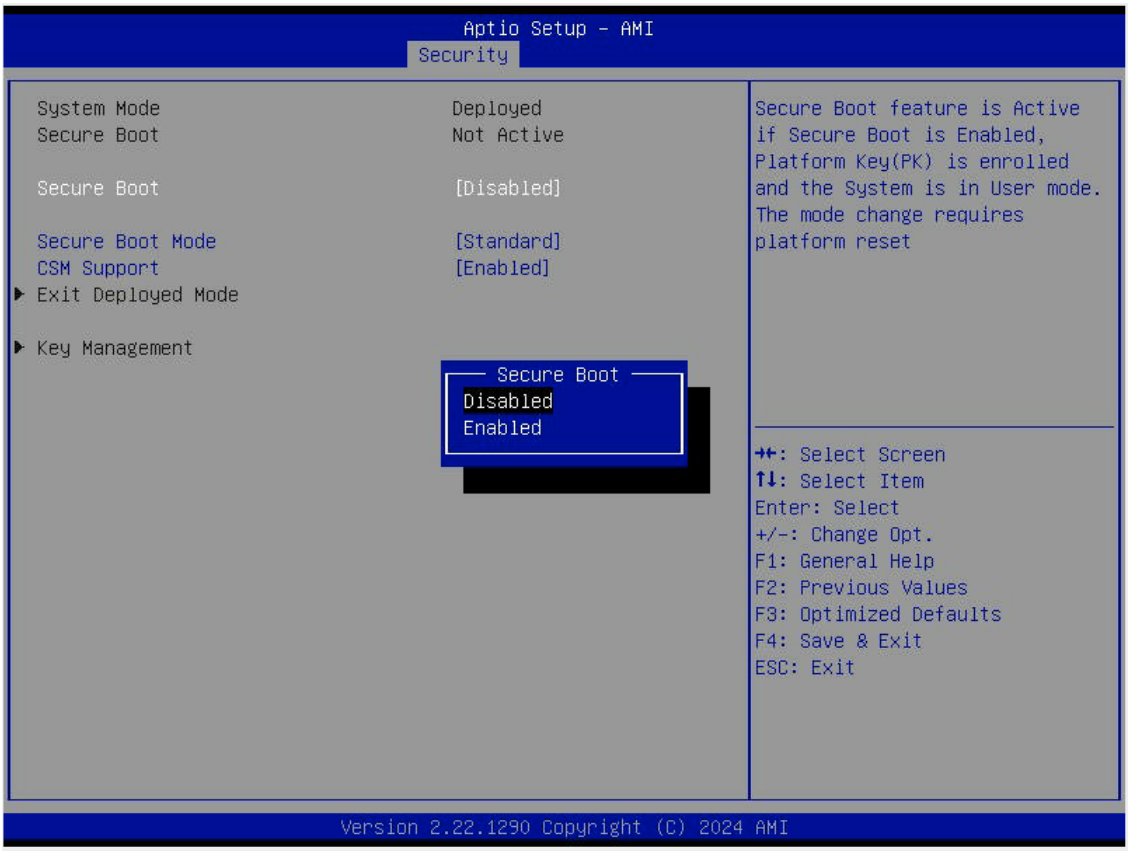


Figure 6-4: Secure Boot Disabled Selected

Secure Boot Mode

Use this feature to set the secure boot mode. The options are Standard and **Custom**. Select Standard to load the manufacturer's default secure variables. Select Custom to change the image execution policy and to manage secure boot keys.

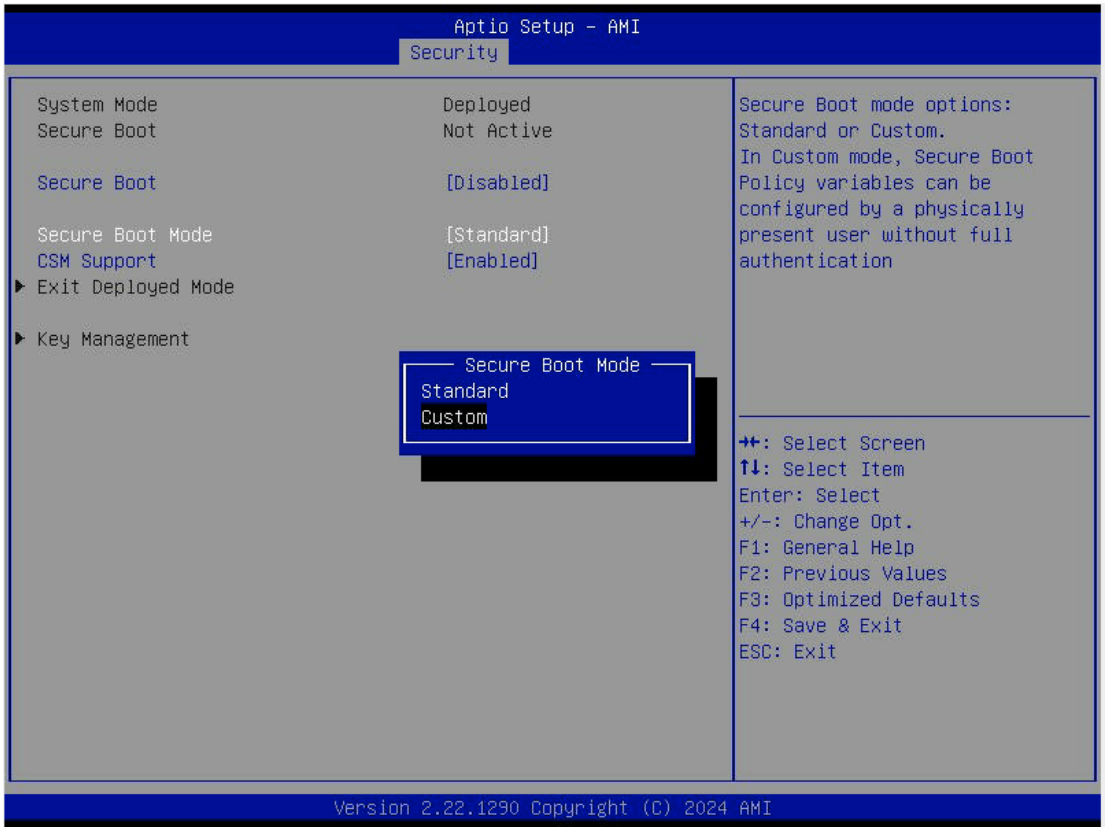


Figure 6-5: Secure Boot Custom Selected

CSM Support

Select Enabled for legacy Compatibility Support Module (CSM) support, which will provide compatibility support for traditional legacy BIOS used for system boot.

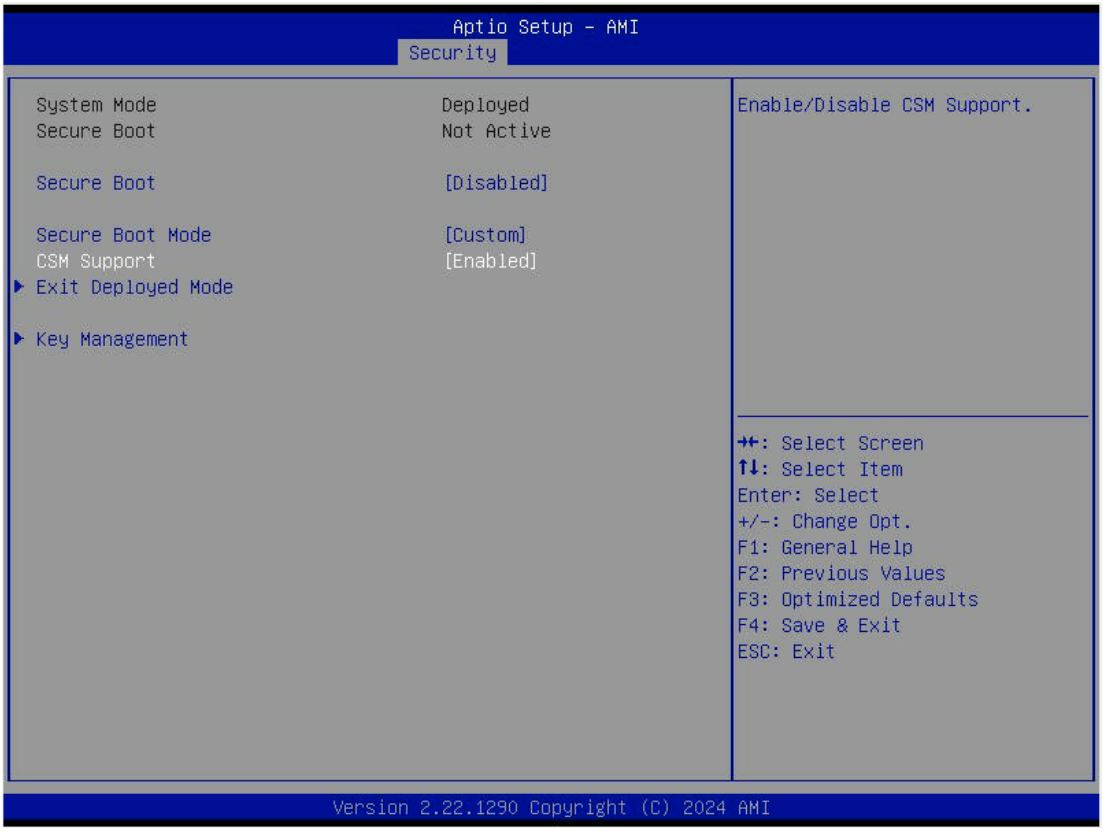


Figure 6-6: CSM Support Selected

The options are Disabled and **Enabled**.

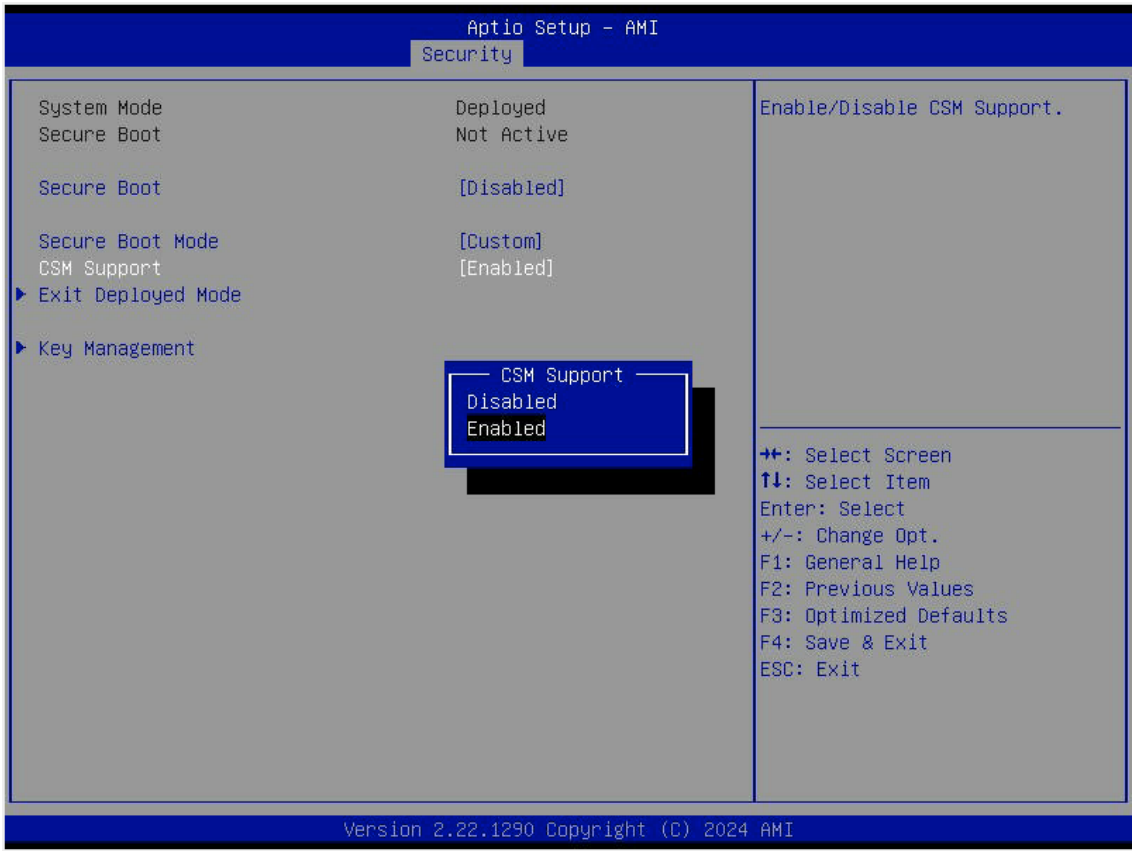


Figure 6-7: CSM Support Enabled Selected

6.3 Secure Boot Settings

To have secure boot support, follow the steps below:

1. Set **Secure Boot Mode** to **Standard**.

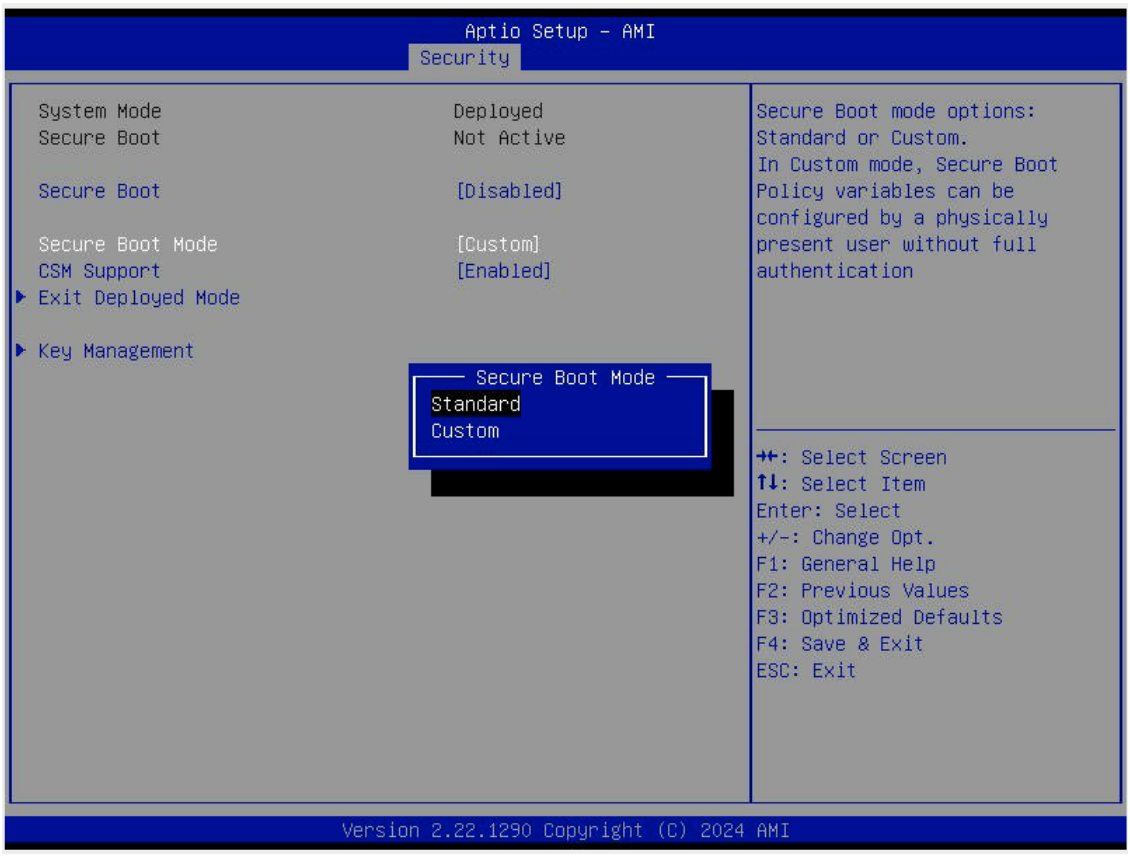


Figure 6-8: Secure Boot Mode Standard Option Selected

2. Press **Yes** to install factory default keys as needed.

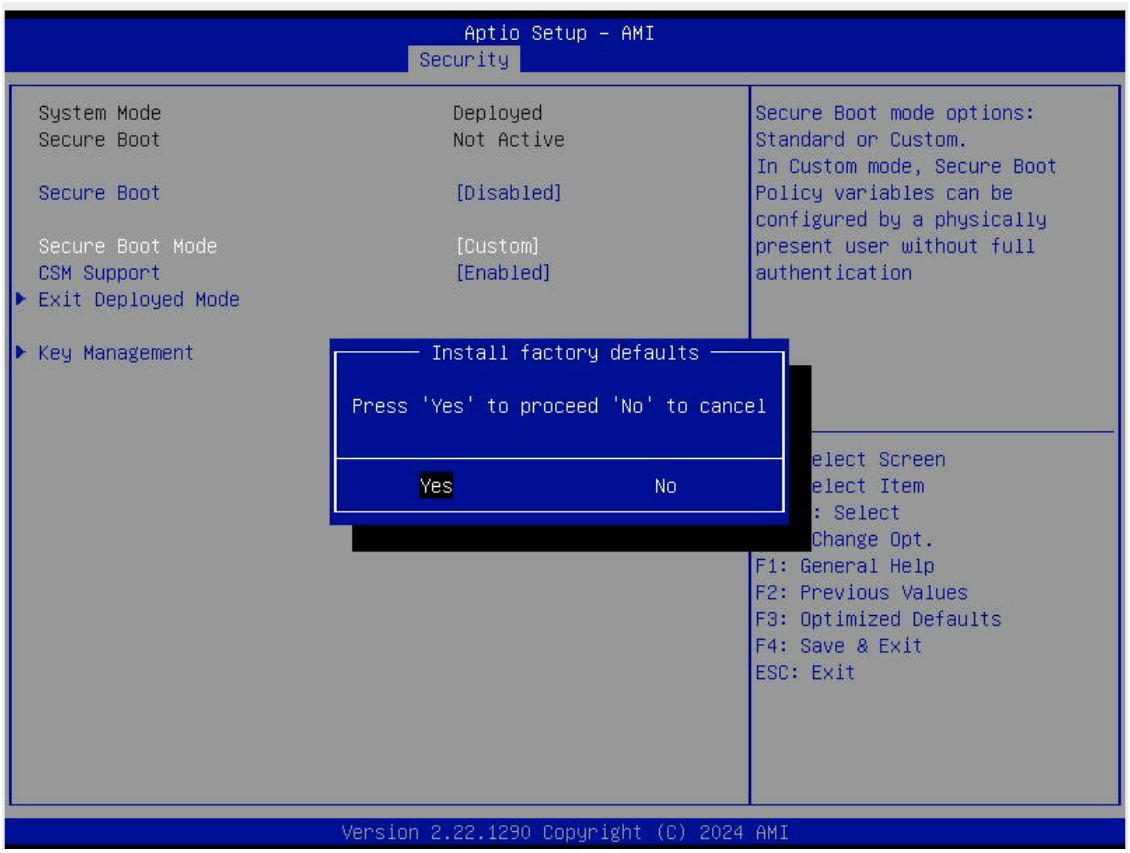


Figure 6-9: Confirming to Install Factory Defaults

Note: The Key Management menu will become unavailable when Secure Boot Mode is set to Standard.

3. For the changes to take effect, press **<F4>** to save the settings.
4. Exit the **BIOS Setup Utility**.
5. Press **<DEL>** during system boot to enter the **BIOS Setup Utility**.

6. Navigate to the **Security** tab.

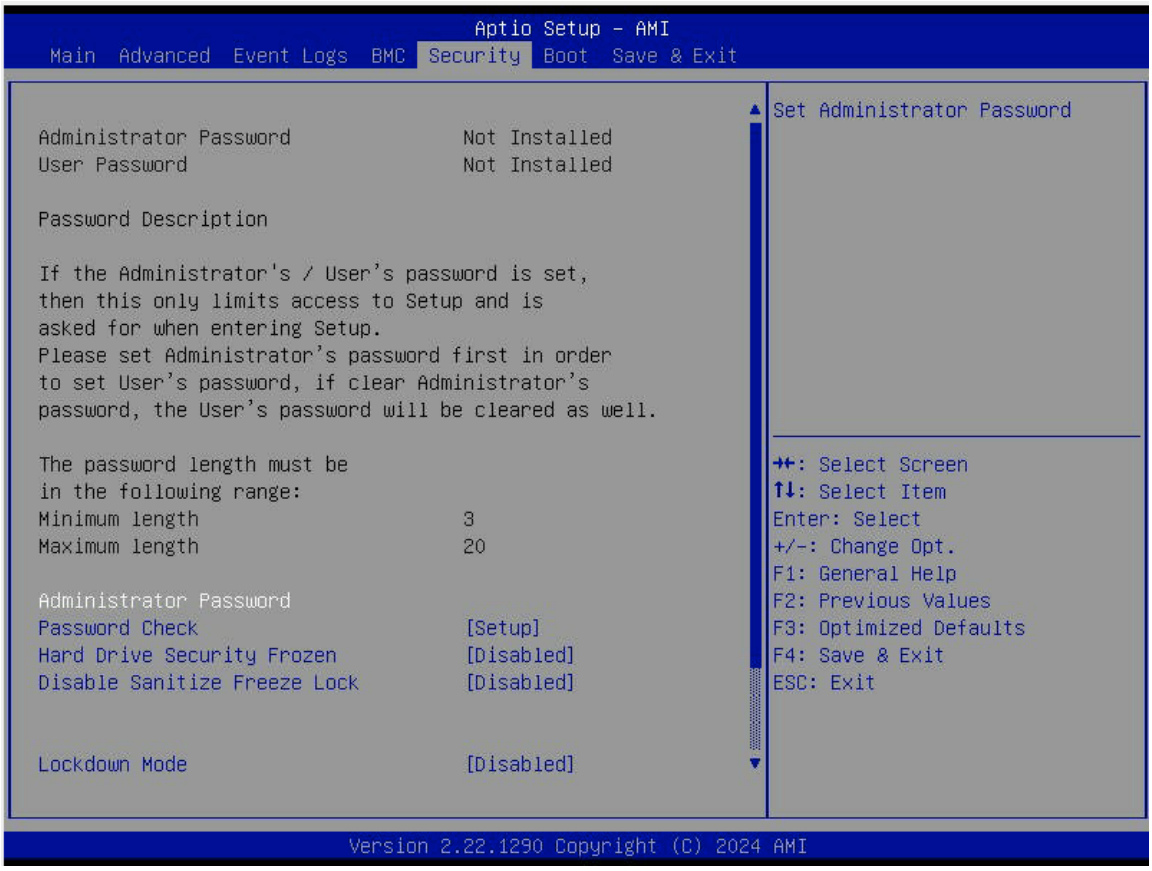


Figure 6-10: Security Tab Main Menu

7. Enter the **Secure Boot** menu.

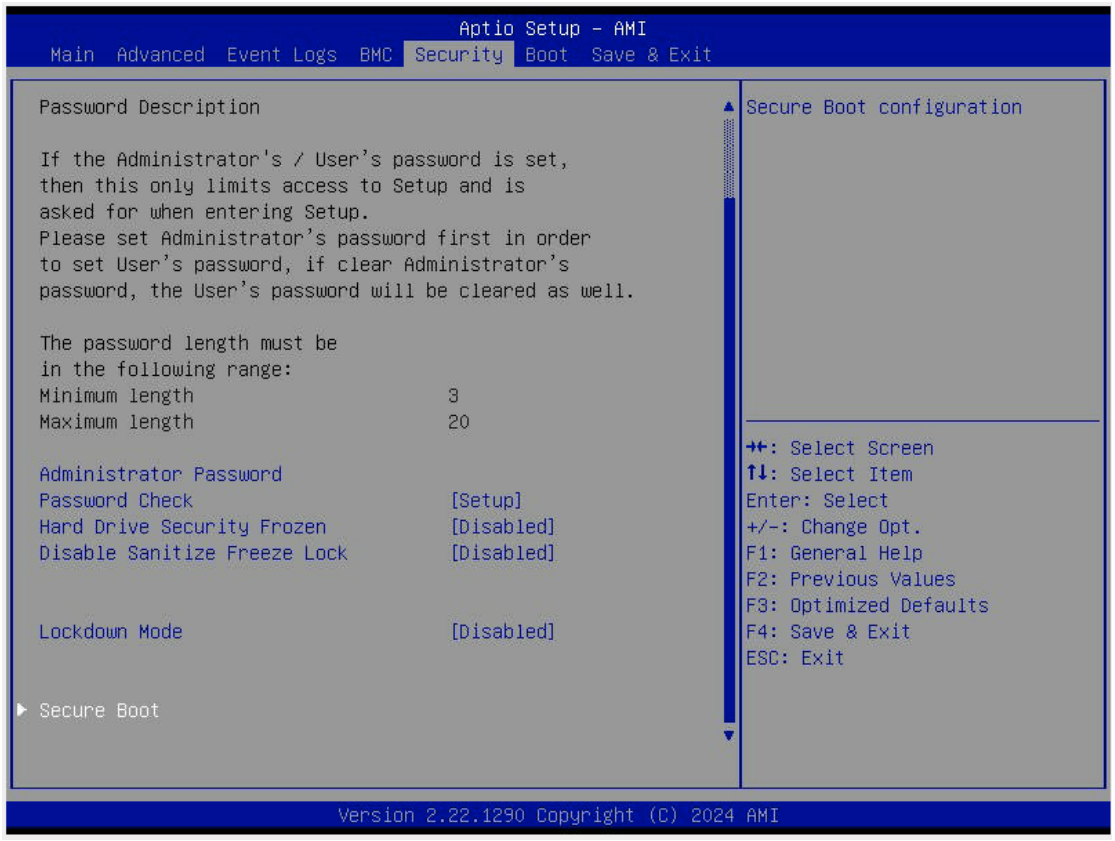


Figure 6-11: Secure Boot Selected

8. Navigate to the **CSM Support** option.

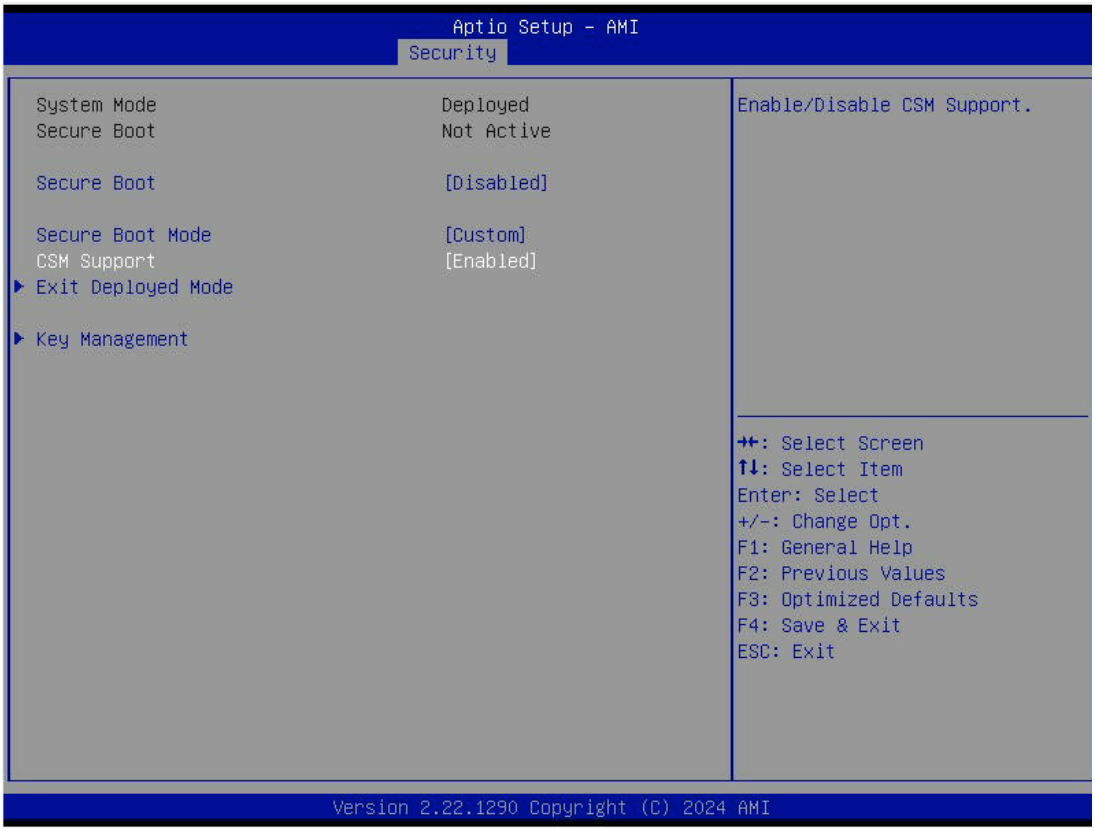


Figure 6-12: CSM Support Selected

9. Set it to **Disabled**.

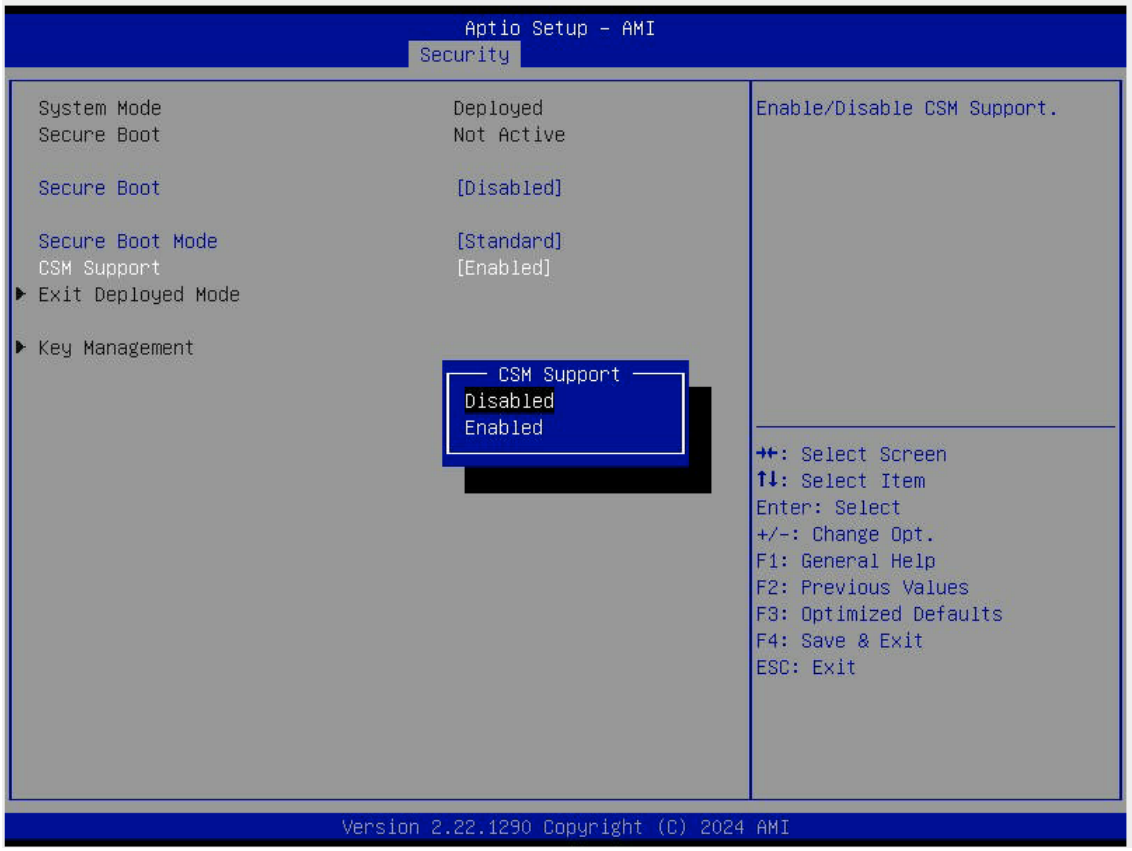


Figure 6-13: CSM Support Disabled

10. For the changes to take effect, press **<F4>** to save the settings.

11. Exit the BIOS Setup Utility.

12. Press **<DEL>** during system boot to enter the BIOS Setup Utility.

13. Navigate to the **Security** tab.

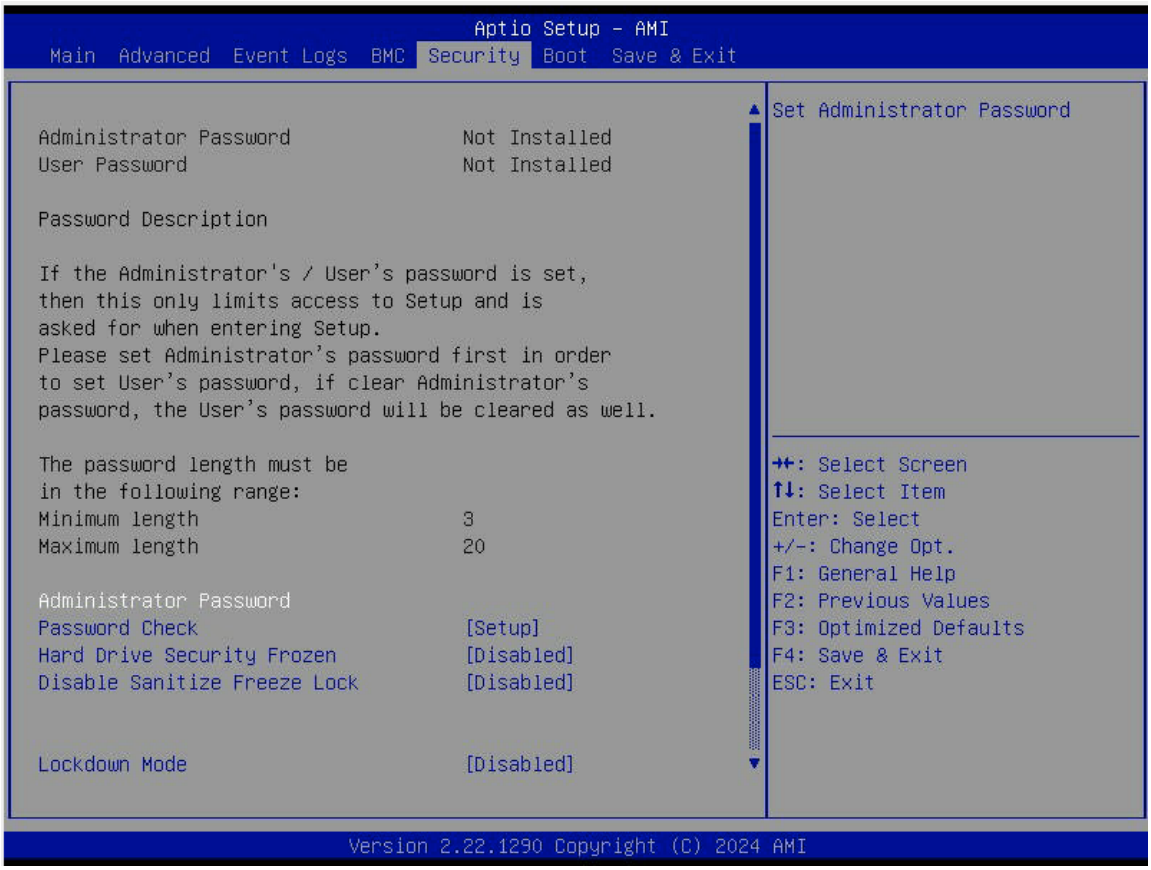


Figure 6-14: Security Tab Main Menu

14. Enter the **Secure Boot** menu.

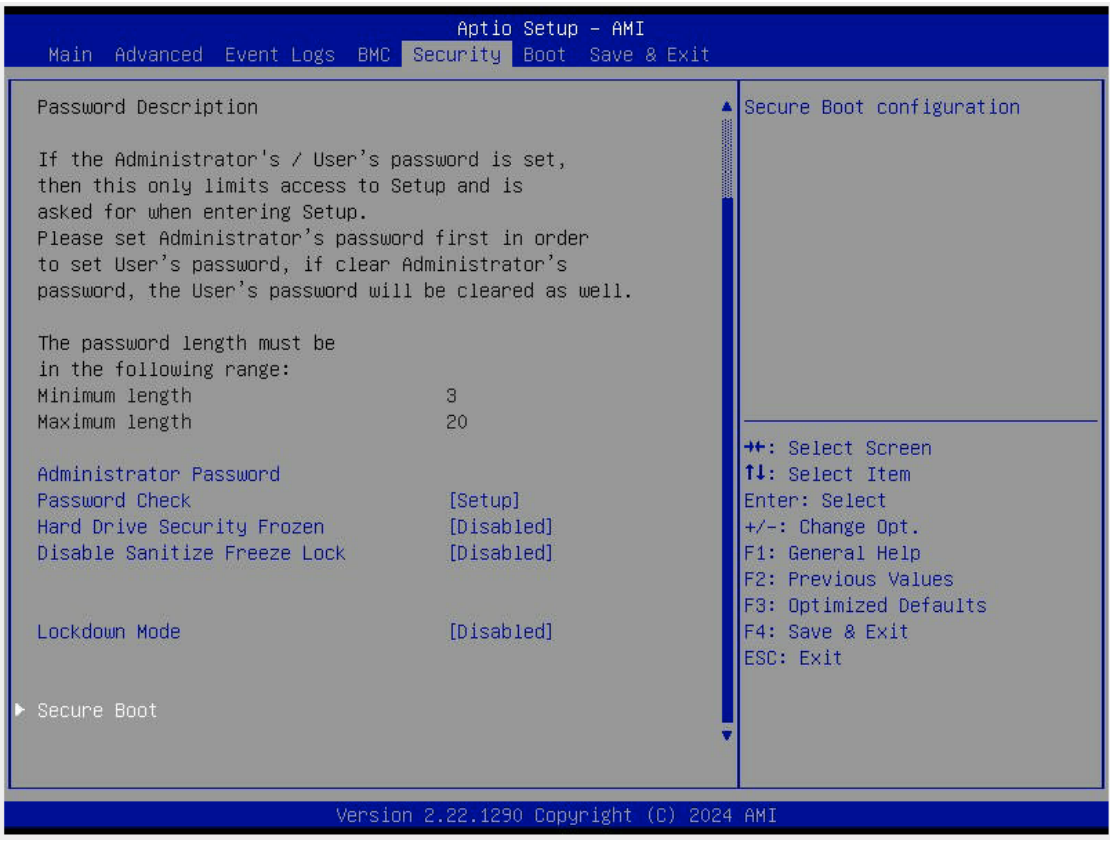


Figure 6-15: Secure Boot Selected

15. Set **Secure Boot** to **Enabled**.

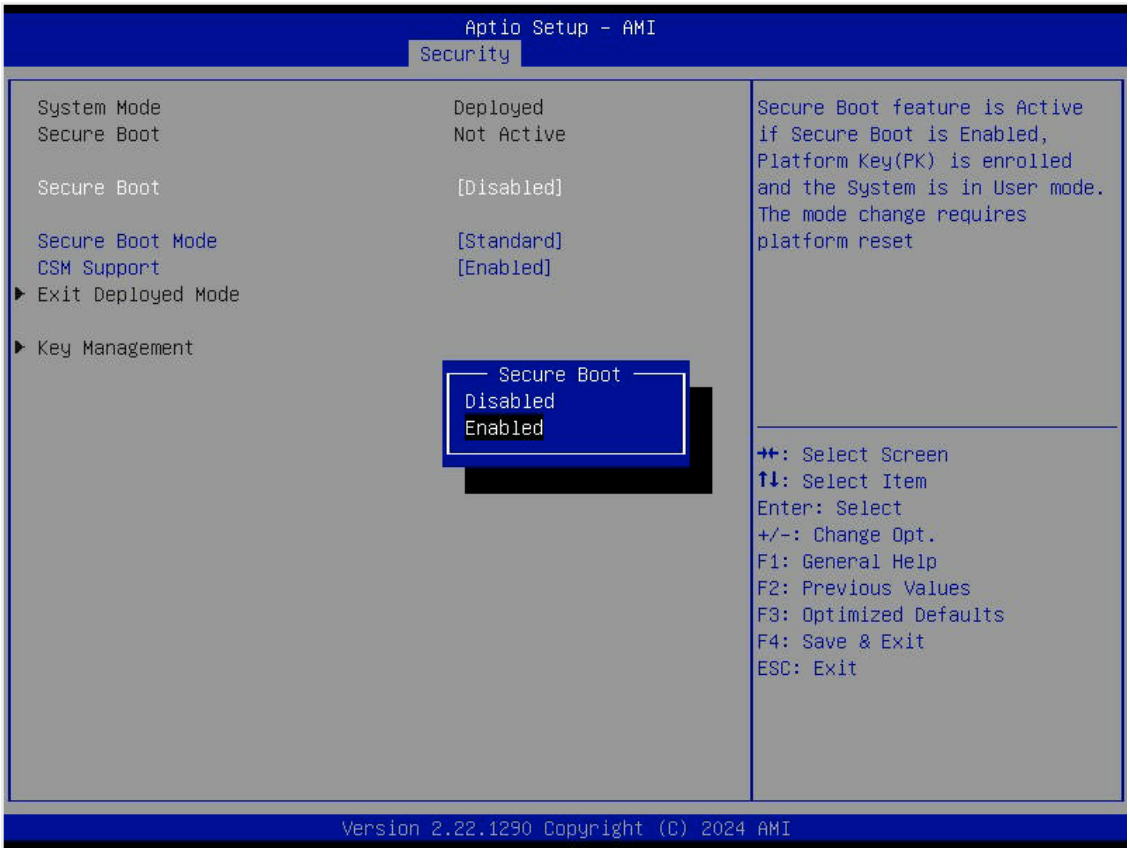


Figure 6-16: Secure Boot Enabled Selected

16. For the changes to take effect, press **<F4>** to save the settings.
17. Exit the **BIOS Setup Utility**.
18. Press **<DEL>** during system boot to enter the **BIOS Setup Utility**.

19. Navigate to the **Security** tab.

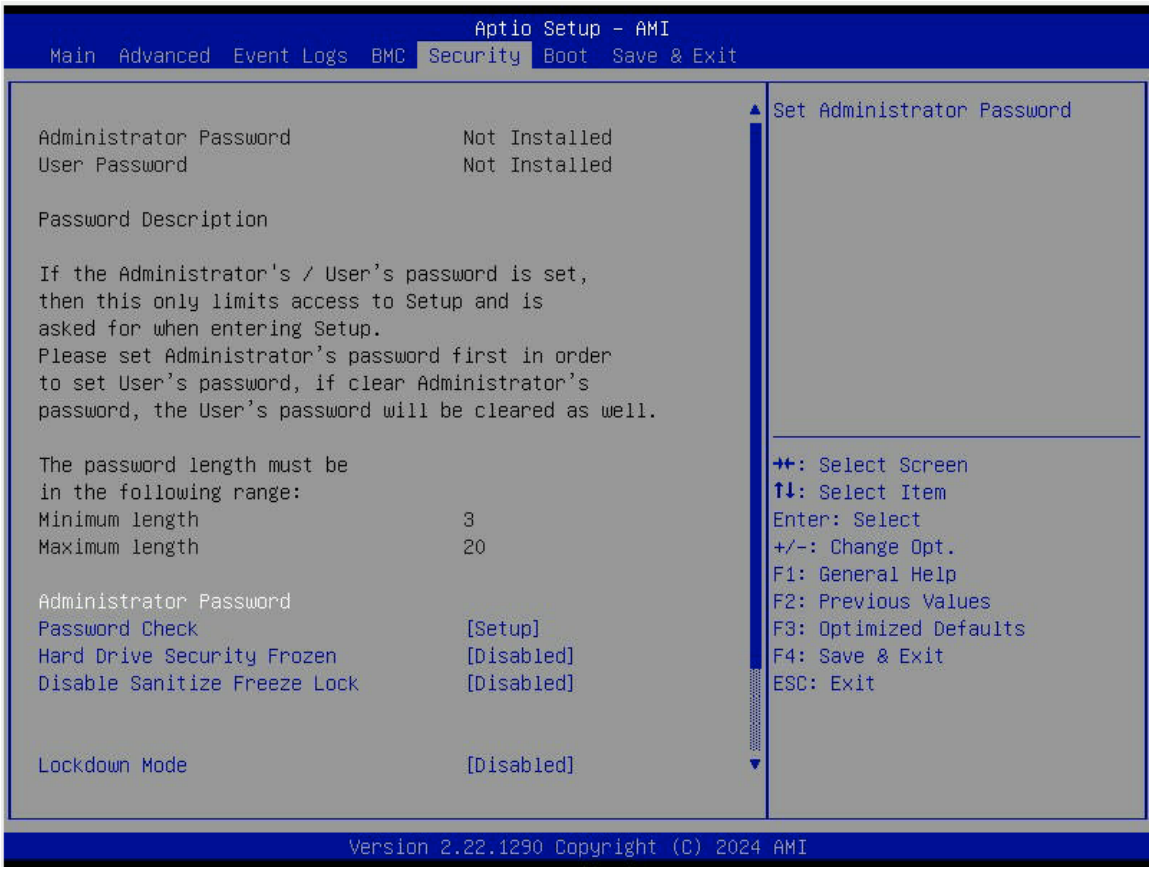


Figure 6-17: Security Tab Main Menu

20. Enter the **Secure Boot** menu.

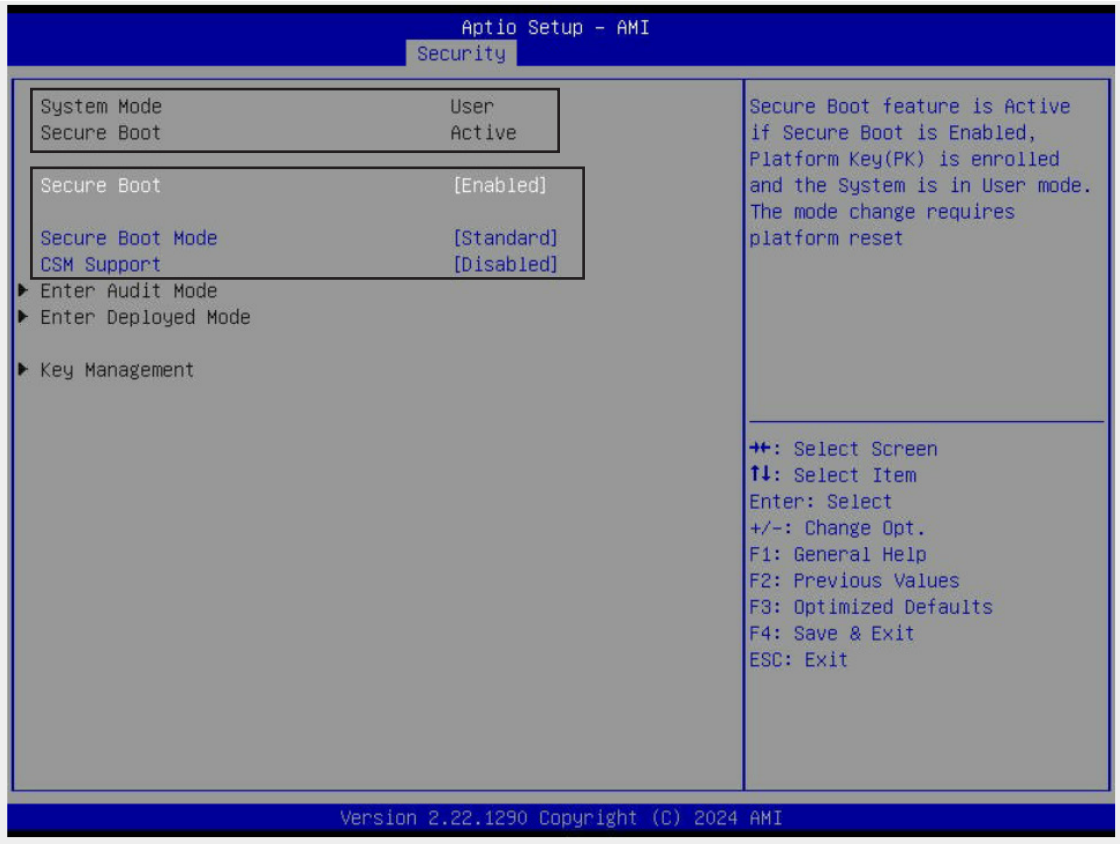


Figure 6-18: Security Boot Selected

Note: Once Secure Boot is enabled, CSM Support will become disabled and the legacy environment is no longer valid. The authorized UEFI support includes UEFI OS, AOC UEFI FW, and UEFI PXE server.

21. Now that **Secure Boot** is enabled, navigate to the **Advanced** tab.

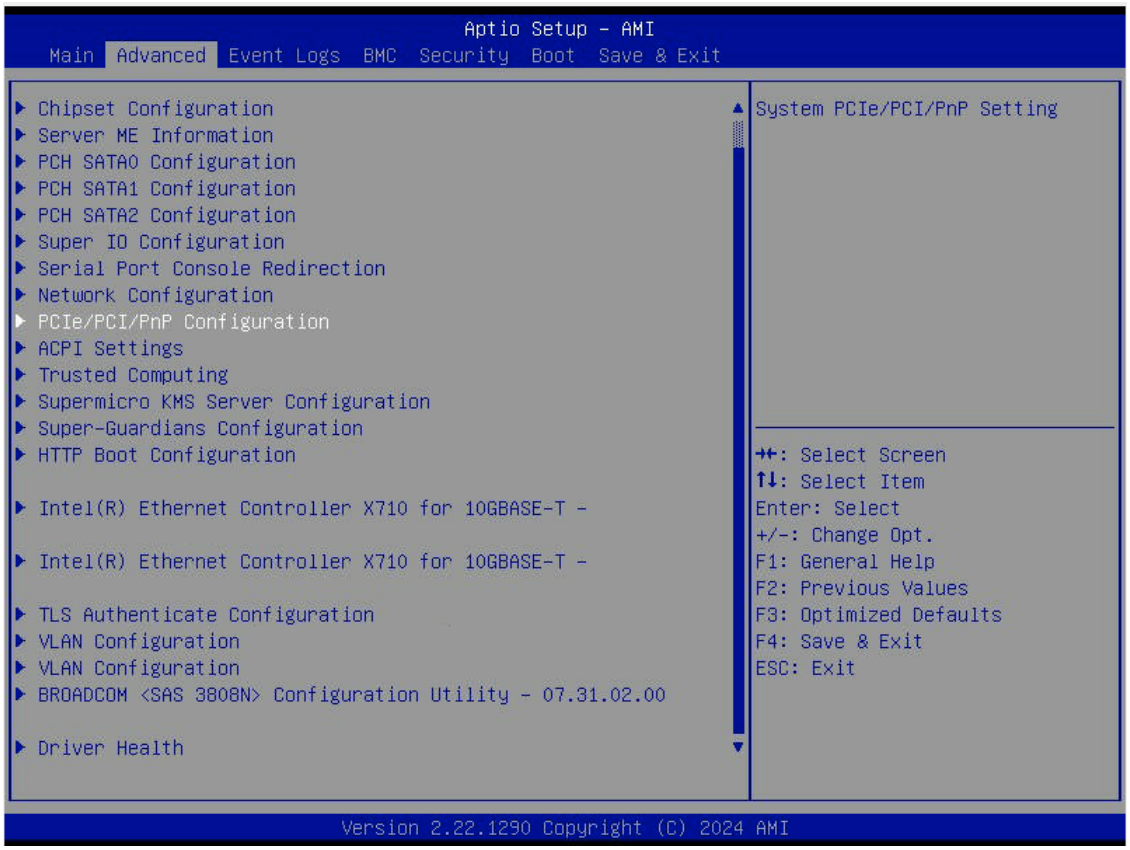


Figure 6-19: Advanced Menu

22. Select **BROADCOM <SAS 3808N> Configuration Utility**. The BROADCOM <SAS 3808N> Configuration Utility Advanced Menu will appear.

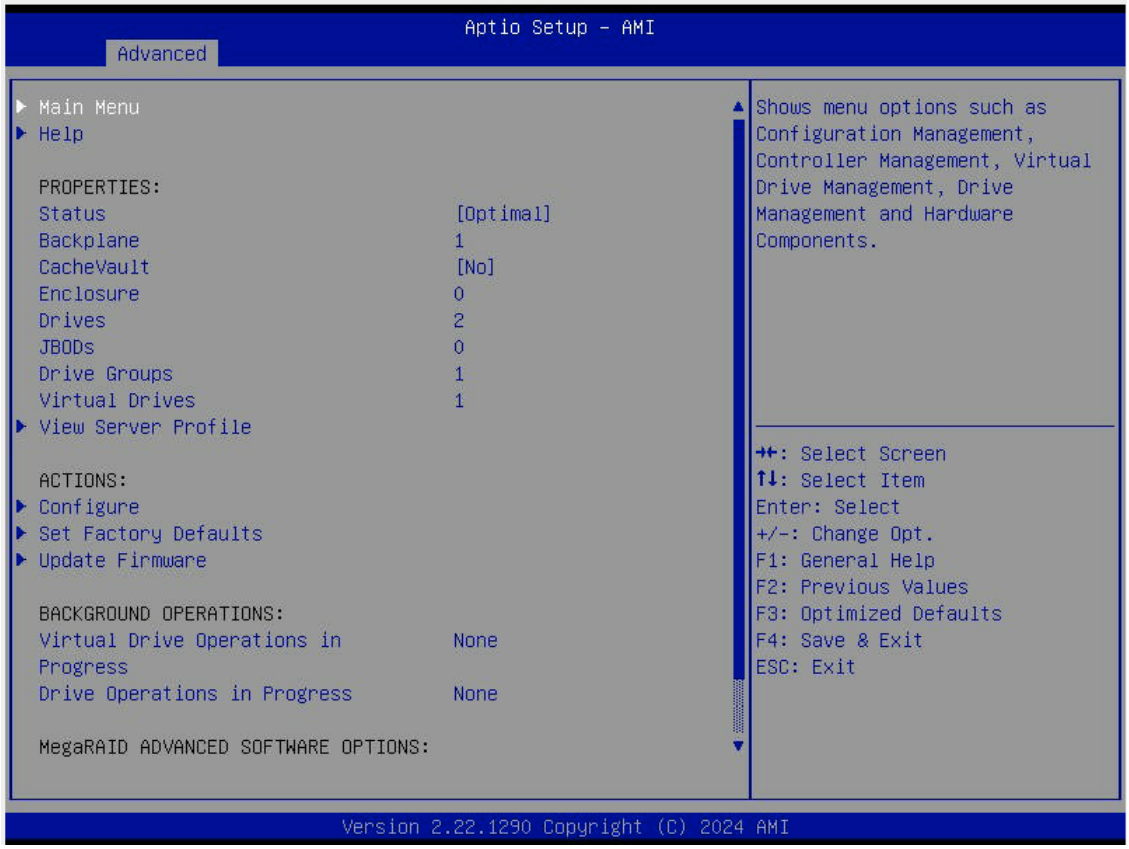


Figure 6-20: BROADCOM <SAS 3808N> Configuration Advanced Menu

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