

H3C G7 intel&AMD 平台服务器

LSI-9540 系列阵列卡在 BIOS 中配置 RAID

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一. 适用范围与注意事项

- 本文档旨在说明 H3C G7 intel&AMD 平台系列服务器 LSI-9540 系列存储控制卡在 BIOS 下配置阵列的方法，并以 R4900 G7 服务器为例进行配置步骤说明。
- 本文所述安装过程如涉及挂载文件/文件夹（高级版），需要购买 HDM License，如想要使用此功能请联系经销商购买并在激活后使用。
HDM License 的注册安装方法请参考：<https://zhiliao.h3c.com/Theme/details/232557>
- 如文中方法不适用或阵列卡型号不匹配，可以通过下面导航链接查找适用文档：
<https://zhiliao.h3c.com/Theme/details/208527>
- 提示：
本文档中的信息（包括产品，软件版本和设置参数）仅作参考示例，具体操作与目标需求设置请以实际为准。
本文档不定期更新维护，请以发布的最新版本为准。

二. 配置准备

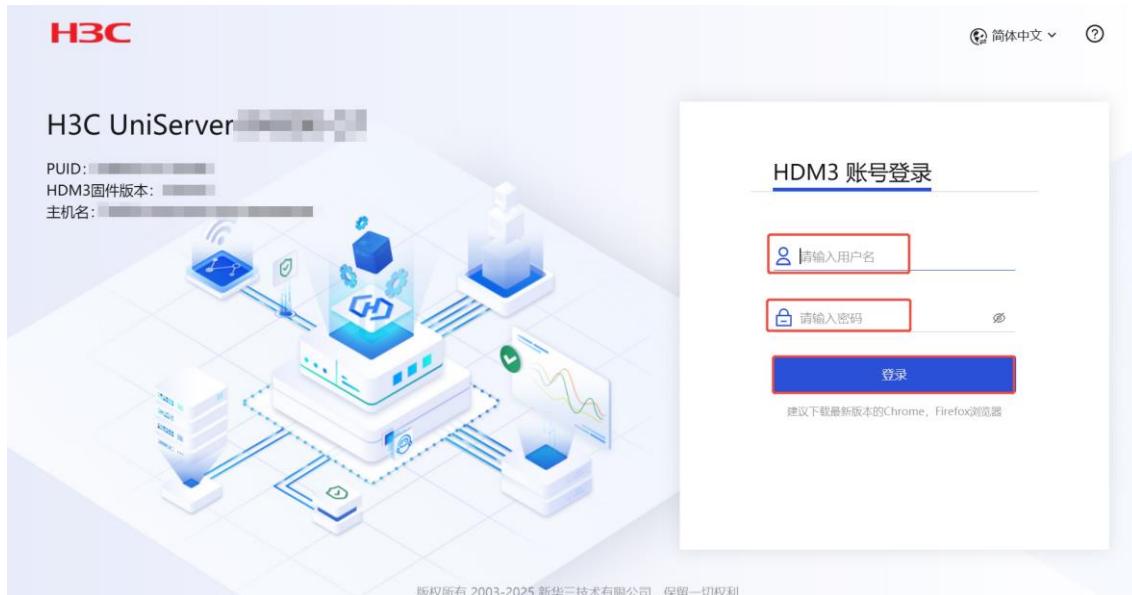
1. 连接 HDM 与启用远程控制台

具体方法请参考：<https://zhiliao.h3c.com/theme/details/232282>

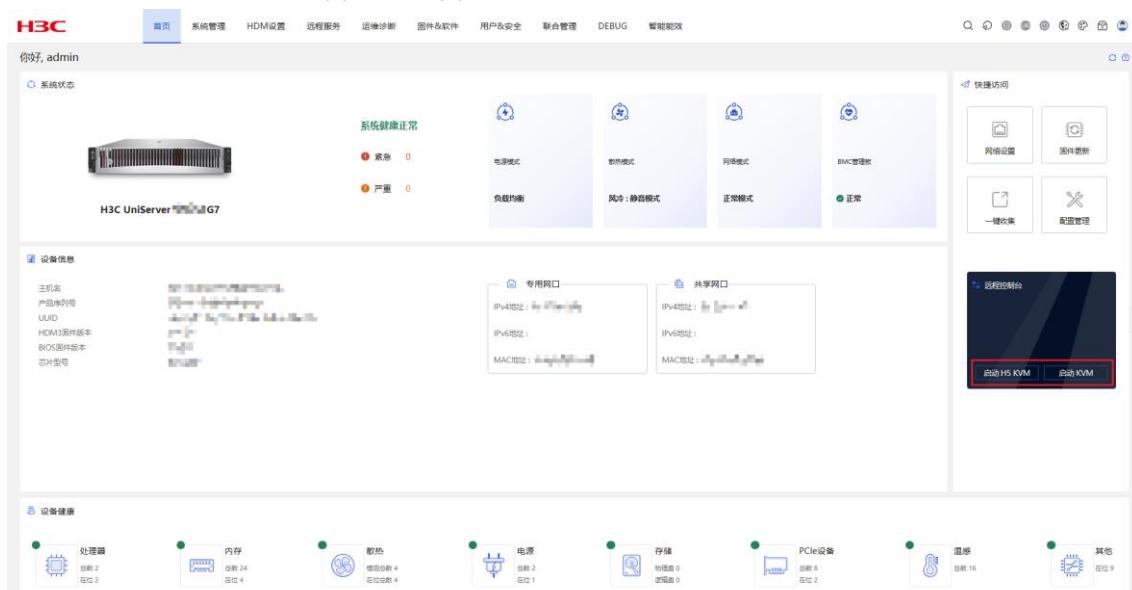
三. 配置步骤

1. 访问 HDM 并启用 KVM/H5 KVM

- 1) 浏览器输入 HDM IP 地址访问 HDM，输入用户名和密码登录。



- 2) 选择 H5 KVM 或 KVM 启用控制台。



注：现场同样可使用显示器、鼠标和键盘等外设与服务器进行交互。

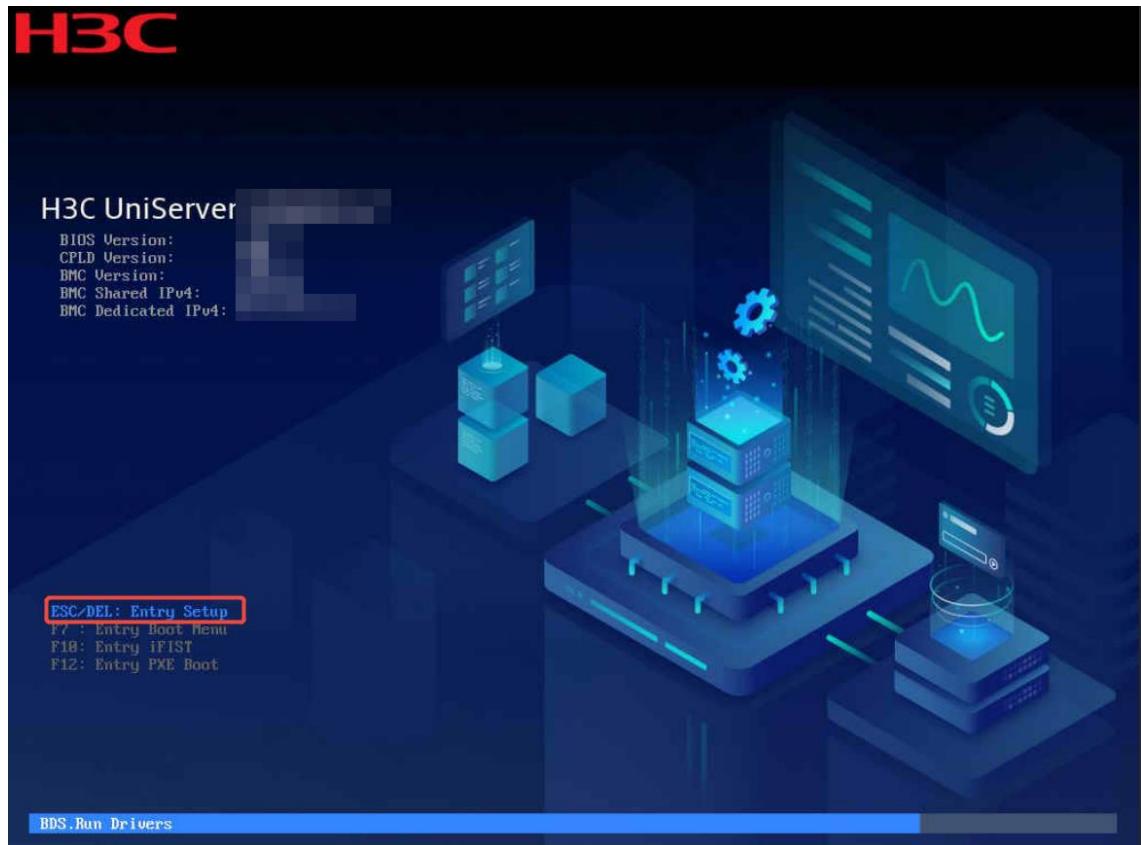
2. 创建与删除阵列

LSI-9540 支持 RAID 0, RAID 1, RAID 10

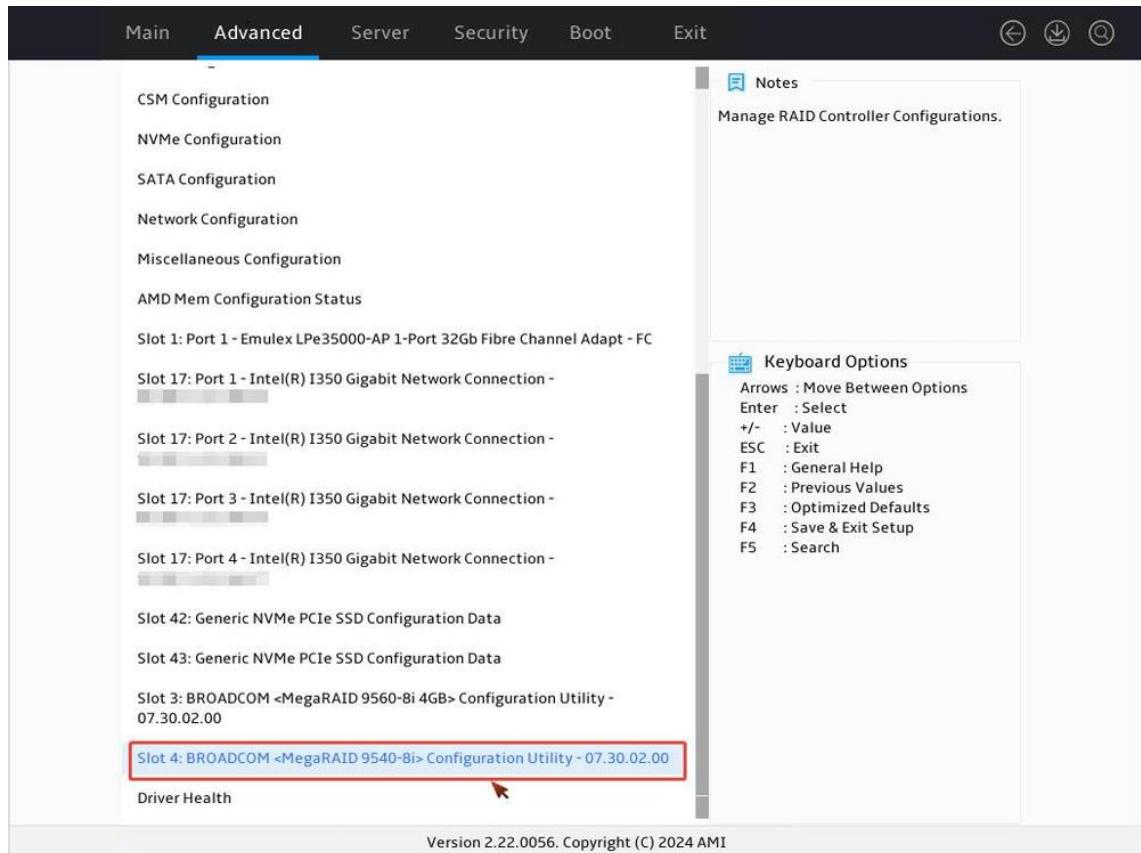
2.1 创建阵列

2.1.1 创建 RAID 0

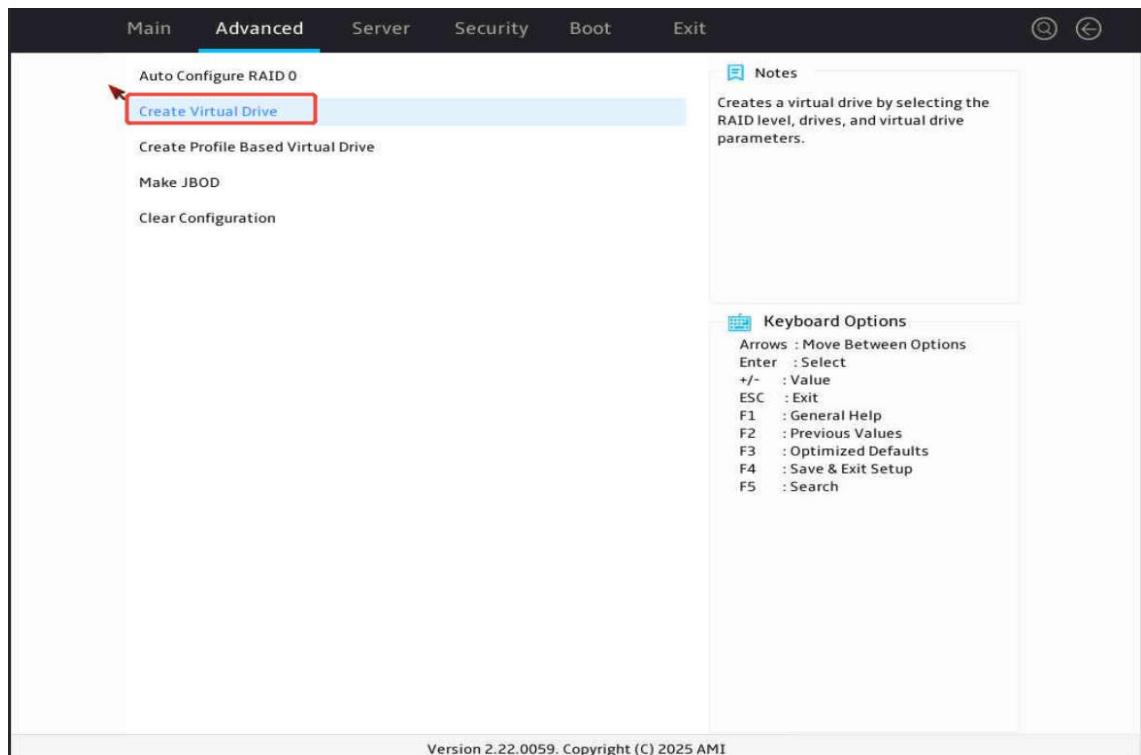
- 1) BIOS 在开机自检界面按下 **ESC**, 进入 BIOS 菜单。



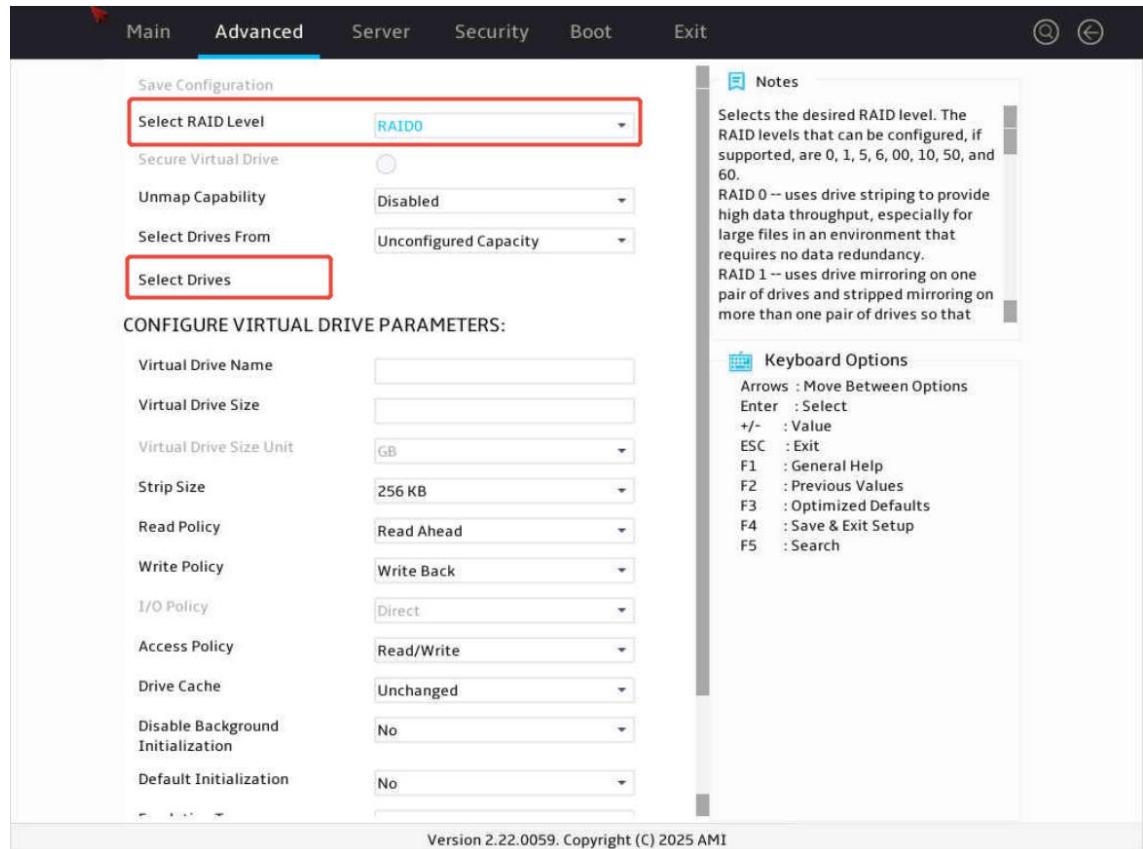
- 2) 在 **Advanced> Dynamic Device Configuration** 页签下找到并进入阵列卡菜单。

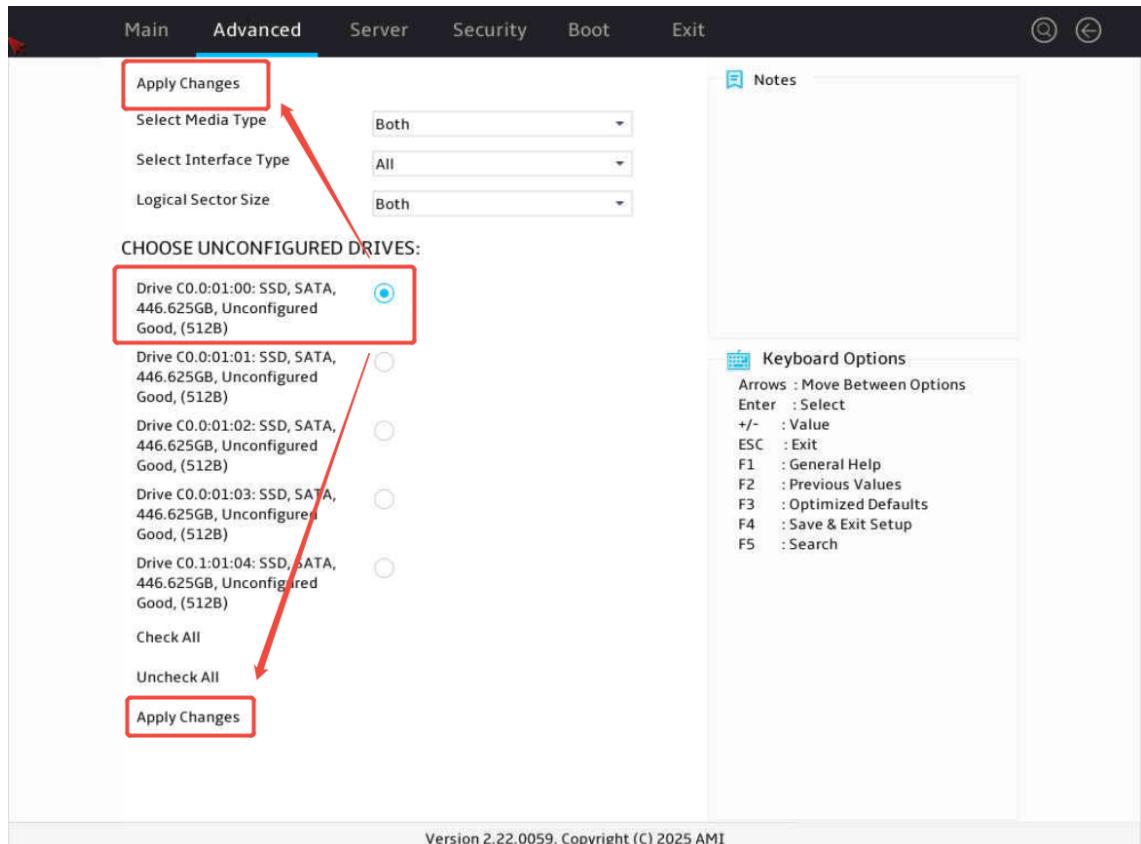


3) 依次选择 Main Menu>Configuration Management>Create Virtual Drive, 按 Enter 进入后开始创建。

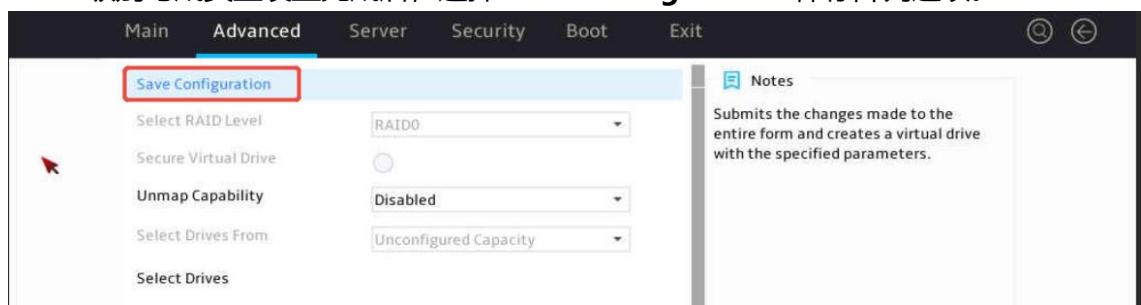


- 4) 设置 **Select RAID Level** 为 RAID 0; 在 **Select Drives** 中选择成员盘, **Enabled** 表明已选中成员盘, 点击 **Apply Changes** 保存选项。

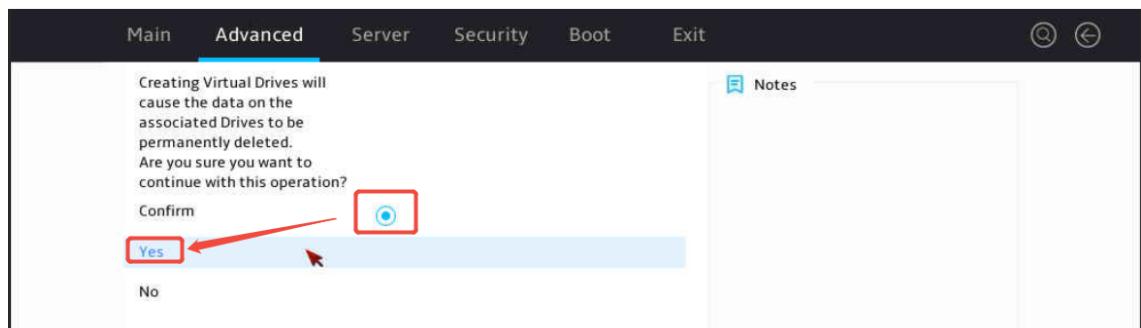


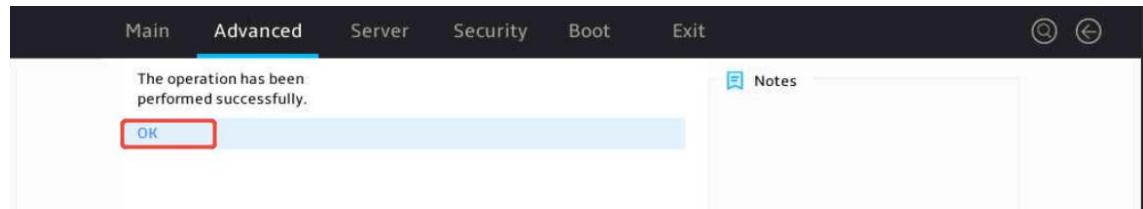


5) RAID 级别与成员盘设置完成后，选择 **Save Configuration** 保存阵列选项。



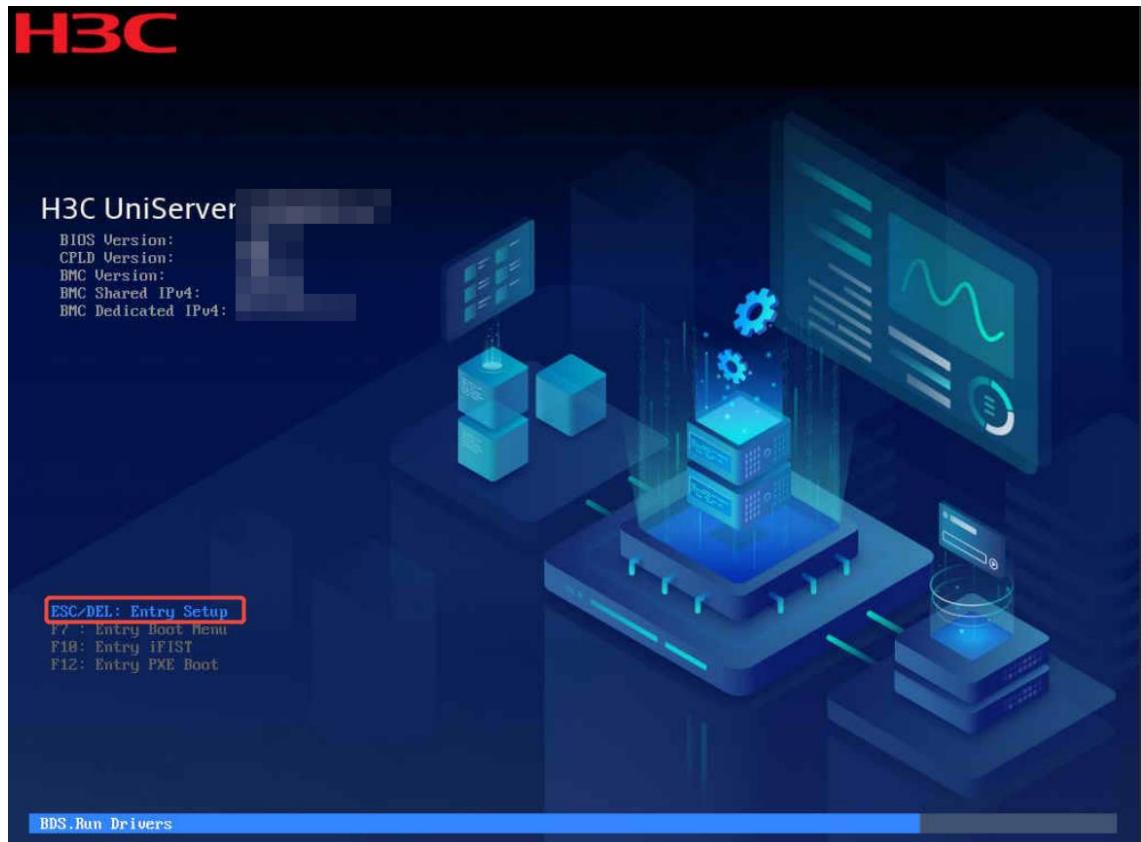
6) 将 Confirm 选项设置为 **Enabled**，点击 **Yes**，再点击 **OK**，完成配置。





2.1.2 创建 RAID 10

- 1) BIOS 在开机自检界面按下 ESC，进入 BIOS 菜单。



- 2) 在 **Advanced** 页签下找到 **Dynamic Device Configuration** 并进入菜单，点击 LSI-9540 阵列卡菜单。

The screenshot shows the AMI UEFI BIOS setup interface. The top navigation bar includes tabs for Main, Advanced, Server, Security, Boot, and Exit. The Advanced tab is selected. On the left, a list of configuration options is displayed under the Chip Configuration heading, with 'Dynamic Device Configuration' highlighted by a red box. To the right, there is a 'Notes' section describing the dynamic device configuration menu and a detailed 'Keyboard Options' section with key mappings.

Chip Configuration

- Socket Configuration
- Platform Configuration
- Dynamic Device Configuration**
- Trusted Computing
- ACPI Settings
- UEFI Variables Protection
- Serial Port Console Redirection
- SIO Common Setting
- SIO Configuration
- Option ROM Dispatch Policy
- PCI Subsystem Settings
- USB Configuration
- CMOS
- NVMe Configuration
- Emulation Configuration
- SMBIOS Configuration
- Network Configuration
- Miscellaneous Configuration

Version 2.22.0059. Copyright (C) 2025 AMI

This screenshot shows the same AMI UEFI BIOS setup interface, but the 'Advanced' tab is selected. The left sidebar lists options like CSM Configuration, NVMe Configuration, SATA Configuration, Network Configuration, Miscellaneous Configuration, and AMD Mem Configuration Status. The right side features a 'Notes' section for managing RAID controller configurations and a 'Keyboard Options' section. A specific item, 'Slot 4: BROADCOM <MegaRAID 9540-8i> Configuration Utility - 07.30.02.00', is highlighted with a red box.

Notes

Manage RAID Controller Configurations.

Keyboard Options

Arrows : Move Between Options
 Enter : Select
 +/- : Value
 ESC : Exit
 F1 : General Help
 F2 : Previous Values
 F3 : Optimized Defaults
 F4 : Save & Exit Setup
 F5 : Search

Driver Health

Slot 1: Port 1 - Emulex LPe35000-AP 1-Port 32Gb Fibre Channel Adapt - FC

Slot 17: Port 1 - Intel(R) I350 Gigabit Network Connection -

Slot 17: Port 2 - Intel(R) I350 Gigabit Network Connection -

Slot 17: Port 3 - Intel(R) I350 Gigabit Network Connection -

Slot 17: Port 4 - Intel(R) I350 Gigabit Network Connection -

Slot 42: Generic NVMe PCIe SSD Configuration Data

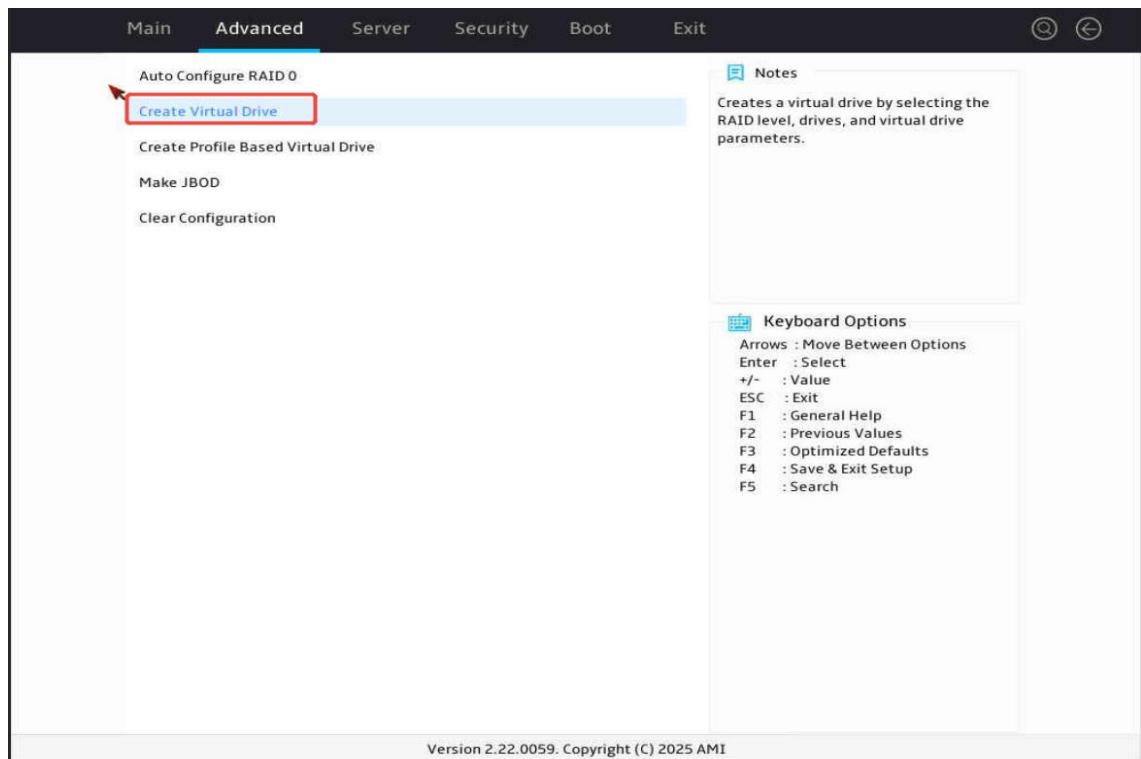
Slot 43: Generic NVMe PCIe SSD Configuration Data

Slot 3: BROADCOM <MegaRAID 9560-8i 4GB> Configuration Utility - 07.30.02.00

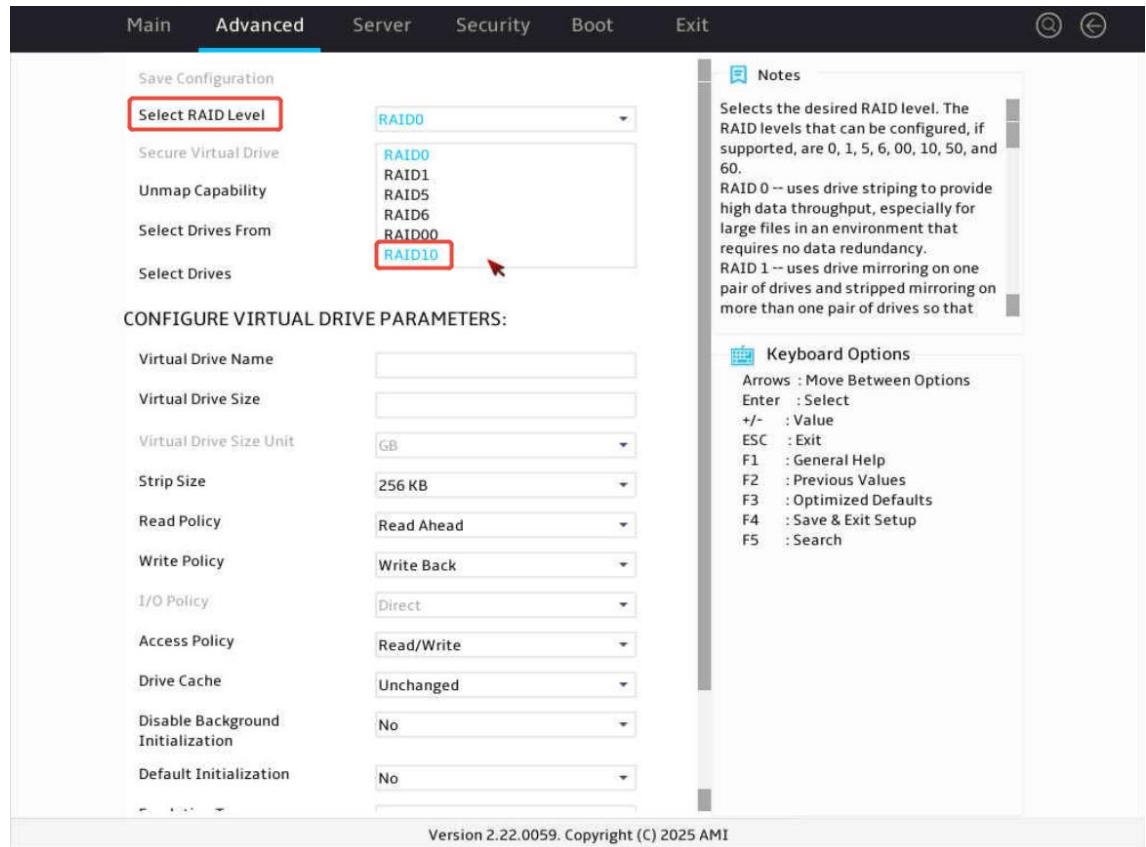
Slot 4: BROADCOM <MegaRAID 9540-8i> Configuration Utility - 07.30.02.00

Version 2.22.0056. Copyright (C) 2024 AMI

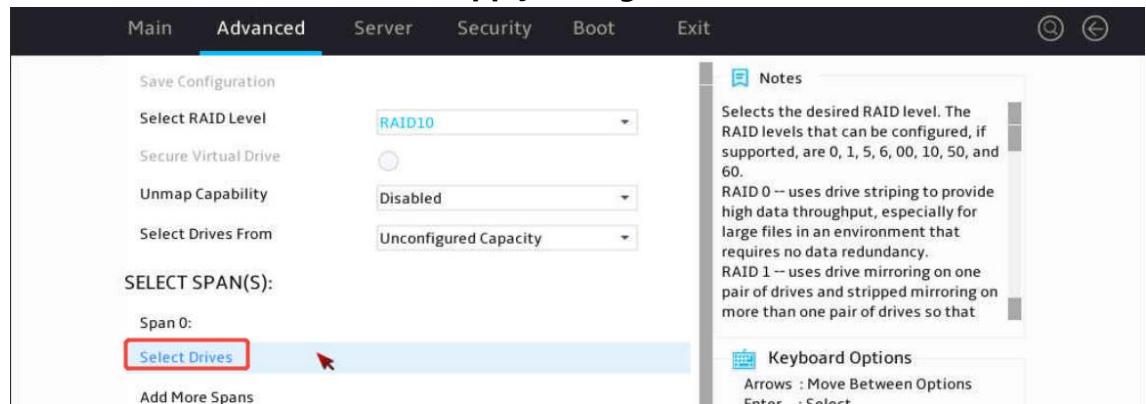
- 3) 依次选择 **Main Menu>Configuration Management>Create Virtual Drive**,
按 **Enter** 进入后开始创建

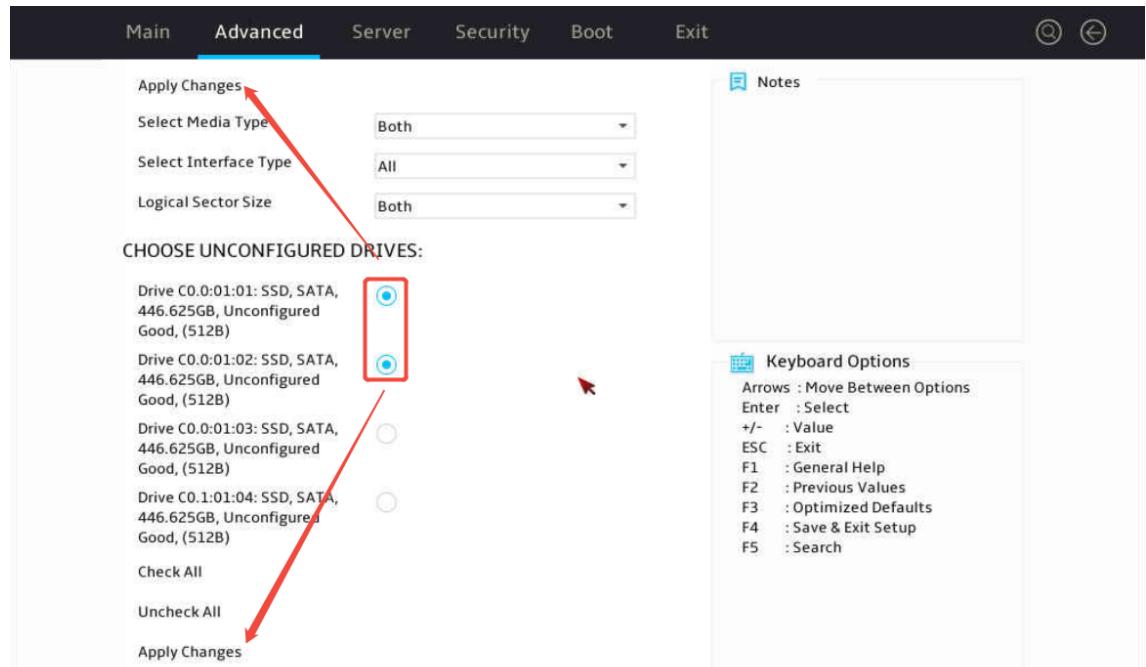


- 4) 设置 **RAID Level** 为 RAID 10。

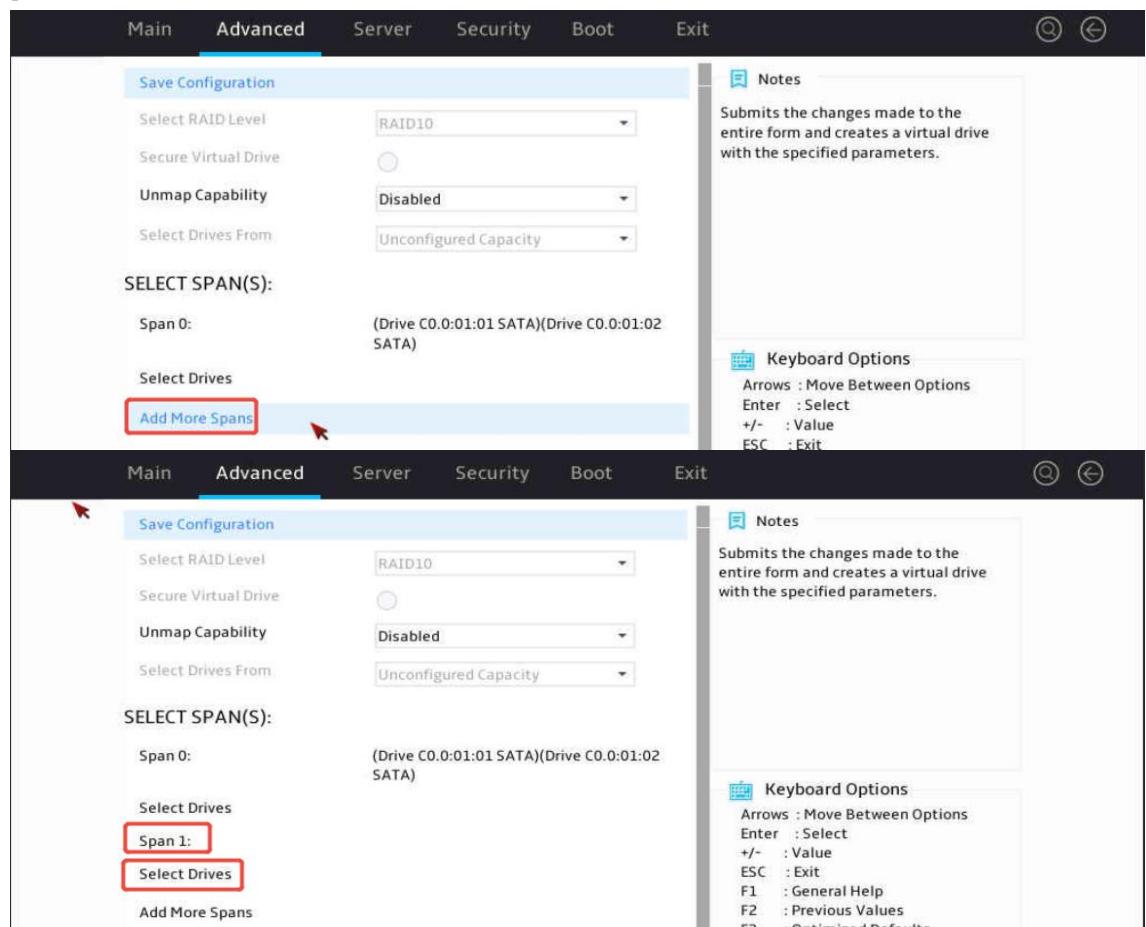


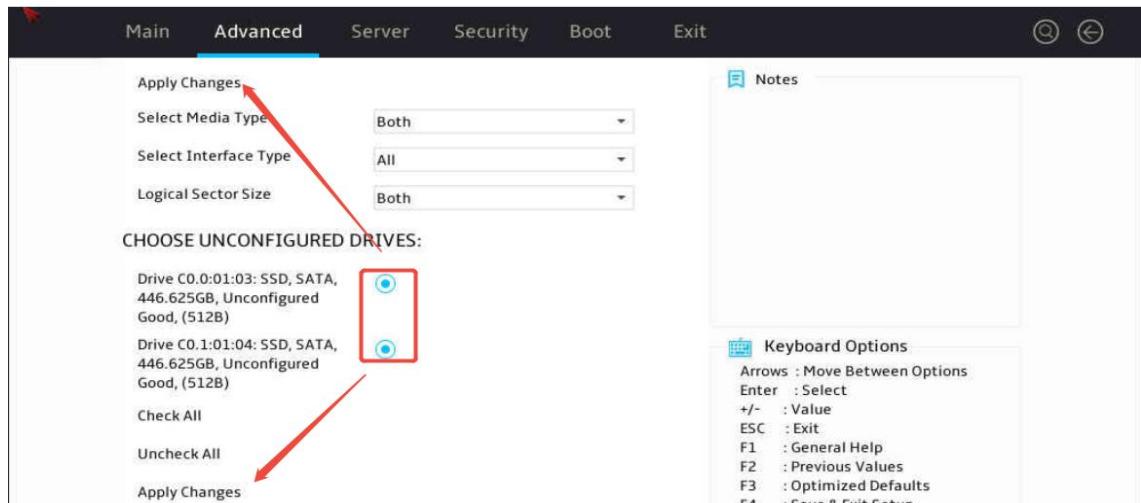
- 5) 在 **Select Drives** 中选择成员盘，在 **Select Drives** 中选择第一个 Span 的成员盘；
Enabled 表明已选中成员盘，点击 **Apply Changes** 保存选项。



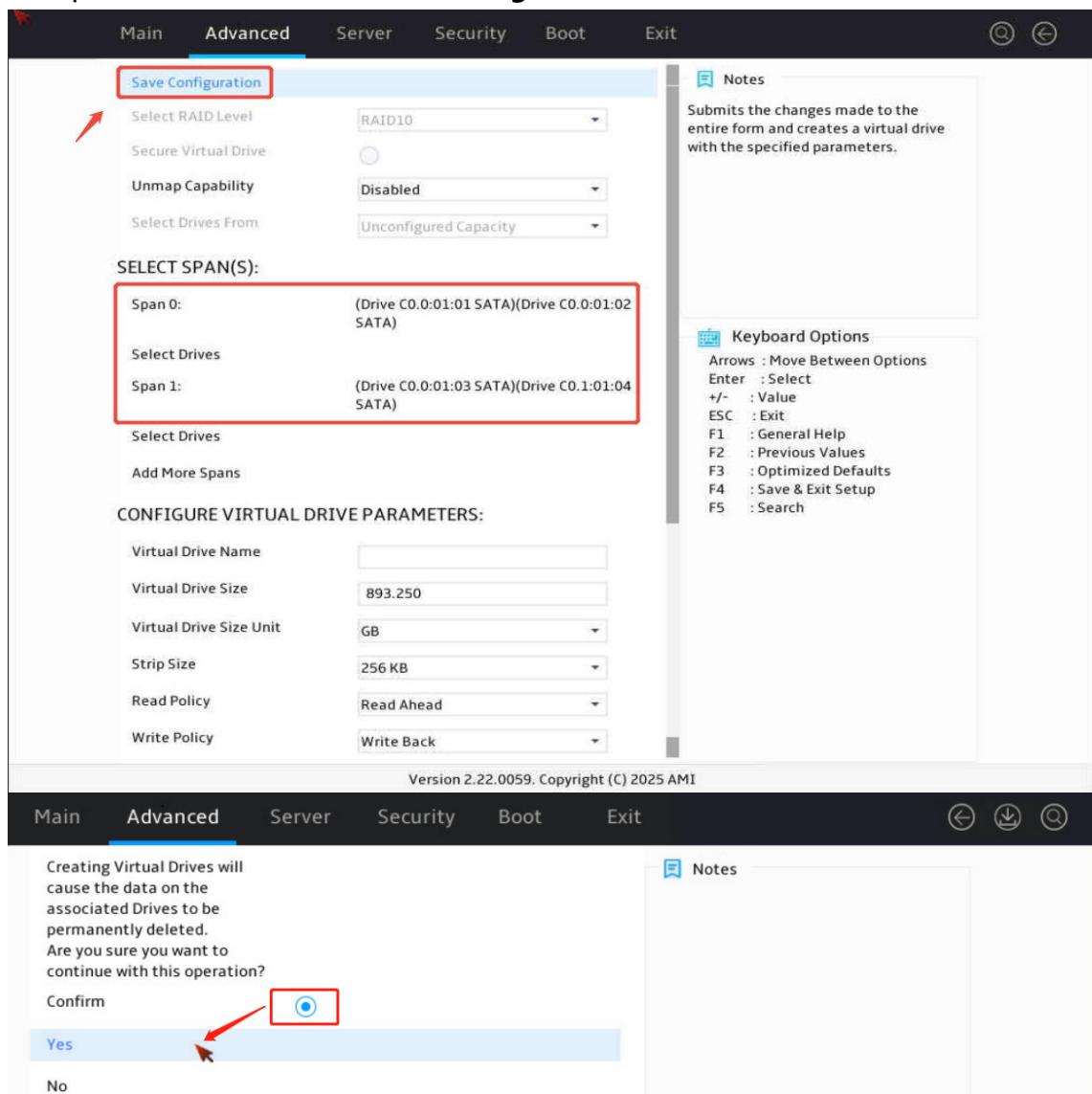


- 6) 在生成第一个 Span 后，选择 **Add More Spans** 添加第二个 Span 的成员盘，方法同上。





7) 所有 Span 设置完成后，选择 **Save Configuration** 完成配置，生成阵列。



注：

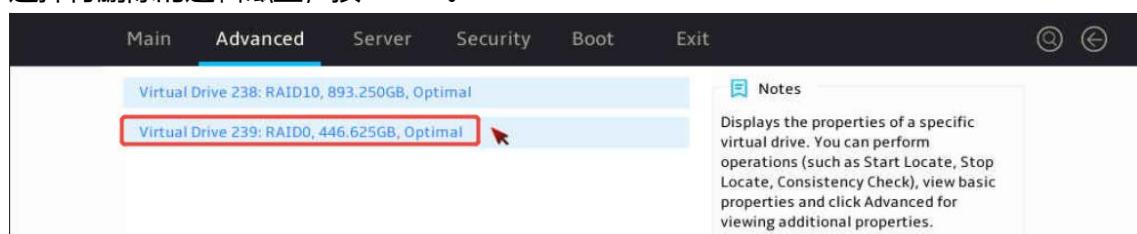
- RAID 10 支持 2~8 个 Span，每个 Span 至少需要 2 个磁盘且数量必须为偶数，且各个 Span 的硬盘数量必须保持一致。

2.2 删 除 阵 列

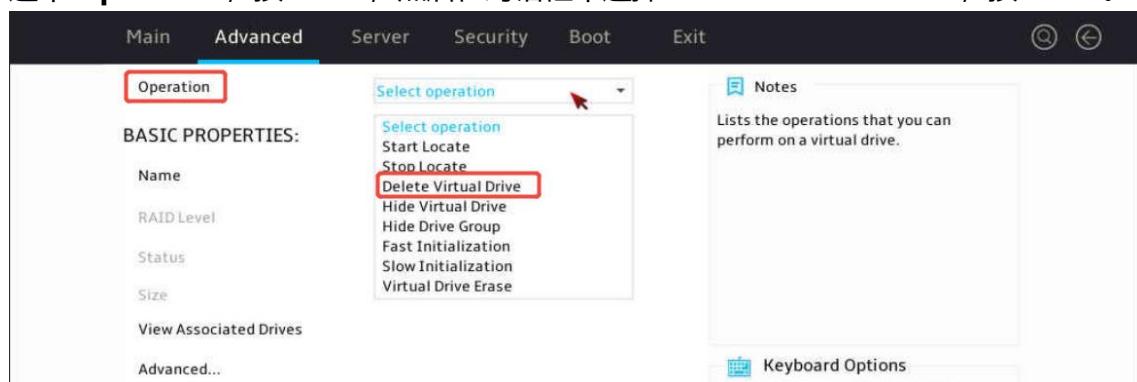
1) 在存储控制卡配置界面选择 **Virtual Drive Management**，按 **Enter**。



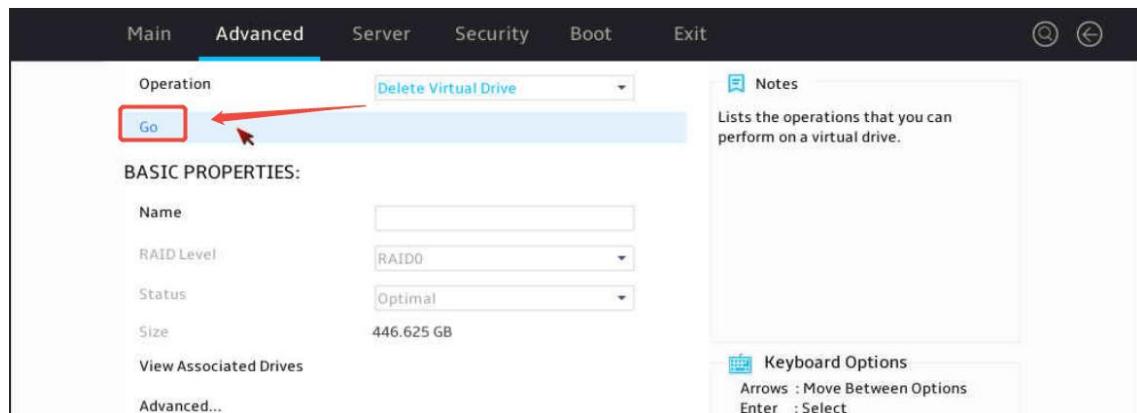
2) 选择待删除的逻辑磁盘，按 **Enter**。

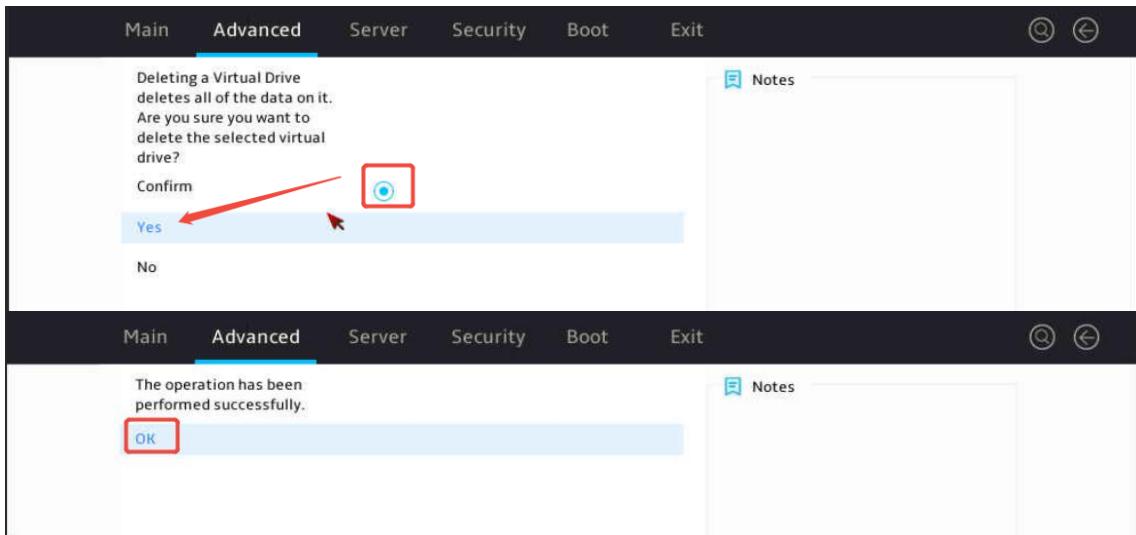


3) 选中 **Operation**，按 **Enter**，然后在对话框中选择 **Delete Virtual Drive**，按 **Enter**。



4) 选择 **Go**，确认操作；选择 **Confirm**，使其 **Enabled**，选择 **Yes**，按 **Enter**。





3. 创建与删除热备

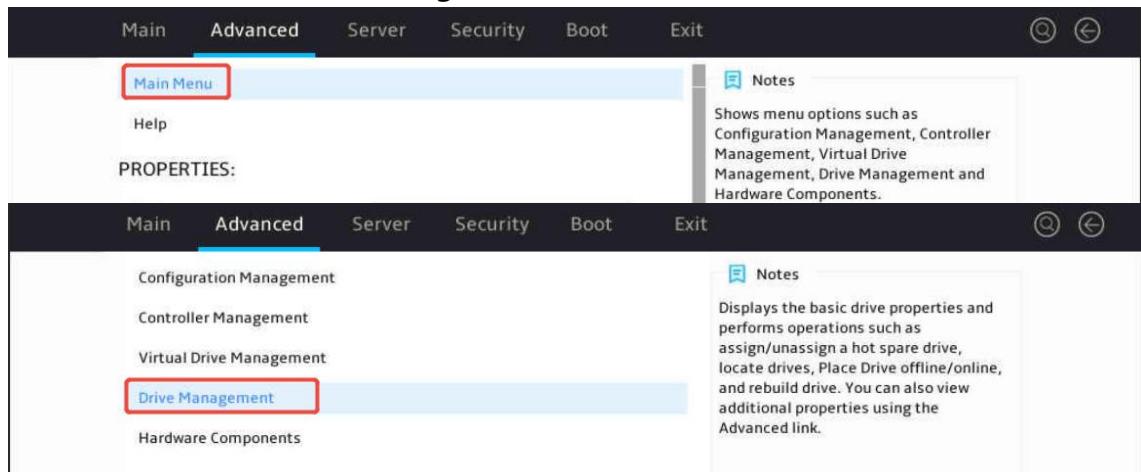
热备盘类型：

- 全局热备盘 (Global Spare)：为存储控制卡上存在的全部具有冗余功能的 RAID 提供热备，可将一块或多块磁盘配置为全局热备盘。全局热备盘可自动替换任意 RAID 中出现的故障盘。
- 专属热备盘(Dedicated Spare)：为存储控制卡上某个指定具有冗余功能的 RAID 提供热备，每个 RAID 都可配置一个或多个专属热备盘。专属热备盘可自动替换指定 RAID 内出现的故障盘。

3.1 创建热备

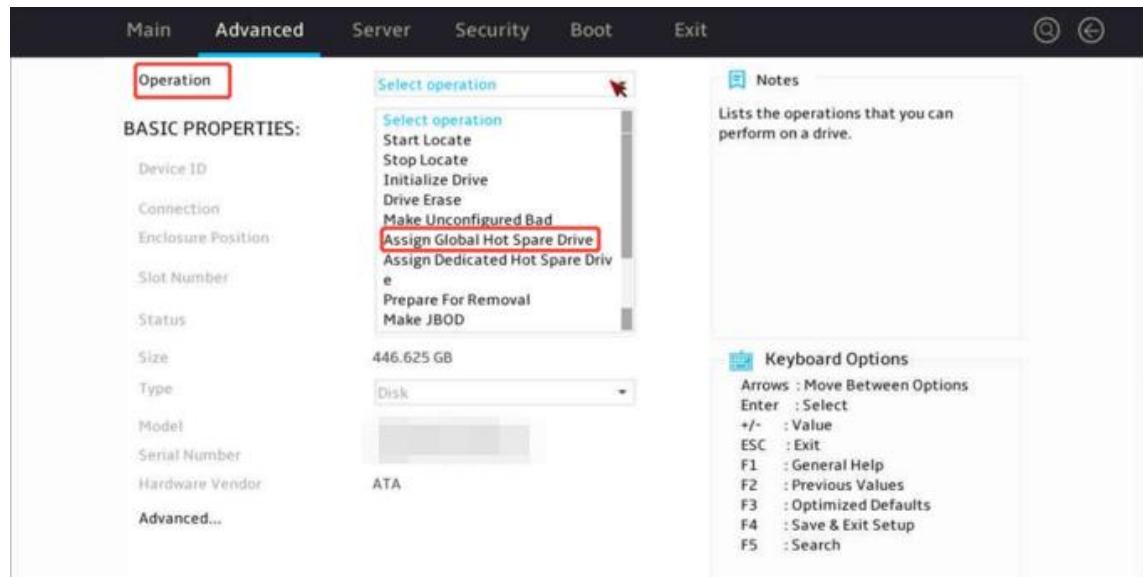
3.1.1 创建全局热备

1) 选择 **Main Menu>Drive Management**，找到并进入需要配置为热备盘的硬盘。

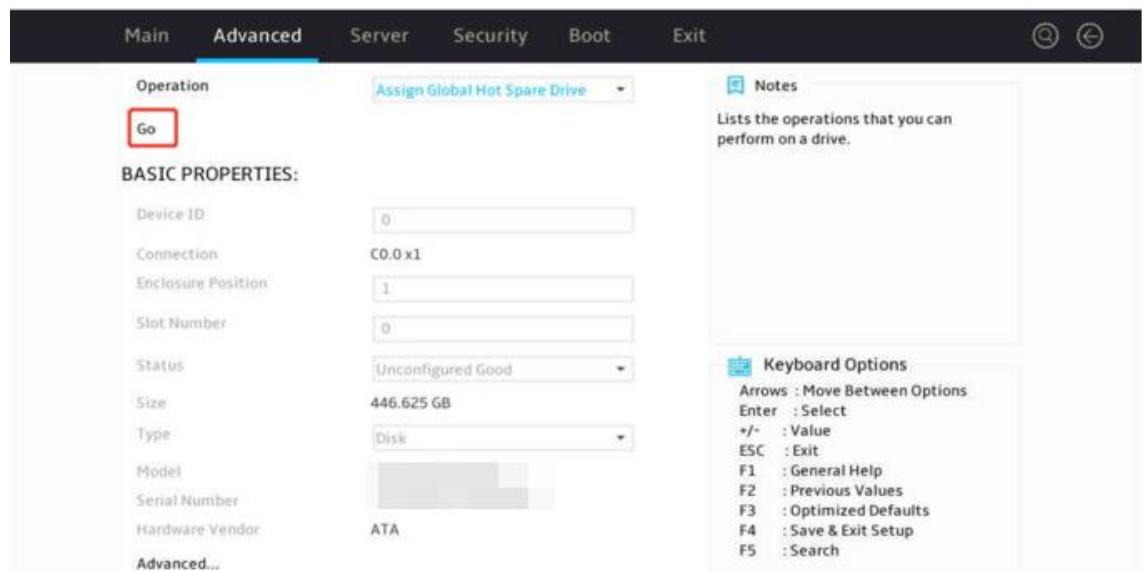




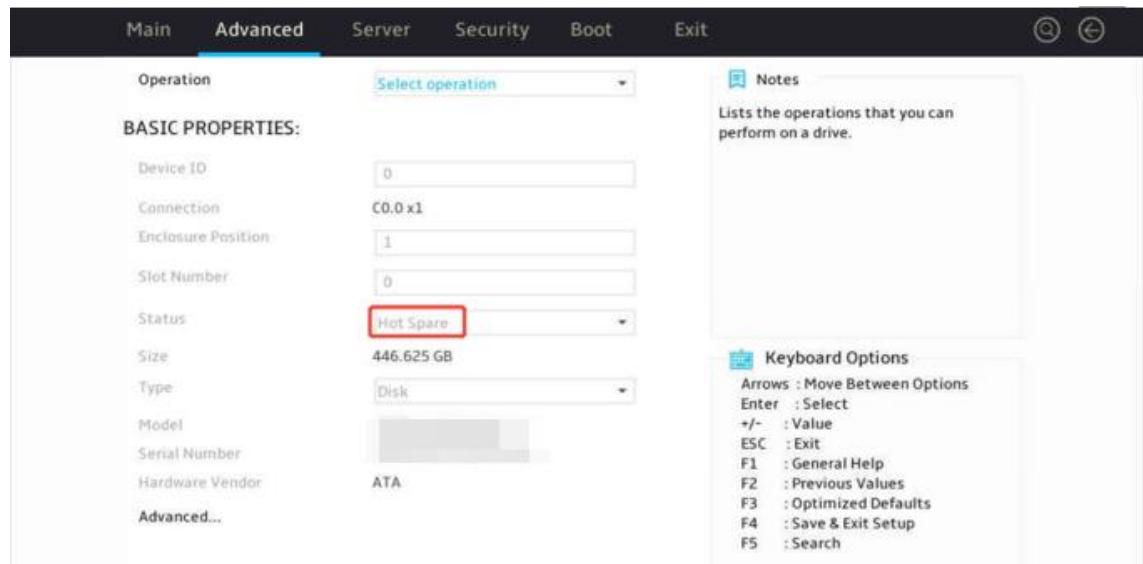
2) 选中 **Operation**, 按 **Enter**, 然后再选择 **Assign Global Hot Spare Drive**, 按 **Enter**.



3) 选择完成后, 点击 **Go** 完成配置。

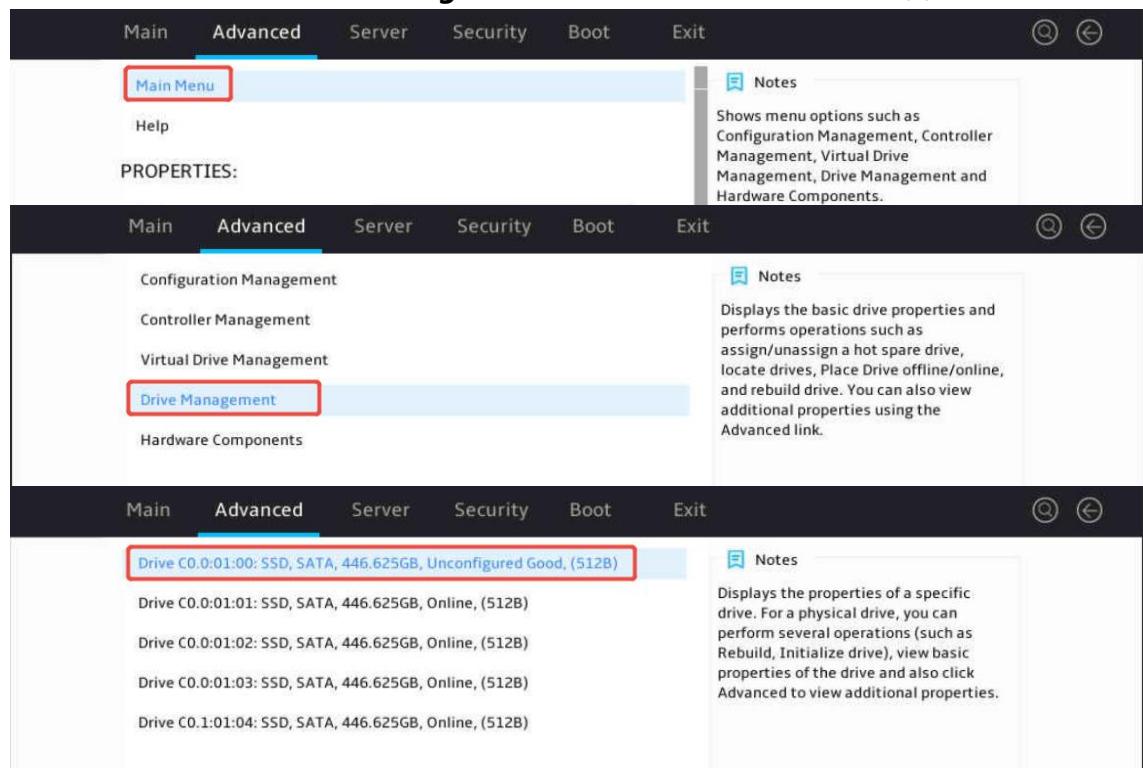


4) 配置完成的硬盘状态将显示为 Hot Spare。

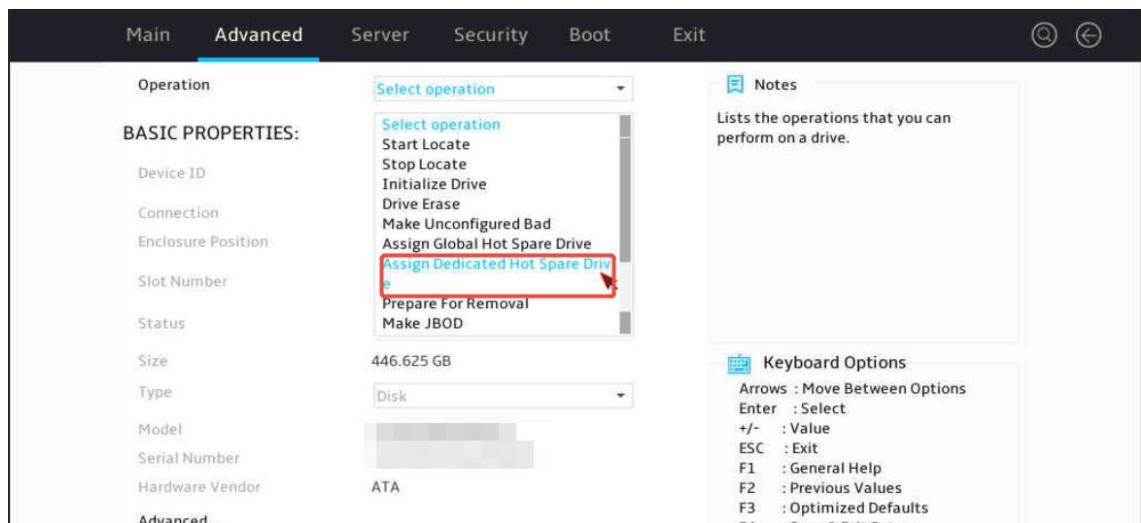


3.1.2 创建专用热备

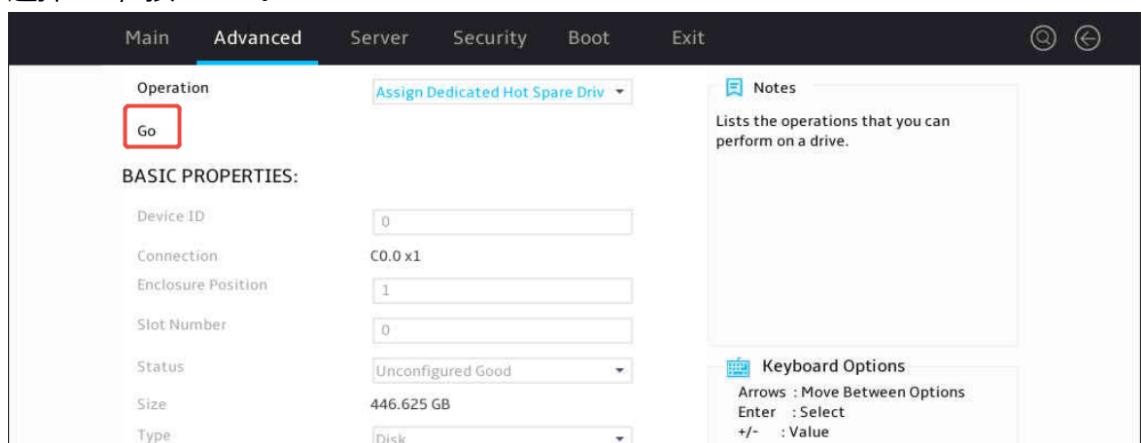
1) 选择 Main Menu>Drive Management，找到并进入需要配置为热备盘的硬盘。



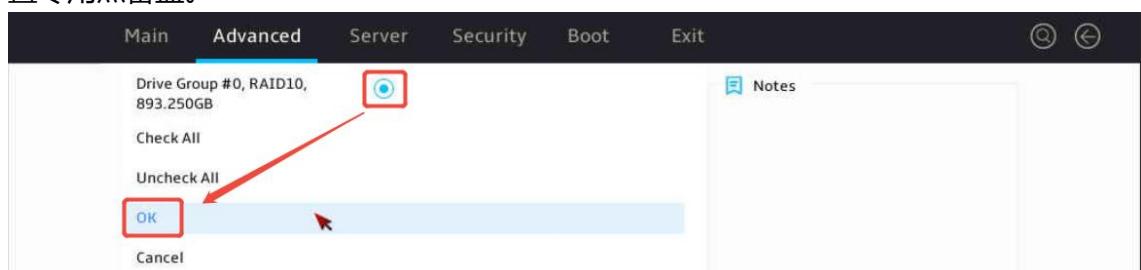
2) 选中 Operation，按 Enter，然后再选择 Assign Dedicated Hot Spare Drive，按 Enter。



3) 选择 Go, 按 Enter。

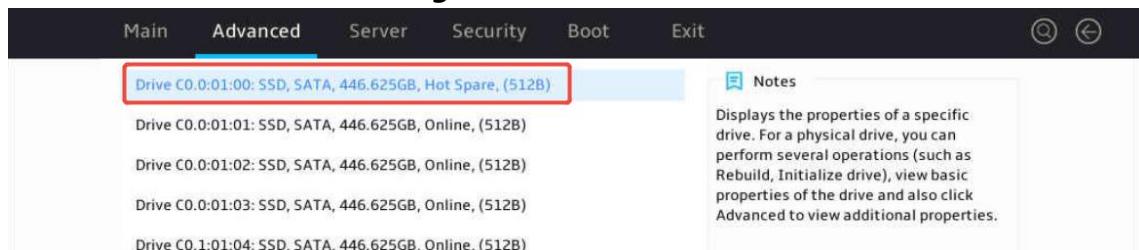


4) 选择需要配置专用热备盘的逻辑磁盘, 使其 Enabled, 选择 OK, 按 Enter, 完成配置专用热备盘。

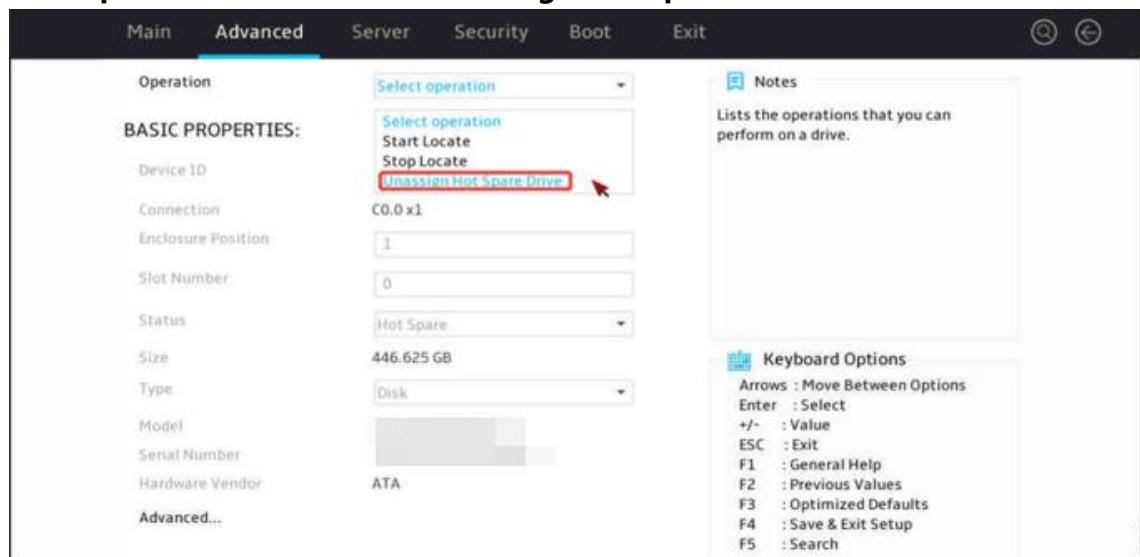


3.2 删热备

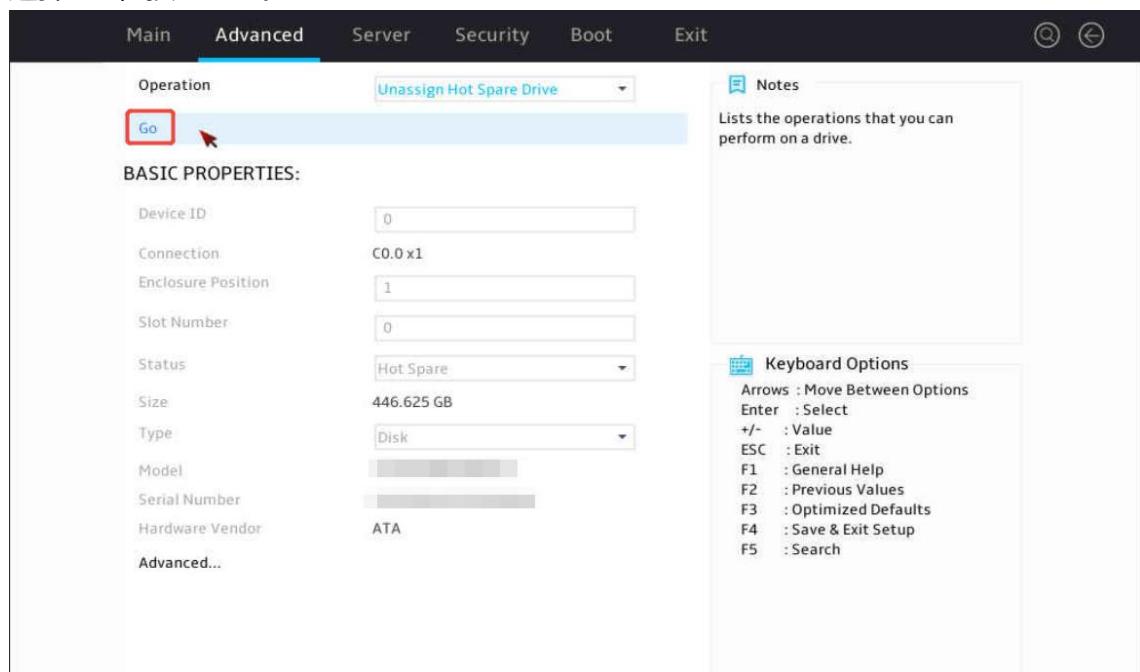
1) 选择 Main Menu>Drive Management, 找到并进入需要取消热备盘的硬盘, 按 Enter。



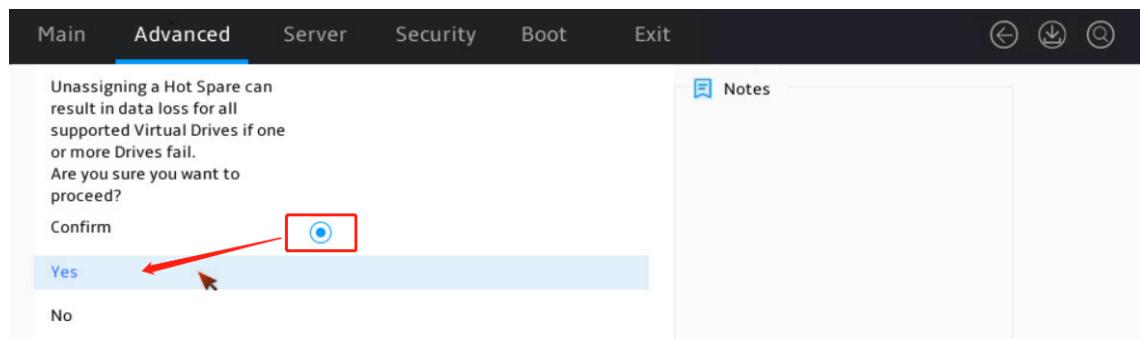
2) 选择 Operation 按 Enter, 选择 Unassign Hot spare drive, 按 Enter。



3) 选择 Go, 按 Enter。



4) Confirm 选项选择为 Enabled, 选择 Yes 后按 Enter。

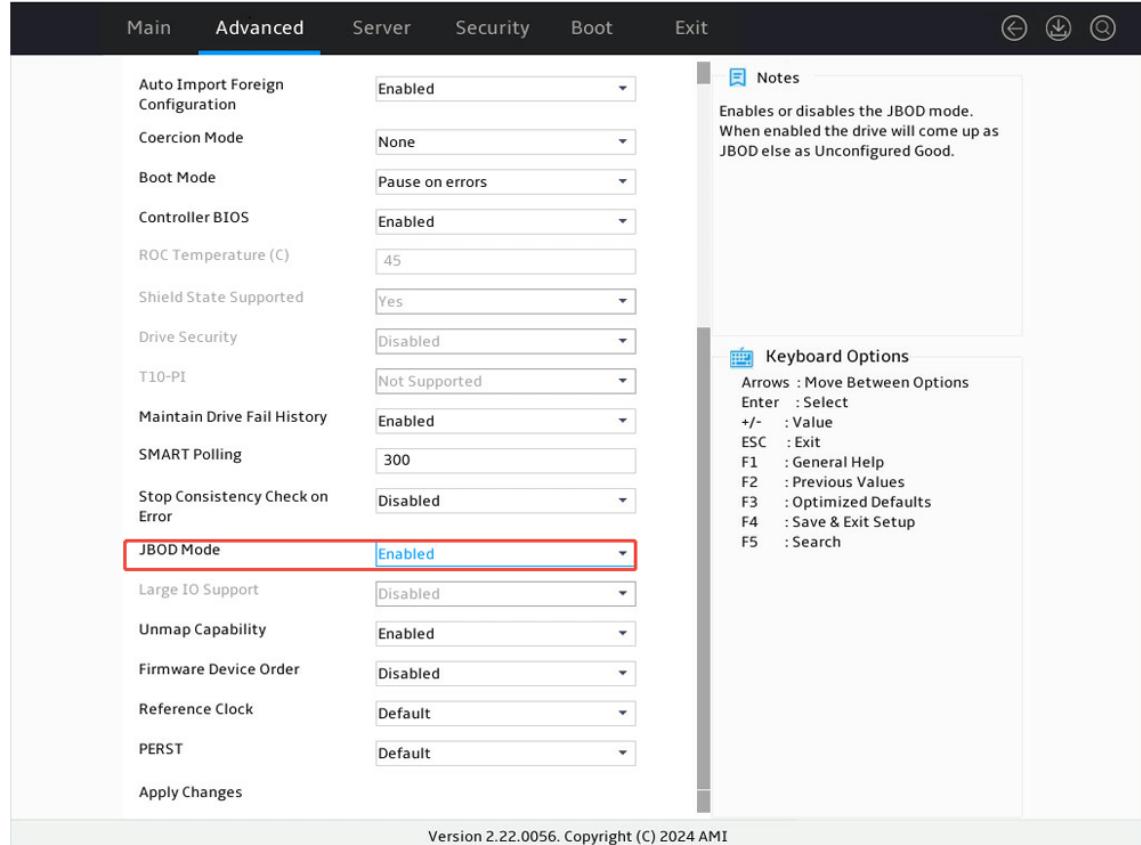


4. 设置与取消直通盘

4.1 阵列卡 RAID 模式下设置与取消直通盘

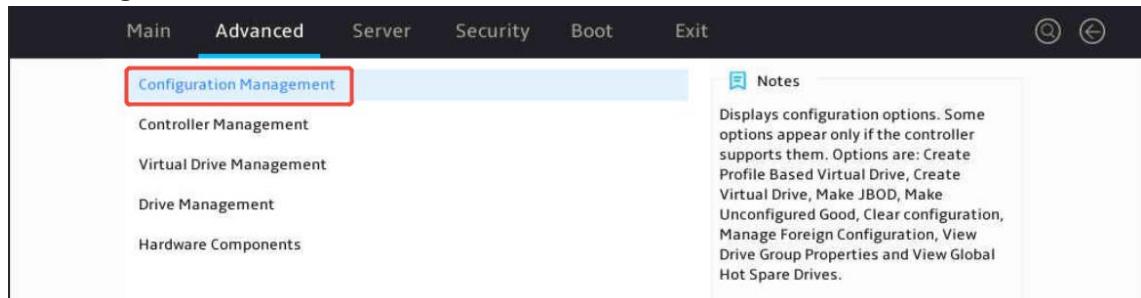
4.1.1 设置硬盘直通

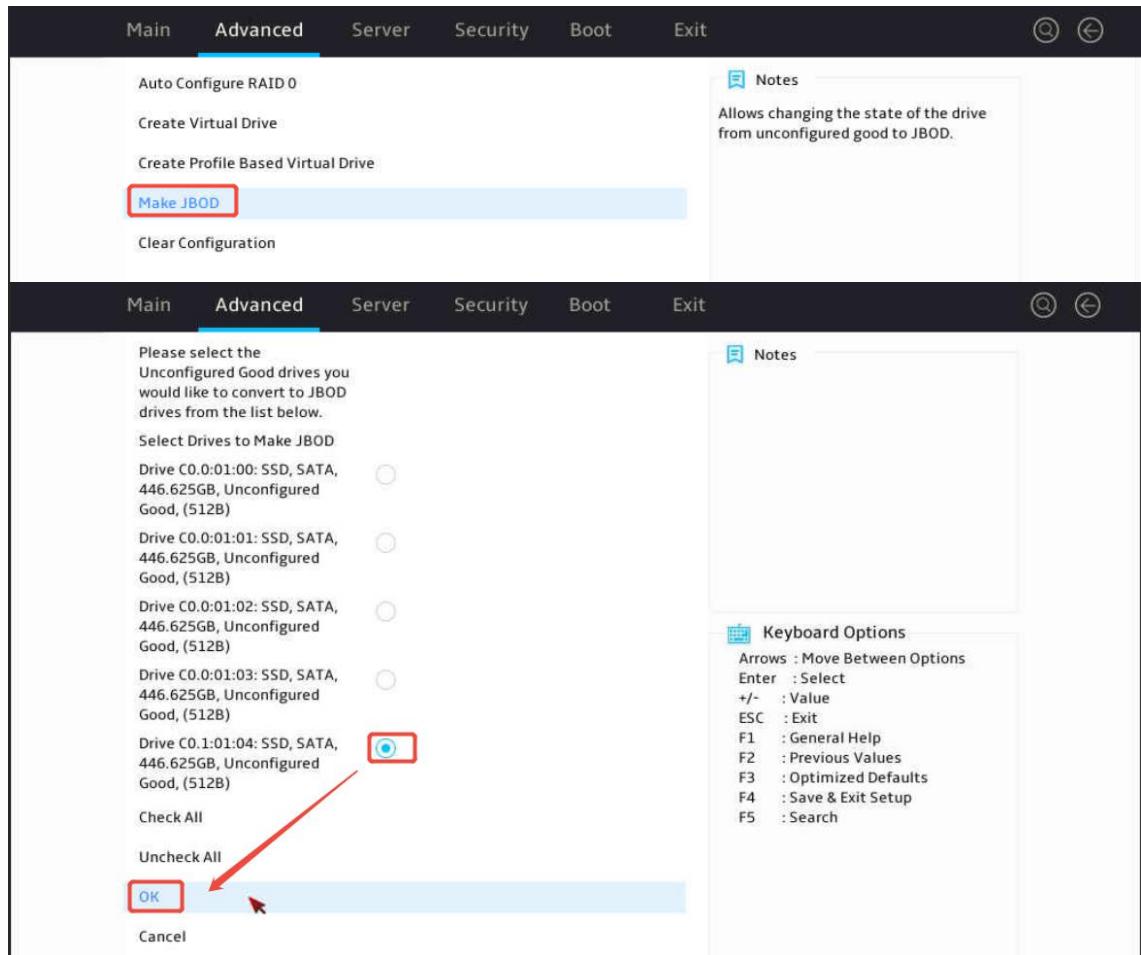
- 1) 依次进入 **Controller Management>Advanced Controller Properties**, 设置 JBOD Mode 为 **Enabled** 并保存。



注：设置 JBOD Mode 为 Enabled 后，Unconfigured Good 状态的硬盘会自动切换为 JBOD，如没有自动切换，或 JBOD Mode 已为 Enabled 状态，需单独调整 Unconfigured Good 状态的硬盘为 JBOD，再执行步骤 2)。

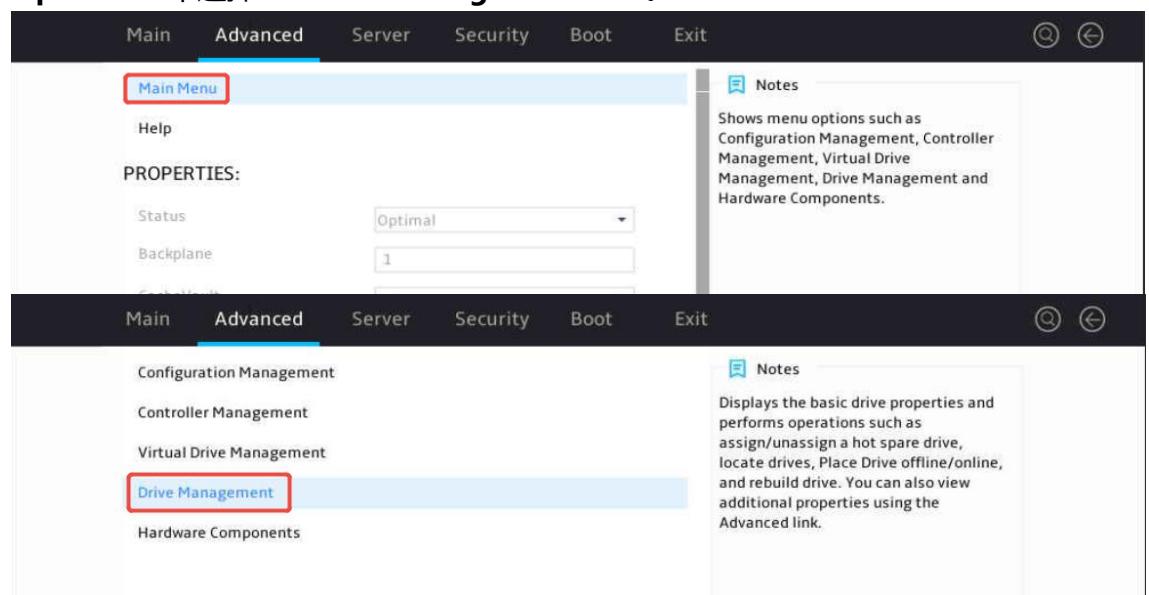
- 2) 依次进入 **Main Menu>Configuration Management>Make JBOD** 中选择 Unconfigured Good 硬盘进行配置即可。





4.1.2 取消硬盘直通

- 1) 依次进入 **Main Menu>Drive Management**, 选中需要取消 JBOD 状态的硬盘, 在 **Operation** 中选择 **Make Unconfigured Good**.



Main Advanced Server Security Boot Exit

Drive C0.0:01:00: SSD, SATA, 446.625GB, Unconfigured Good, (512B)
 Drive C0.0:01:01: SSD, SATA, 446.625GB, Unconfigured Good, (512B)
 Drive C0.0:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (512B)
 Drive C0.0:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (512B)
JBOD C0.1:01:04: SSD, SATA, 447.131GB, ATA, US4A1480SM003LX, 1003009162562900AP, Online, (512B)

Notes
 Displays the properties of a specific drive. For a physical drive, you can perform several operations (such as Rebuild, Initialize drive), view basic properties of the drive and also click Advanced to view additional properties.

Main Advanced Server Security Boot Exit

Operation **Select operation**
 Select operation
 Start Locate
 Stop Locate
Make Unconfigured Good

BASIC PROPERTIES:

Device ID	C0.1 x1
Connection	1
Enclosure Position	1
Slot Number	4
Status	Online
Size	447.131 GB
Type	Disk
Model	[redacted]
Serial Number	[redacted]
Hardware Vendor	ATA
Advanced...	

Notes
 Lists the operations that you can perform on a drive.

Keyboard Options

- Arrows : Move Between Options
- Enter : Select
- +/- : Value
- ESC : Exit
- F1 : General Help
- F2 : Previous Values
- F3 : Optimized Defaults
- F4 : Save & Exit Setup
- F5 : Search

2) 选择 Go 保存。

Main Advanced Server Security Boot Exit

Operation **Make Unconfigured Good**
Go

BASIC PROPERTIES:

Device ID	2
Connection	C0.1 x1
Enclosure Position	1
Slot Number	4
Status	Online
Size	447.131 GB
Type	Disk
Model	[redacted]
Serial Number	[redacted]
Hardware Vendor	ATA
Advanced...	

Notes
 Lists the operations that you can perform on a drive.

Keyboard Options

- Arrows : Move Between Options
- Enter : Select
- +/- : Value
- ESC : Exit
- F1 : General Help
- F2 : Previous Values
- F3 : Optimized Defaults
- F4 : Save & Exit Setup
- F5 : Search

