

H3C G7 飞腾平台服务器 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 飞腾平台系列服务器 LSI-9540 系列存储控制卡在 BIOS 下配置阵列的方法，并以 R4970 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

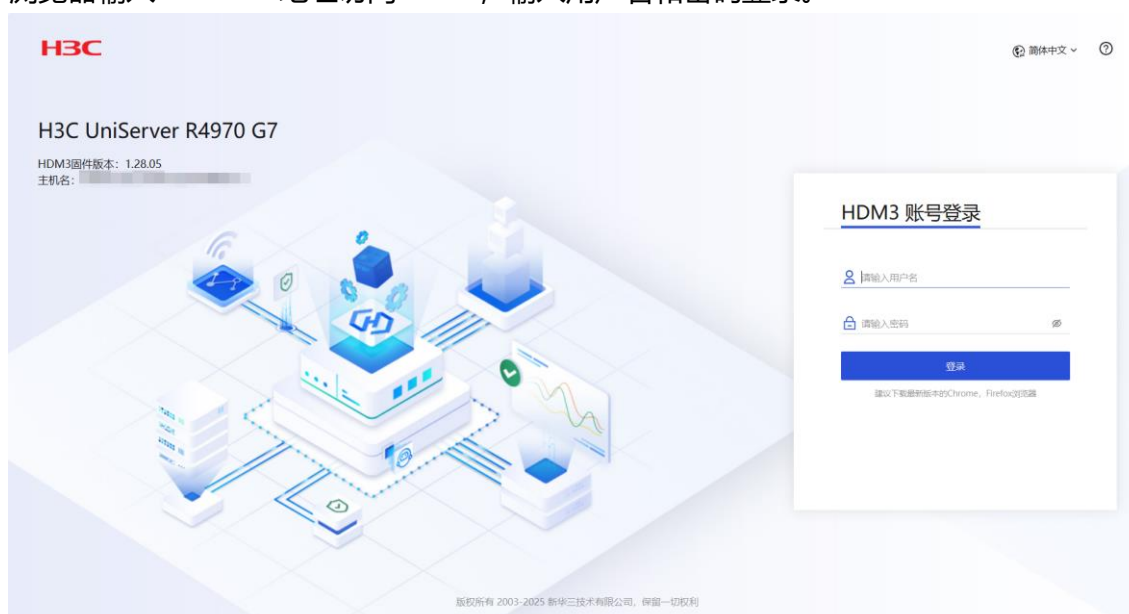
1. 连接 HDM 与启用远程控制台

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

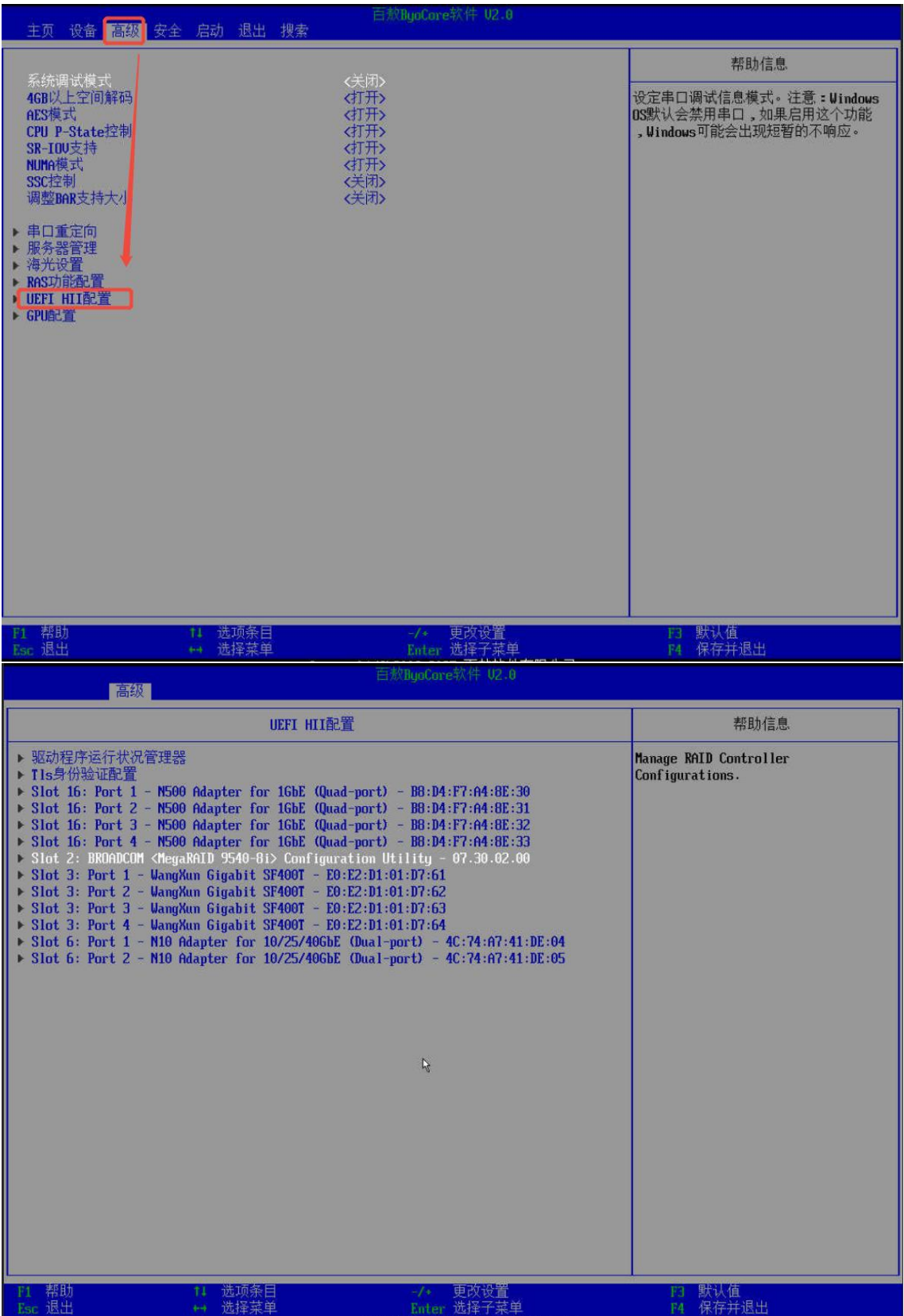
2.1 创建阵列

2.1.1 创建 RAID0

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



- 2) 在**高级**页签下找到 **UEFI HII 配置**并进入后找到对应的阵列卡（9540-8i）

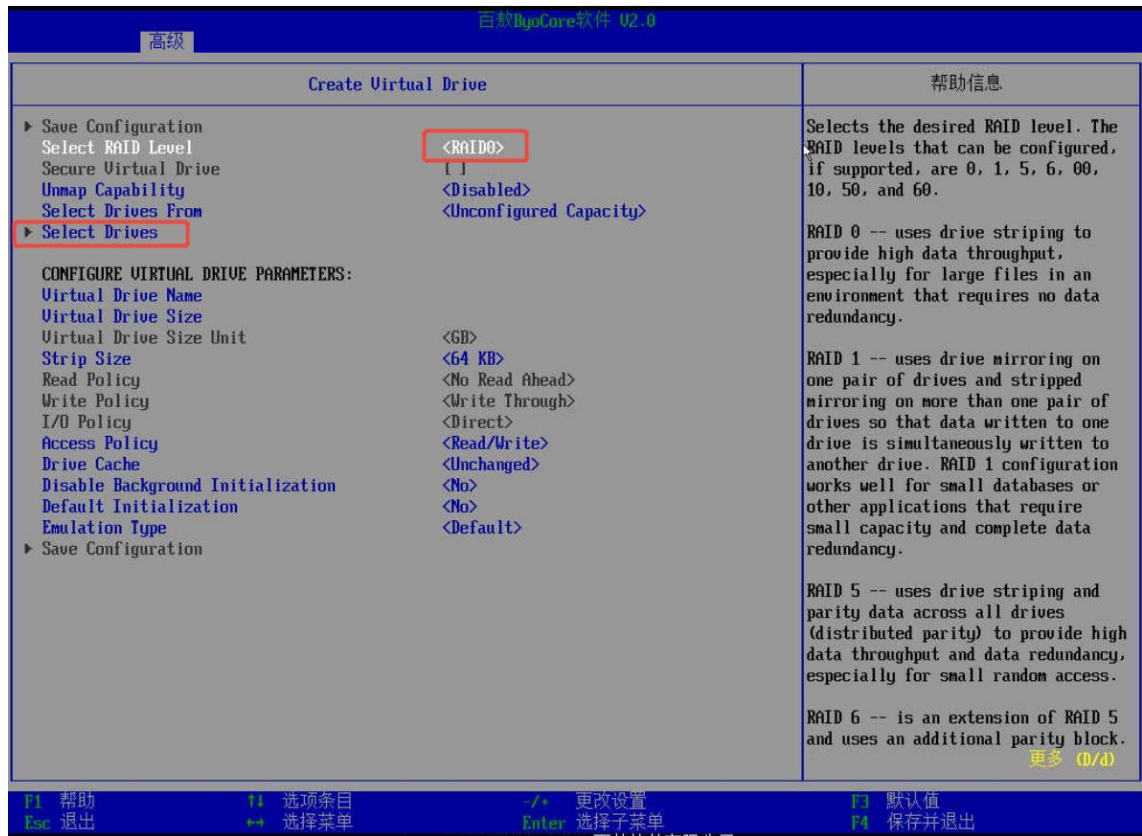


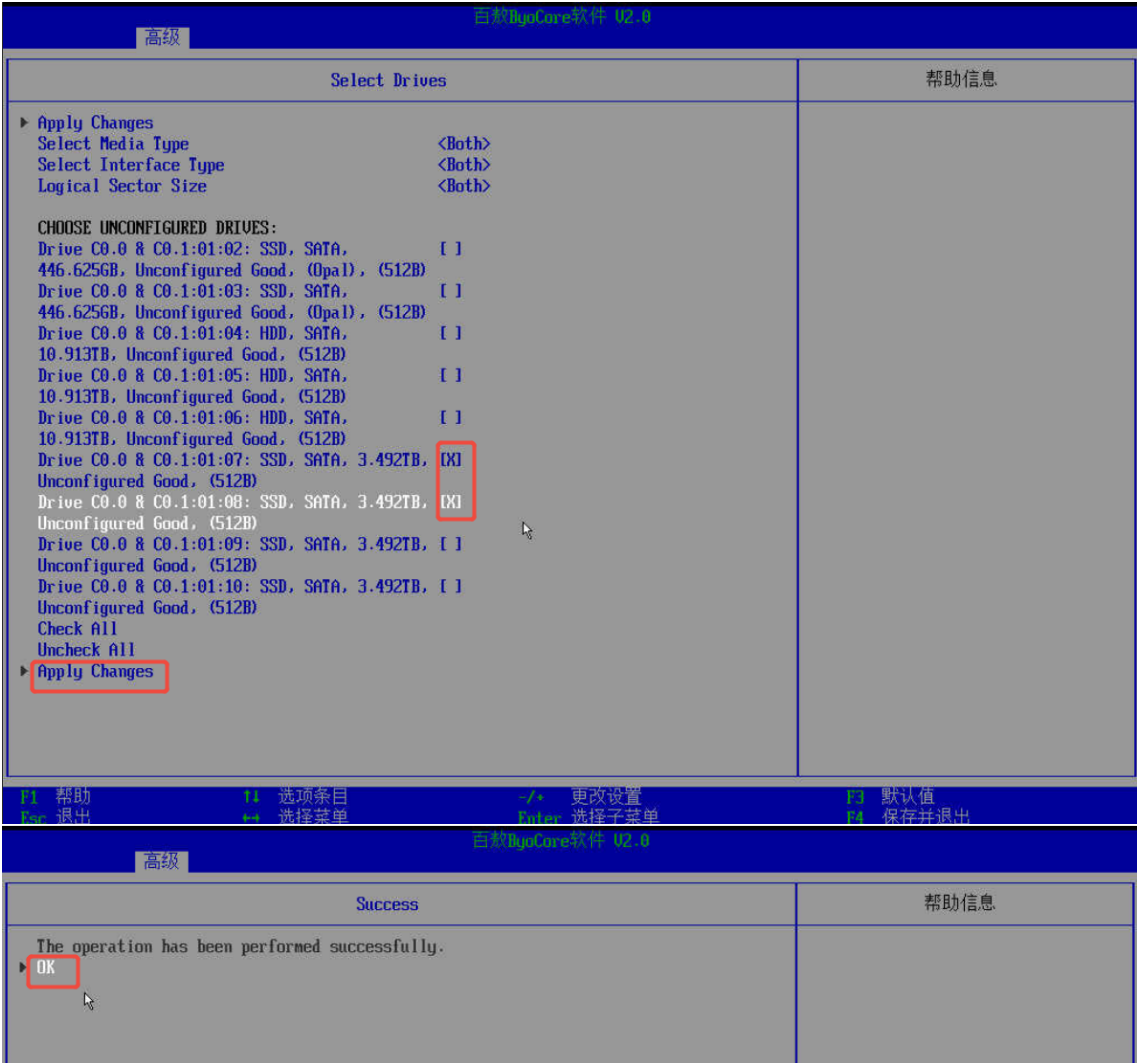
3) 依次选择 Main Menu>Configuration Management>Create Virtual Drive, 按

Enter 进入后开始创建。

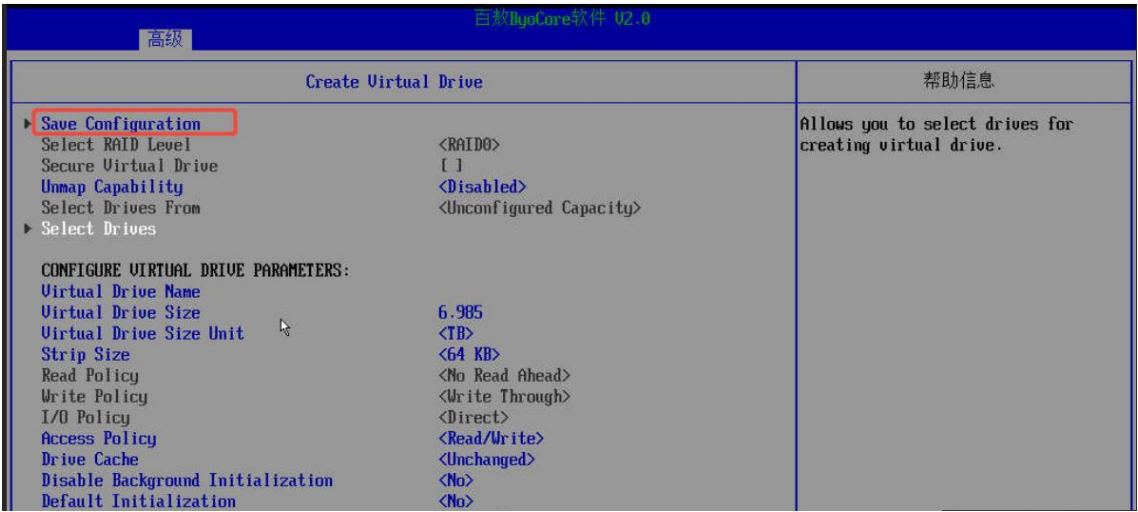


4) 设置 **Select RAID Level** 为 RAID 0; 在 **Select Drives** 中选择成员盘, **Enabled** 表明已选中成员盘, 点击 **Apply Changes** 保存选项。

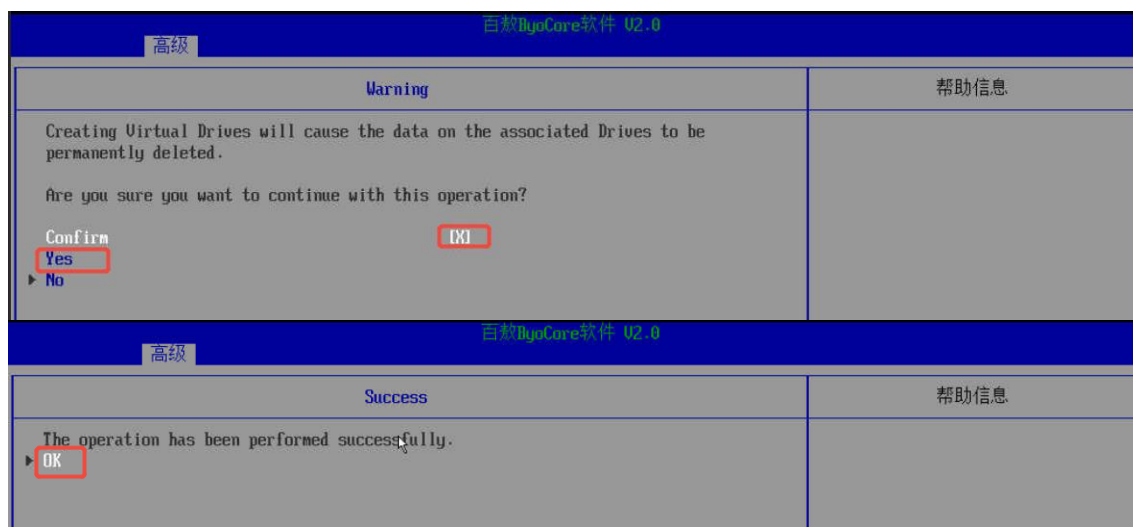




5) RAID 级别与成员盘设置完成后，选择 **Save Configuration** 保存阵列选项。

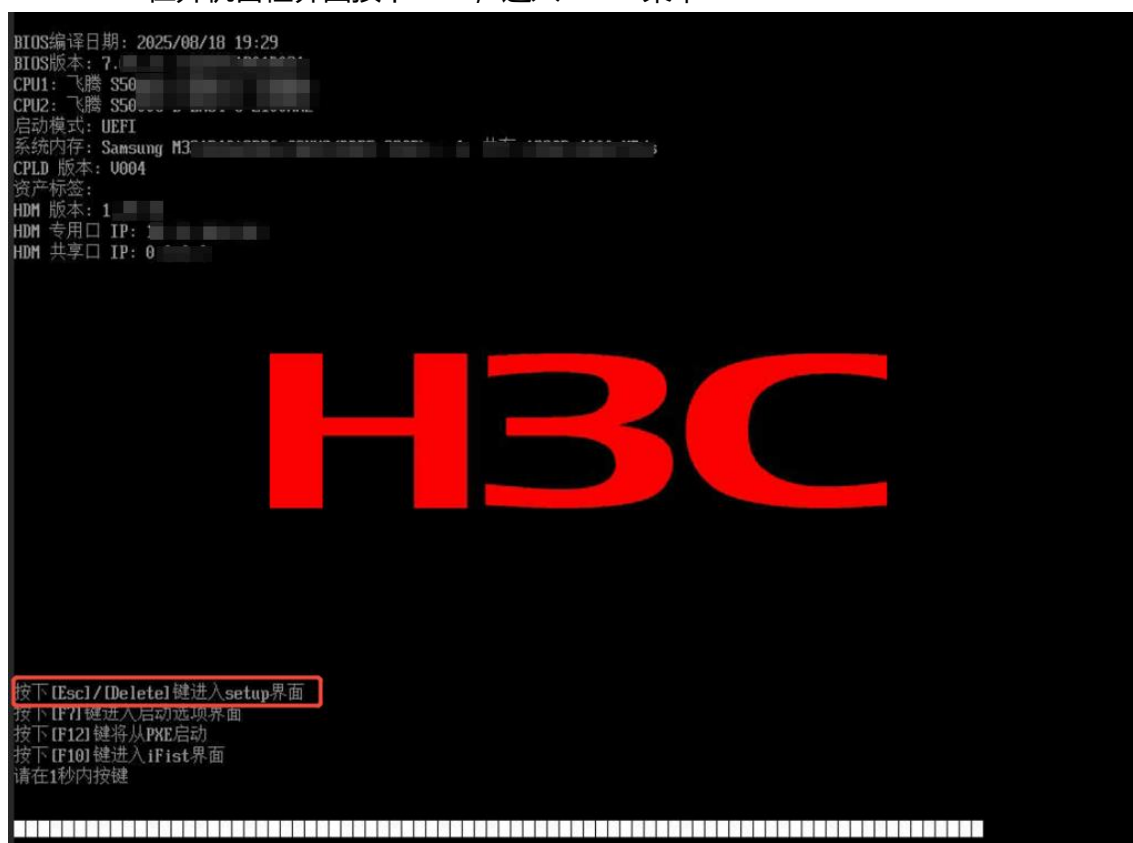


6) 将 Confirm 选项设置为 **Enabled**，点击 **Yes**，再点击 **OK**，完成配置。

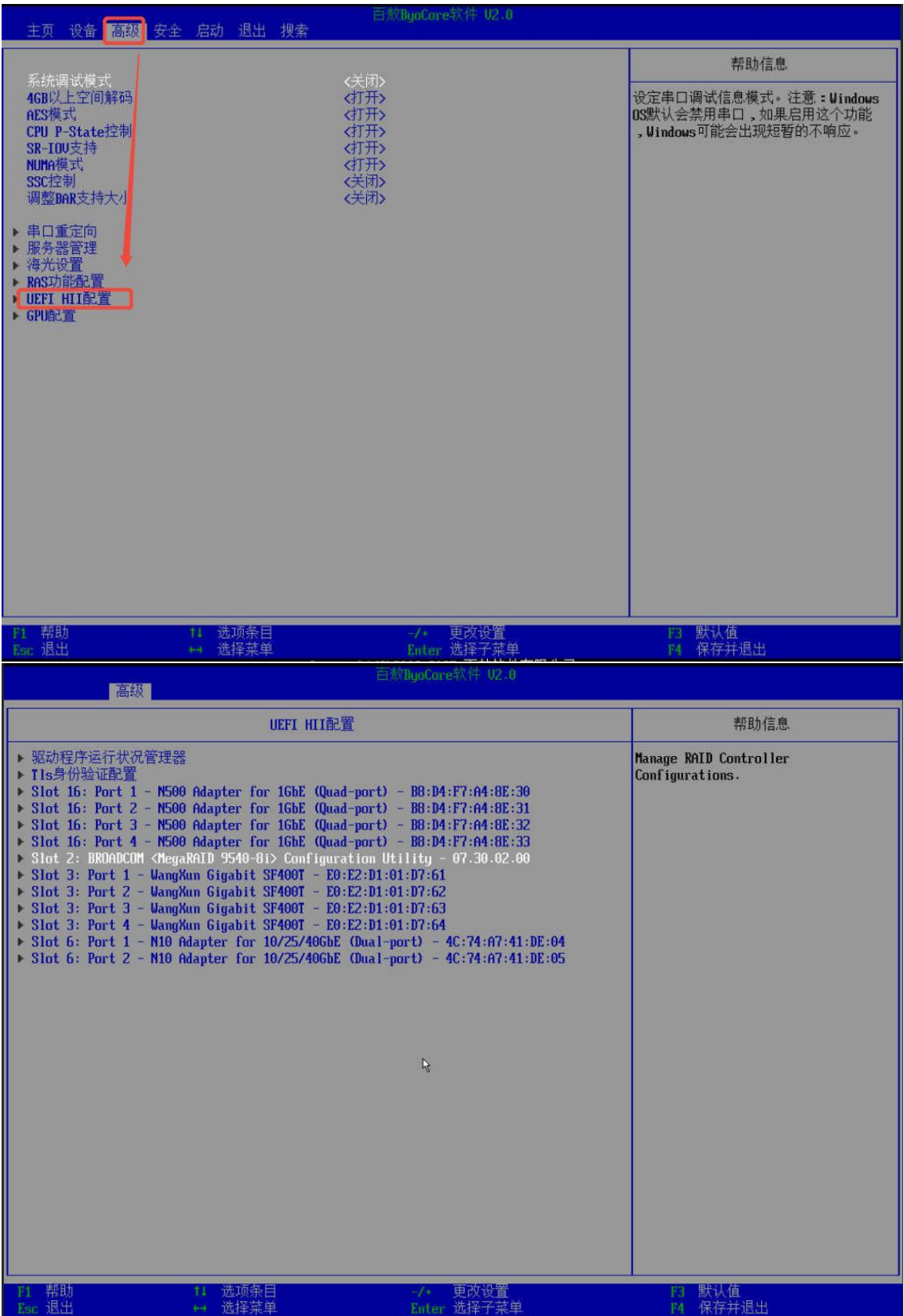


2.1.2 创建 RAID10

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

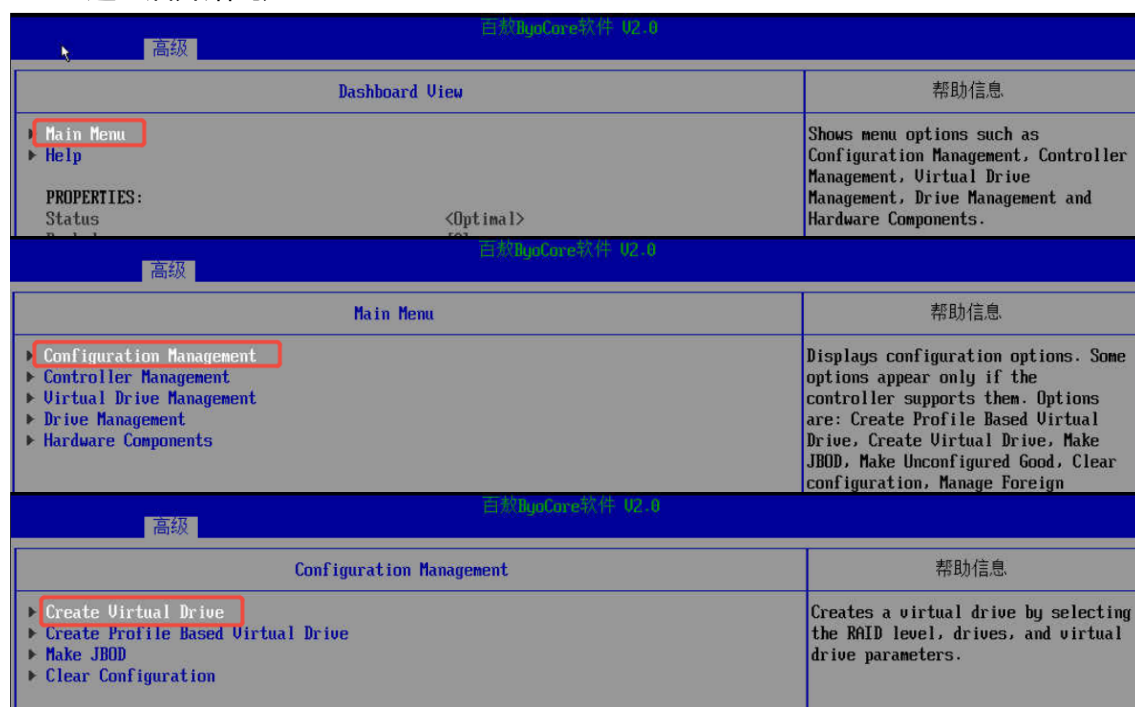


- 2) 在高级页签下找到 **UEFI HII 配置**并进入后找到对应的阵列卡（9540-8i）

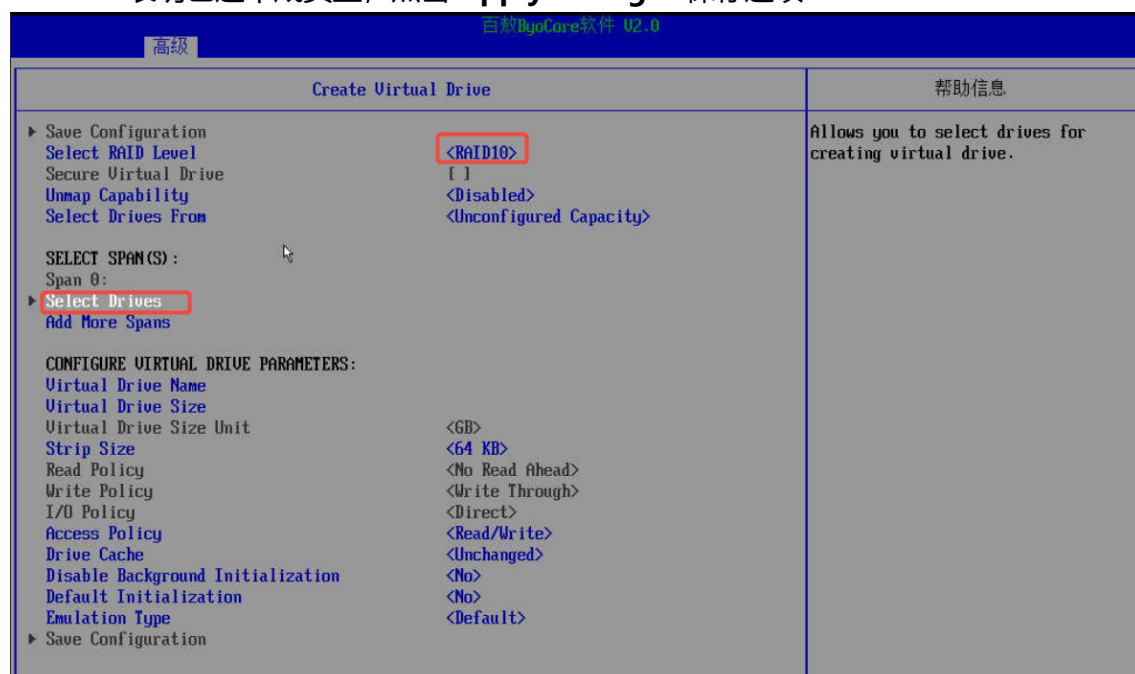


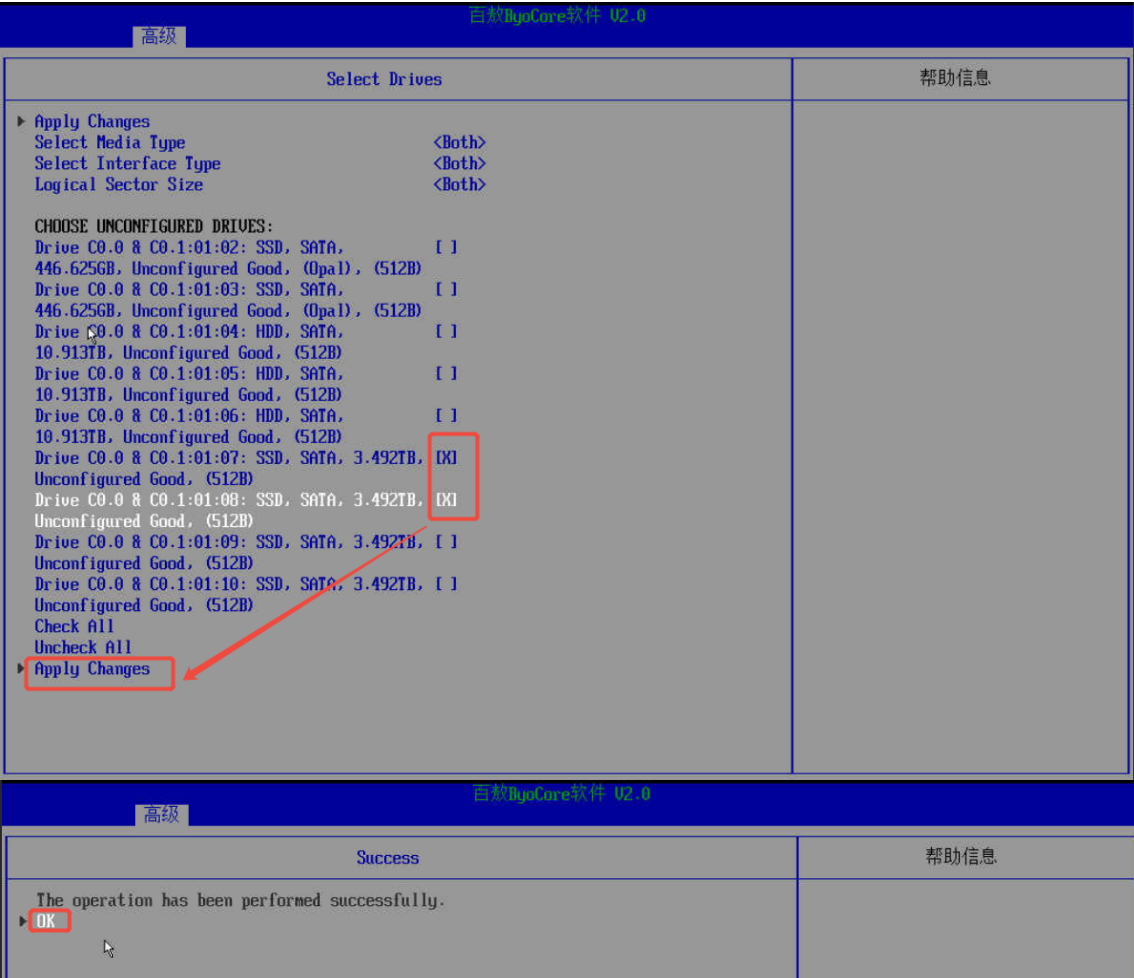
3) 依次选择 Main Menu>Configuration Management>Create Virtual Drive, 按

Enter 进入后开始创建。

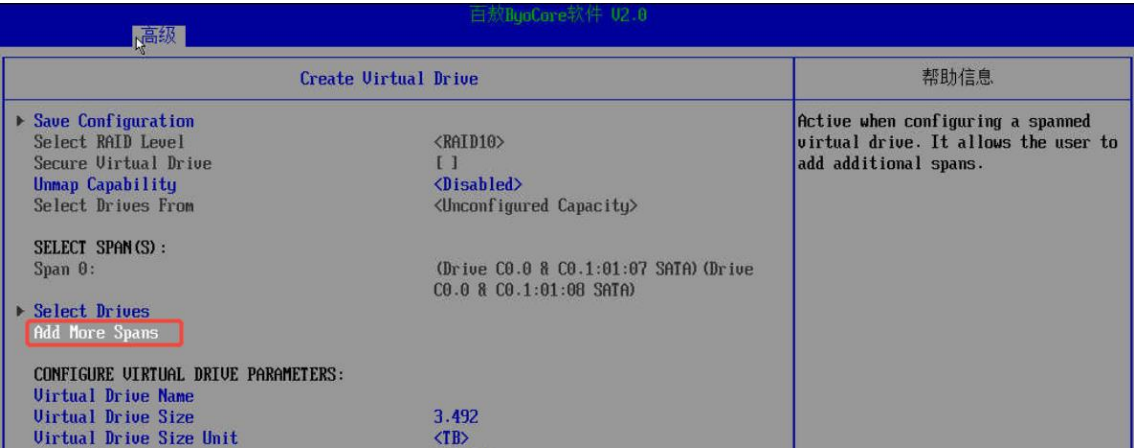


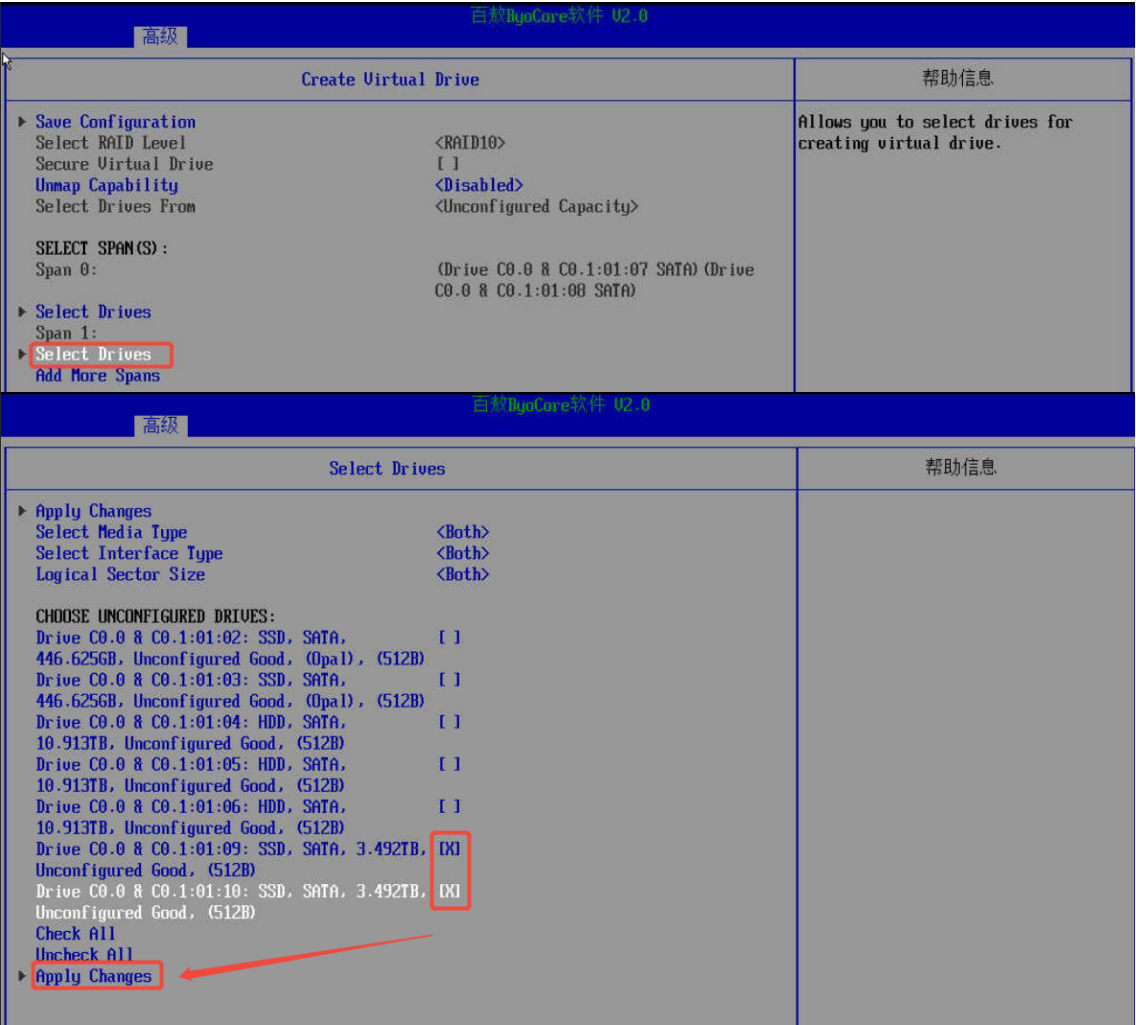
- 4) 设置 **Select RAID Level** 为 RAID 10; 在 **Select Drives** 中选择第一个 Span 成员盘, **Enabled** 表明已选中成员盘, 点击 **Apply Changes** 保存选项





5) 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。





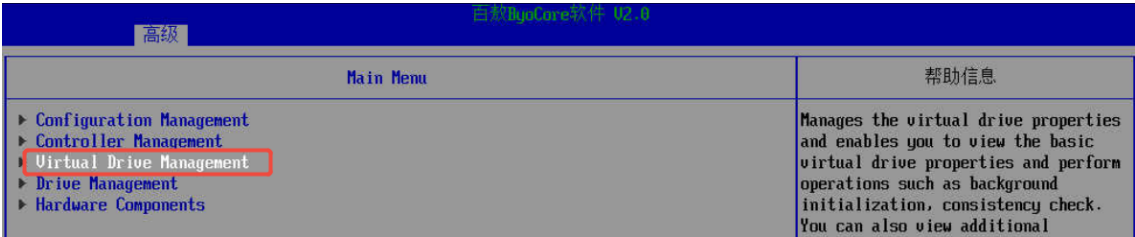
6) 所有 Span 设置完成后，选择 **Save Configuration** 完成配置，生成阵列。



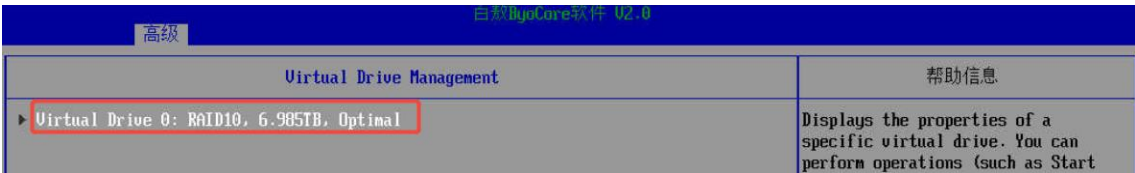
注： RAID 10 支持 2~8 个 Span，每个 Span 至少需要 2 个磁盘且数量必须为偶数，且各个 Span 的硬盘数量必须保持一致。

2.2 删除阵列

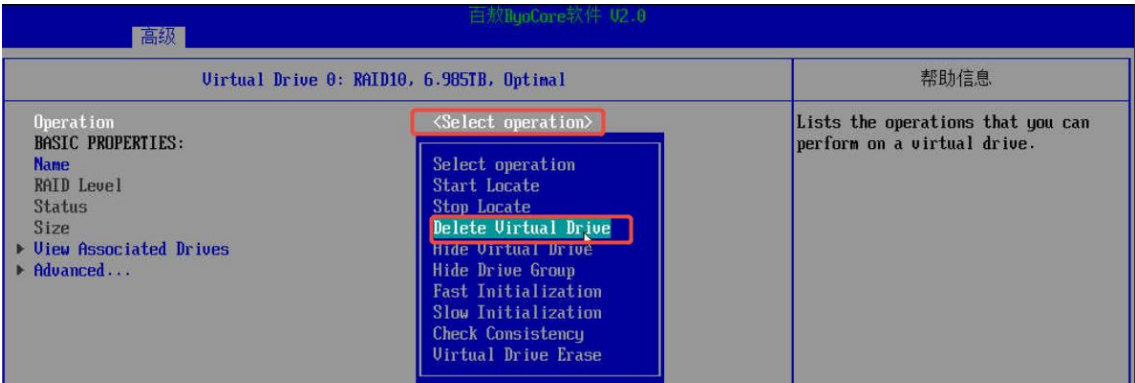
1) 在存储控制卡配置界面选择 **Virtual Drive Management**，按 **Enter**。



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。

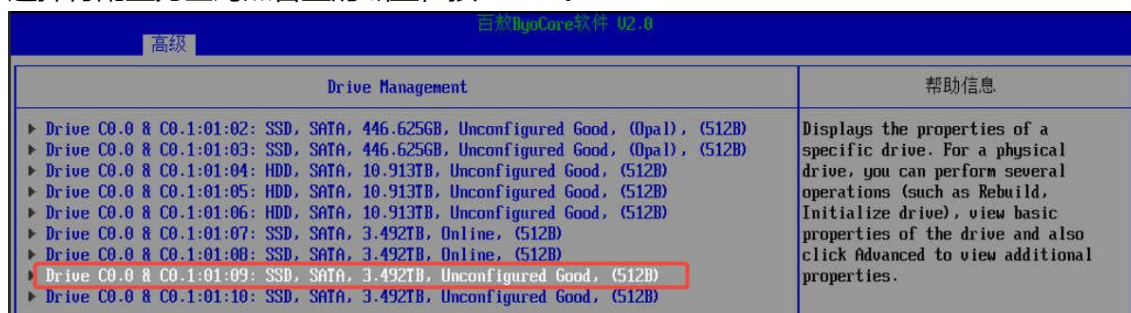
3.1 创建热备

3.1.1 创建全局热备

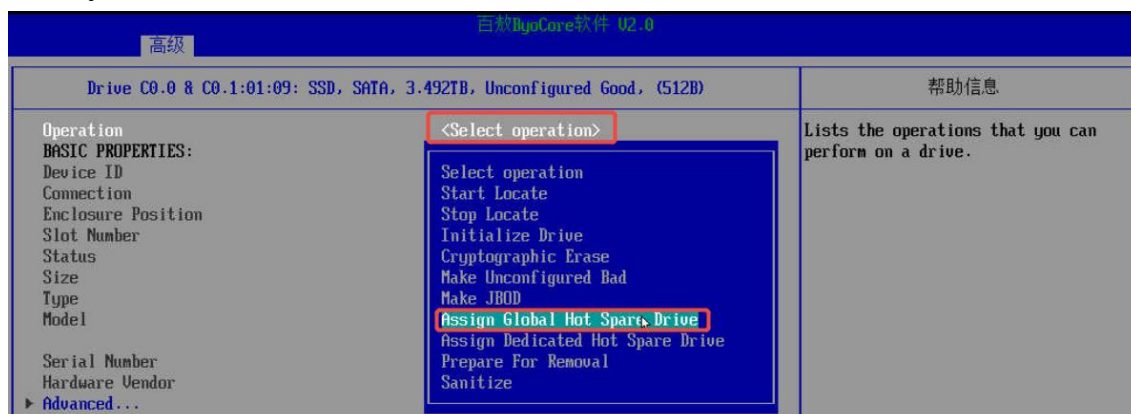
- 1) 选择 **Main Menu>Drive Management**，找到并进入需要配置为热备盘的硬盘。



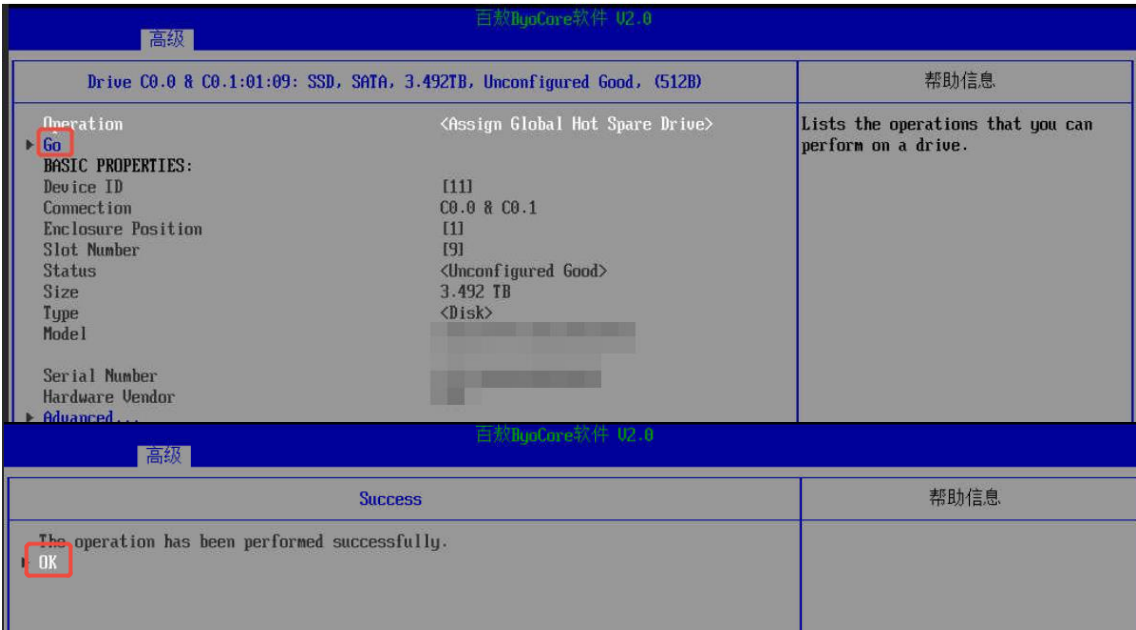
- 2) 选择待配置为全局热备盘的磁盘，按 **Enter**。



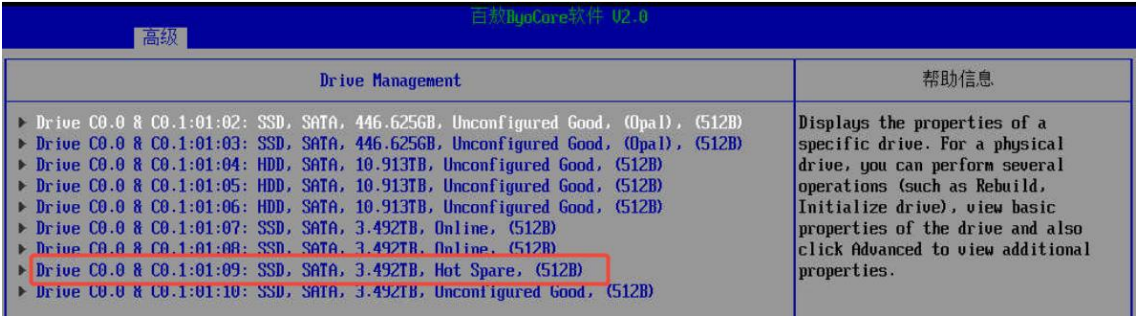
- 3) 选中 **Operation**，按 **Enter**，然后再选择 **Assign Global Hot Spare Drive**，按 **Enter**。



- 4) 选择完成后，点击 **Go** 完成配置。

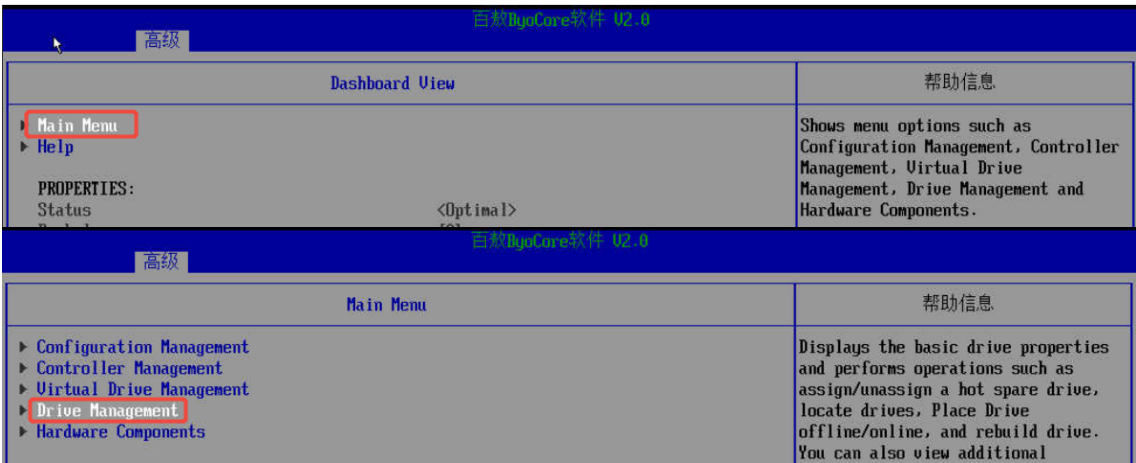


5) 配置完成的硬盘状态将显示为 Hot Spare。



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。



高级 百脑BgcCore软件 V2.0	
Drive Management	帮助信息
▶ Drive C0.0 & C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:09: SSD, SATA, 3.492TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:10: SSD, SATA, 3.492TB, Unconfigured Good, (512B)	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.

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

高级 百脑BgcCore软件 V2.0	
Drive C0.0 & C0.1:01:10: SSD, SATA, 3.492TB, Unconfigured Good, (512B)	帮助信息
Operation BASIC PROPERTIES: Device ID Connection Enclosure Position Slot Number Status Size Type Model Serial Number Hardware Vendor ▶ Advanced... <Select operation> Select operation Start Locate Stop Locate Initialize Drive Cryptographic Erase Make Unconfigured Bad Make JBOD Assign Global Hot Spare Drive Assign Dedicated Hot Spare Drive Prepare For Removal Sanitize	Lists the operations that you can perform on a drive.

- 3) 选择 **Go**，按 **Enter**。

高级 百脑BgcCore软件 V2.0	
Drive C0.0 & C0.1:01:10: SSD, SATA, 3.492TB, Unconfigured Good, (512B)	帮助信息
Operation ▶ Go BASIC PROPERTIES: Device ID [10] Connection C0.0 & C0.1 Enclosure Position [1] Slot Number [10] <Assign Dedicated Hot Spare Drive>	Starts the selected operation or opens another form.

- 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。

高级 百脑BgcCore软件 V2.0	
Associate Drive Groups to The Dedicated Hot Spare Drive	帮助信息
Drive Group #0, RAID1, 3.492TB [X] Check All Uncheck All ▶ OK ▶ Cancel	
高级 百脑BgcCore软件 V2.0	
Success	帮助信息
The operation has been performed successfully. ▶ OK	

- 5) 配置完成的硬盘状态将显示为 Hot Spare

高级 百数DuoCore软件 V2.0	
Drive Management	帮助信息
▶ Drive C0.0 & C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:09: SSD, SATA, 3.492TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:10: SSD, SATA, 3.492TB, Hot Spare, (512B)	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.

3.2 删除热备

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

高级 百数DuoCore软件 V2.0	
Dashboard View	帮助信息
▶ Main Menu ▶ Help PROPERTIES: Status <Optimal>	Shows menu options such as Configuration Management, Controller Management, Virtual Drive Management, Drive Management and Hardware Components.
高级 百数DuoCore软件 V2.0	
Main Menu	帮助信息
▶ Configuration Management ▶ Controller Management ▶ Virtual Drive Management ▶ Drive Management ▶ Hardware Components	Displays the basic drive properties and performs operations such as assign/unassign a hot spare drive, locate drives, Place Drive offline/online, and rebuild drive. You can also view additional
高级 百数DuoCore软件 V2.0	
Drive Management	帮助信息
▶ Drive C0.0 & C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:09: SSD, SATA, 3.492TB, Hot Spare, (512B) ▶ Drive C0.0 & C0.1:01:10: SSD, SATA, 3.492TB, Unconfigured Good, (512B)	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.

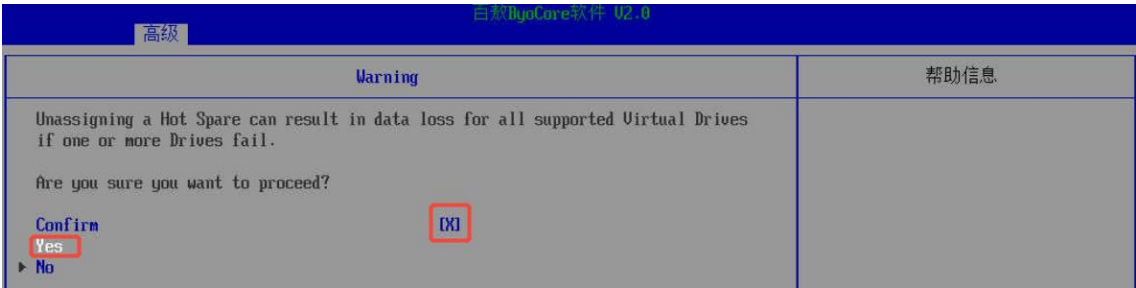
2) 选择 **Operation** 按 **Enter**, 选择 **Unassign Hot spare drive**, 按 **Enter**。

高级 百数DuoCore软件 V2.0	
Drive C0.0 & C0.1:01:09: SSD, SATA, 3.492TB, Hot Spare, (512B)	帮助信息
Operation <Select operation> BASIC PROPERTIES: Device ID Connection Enclosure Position Slot Number Status Size 3.492 TB Type <Disk> Model Serial Number Hardware Vendor ▶ Advanced...	Lists the operations that you can perform on a drive.

3) 选择 **Go**, 按 **Enter**。



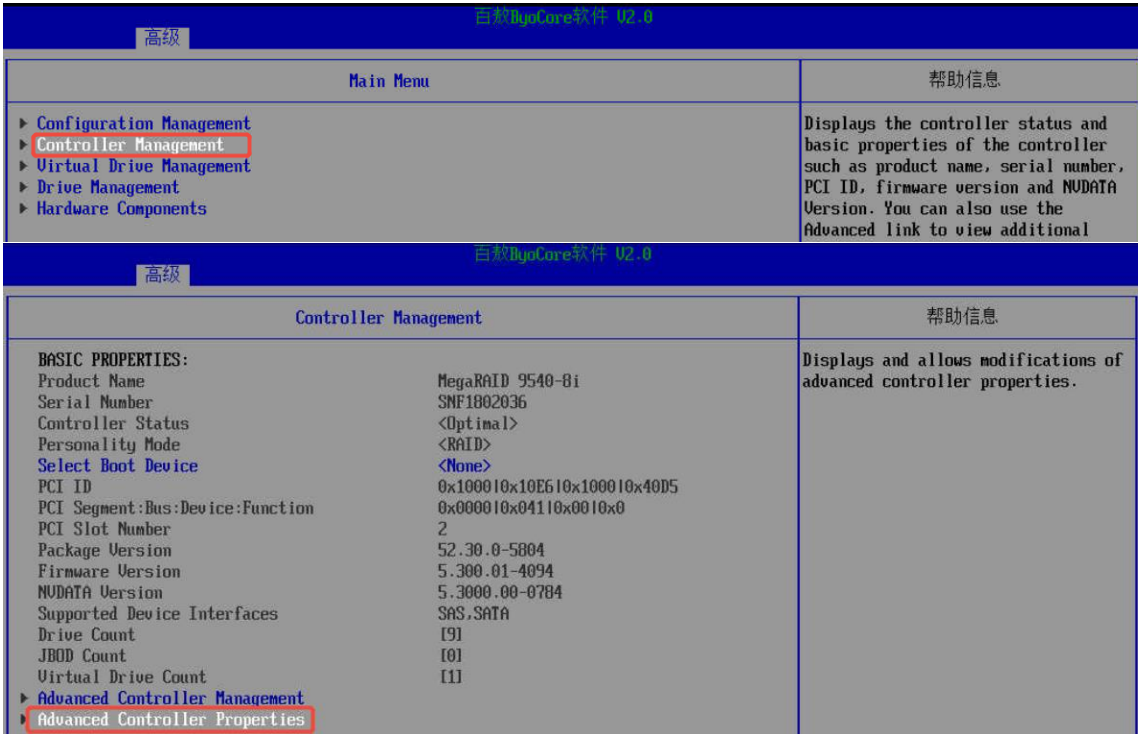
4) Confirm 选项选择为 **Enabled**，选择 **Yes** 后按 **Enter**。

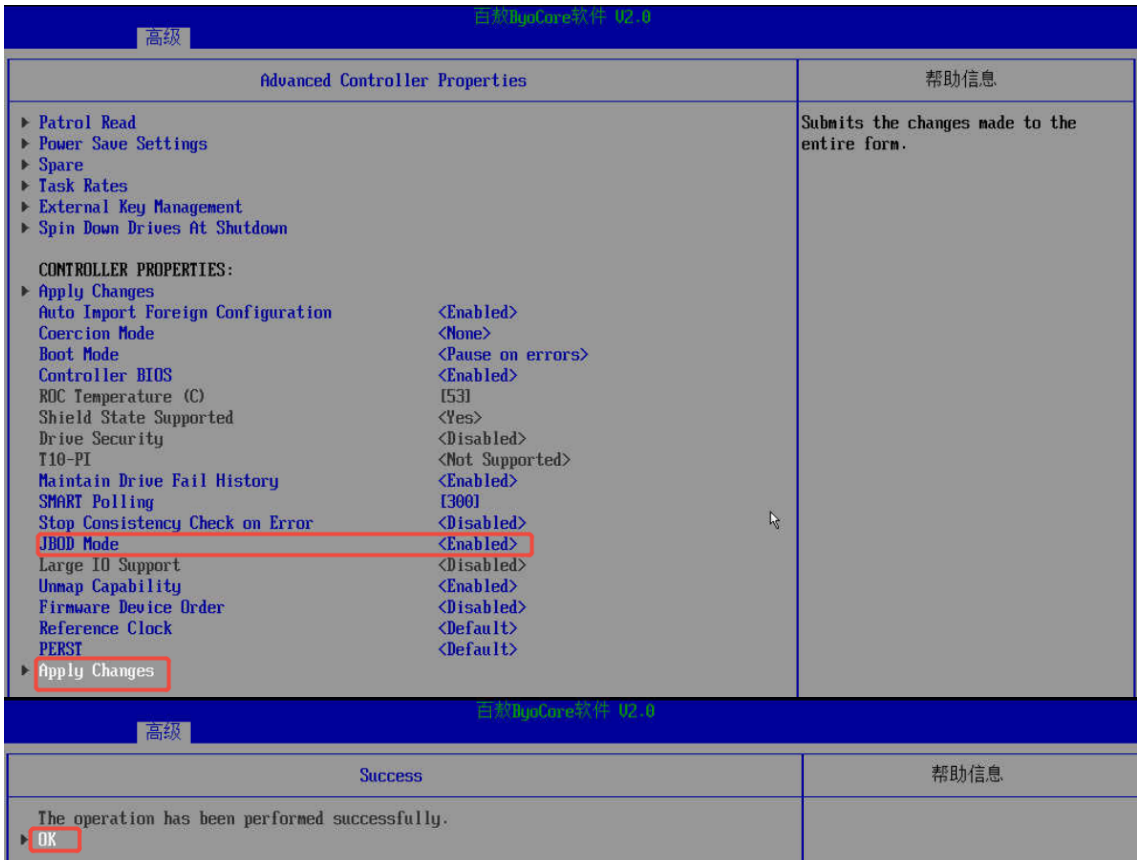


4. 设置与取消直通盘

4.1 设置硬盘直通

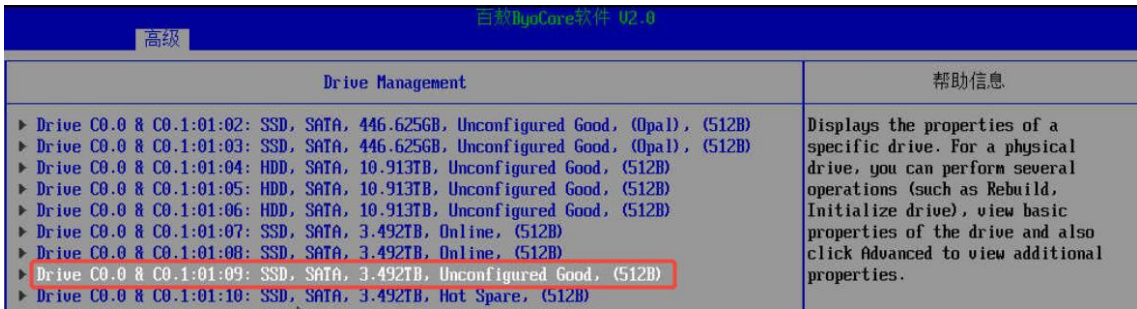
1) 进入 **Controller Management>Advanced Controller Properties**，设置 JBOD Mode 为 **Enabled** 并保存。

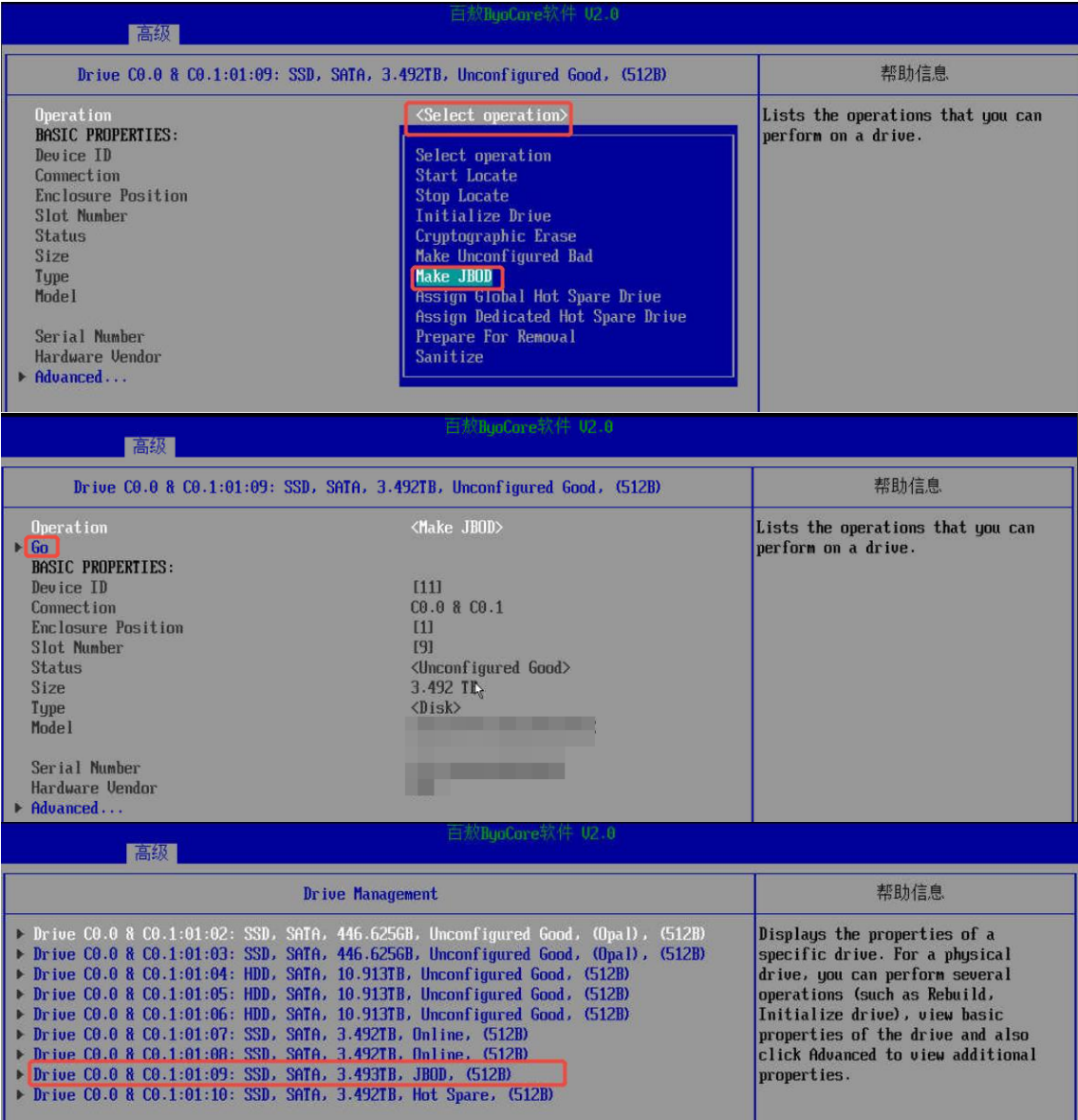




注：设置 JBOD Mode 为 Enabled 后，Unconfigured Good 状态的硬盘会自动切换为 JBOD，如没有自动切换，或 JBOD Mode 已为 Enabled 状态，需单独调整 Unconfigured Good 状态的硬盘为 JBOD，再执行步骤 2)。

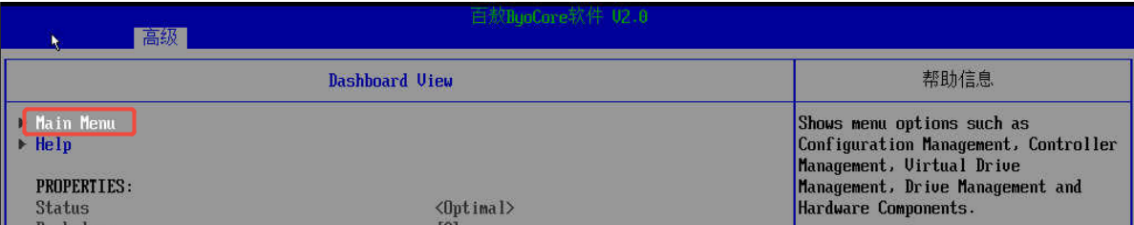
2) 然后在 **Drive Management** 中选择 Unconfigured Good 硬盘进行配置即可。





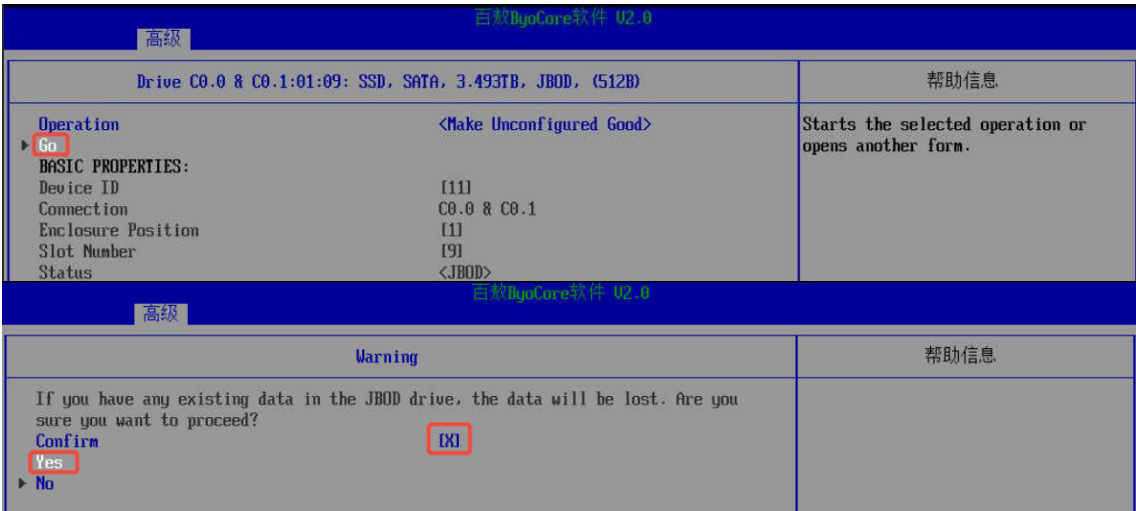
4.2 取消硬盘直通

- 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**。





2) 选择 Go 保存。



高级		百数DuoCore软件 V2.0	
Drive Management		帮助信息	
▶ Drive C0.0 & C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B) ▶ Drive C0.0 & C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B) ▶ Drive C0.0 & C0.1:01:09: SSD, SATA, 3.492TB, Unconfigured Good, (512B) ▶ Drive C0.0 & C0.1:01:10: SSD, SATA, 3.492TB, Hot Spare, (512B)		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.	