

Configure Boot with HW RAID on C-Series M6 Servers

Contents

[Introduction](#)

[Prerequisites](#)

[Components Used](#)

[Background Information](#)

[Configure](#)

[Verify](#)

[Troubleshoot](#)

[Related Information](#)

Introduction

This document describes the steps to configure Cisco Boot-optimized M.2 RAID controller on Standalone C-Series via Cisco Integrated Manager Controller.

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Prerequisites

Cisco recommends that you have knowledge of these topics:

- Cisco Integrated Management Controller (CIMC)
- RAID Configuration

Components Used

The information in this document is based on these software and hardware versions:

- UCSC-C220-M6S
- CIMC Version: 4.2(1a)
- M.2 Drives
- UCS-M2-HWRAID
- PCIe Slot MSTOR-RAID
- Model: ATA
- Type: SSD
- ESXI 7.0 U2

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Background Information

On C220 M6 and C240 M6 servers, you have the option to use two SATA M.2 modules and configure them from CIMC as RAID 0 or 1 for Booting.

There are two types of controllers that can be chosen for M.2 modules, Noe Valley (UCS-M2-HWRAID) and Fort Point (UCS-MSTOR-M2).

Fort Point M.2 module

- SATA is GEN3 from PCH sSATA controller
- PCIe is GEN3 x2
- I2C OOB from Pilot4
- Cannot mix SATA and PCIe M.2 modules
- SATA, AHCI mode only

Noe Valley M.2 module

- SATA from RAID Controller
- Hardware RAID 0/1 support
- No PCIe M.2 support

Configure

Verify the current physical and virtual drive information

- From the CIMC menu, select **Storage**, then select the **Cisco Boot optimized M.2 Raid controller (MSTOR-RAID)**.
- Select **Physical Drive Info**.
- Verify drives are correctly read and health is **Good**.

The screenshot shows the Cisco Integrated Management Controller (CIMC) interface. The breadcrumb navigation indicates the path: / ... / Cisco Boot optimized M.2 Raid controller (MSTOR-RAID) / Physical Drive Info. The left sidebar shows the 'Storage' menu expanded, with 'Cisco Boot optimized M.2 Rai...' selected. The main content area has three tabs: 'Controller Info', 'Physical Drive Info', and 'Virtual Drive Info'. The 'Physical Drive Info' tab is active, showing a 'Physical Drives' section with a list of drives. The table below shows the details for these drives.


Controller	Physical Drive Number	Status	State	Health
MSTOR-RAID	253	JBOD	JBOD	Good
MSTOR-RAID	254	JBOD	JBOD	Good

Create Virtual Drive from Controller Info Tab

- Navigate to the option **Create Virtual Drive from Unused Physical Drives**.

Controller Info | Physical Drive Info | Virtual Drive Info

Create Virtual Drive from Unused Physical Drives | Import Foreign Config | Clear Foreign Config

▼ Health/Status 

Composite Health: ✔ Good

Controller Status: Optimal

Operation Status: No operation in progress

Progress in %: 0

▼ Running Firmware Images

BIC

Firmwa

Boot Blo

▼ Firmware Versions

Product Name: Cisco Boot optimized M.2 Raid controller ?

Product PID: UCS-M2-HWRAID

Serial Number: FCH24177ADW

Firmware Package Build: 2.3.17.1014

▼ Virtual Drive Count

Virtual Di

Degraded Di

Offline Di

▼ PCI Info

PCI Slot: MSTOR-RAID

Vendor ID: 1b4b

Device ID: 9230

Sub Vendor ID: 1137

SubDevice ID: 251

▼ Physical Drive Count

Disk Pres

Critical D

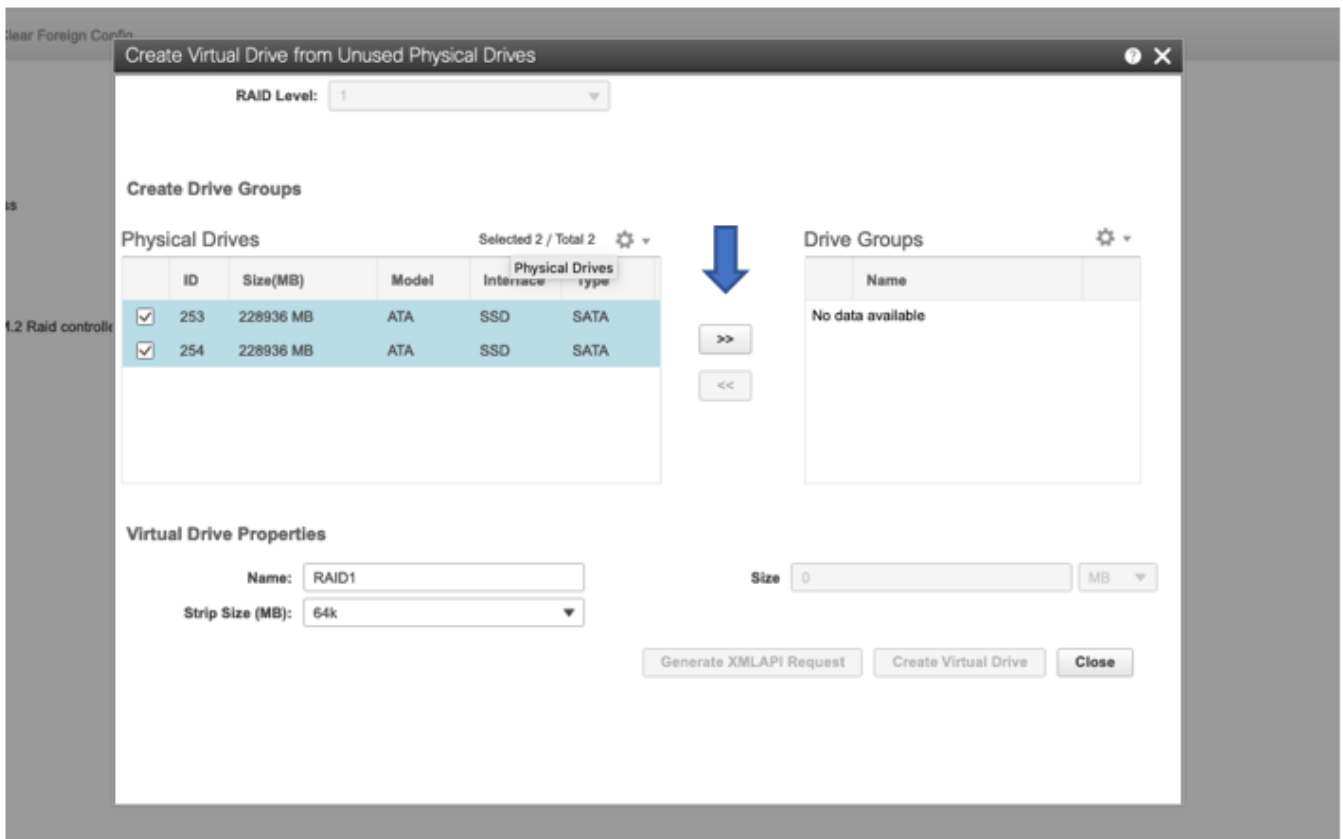
Failed D

► Capabilities

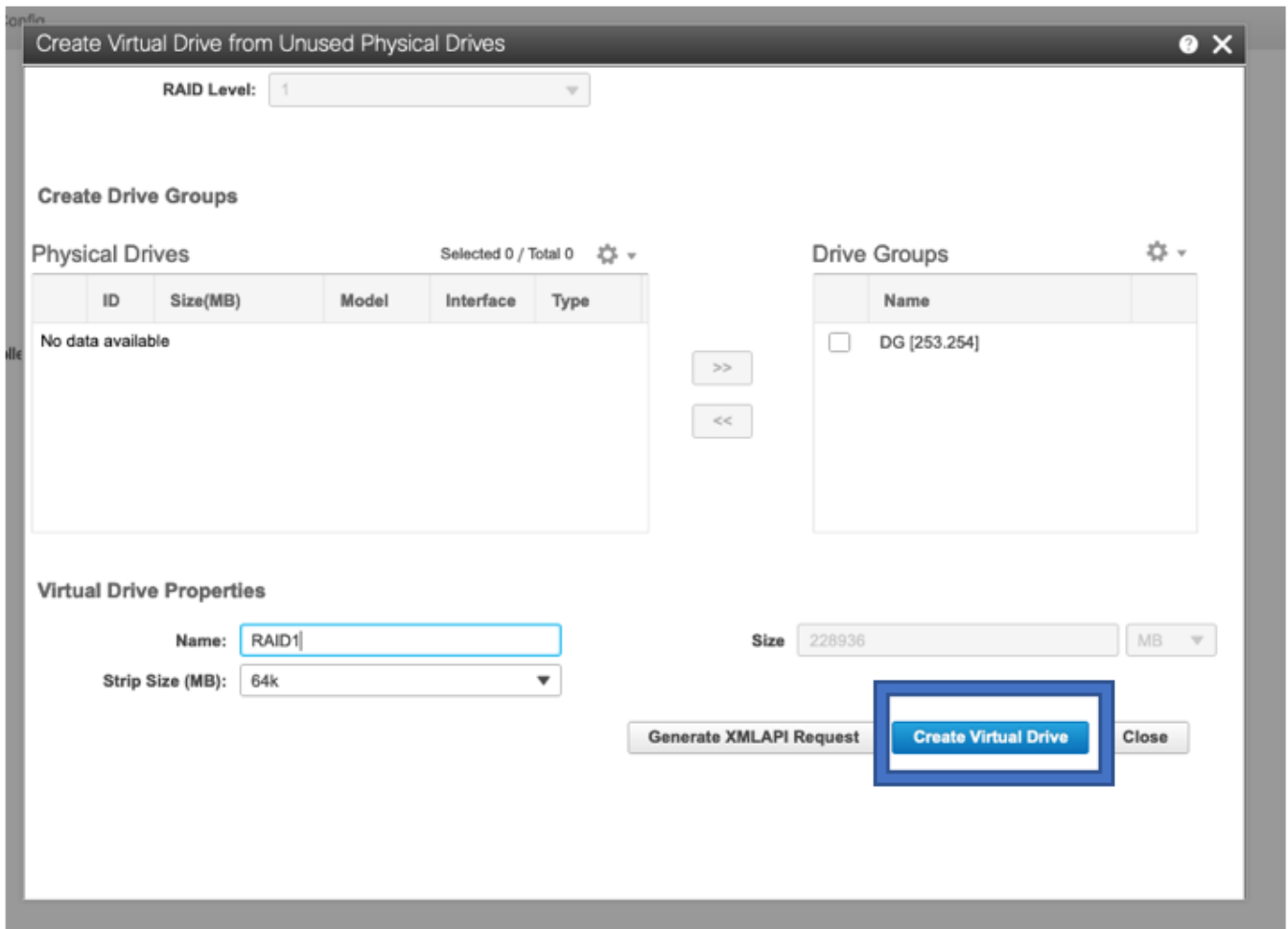
► HW Configuration

- Select M.2 drives and click on the arrow in order to move them into **Drive Groups**.
- You can select RAID Level 0 or 1.

 **Note:** for **UCS-M2-HWRAID**, RAID 1 is the only option.

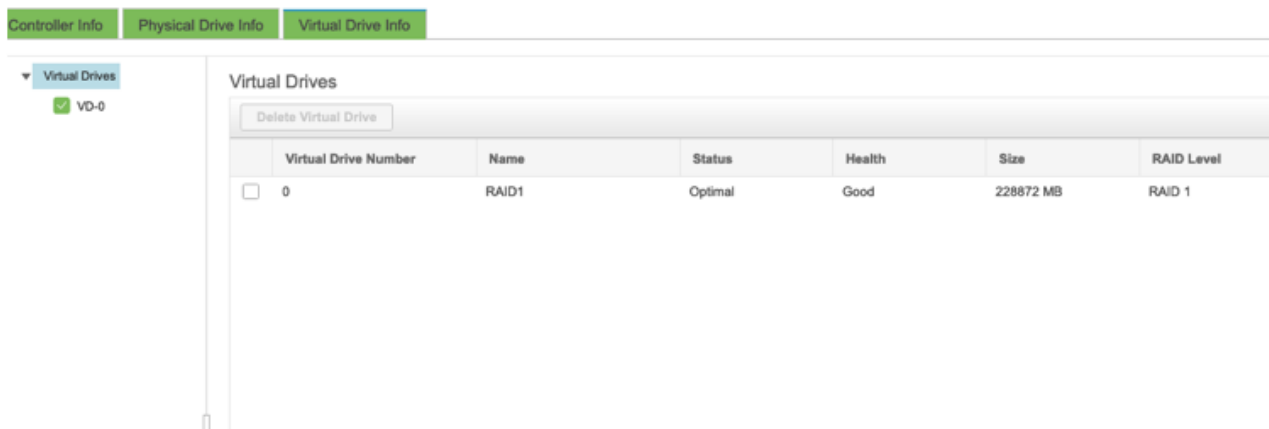


- Optionally you can modify the virtual Drive name and strip size.
- Click **Create Virtual Drive**.



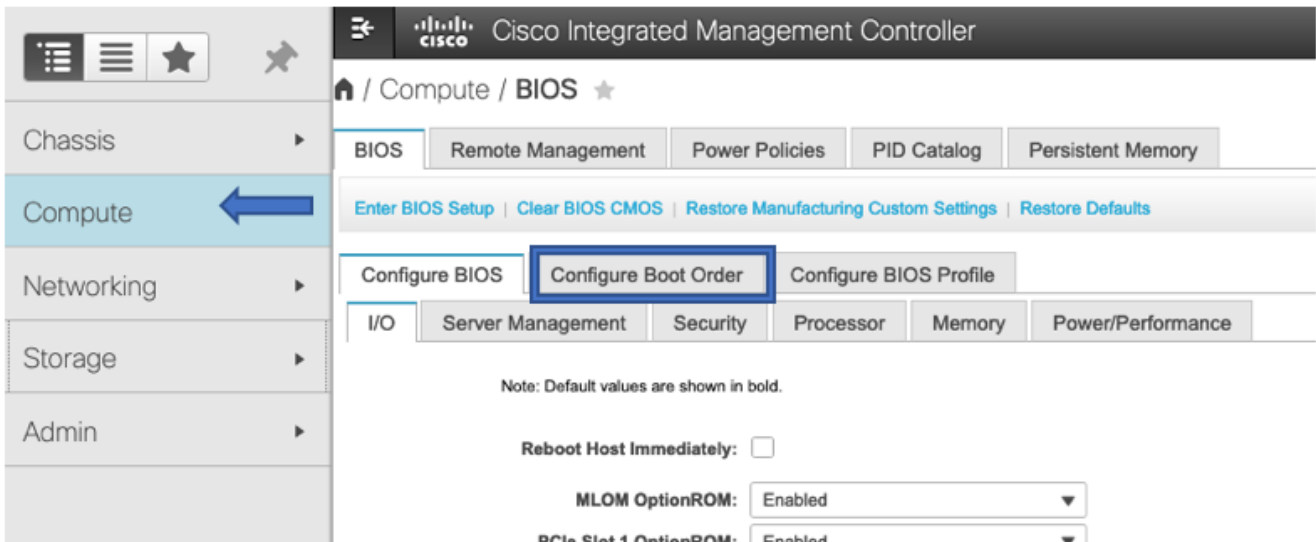
Verify Virtual Drive information

- Navigate to **Virtual Drive Info** and verify if the virtual drive is created.
- Details as status, health, RAID Level are visible under the **Virtual Drive Info**.

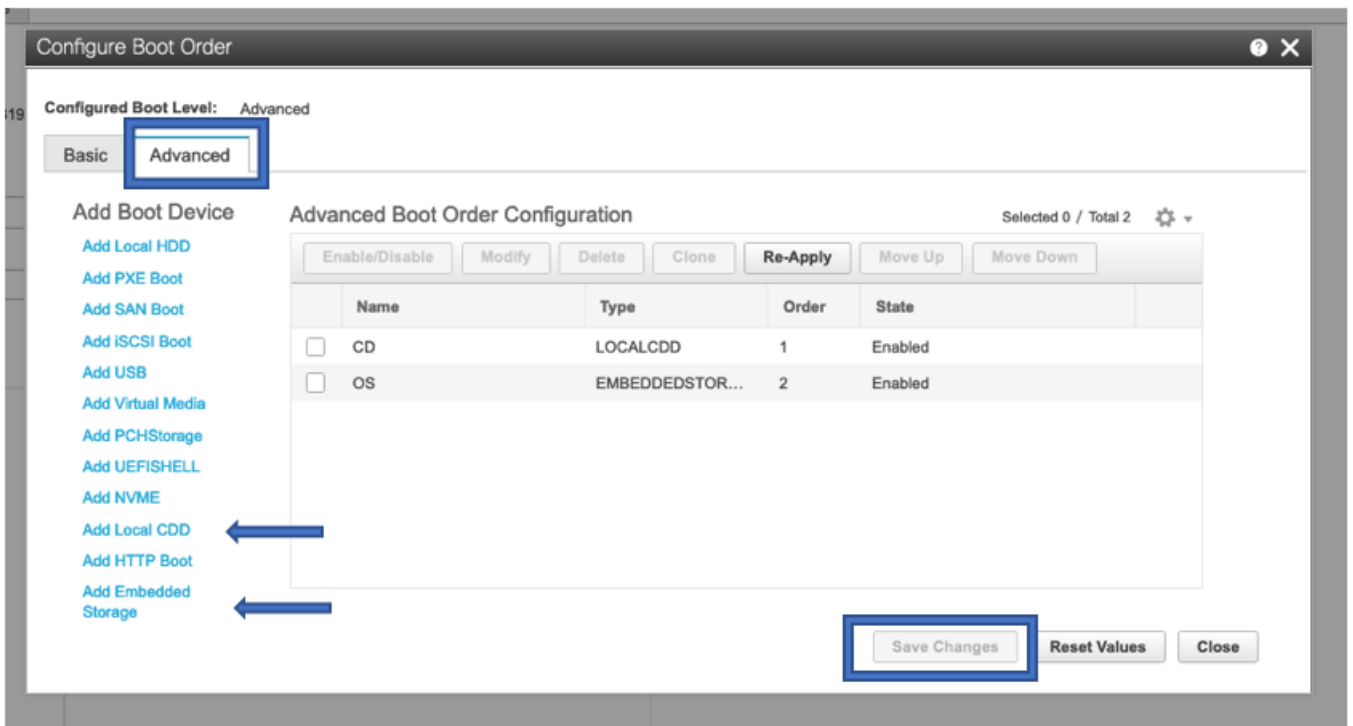


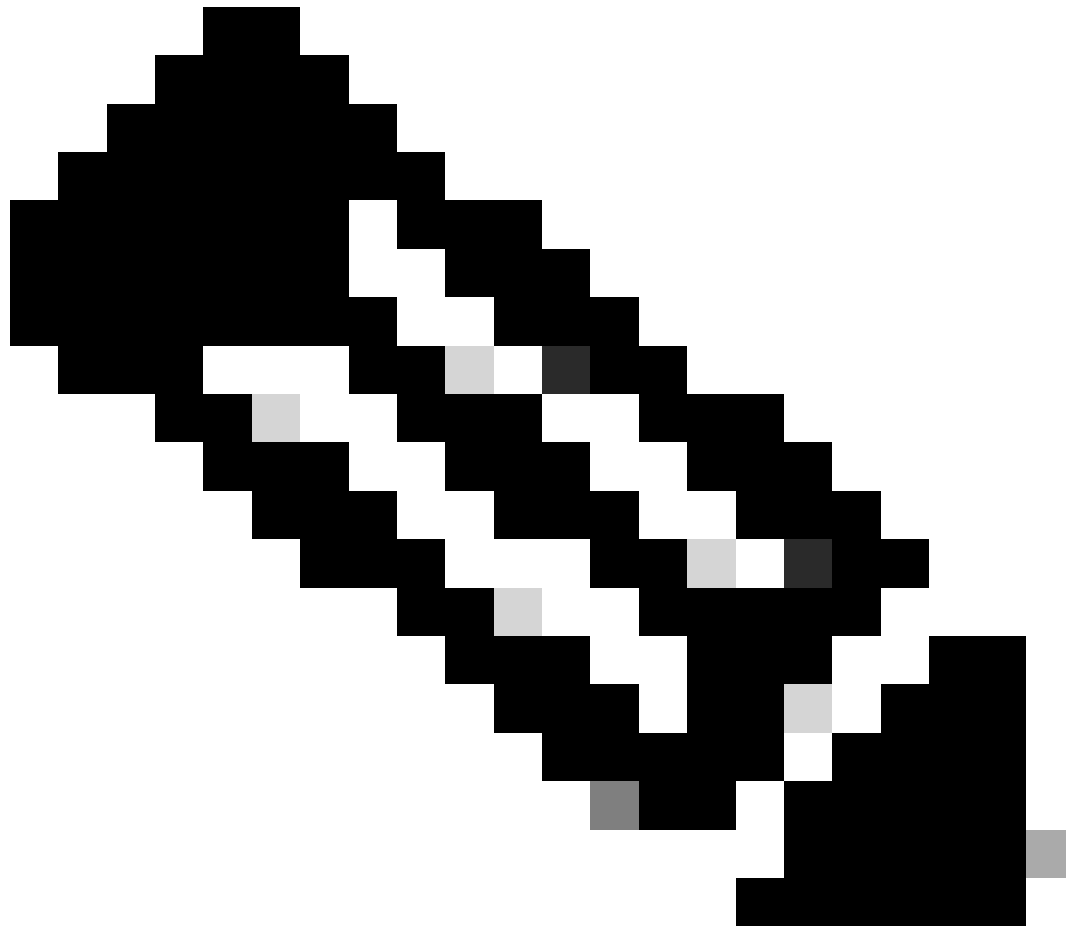
Configure Boot Order

- Navigate to **Compute** and select **Configure Boot Order**.



- Navigate to **Advance** option.
- Select the **Add Local CDD** and **Add Embedded Storage**.





Note: Alternatively you can use the boot option **Add Local HDD** and select slot **MSTOR-RAID**





Map ISO image on KVM

- Select **Launch vKVM**, a new window is opened

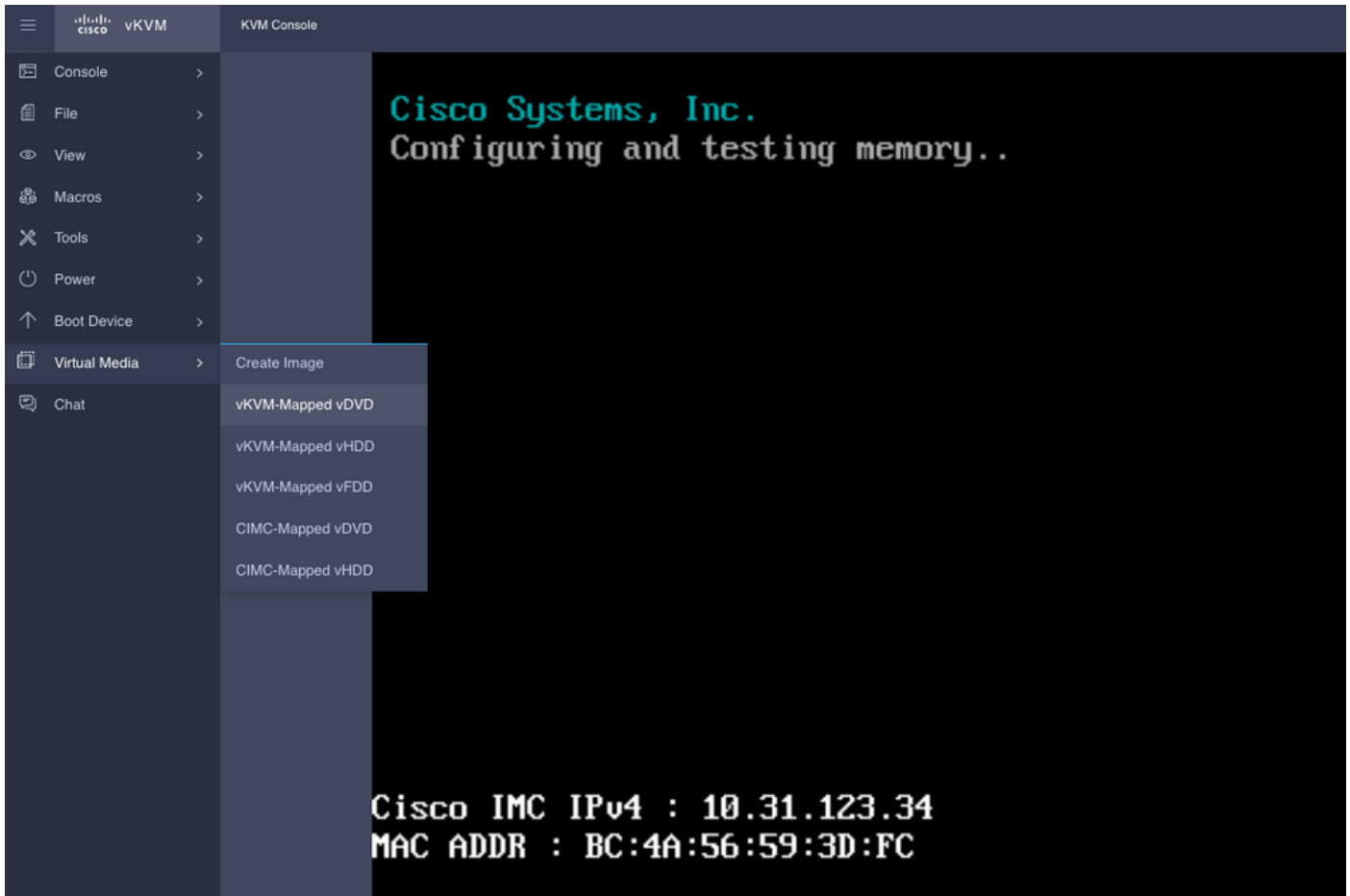
IMC) Information

1)

[Select Timezone](#)

-  Overall Utilization (%)
-  CPU Utilization (%)
-  Memory Utilization (%)
-  IO Utilization (%)

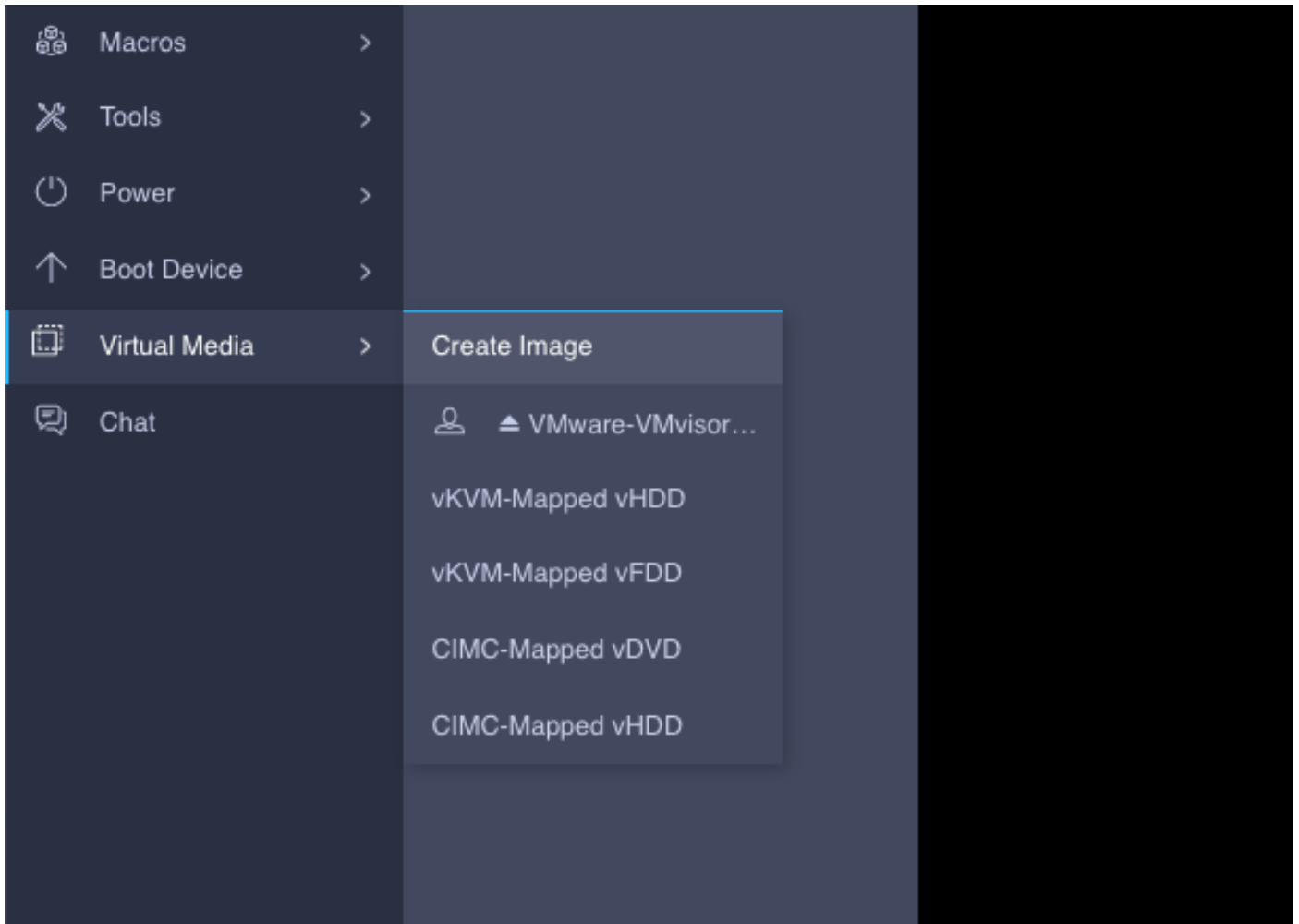
- Select **Virtual Media** and select the respective map option.



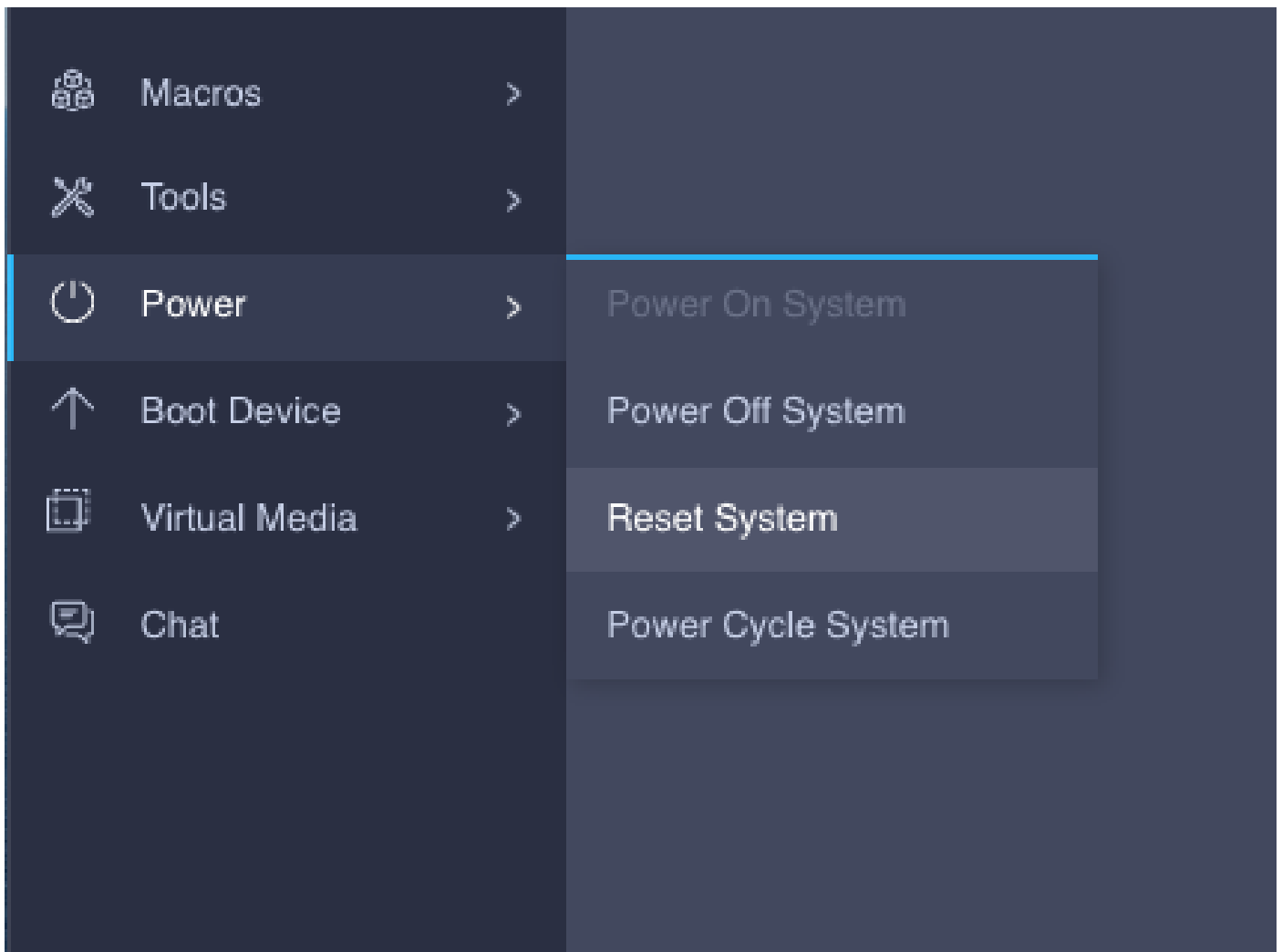
- Browse the ISO file from your local computer and select **Map Drive**.



- Confirm ISO is mapped.



- Reboot the server to start the installation.



Verify

Confirm OS is able to detect Virtual Drive information.

Select a Disk to Install or Upgrade
(any existing VMFS-3 will be automatically upgraded to VMFS-5)

* Contains a VMFS partition
Claimed by VMware vSAN


Storage Device	Capacity
Local:	
ATA CISCO VD (t10.ATA____CISCO_VD____...)	223.51 GiB
Remote:	
(none)	

(Esc) Cancel (F1) Details (F5) Refresh (Enter) Continue

Troubleshoot

RAID can be configured from Server BIOS Setup if CIMC is not configured.

Select **Enter BIOS Setup**.

 **Note:** BIOS Setup can be accessed if you press F2 during the server post.

Cisco Integrated Management Controller

Home / Compute / BIOS

BIOS | Remote Management | Power Policies | PID Catalog | Persistence

Enter BIOS Setup | Clear BIOS CMOS | Restore Manufacturing Custom Settings | Restore Defaults

Configure BIOS | **Configure Boot Order** | Configure BIOS Profile

BIOS Properties

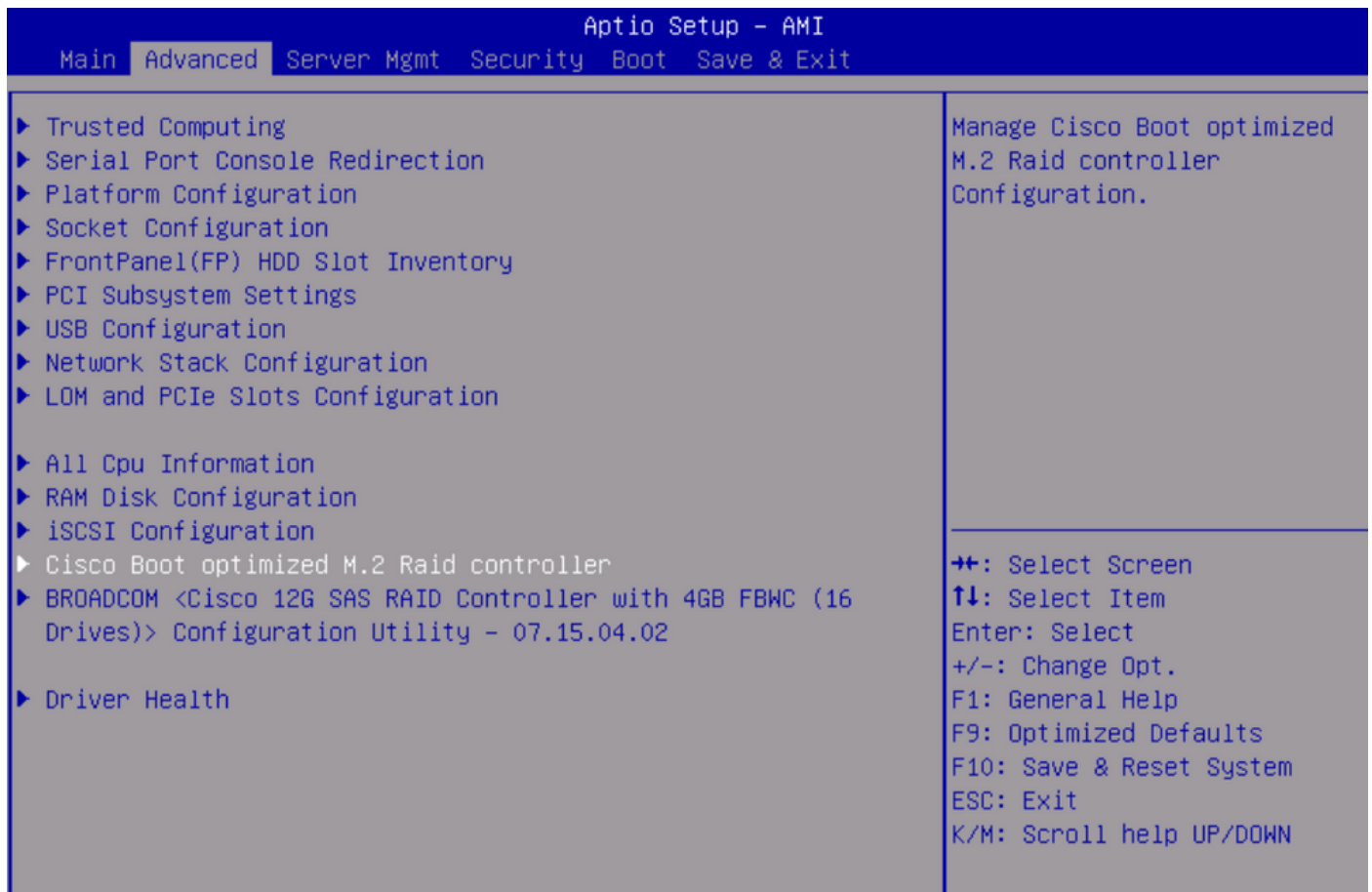
Running Version	C220M6.4.2.1c.0.0526211819
UEFI Secure Boot	<input type="checkbox"/>
Actual Boot Mode	Uefi
Configured Boot Mode	Legacy
Last Configured Boot Order Source	CIMC
Configured One time boot device	OS

Select the **Power Cycle** option.

Refresh | Host Power | Launch vKVM | Ping | CIMC Reboot | Locator LED

- Host: Powered On
- Power Off
- Power On
- Power Cycle**
- Hard Reset
- Shut Down

Navigate to **Advanced** tab and select **Cisco Boot optimized M.2 RAID Controller**.



Select the necessary option for RAID configuration.

RAID Main Configuration

- ▶ [Physical/Virtual Disk Information]
- ▶ [Create RAID Configuration]
- ▶ [Delete RAID Configuration]
- ▶ [RAID Rebuild]
- ▶ [Erase Physical Disk]
- ▶ [Controller Information]

View physical/virtual disk information.

←→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F9: Optimized Defaults
F10: Save & Reset System
ESC: Exit
K/M: Scroll help UP/DOWN

Related Information

- [Technical Support & Documentation - Cisco Systems](#)