

# H3C G7 海光平台服务器 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 海光平台系列服务器 LSI-9540 系列存储控制卡在 BIOS 下配置阵列的方法，并以 R4930 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

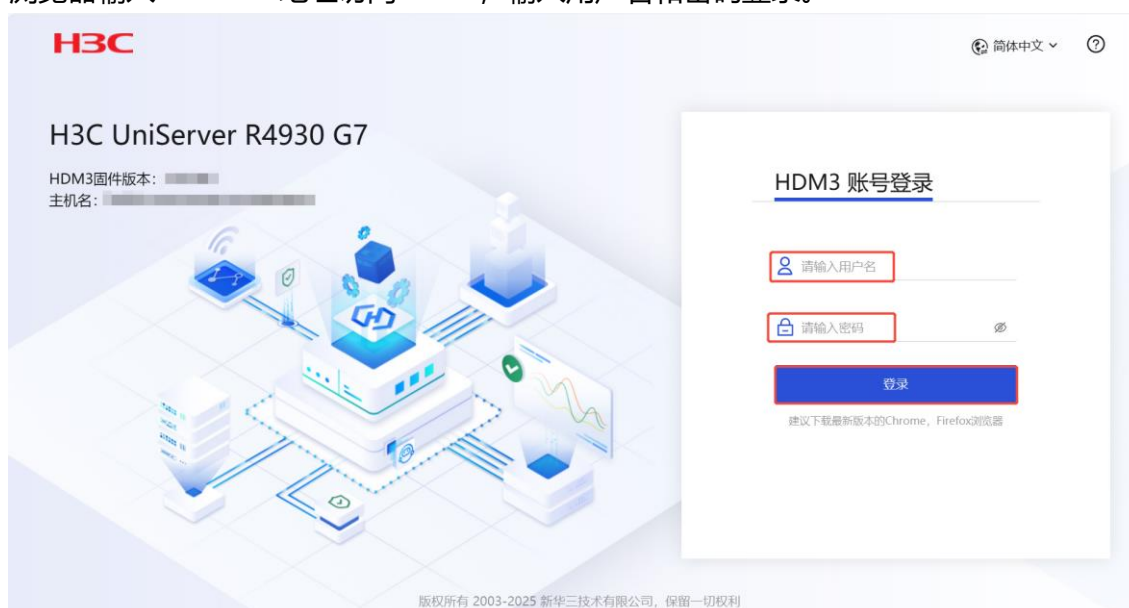
### 1. 连接 HDM 与启用远程控制台

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。

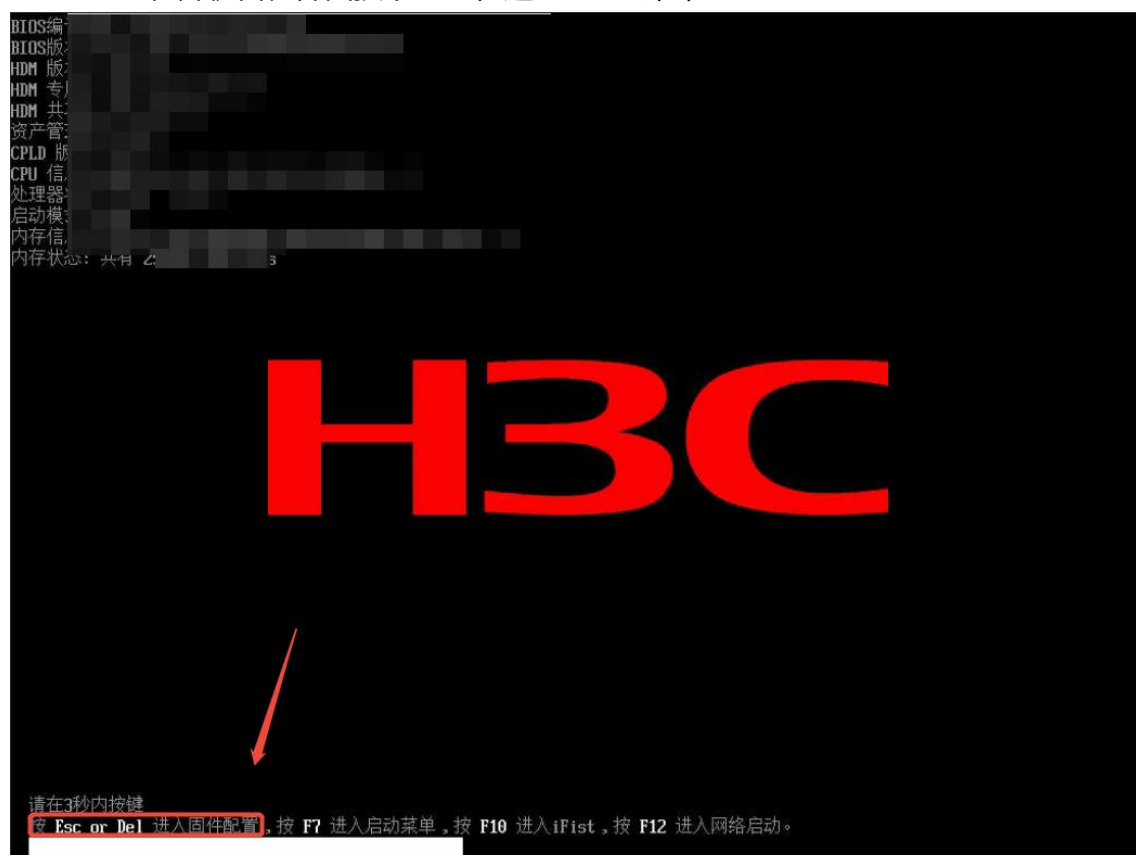
### 2. 创建与删除阵列

LSI-9540 支持 RAID 0, RAID 1, RAID 10

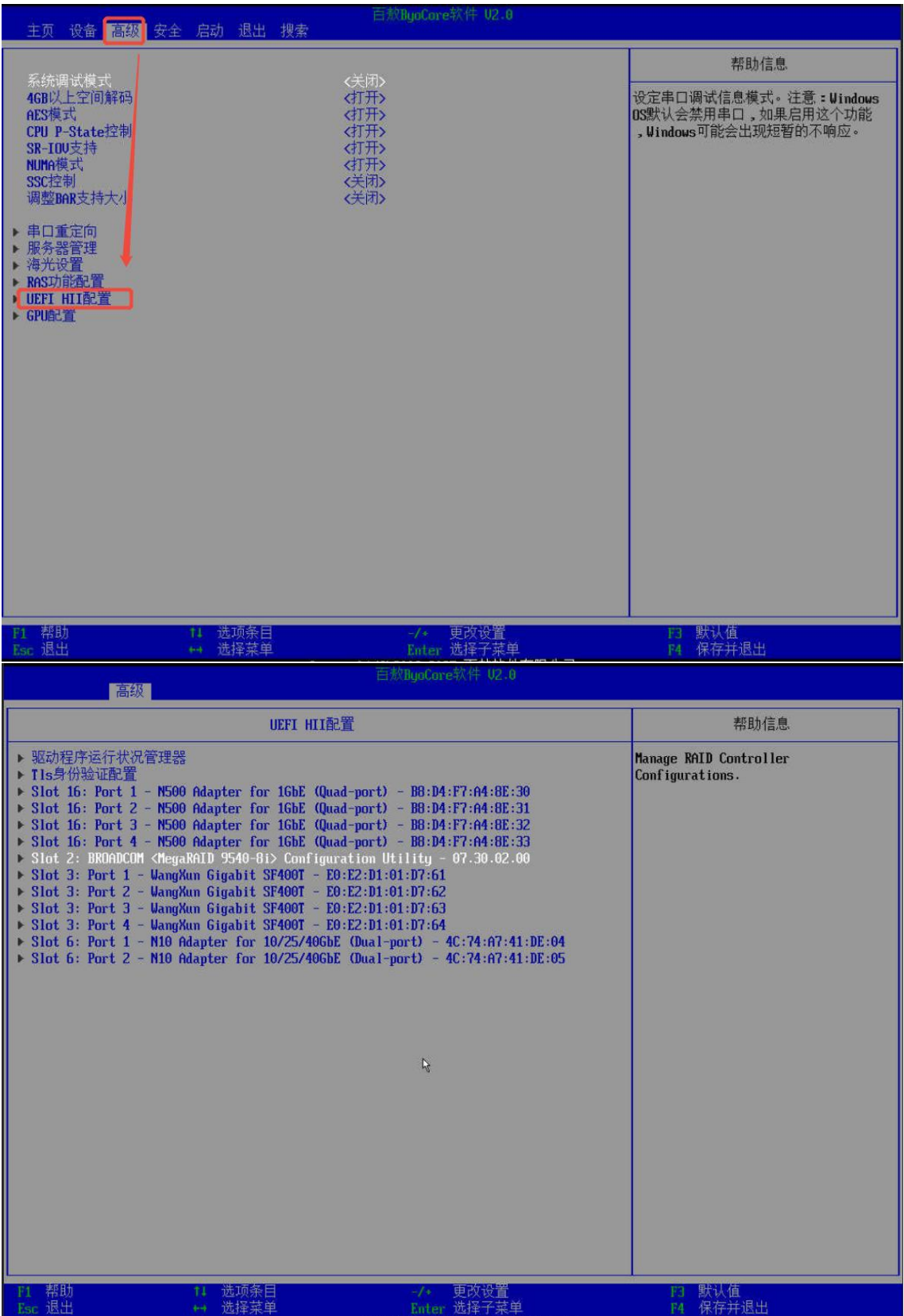
#### 2.1 创建阵列

##### 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**)

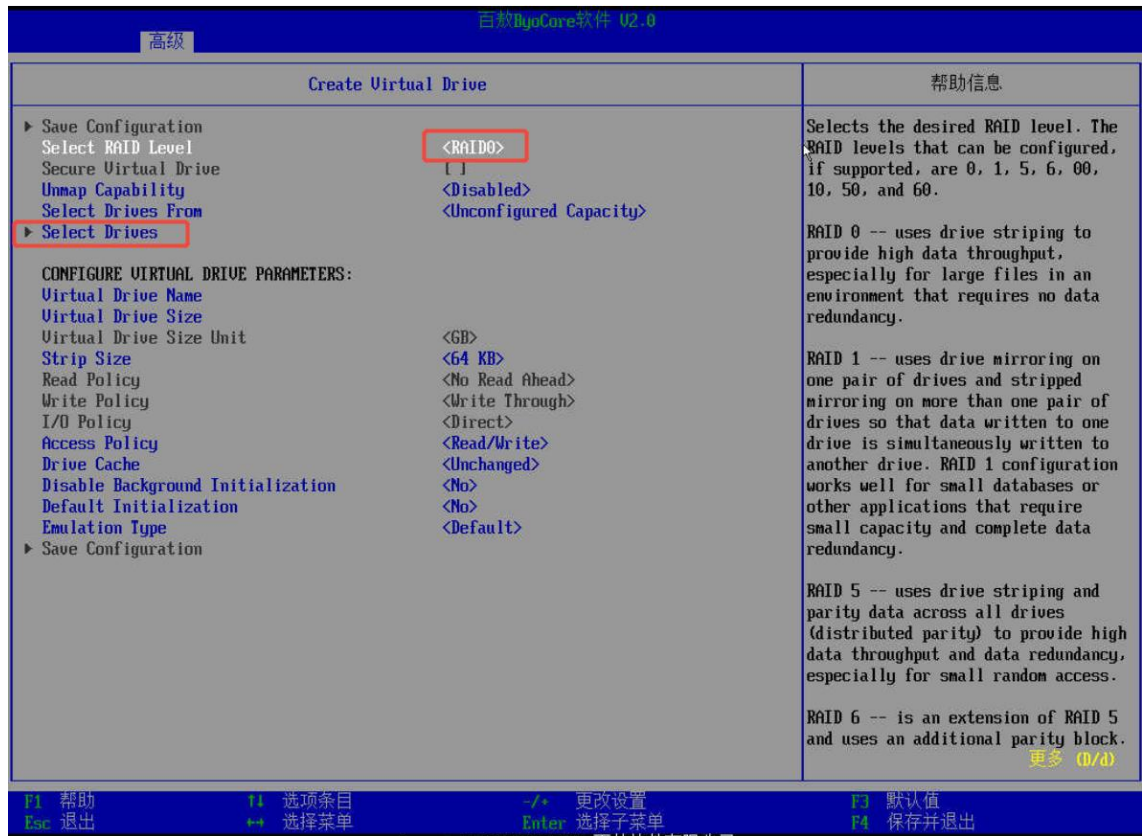


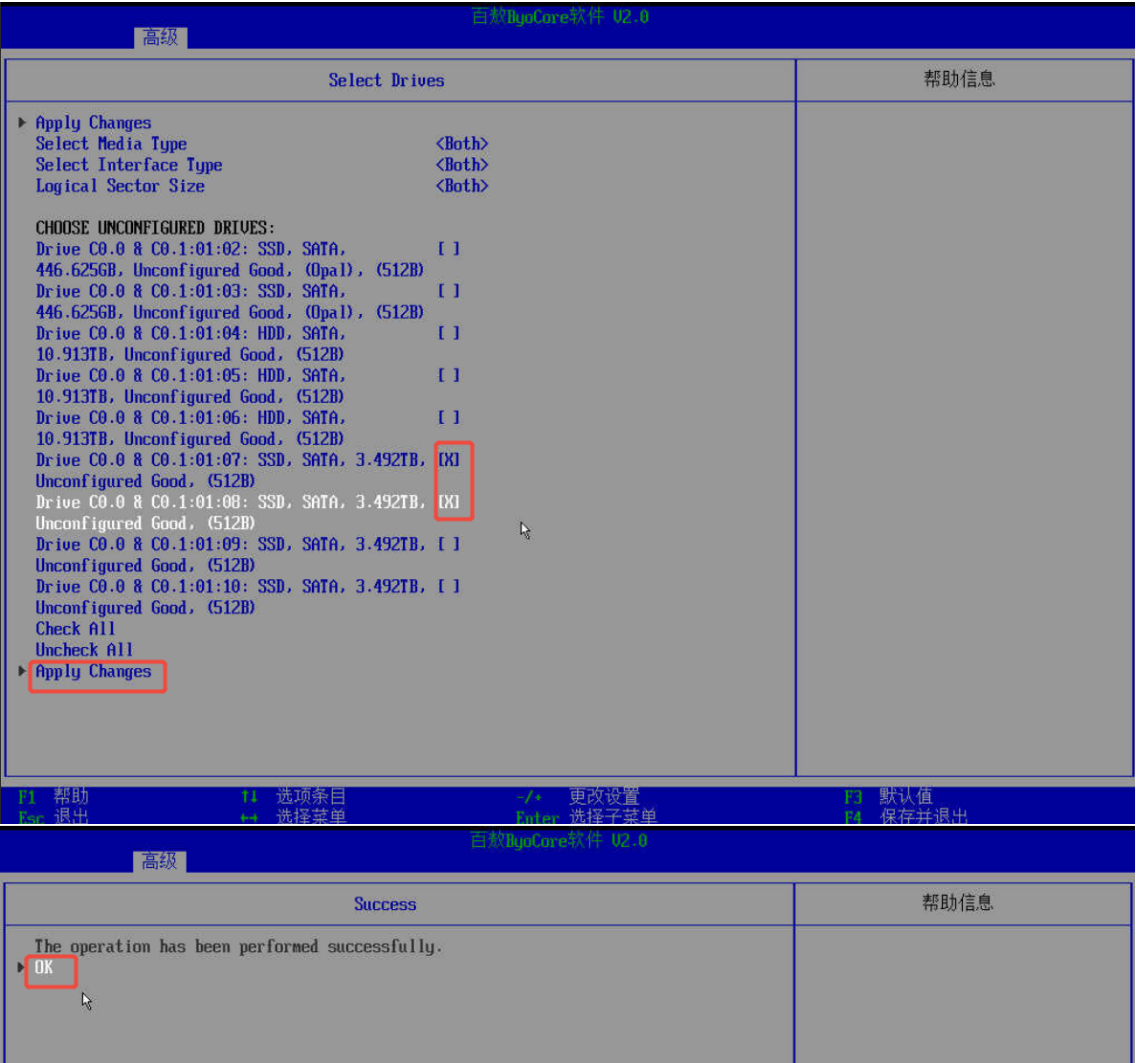
3) 依次选择 Main Menu>Configuration Management>Create Virtual Drive, 按

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。

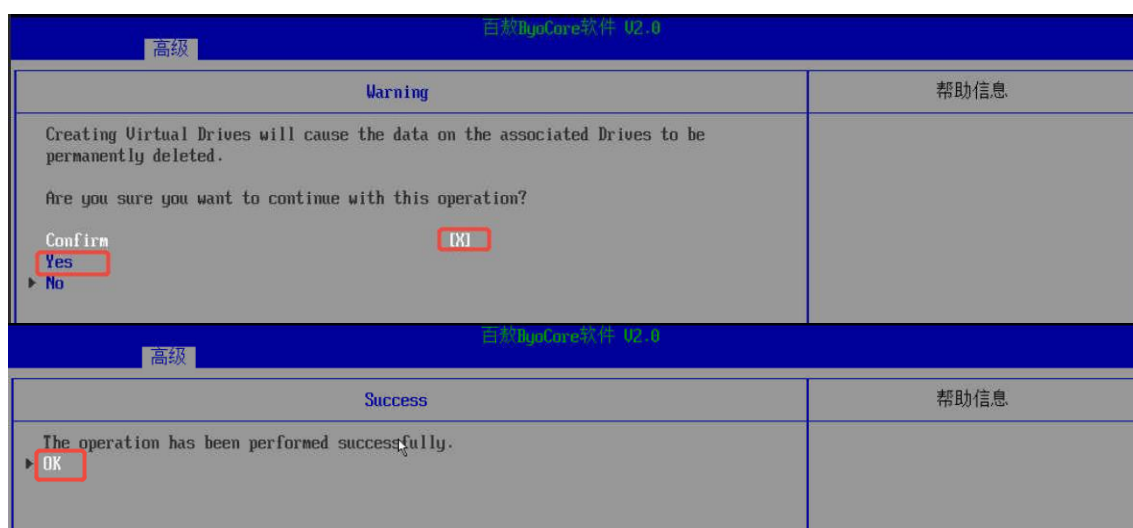




5) RAID 级别与成员盘设置完成后，选择 **Save Configuration** 保存阵列选项。

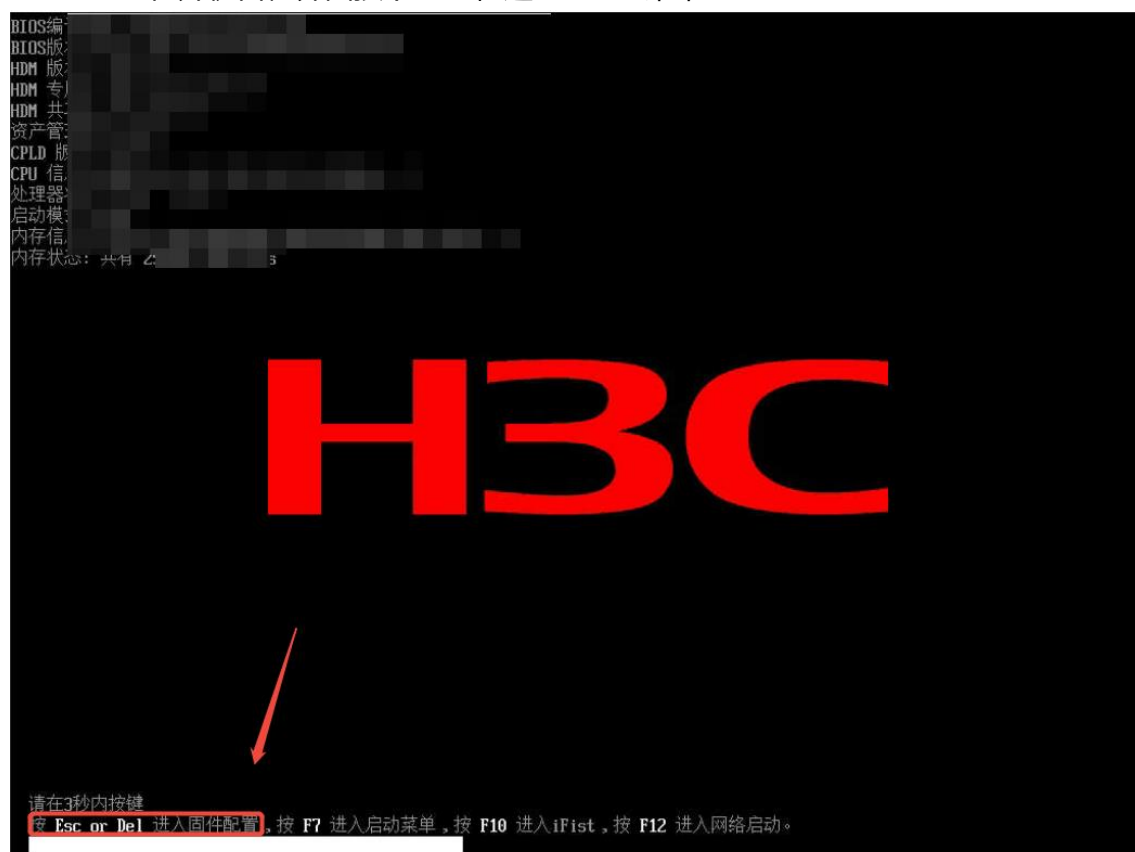


6) 将 Confirm 选项设置为 **Enabled**，点击 **Yes**，再点击 **OK**，完成配置。

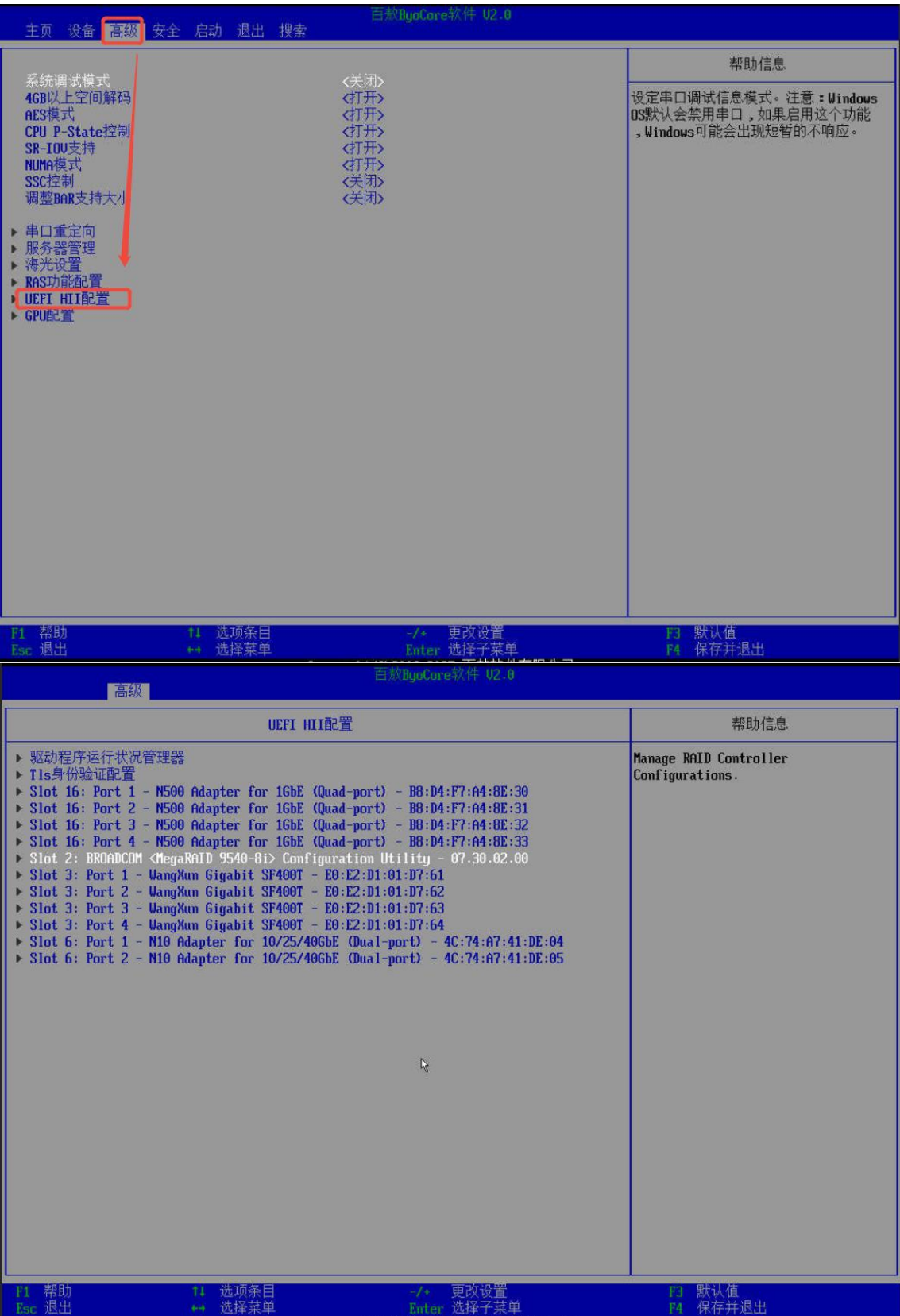


## 2.1.2 创建 RAID10

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

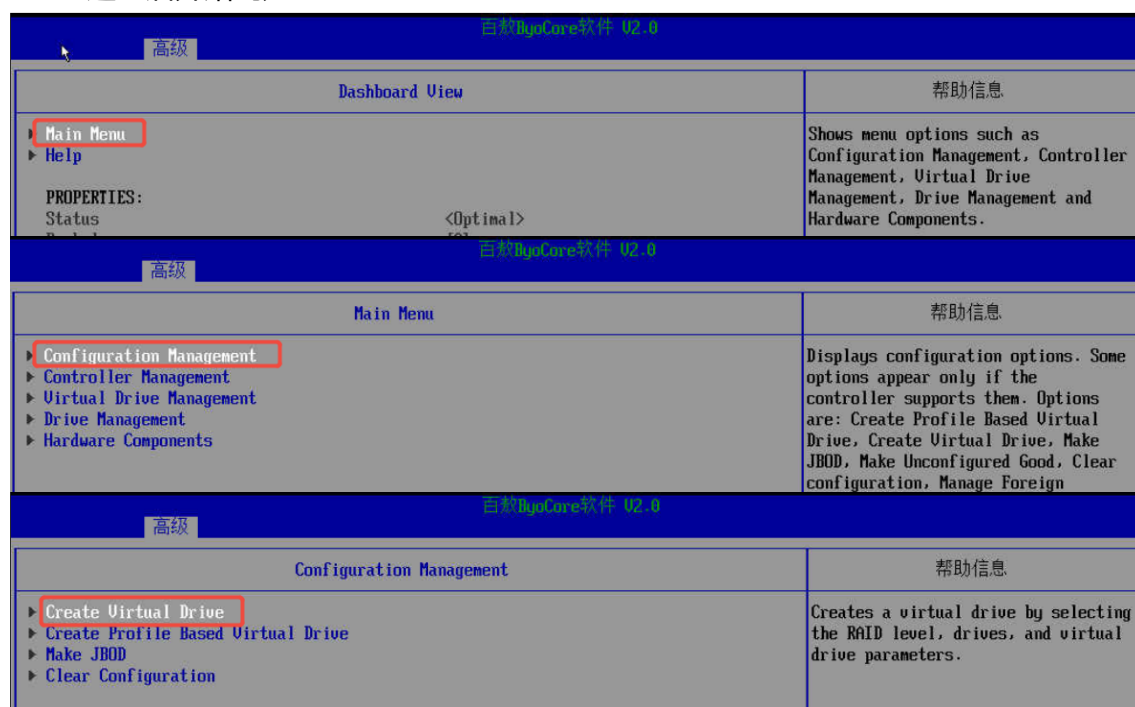


- 2) 在高级页签下找到 **UEFI HII 配置** 并进入后找到对应的阵列卡 (9540-8i)

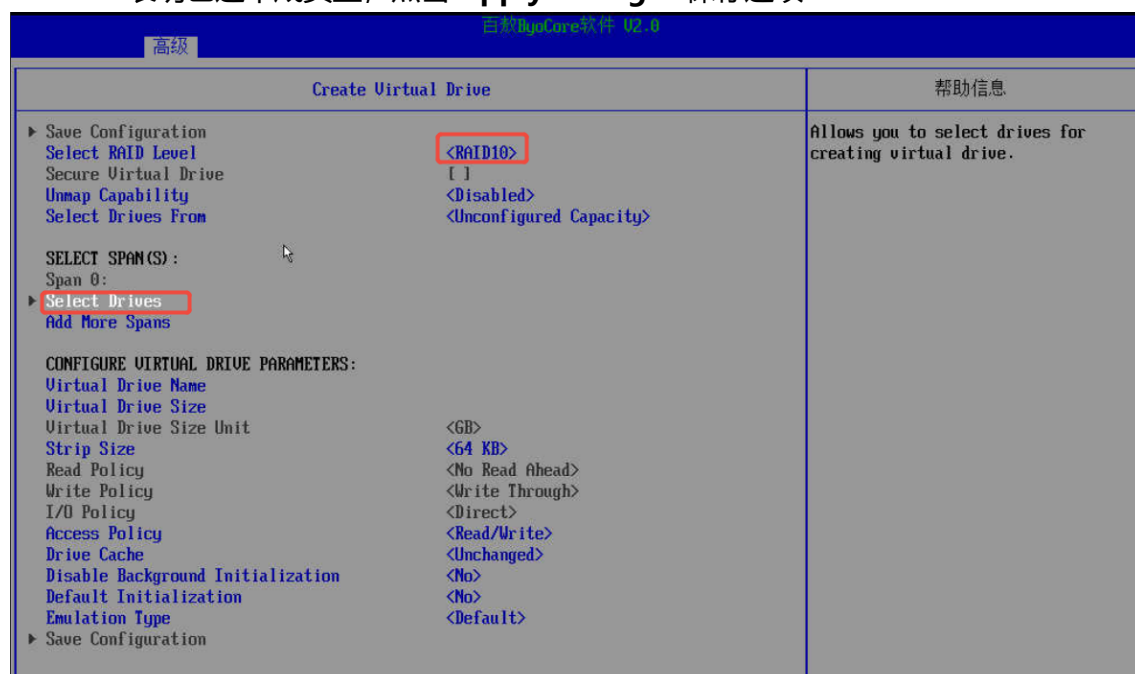


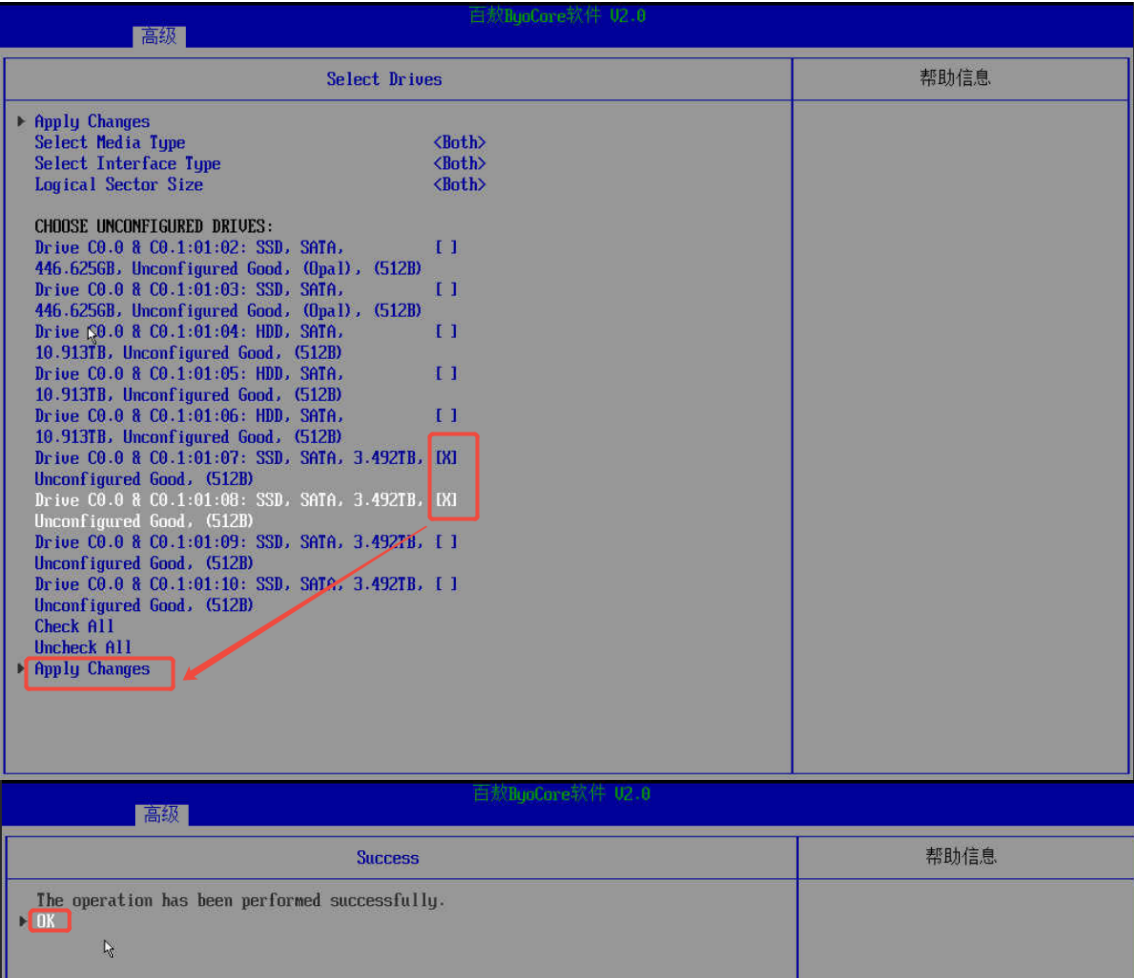
3) 依次选择 **Main Menu>Configuration Management>Create Virtual Drive**，按

Enter 进入后开始创建。

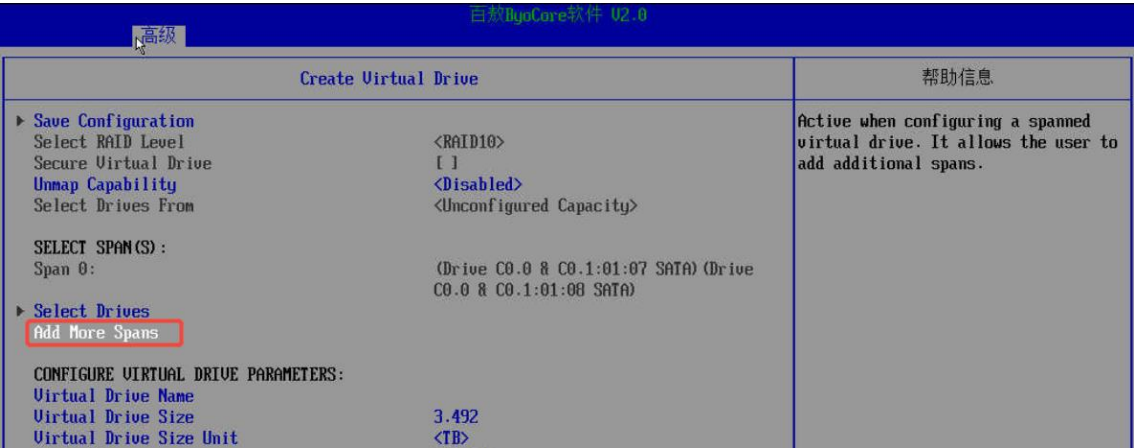


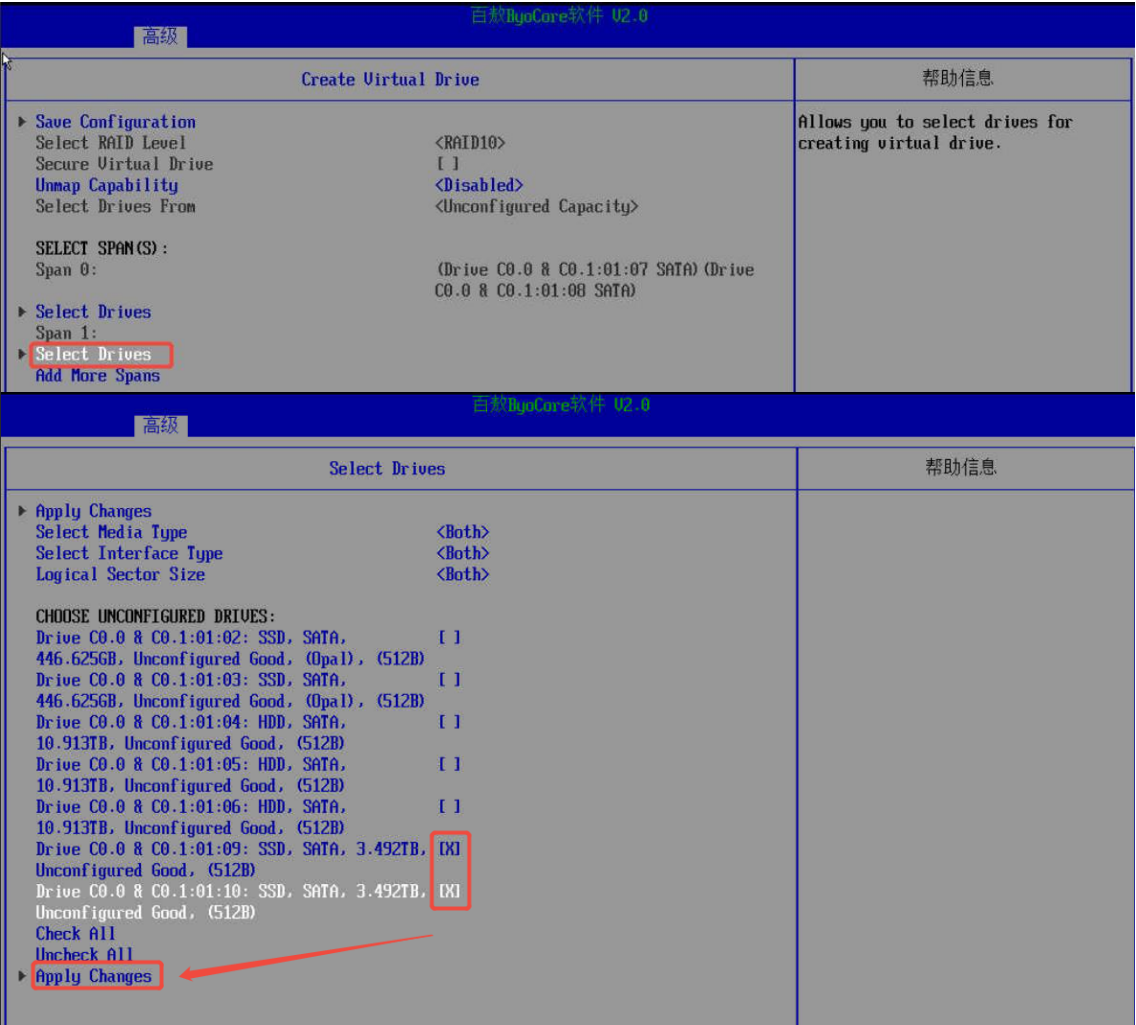
- 4) 设置 **Select RAID Level** 为 RAID 10; 在 **Select Drives** 中选择第一个 Span 成员盘, **Enabled** 表明已选中成员盘, 点击 **Apply Changes** 保存选项





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。





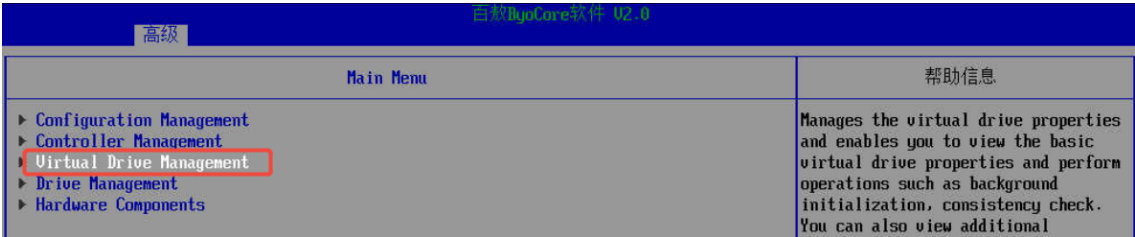
6) 所有 Span 设置完成后，选择 **Save Configuration** 完成配置，生成阵列。



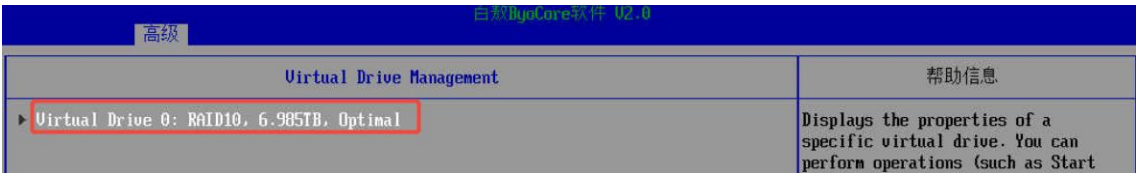
注： RAID 10 支持 2~8 个 Span，每个 Span 至少需要 2 个磁盘且数量必须为偶数，且各个 Span 的硬盘数量必须保持一致。

2.2 删除阵列

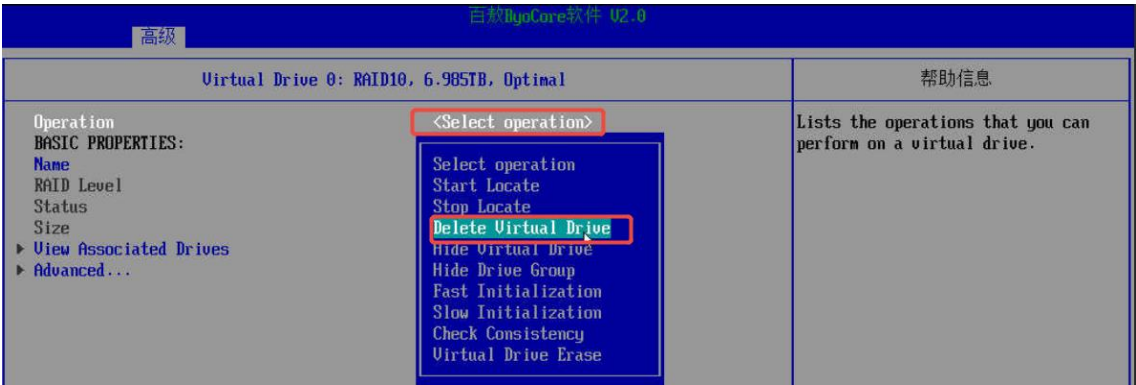
1) 在存储控制卡配置界面选择 **Virtual Drive Management**，按 **Enter**。



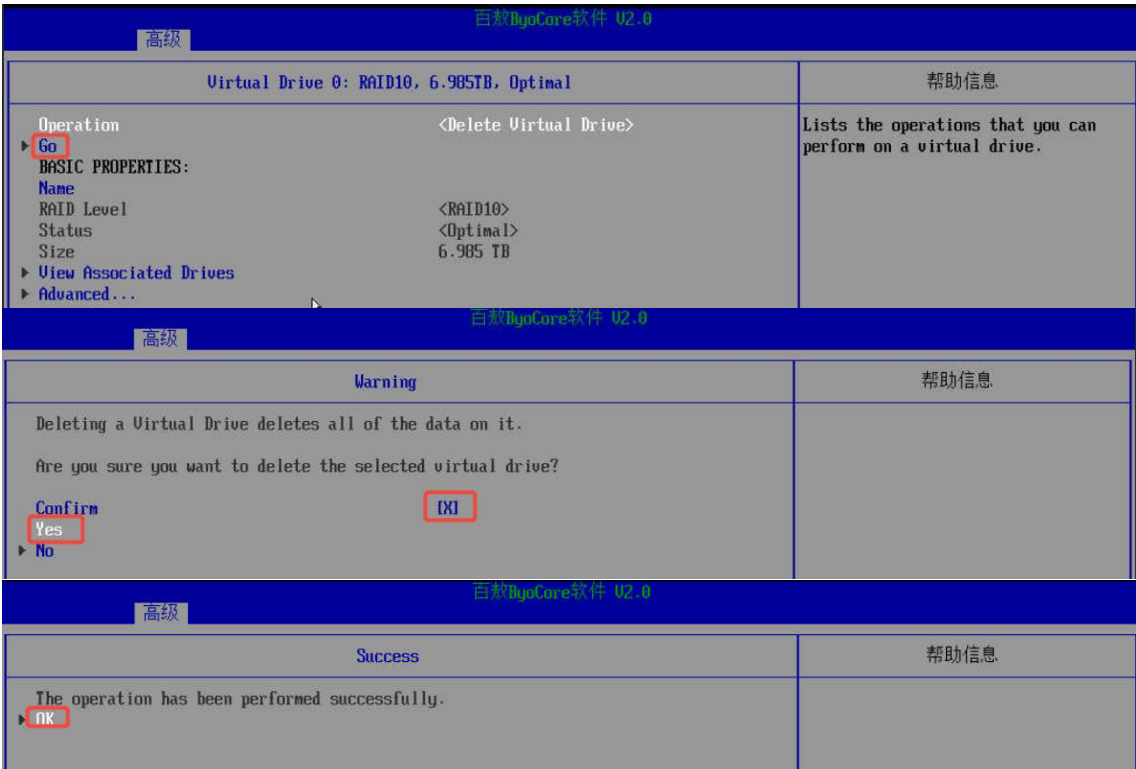
2) 选择待删除的逻辑磁盘，按 **Enter**。



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：

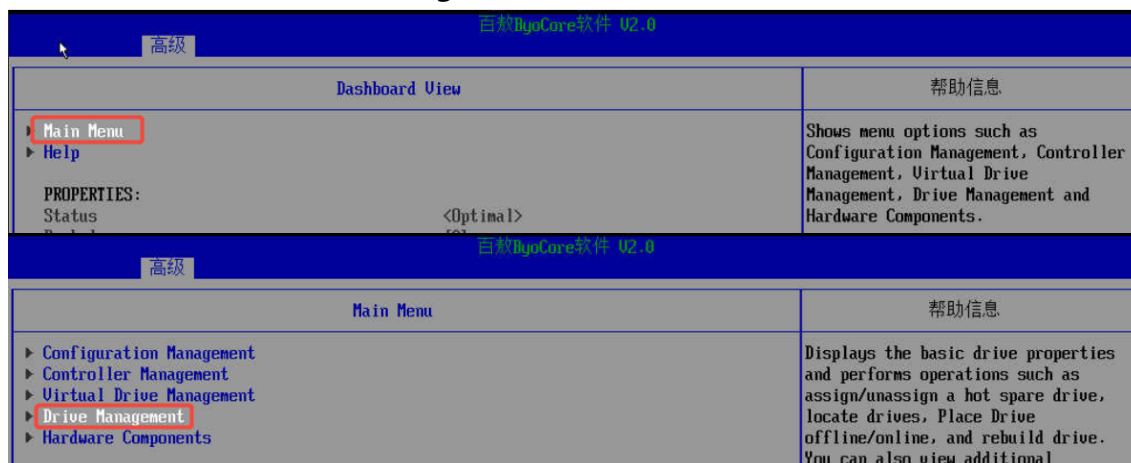
- 全局热备盘 (Global Spare)：为存储控制卡上存在的全部具有冗余功能的 RAID 提供热备，可将一块或多块磁盘配置为全局热备盘。全局热备盘可自动替换任意 RAID 中出现的故障盘。
- 专属热备盘 (Dedicated Spare)：为存储控制卡上某个指定具有冗余功能的 RAID 提供热备，每个 RAID 都可配置一个或多个专属热备盘。专属热备盘可自动替换指定 RAID 内出现的故障

盘。

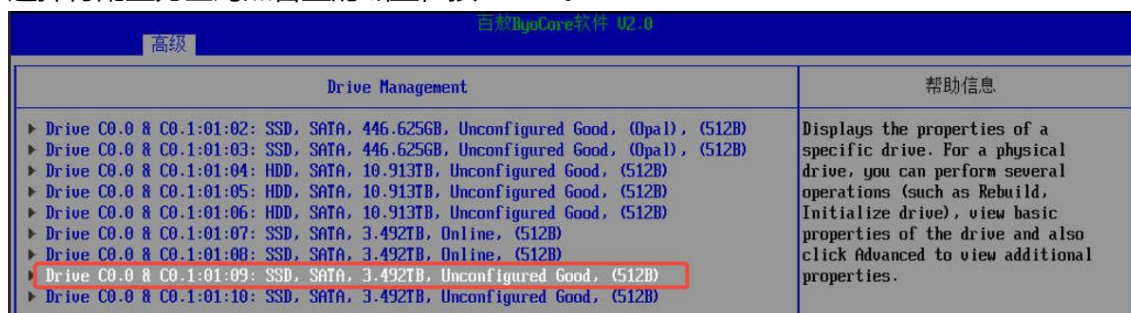
### 3.1 创建热备

#### 3.1.1 创建全局热备

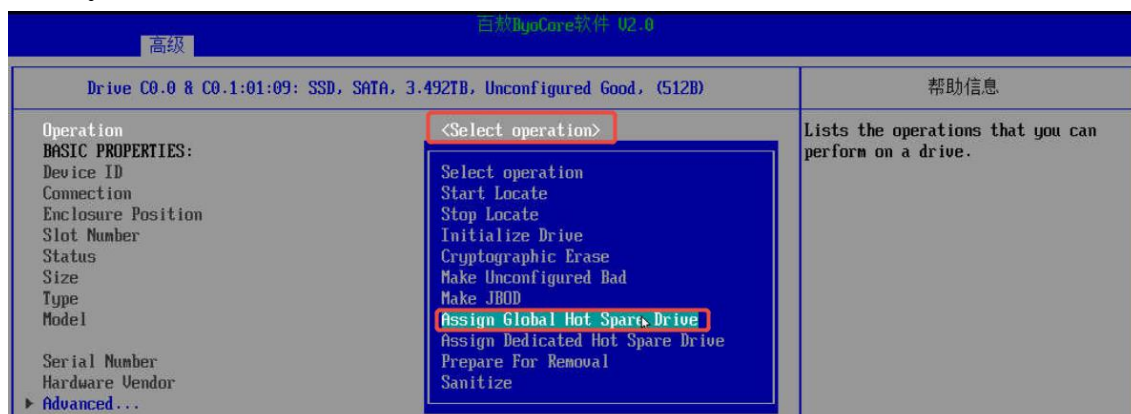
- 1) 选择 **Main Menu>Drive Management**，找到并进入需要配置为热备盘的硬盘。



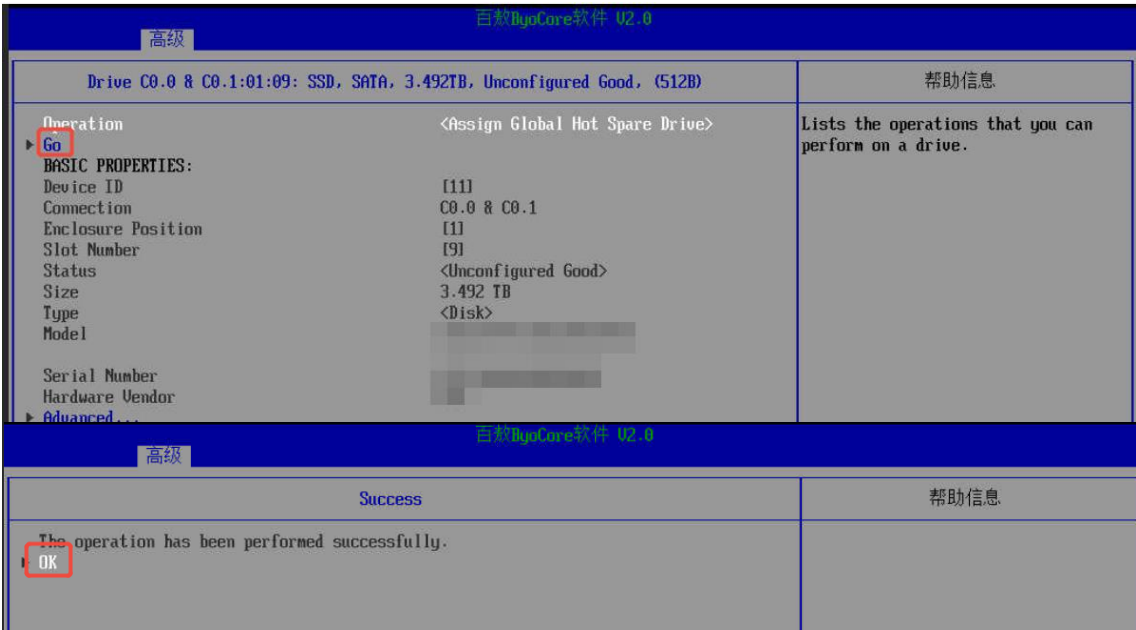
- 2) 选择待配置为全局热备盘的磁盘，按 **Enter**。



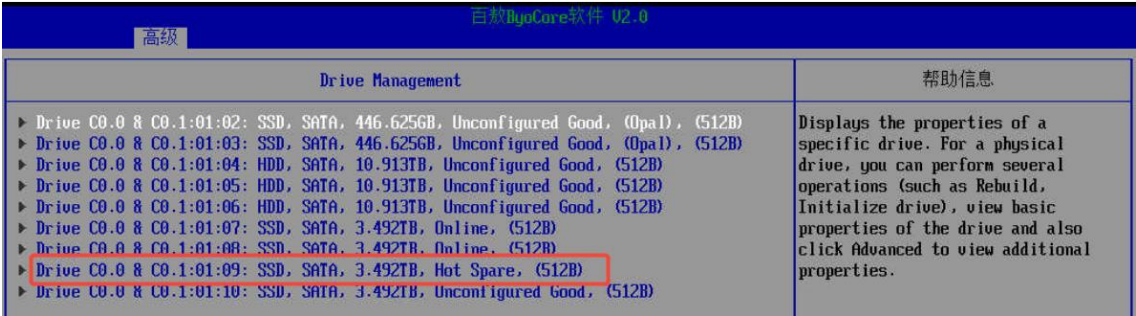
- 3) 选中 **Operation**，按 **Enter**，然后再选择 **Assign Global Hot Spare Drive**，按 **Enter**。



- 4) 选择完成后，点击 **Go** 完成配置。

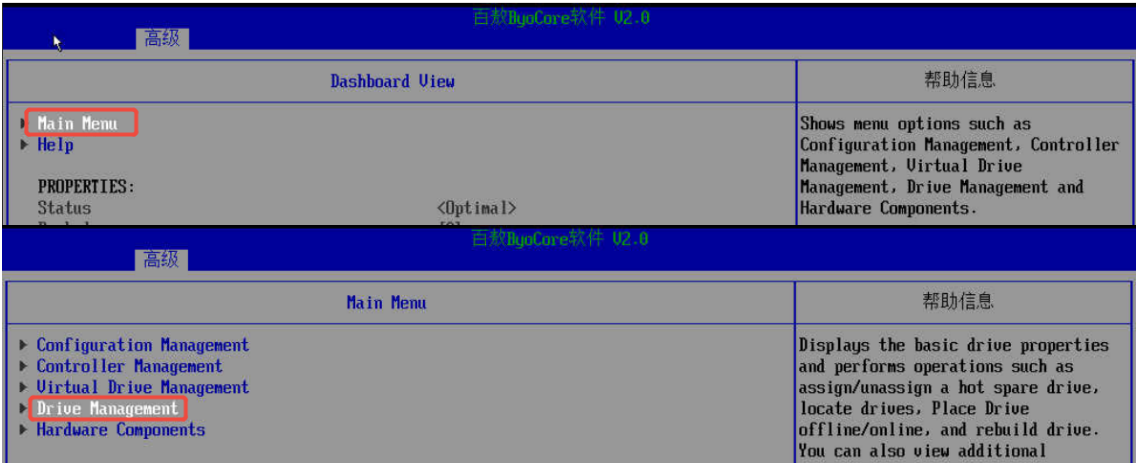


5) 配置完成的硬盘状态将显示为 Hot Spare。



### 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
<ul style="list-style-type: none"> <li>▶ Drive C0.0 &amp; C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:09: SSD, SATA, 3.492TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:10: SSD, SATA, 3.492TB, Unconfigured Good, (512B)</li> </ul>	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
<div> <div>Operation</div> <div>           BASIC PROPERTIES:            Device ID            Connection            Enclosure Position            Slot Number            Status            Size            Type            Model              Serial Number            Hardware Vendor            ▶ Advanced...         </div> </div> <div>           &lt;Select operation&gt;            Select operation            Start Locate            Stop Locate            Initialize Drive            Cryptographic Erase            Make Unconfigured Bad            Make JBOD            Assign Global Hot Spare Drive  <b>Assign Dedicated Hot Spare Drive</b>            Prepare For Removal            Sanitize         </div>	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
<div> <div>Operation</div> <div>           ▶ <b>Go</b>            BASIC PROPERTIES:            Device ID [10]            Connection C0.0 &amp; C0.1            Enclosure Position [1]            Slot Number [10]         </div> </div> <div>&lt;Assign Dedicated Hot Spare Drive&gt;</div>	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
<div>           Drive Group #0, RAID1, 3.492TB [X]            Check All            Uncheck All            ▶ <b>OK</b>            ▶ Cancel         </div>	
高级 百脑BgcCore软件 V2.0	
Success	帮助信息
The operation has been performed successfully. ▶ <b>OK</b>	

- 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
<ul style="list-style-type: none"> <li>▶ Drive C0.0 &amp; C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:09: SSD, SATA, 3.492TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:10: SSD, SATA, 3.492TB, Hot Spare, (512B)</li> </ul>	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

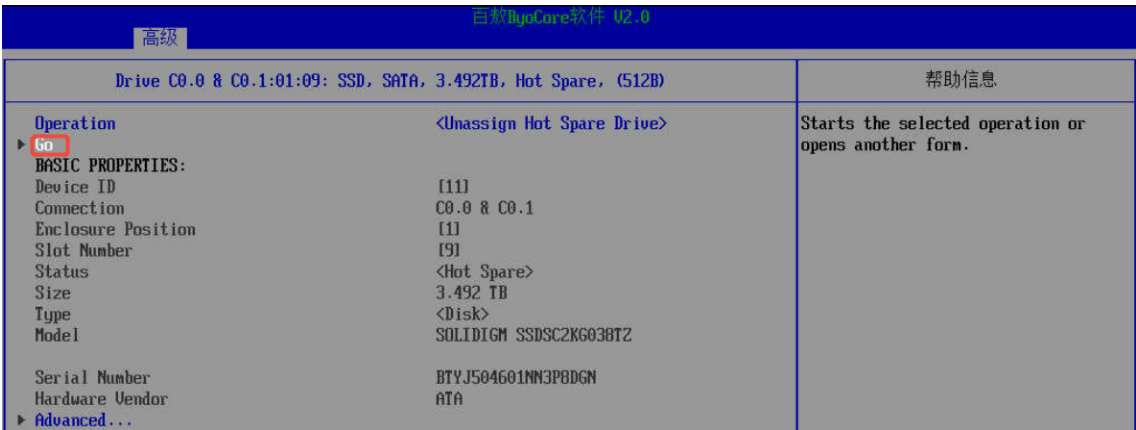
1) 选择 **Main Menu>Drive Management**, 找到并进入需要取消热备盘的硬盘, 按 **Enter**。

高级 百数DuoCore软件 V2.0	
Dashboard View	帮助信息
<ul style="list-style-type: none"> <li>▶ <b>Main Menu</b></li> <li>▶ Help</li> </ul> <p>PROPERTIES: Status &lt;Optimal&gt;</p>	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
<ul style="list-style-type: none"> <li>▶ Configuration Management</li> <li>▶ Controller Management</li> <li>▶ Virtual Drive Management</li> <li>▶ <b>Drive Management</b></li> <li>▶ Hardware Components</li> </ul>	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
<ul style="list-style-type: none"> <li>▶ Drive C0.0 &amp; C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B)</li> <li>▶ Drive C0.0 &amp; C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B)</li> <li>▶ <b>Drive C0.0 &amp; C0.1:01:09: SSD, SATA, 3.492TB, Hot Spare, (512B)</b></li> <li>▶ Drive C0.0 &amp; C0.1:01:10: SSD, SATA, 3.492TB, Unconfigured Good, (512B)</li> </ul>	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.

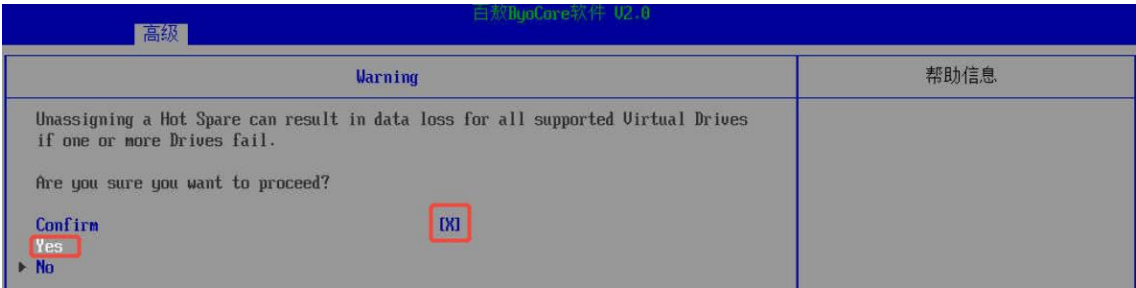
2) 选择 **Operation** 按 **Enter**, 选择 **Unassign Hot spare drive**, 按 **Enter**。

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
<p>Operation &lt;Select operation&gt;</p> <p>BASIC PROPERTIES:</p> <p>Device ID</p> <p>Connection</p> <p>Enclosure Position</p> <p>Slot Number</p> <p>Status</p> <p>Size 3.492 TB</p> <p>Type &lt;Disk&gt;</p> <p>Model</p> <p>Serial Number</p> <p>Hardware Vendor</p> <p>▶ Advanced...</p>	Lists the operations that you can perform on a drive.

3) 选择 **Go**, 按 **Enter**。



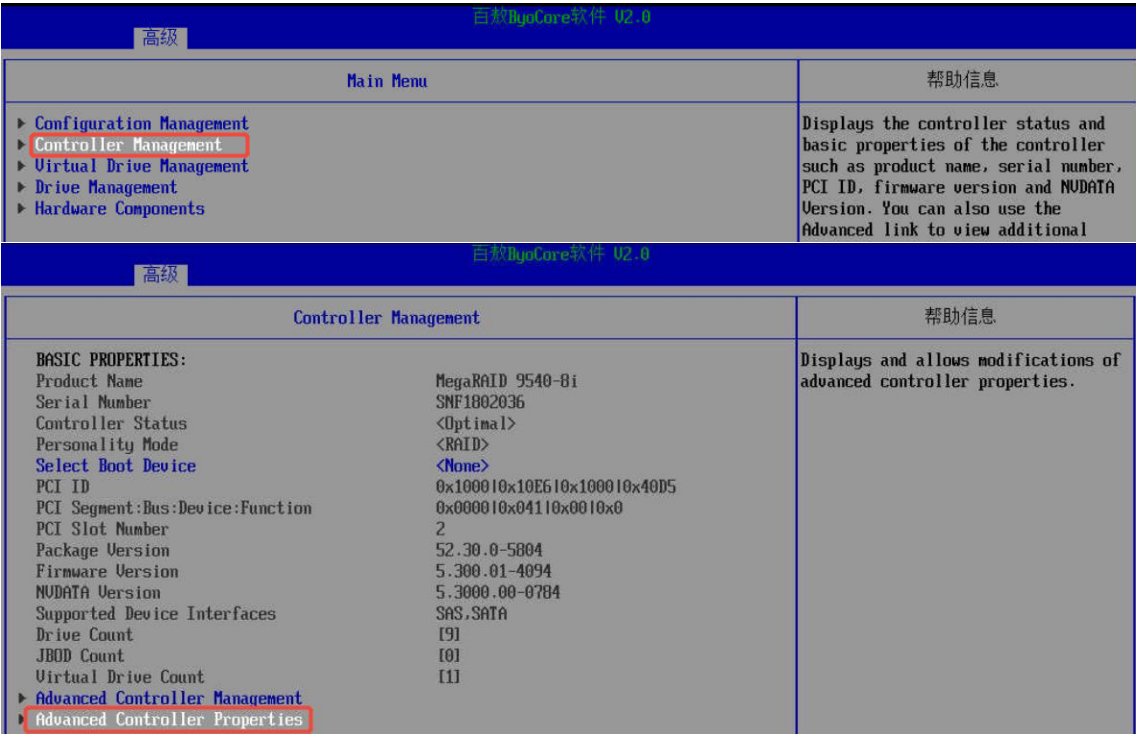
4) Confirm 选项选择为 **Enabled**，选择 **Yes** 后按 **Enter**。

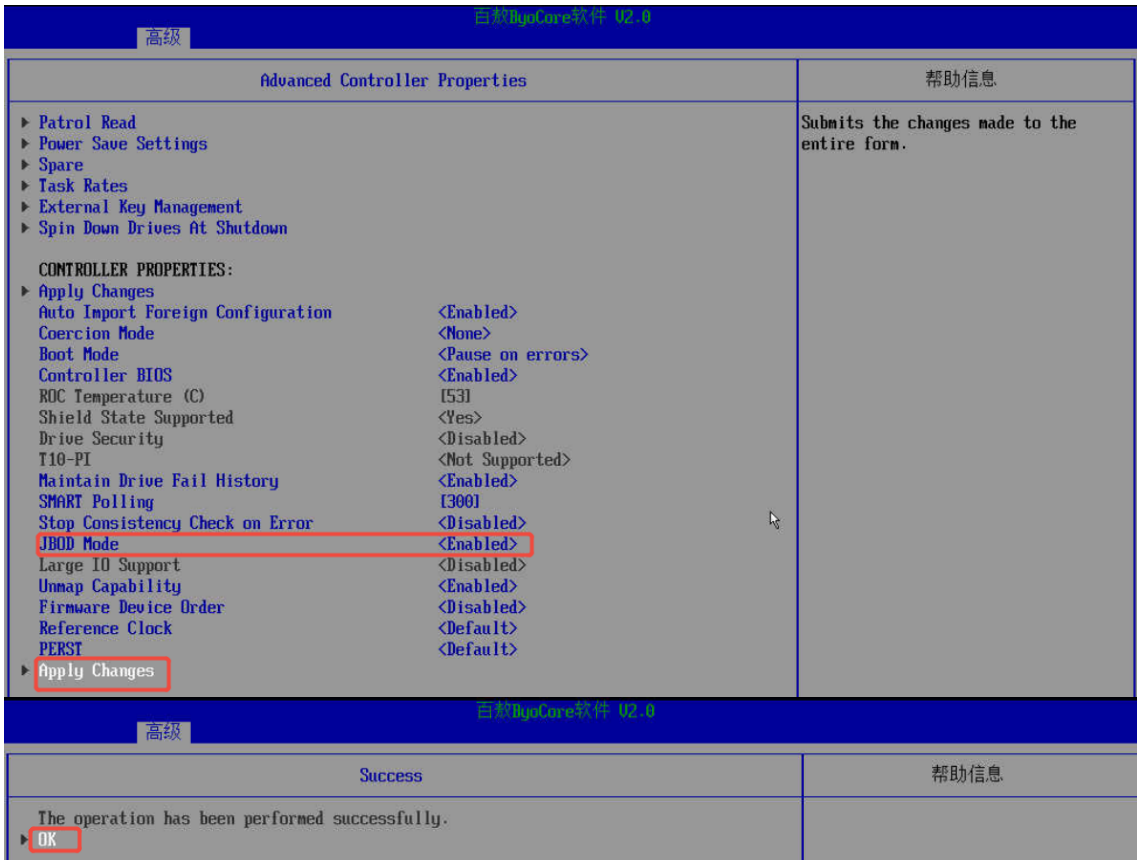


#### 4. 设置与取消直通盘

##### 4.1 设置硬盘直通

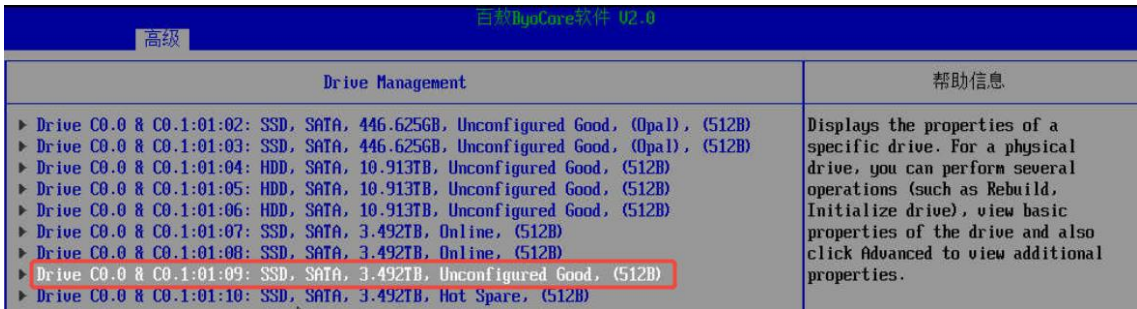
1) 进入 **Controller Management>Advanced Controller Properties**，设置 JBOD Mode 为 **Enabled** 并保存。

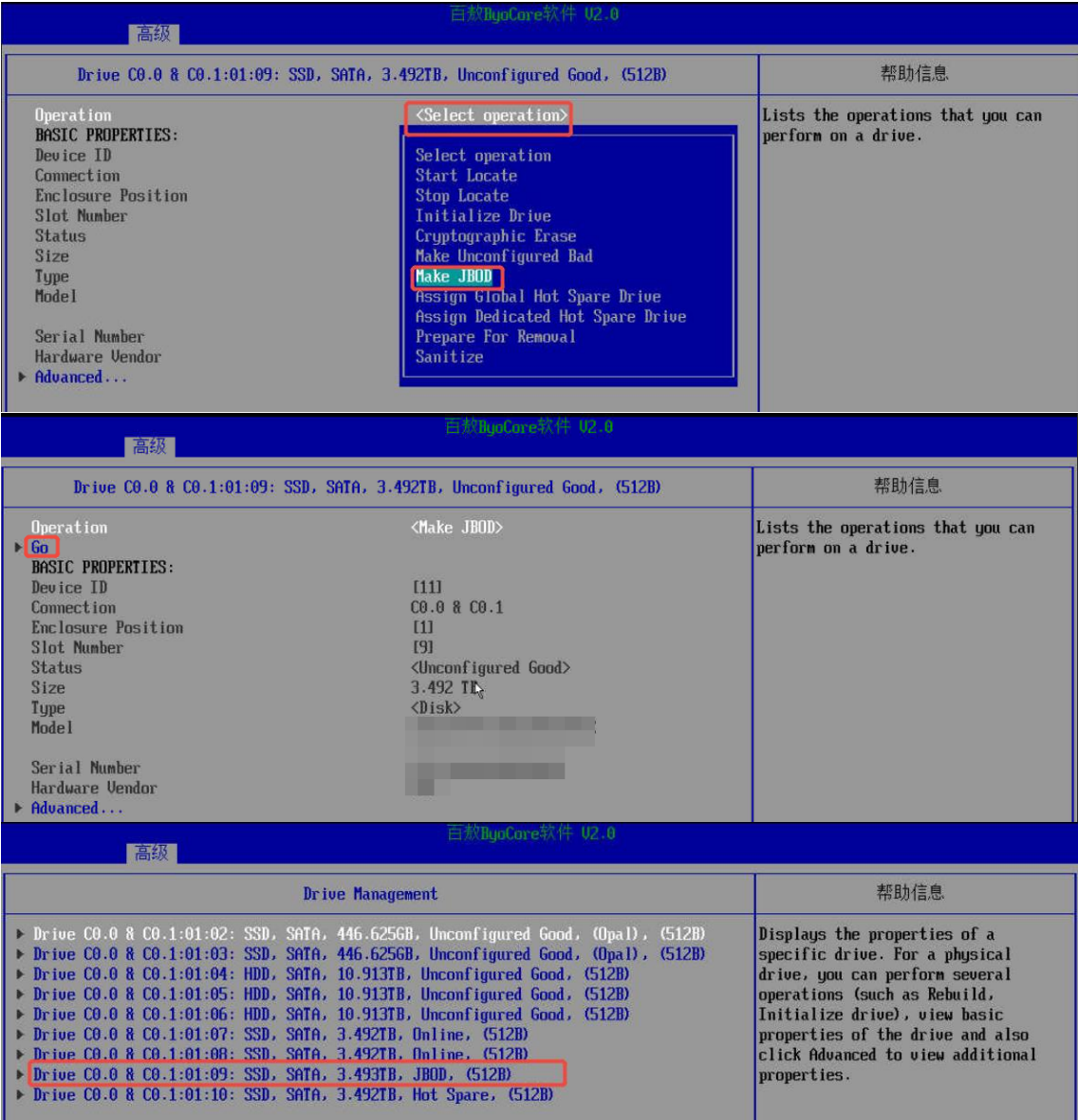




注：设置 JBOD Mode 为 Enabled 后，Unconfigured Good 状态的硬盘会自动切换为 JBOD，如没有自动切换，或 JBOD Mode 已为 Enabled 状态，需单独调整 Unconfigured Good 状态的硬盘为 JBOD，再执行步骤 2)。

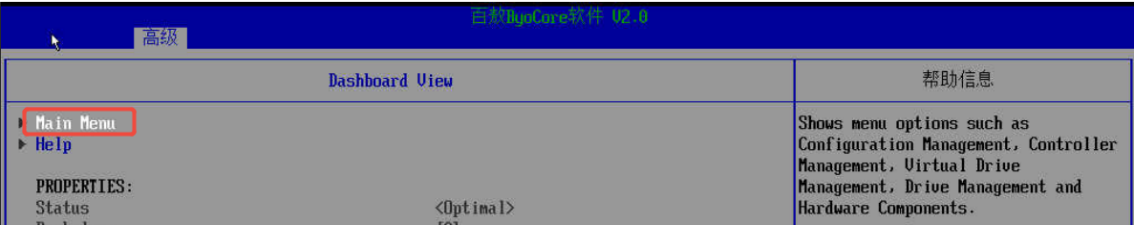
2) 然后在 **Drive Management** 中选择 Unconfigured Good 硬盘进行配置即可。





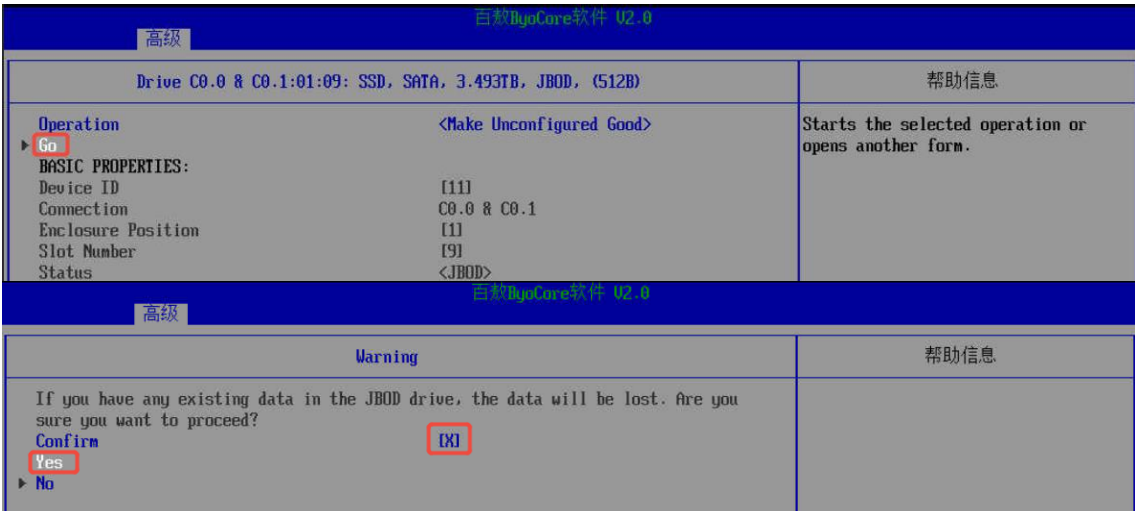
#### 4.2 取消硬盘直通

- 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	
<div><div>▶ Drive C0.0 &amp; C0.1:01:02: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:03: SSD, SATA, 446.625GB, Unconfigured Good, (Opal), (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:04: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:05: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:06: HDD, SATA, 10.913TB, Unconfigured Good, (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:07: SSD, SATA, 3.492TB, Online, (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:08: SSD, SATA, 3.492TB, Online, (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:09: SSD, SATA, 3.492TB, Unconfigured Good, (512B)</div><div>▶ Drive C0.0 &amp; C0.1:01:10: SSD, SATA, 3.492TB, Hot Spare, (512B)</div></div>		<div>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.</div>	