HPE Gen9 服务器
H240/P440/P840 系列阵列卡离线 SSA 迁移阵列

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一. 适用范围与注意事项

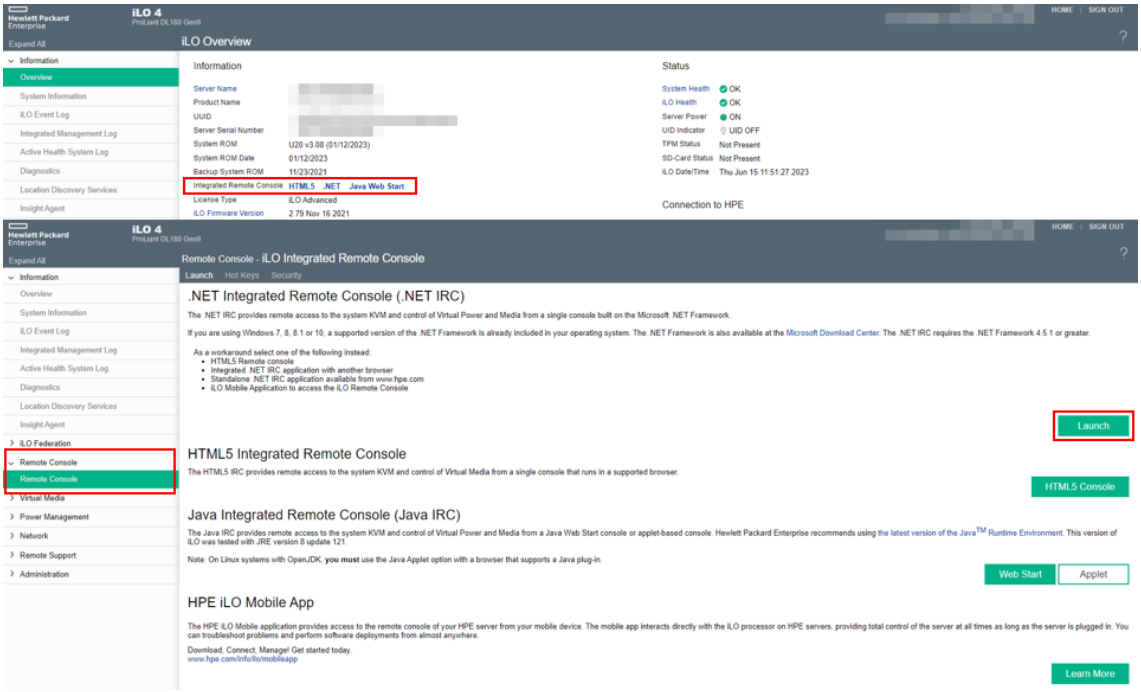
- 本文档旨在说明 HPE Gen9 系列服务器 H240/P440/P840 系列阵列卡离线使用 Smart Storage Administrator 工具配置阵列的方法，并以 DL380 Gen9 服务器为例进行配置步骤说明。
- 实际情况是否适用本文档，请通过下面导航链接进行确认：
  https://zhiliao.h3c.com/Theme/details/218271
- 提示：
  本文档中的信息（包括产品，软件版本和设置参数）仅作参考示例，具体操作与目标需求设置请以实际为准。
  本文档不定期更新维护，请以发布的最新版本为准。

二. 配置准备

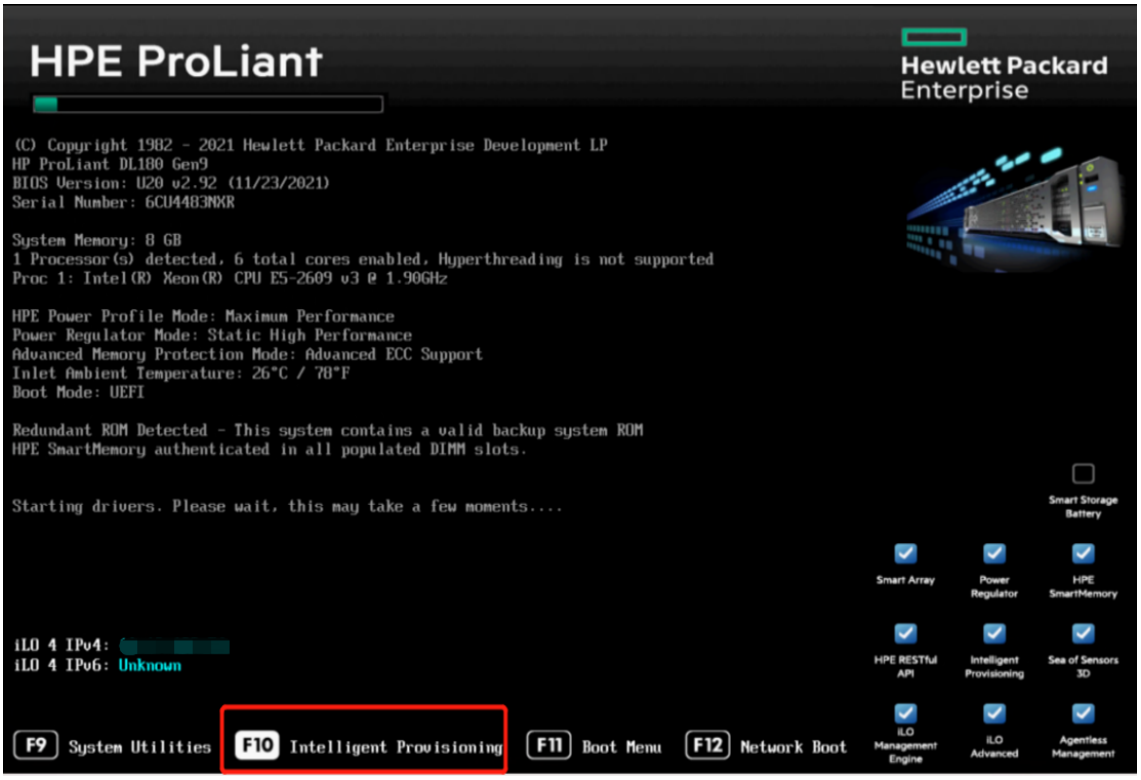
1. 连接 iLO 与启用远程控制台
   具体方法请参考：https://zhiliao.h3c.com/Theme/details/216337
2. SPP 镜像获取
   若通过可引导 U 盘启用 SSA，需要提前准备 SPP。
   具体方法请参考：https://zhiliao.h3c.com/Theme/details/216398
3. USB Key Utility 获取
   下载链接：适用于 Windows 的 USB Key Utility | HPE Support

三. 配置步骤

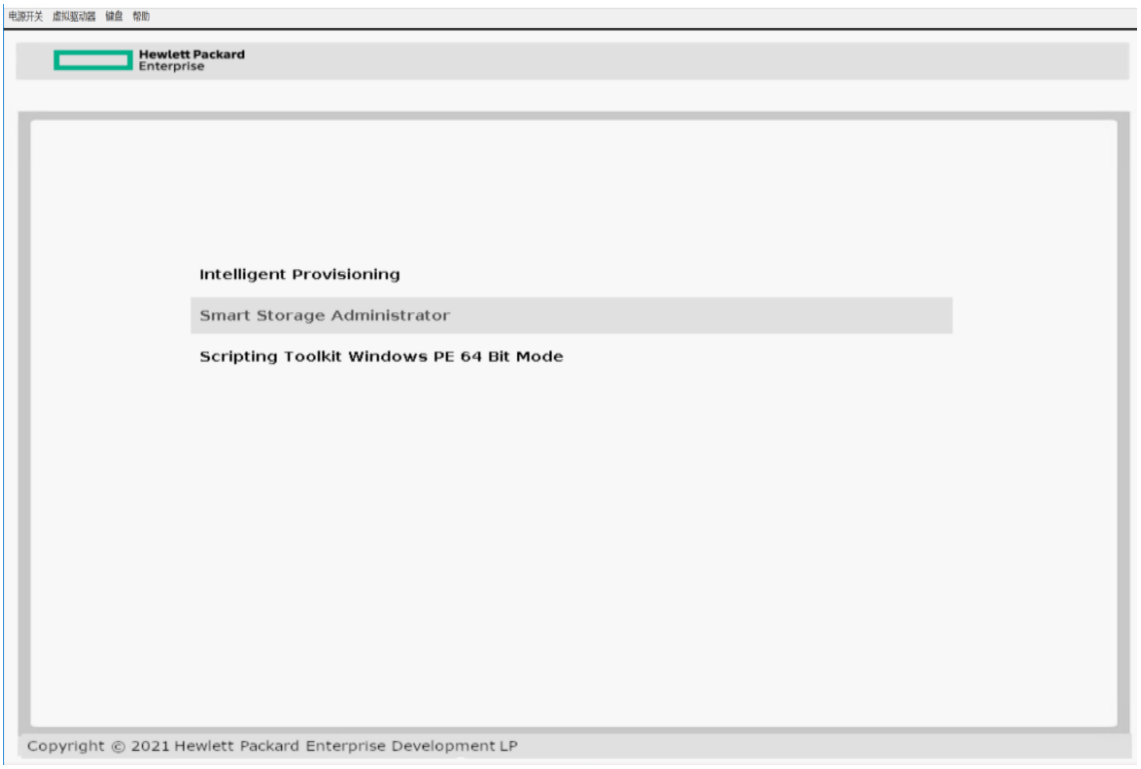
1. 启用 Smart Storage Administrator
   1.1 通过 iLO 远程控制台启用 SSA
   1) iLO 4 页面 **Information -> Overview** 的 Integrated Remote Console 选项，或页面左侧 Remote Console 导航可启用远程控制台。本文以 HTML5 远程控制台为例。



   2) 重启服务器，自检界面按 **F10**。



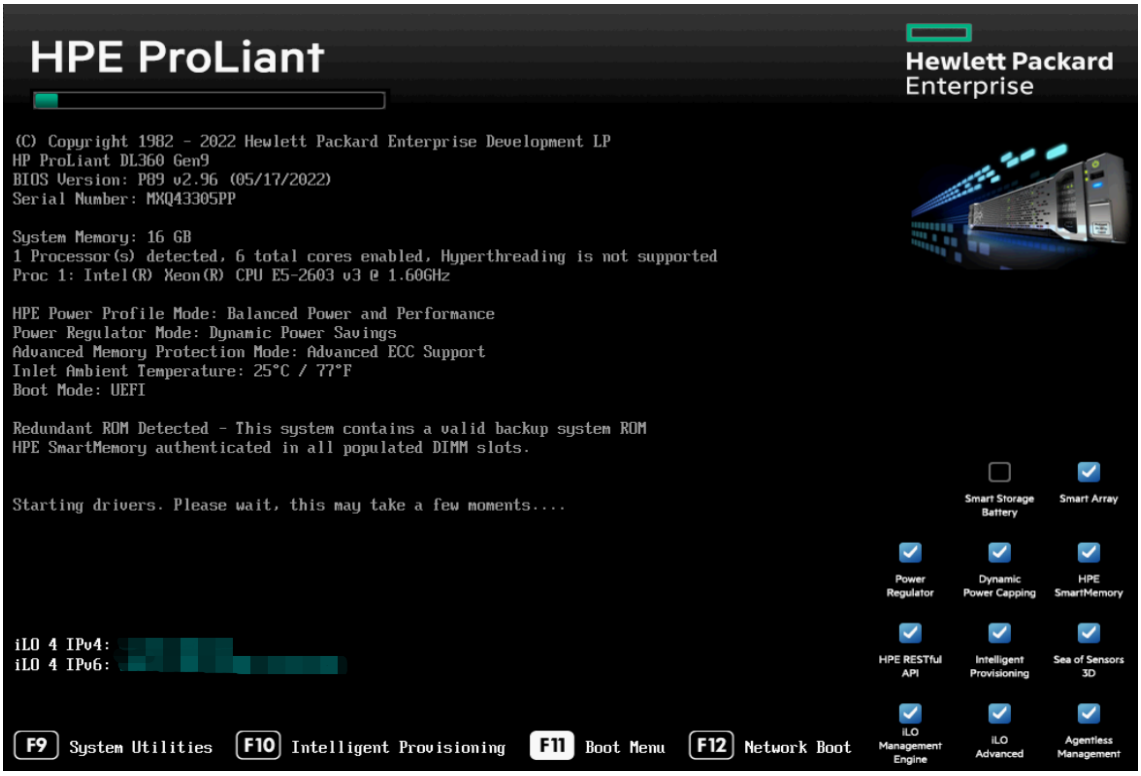
3) 选择 Smart Storage Administrator，按 **Enter** 进入。



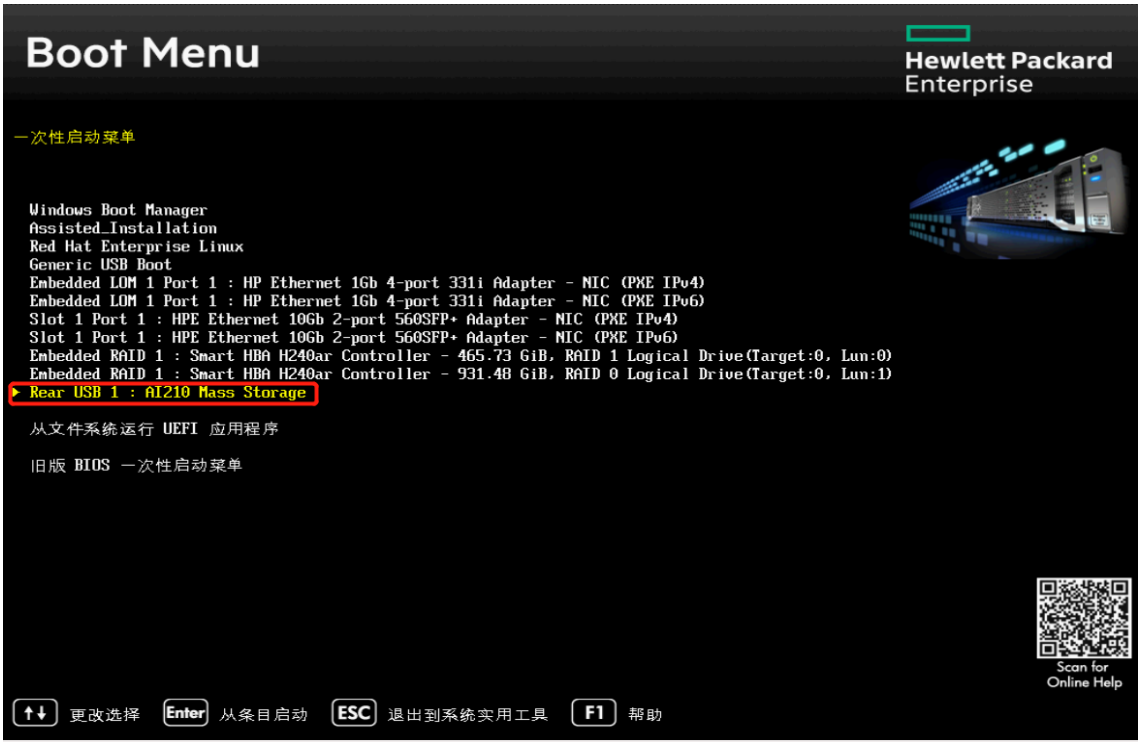
1.2 通过可引导 U 盘启用 SSA

注：制作可引导 SSA U 盘的方法请参考附录。

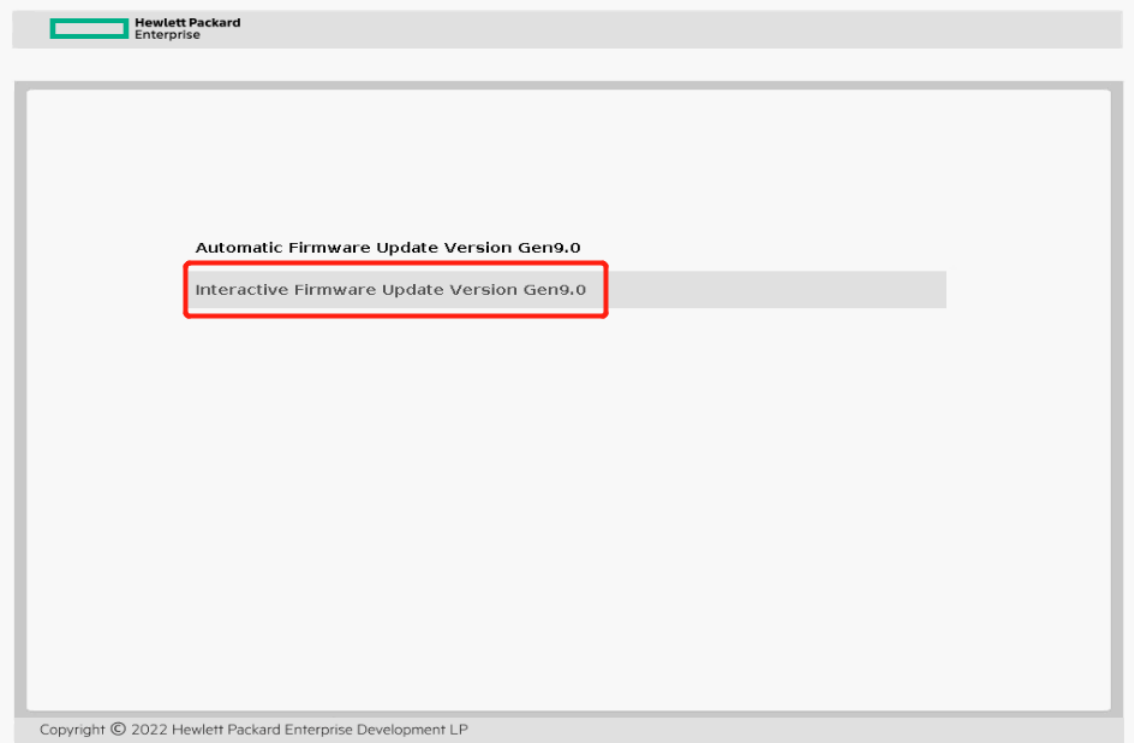
1）插入启动 U 盘，重启服务器，自检界面按 **F11**。



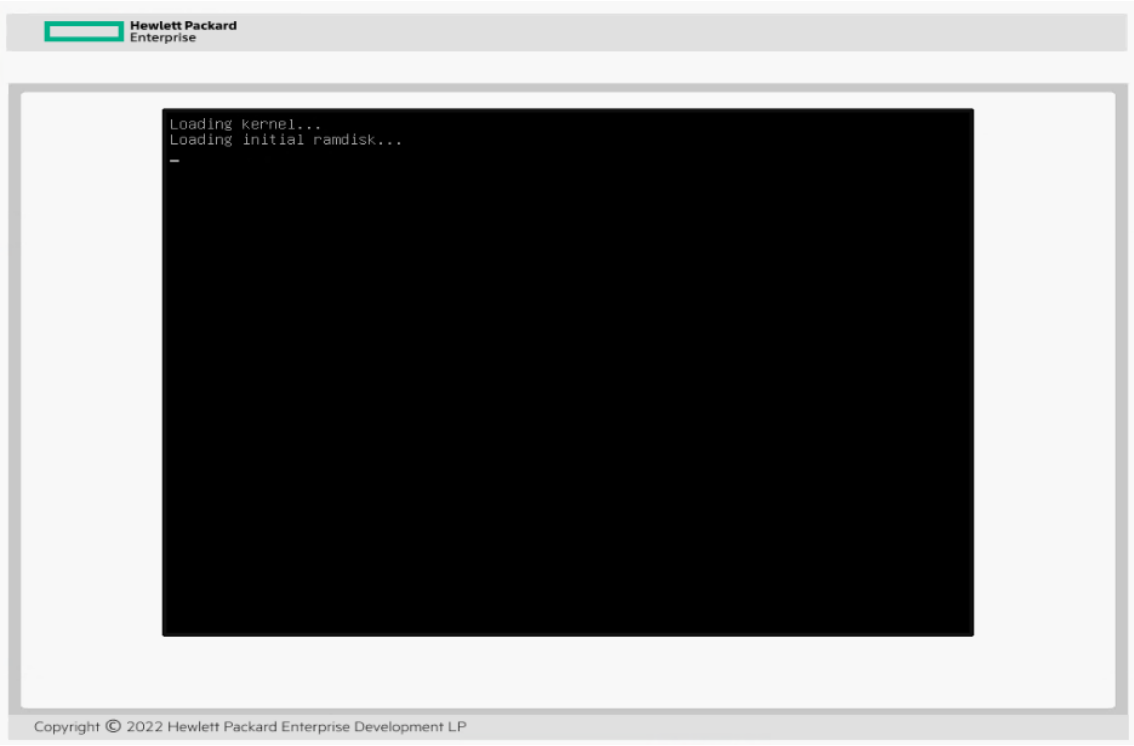
2) 选择从 USB 启动。



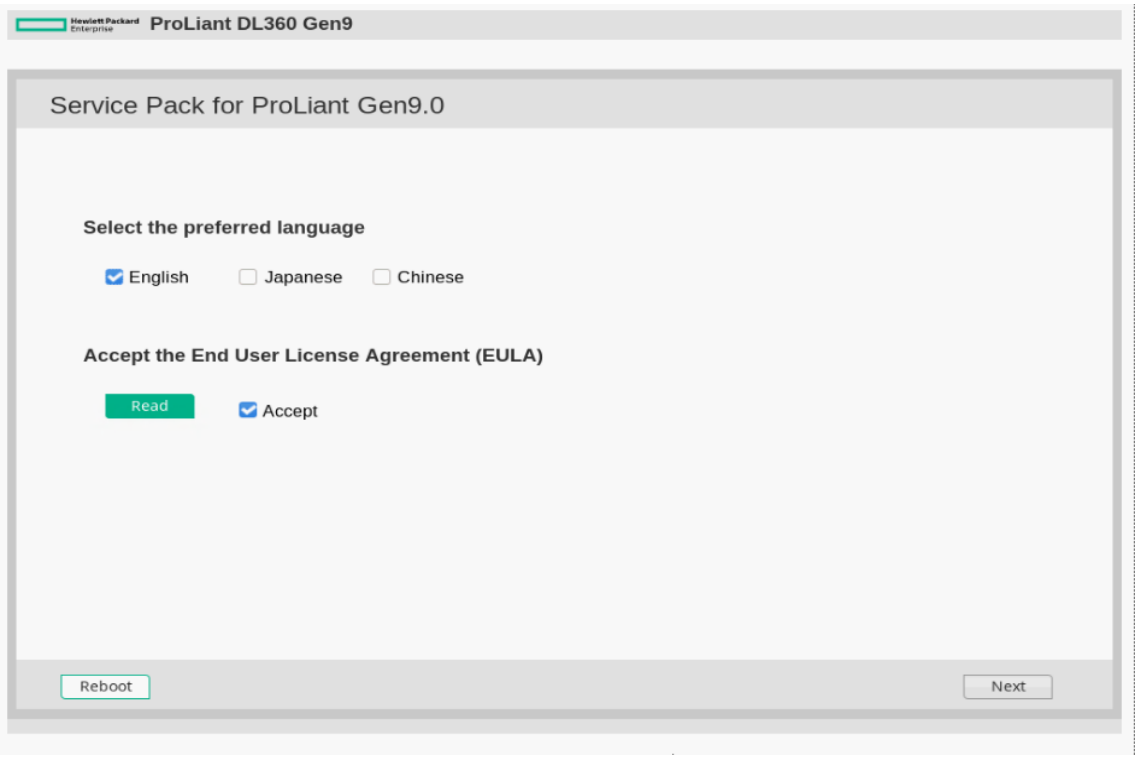
3) 选择 Interactive 交互式。

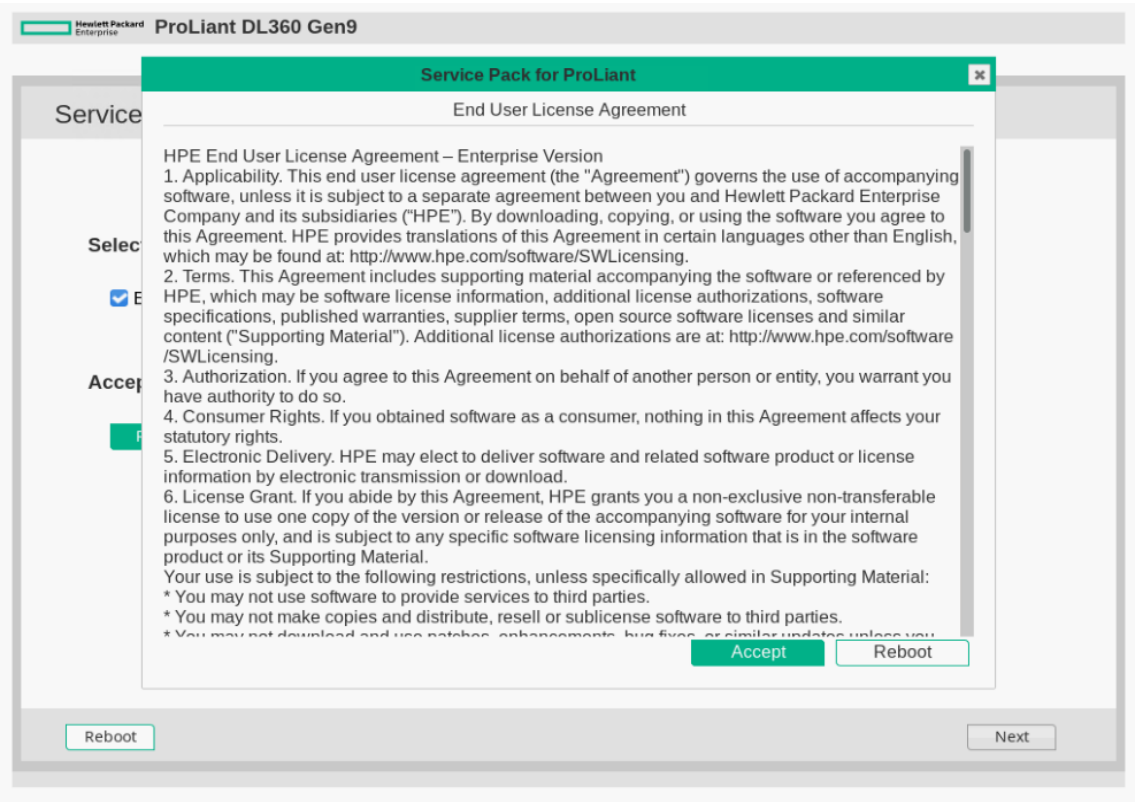


4）等待加载。



5）选择语言，接受许可，点击 **Next**。


ProLiant DL360 Gen9
Service Pack for ProLiant Gen9.0
Select the preferred language
English
Japanese
Chinese
Accept the End User License Agreement (EULA)
Read
Accept
Reboot
Next


ProLiant DL360 Gen9
Service Pack for ProLiant
End User License Agreement
HPE End User License Agreement – Enterprise Version
1. Applicability. This end user license agreement (the "Agreement") governs the use of accompanying software, unless it is subject to a separate agreement between you and Hewlett Packard Enterprise Company and its subsidiaries ("HPE"). By downloading, copying, or using the software you agree to this Agreement. HPE provides translations of this Agreement in certain languages other than English, which may be found at: http://www.hpe.com/software/SWLicensing.
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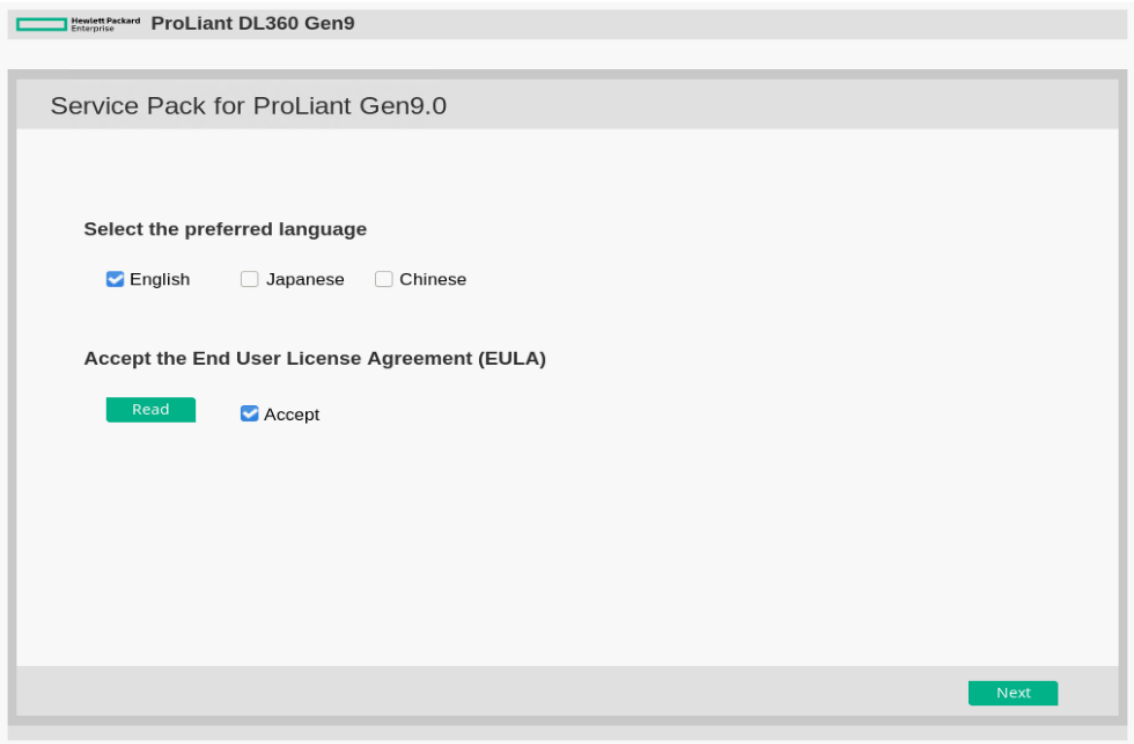
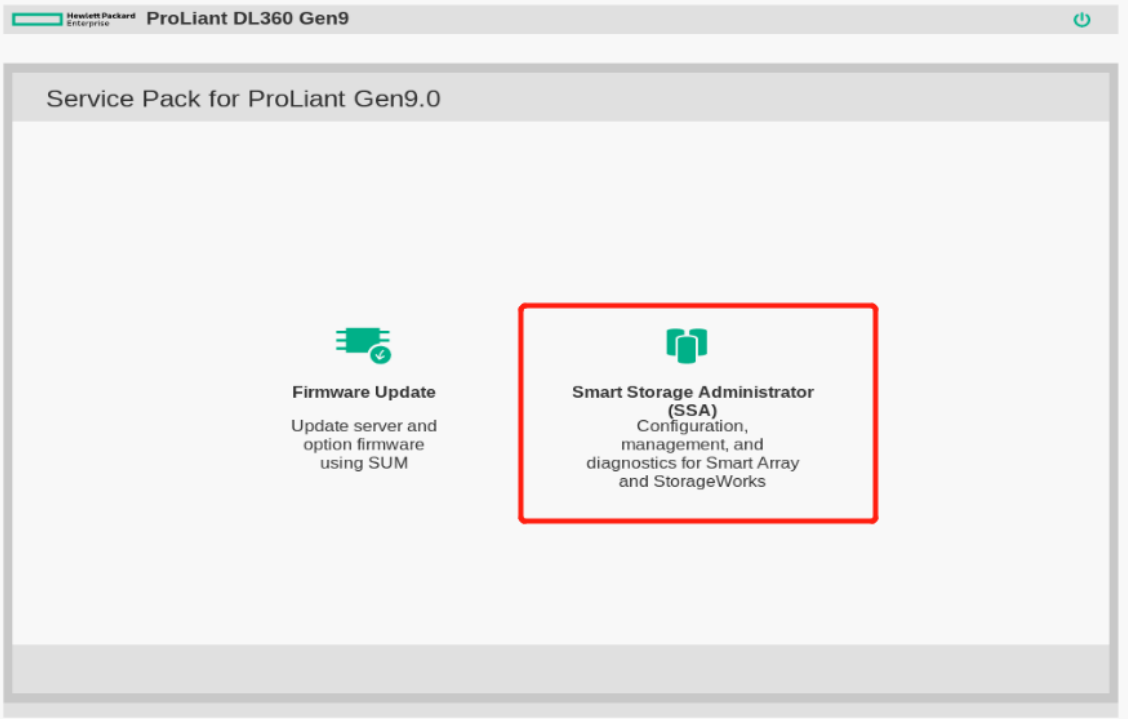
6. License Grant. If you abide by this Agreement, HPE grants you a non-exclusive non-transferable license to use one copy of the version or release of the accompanying software for your internal purposes only, and is subject to any specific software licensing information that is in the software product or its Supporting Material.
Your use is subject to the following restrictions, unless specifically allowed in Supporting Material:
* You may not use software to provide services to third parties.
* You may not make copies and distribute, resell or sublicense software to third parties.
Accept
Reboot
Reboot
Next



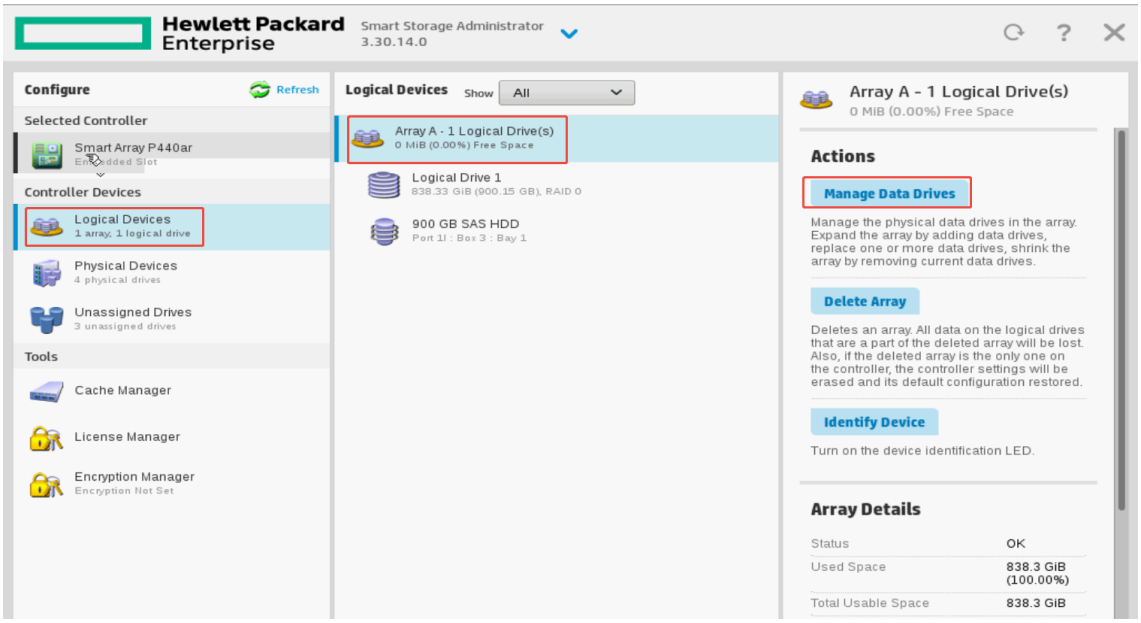
6) 选择右侧 SSA。



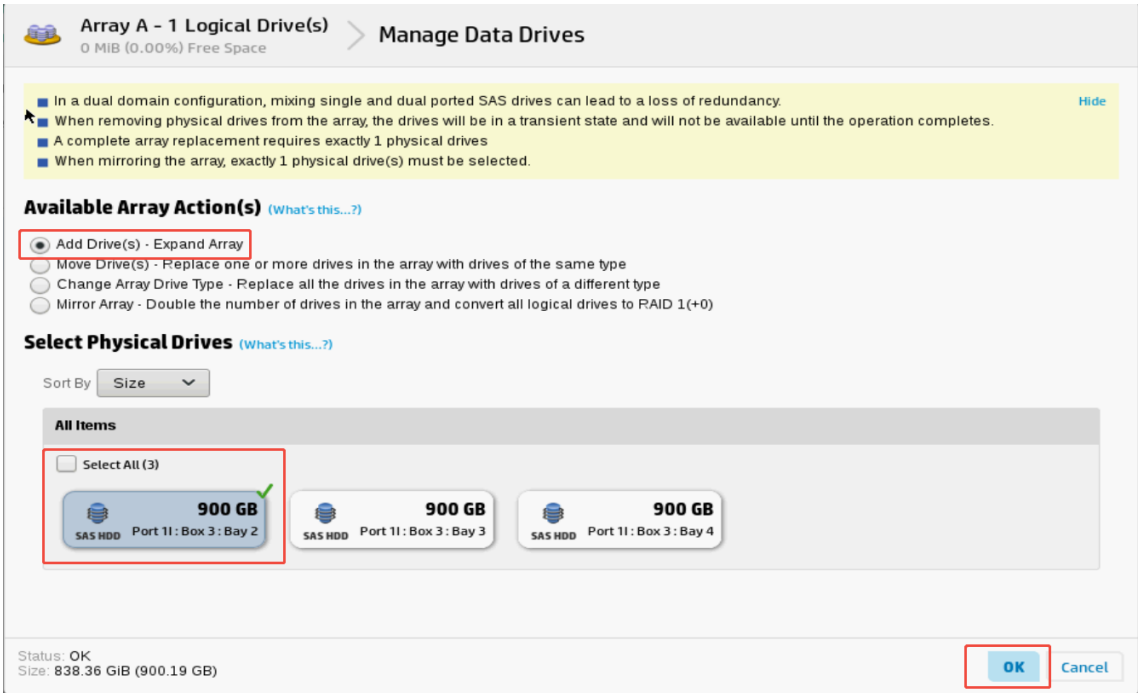
2. 扩容迁移阵列

2.1 阵列扩容

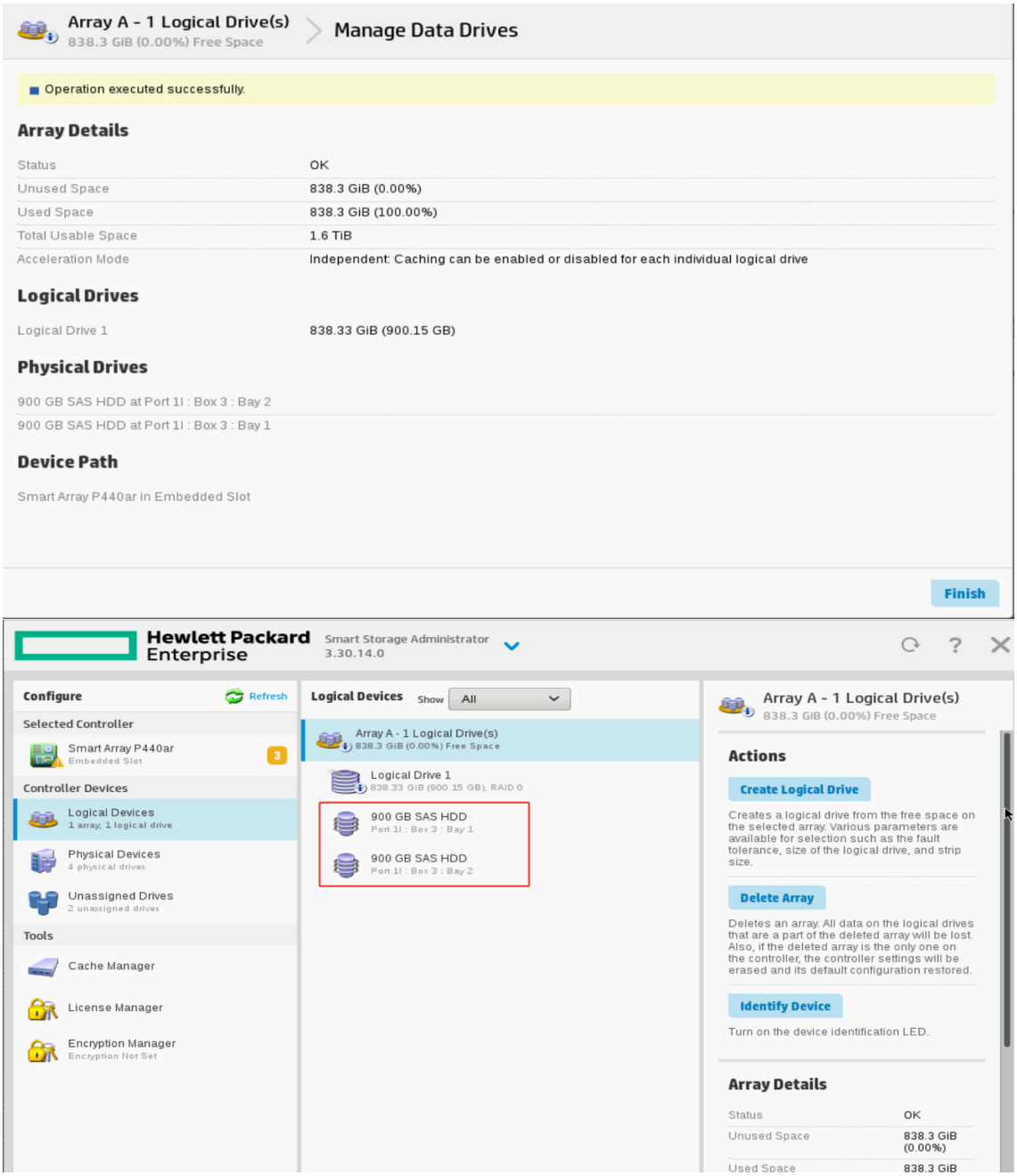
1）选择 P440 ar 阵列卡，点击 **Logical Devices -> Logical Drive 1** 选项。选择右侧 **Manage Data Drives** 选项。本文档以 1 块硬盘的 RAID0 扩容硬盘为例。



2）点击 **Add Drive(s)-Expand Array**，添加 1 块硬盘进行阵列扩容，点击 **OK。**

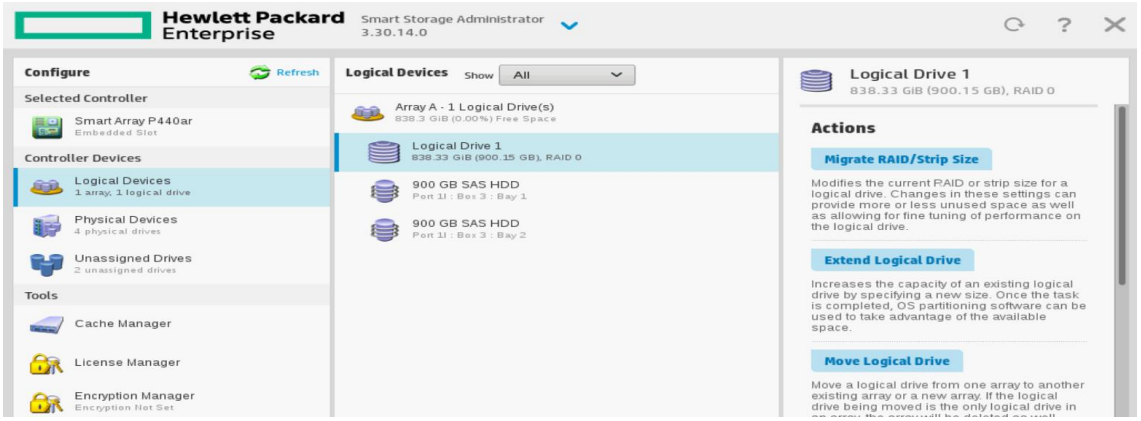


3）由此可以看到操作已经成功执行。

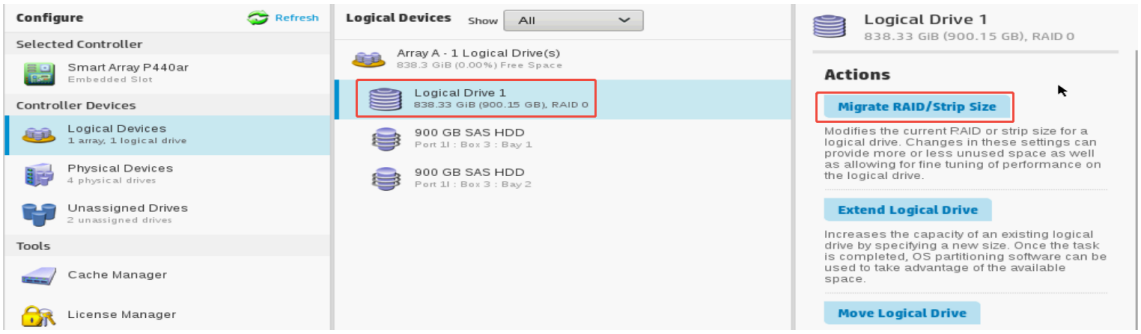


2.2 阵列级别迁移

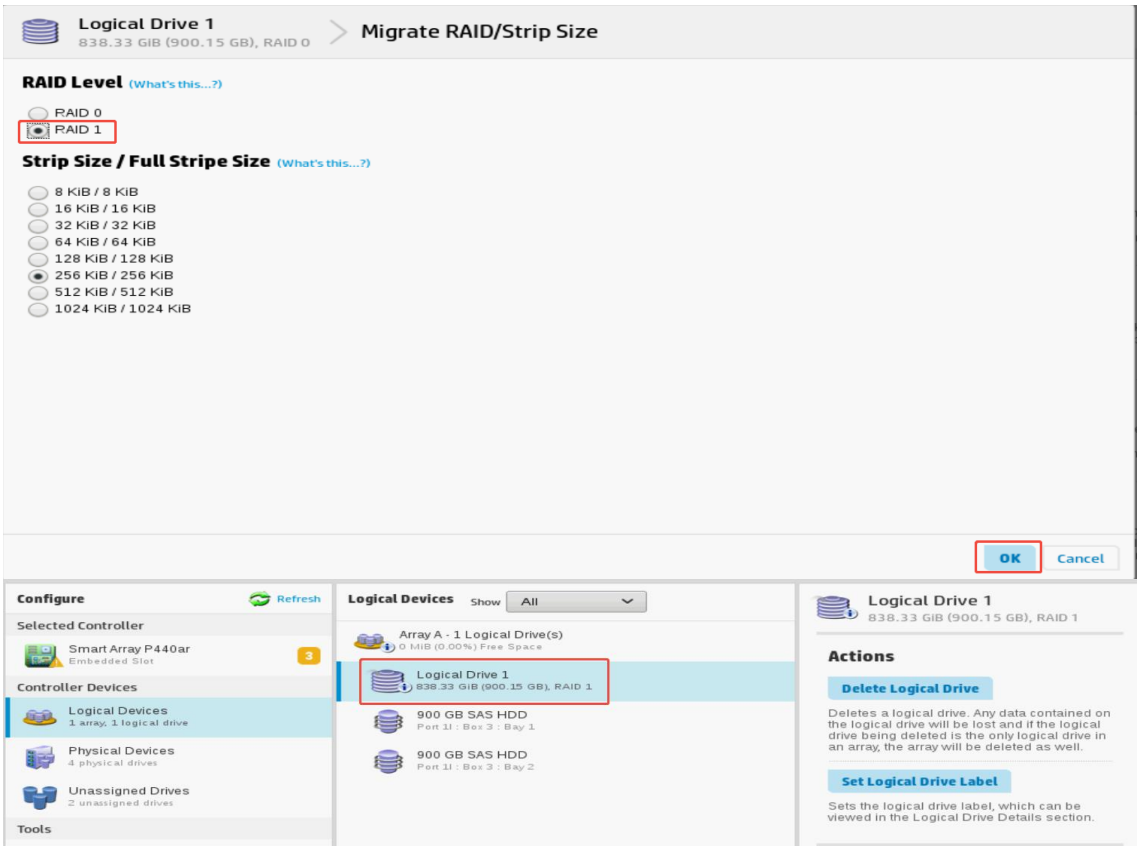
1）扩容硬盘后查看逻辑卷信息，当前两块成员盘但容量为单盘容量大小，原因是扩容后的硬盘容量是处于未使用的状态。



2）在 **Logical Drive 1** 内找到 **Migrate logical Drive** 点击进入。

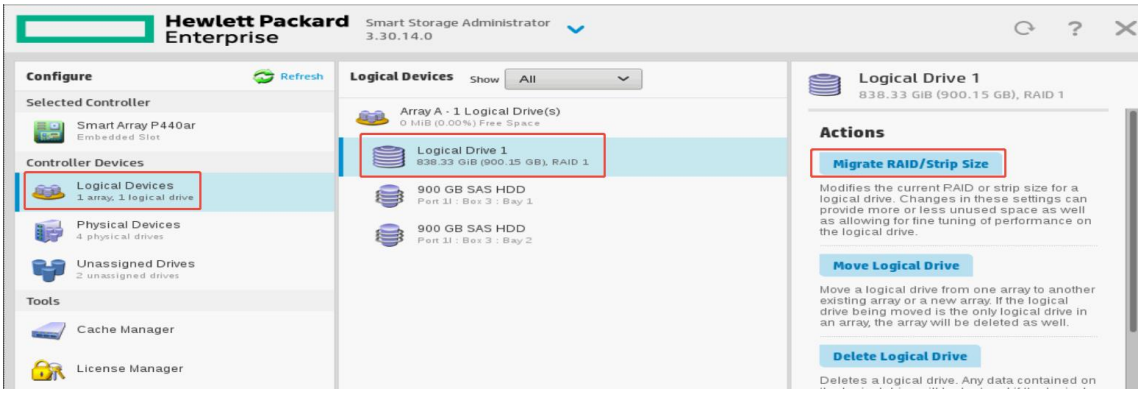


3）选择好目标级别 **RAID1**，进行下一步。完成之后检查当前逻辑卷已是 RAID1 级别。

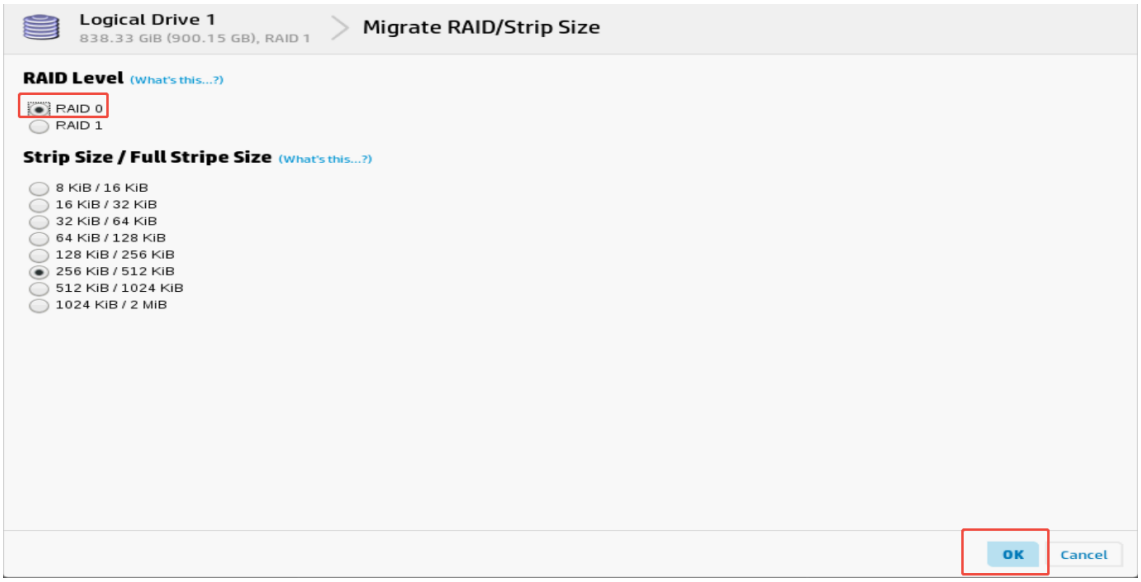


3. 原成员盘迁移阵列

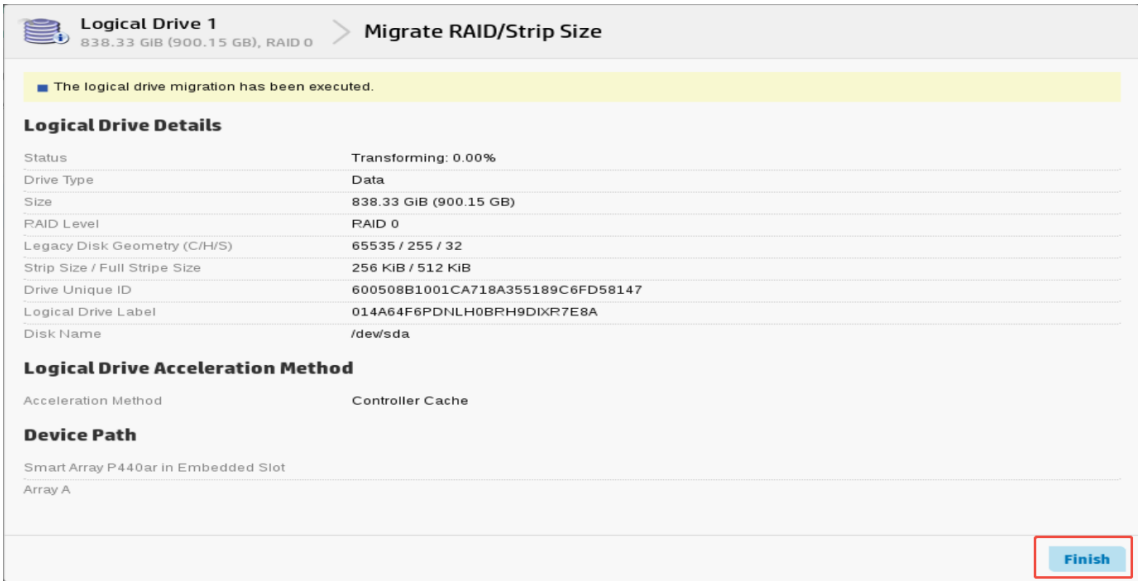
1) 原 raid 为两块盘 raid1，目标为迁移成两块盘 raid0，选择目标逻辑驱动器后点击右侧 **Migrate RAID/Strip Size**。



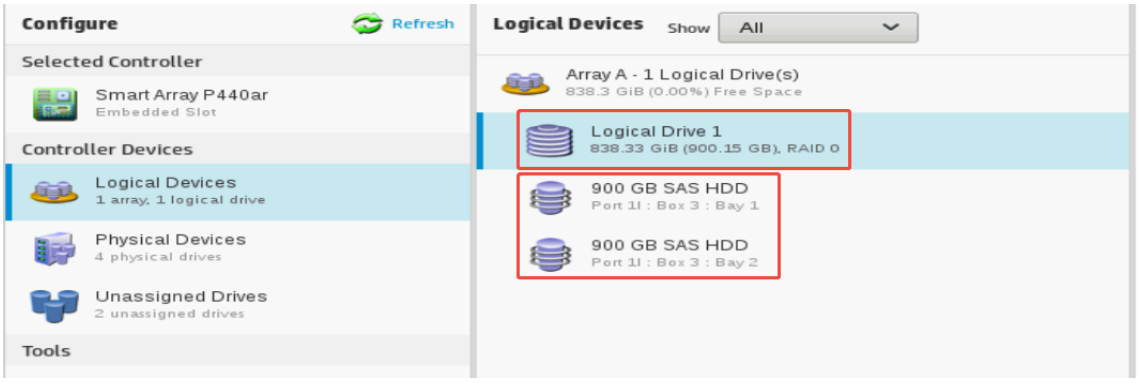
2) 选择目标 RAID0，点击 **OK**。



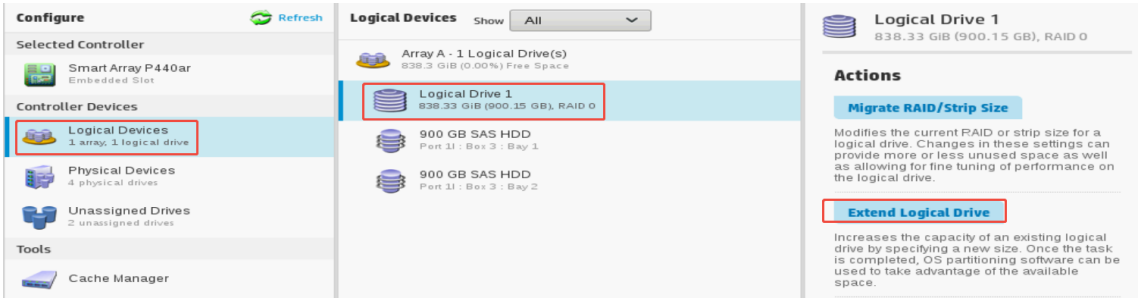
3) 点击 **Finish**。



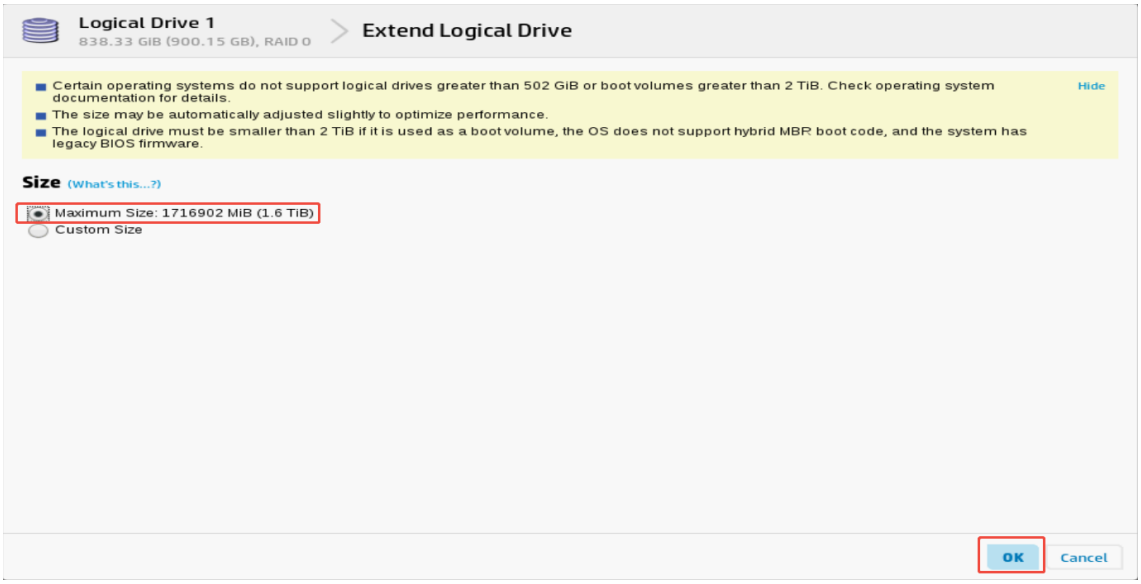
4) 迁移完成后双盘 RAID0 只有单盘容量，因为刚迁移 raid0，旧 Raid1 的一块镜像盘的容量为未使用的状态。



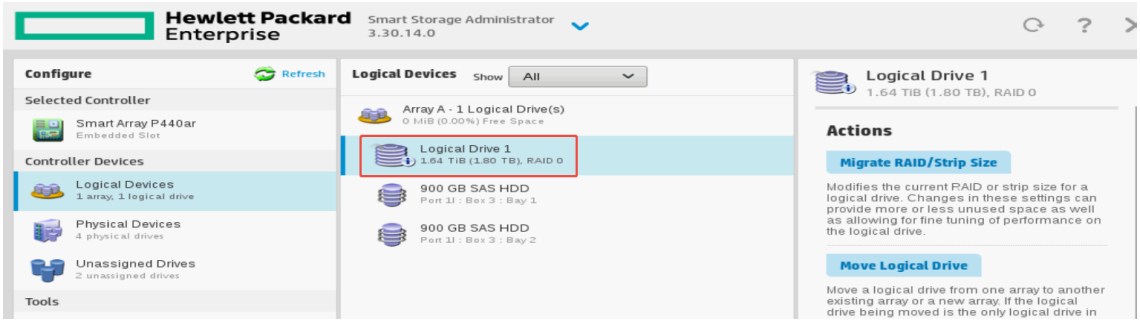
5) 此时需要在逻辑卷 1 中点击扩展逻辑驱动器。



6) 设置容量大小后点击 **OK**。

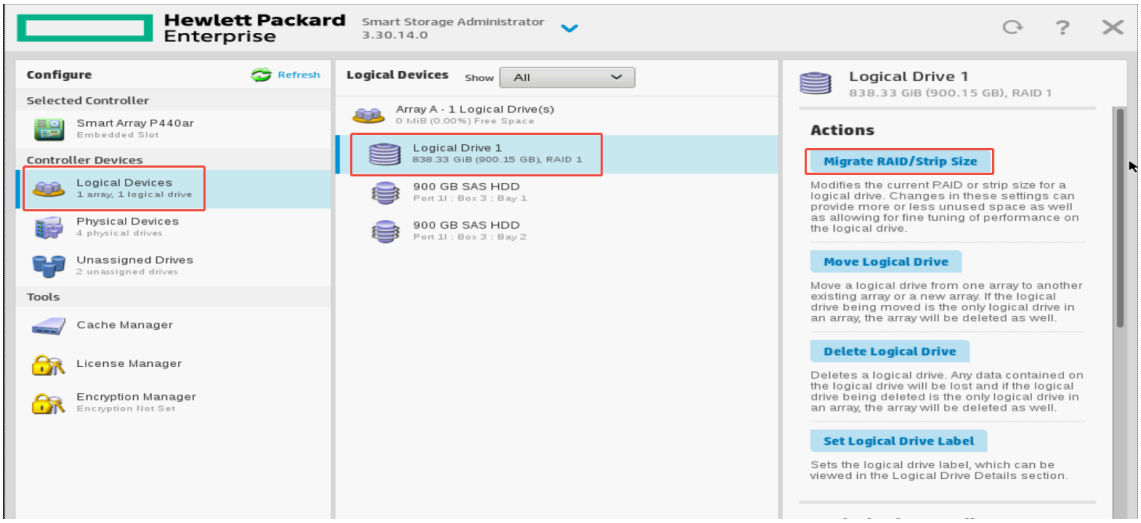


7) 逻辑卷扩容完成后可以看到原逻辑卷中已经是 2 块硬盘容量。

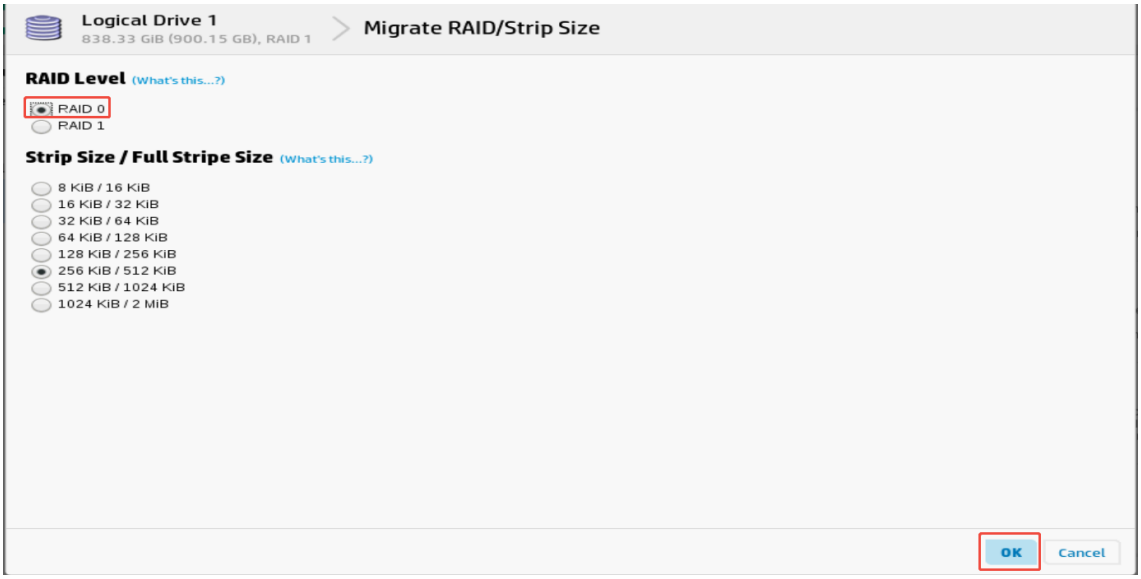


4. 减迁移阵列

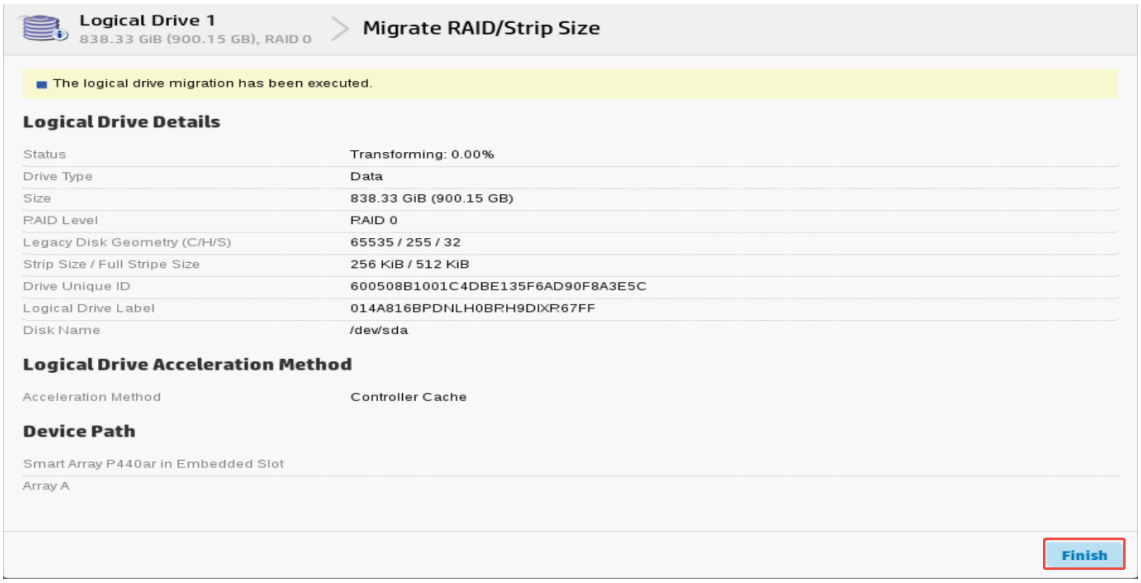
1) 原 RAID 为两块盘 RAID1，目标为迁移成单盘 RAID0，选择目标逻辑卷后点击右侧 **Manage Data Drives** 选项。



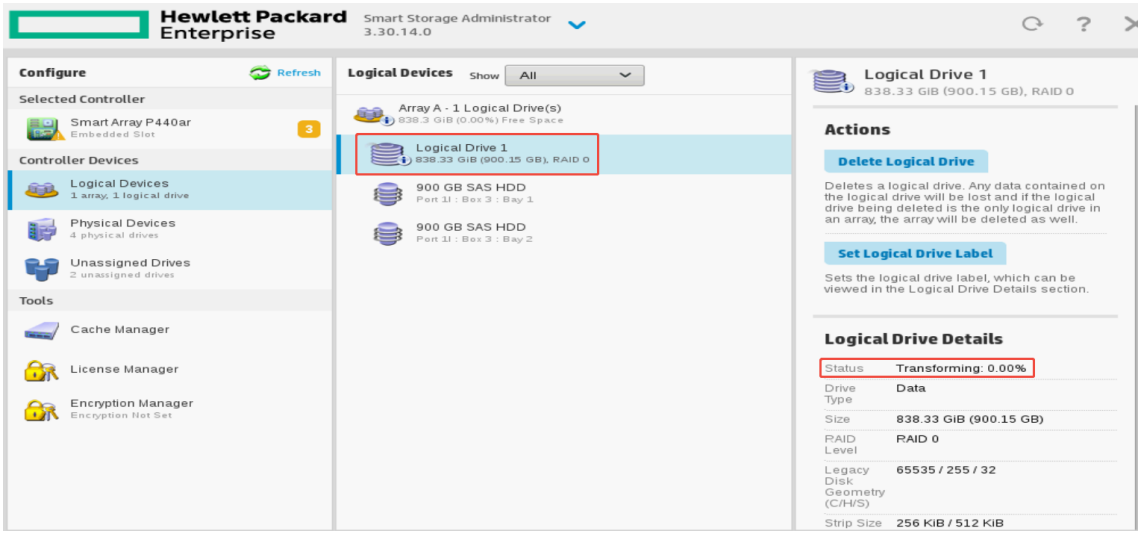
2) 选择目标 RAID0，点击 **OK**



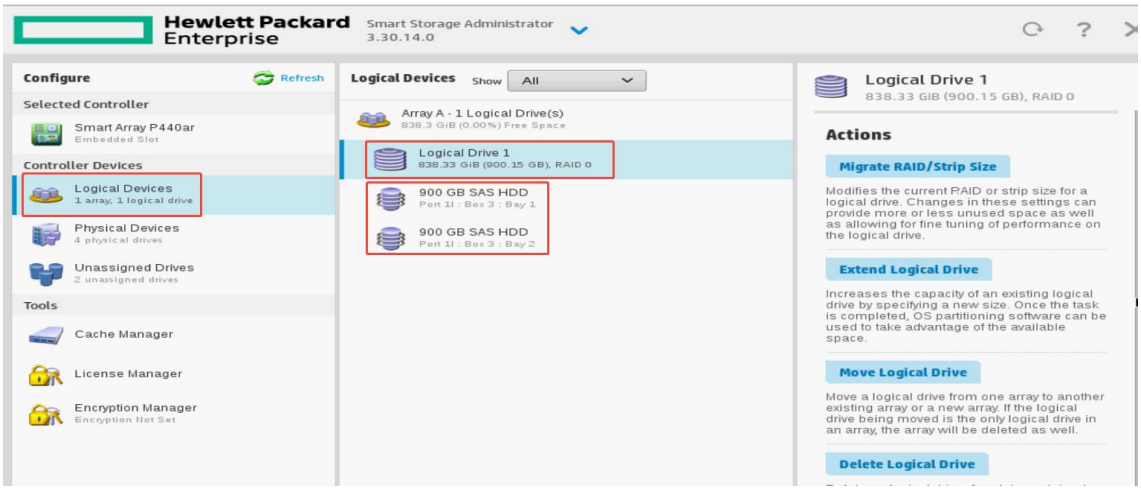
3) 点击 **Finish**



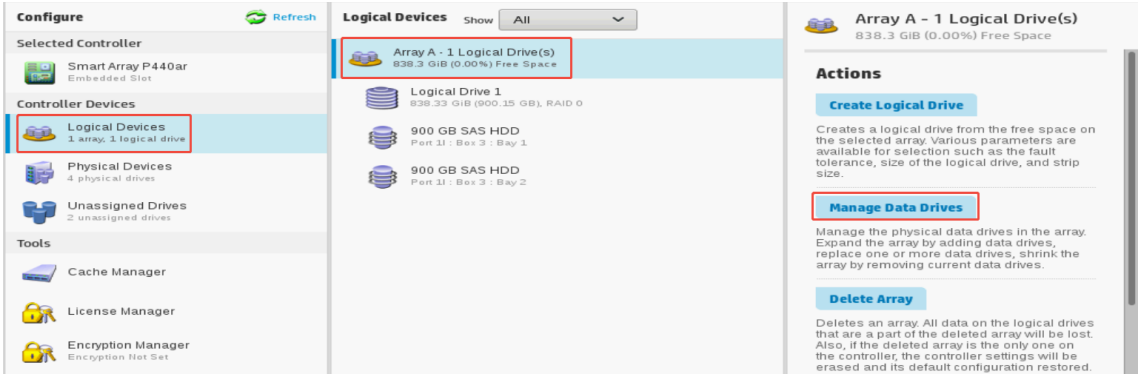
4) 开始转换



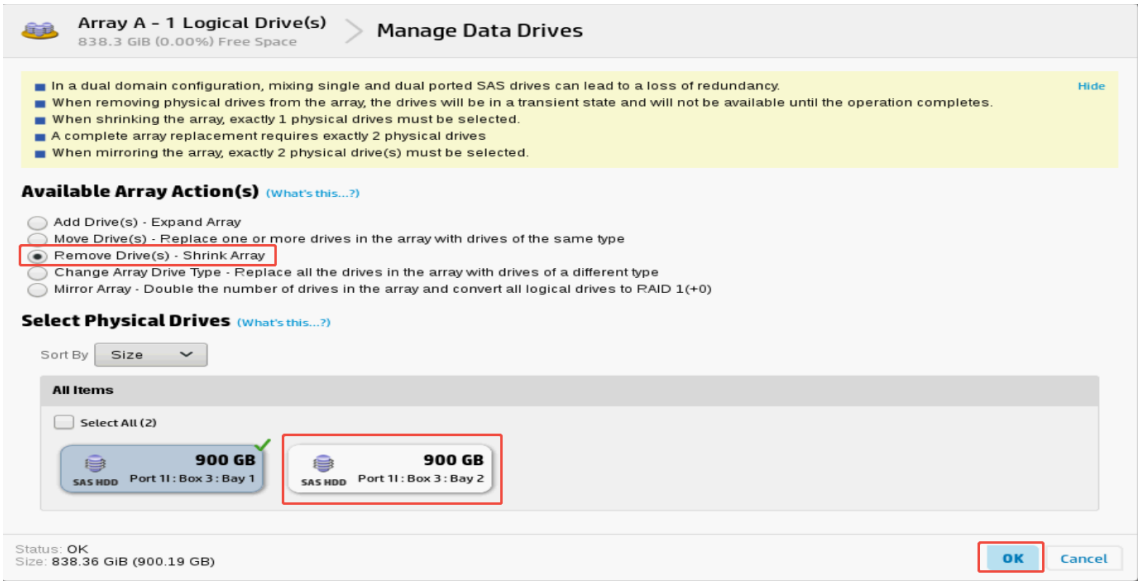
5) 迁移完成之后双盘 RAID0 只有单盘容量，因为刚迁移的 RAID0，原 RAID1 的一块镜像盘容量为未使用状态，此时可以将硬盘移除。



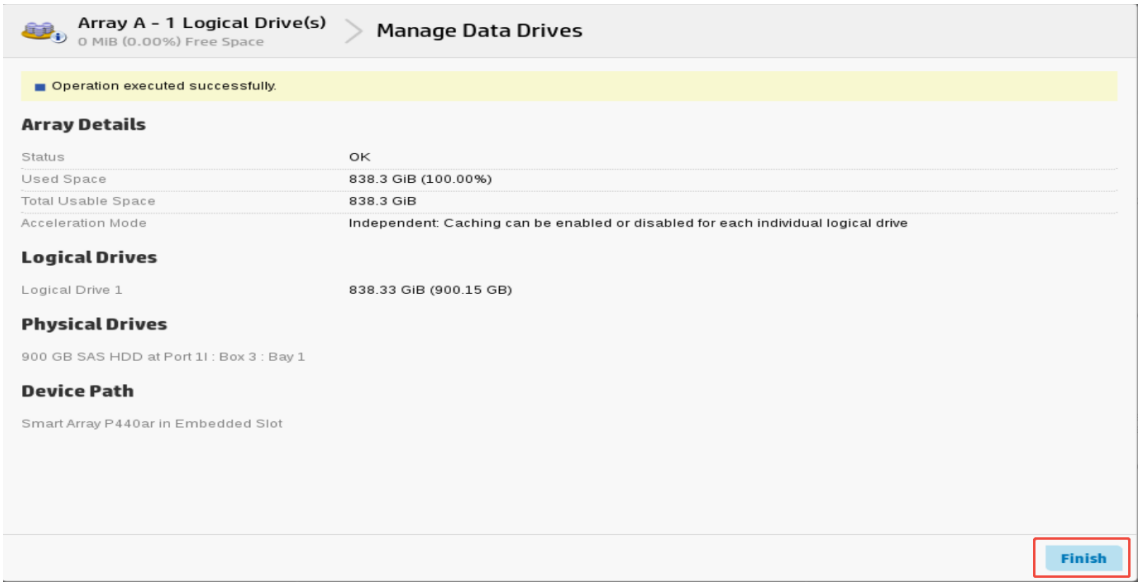
6) 此时可以将该硬盘从阵列中移除，选择 **Manage Data Drives。**



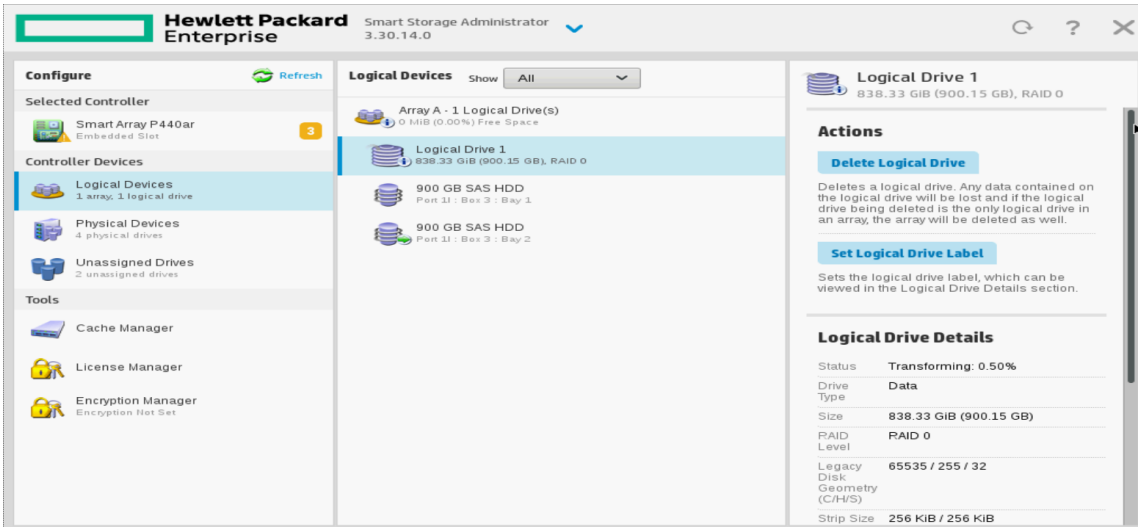
7) 选择 **Remove Drive**，再取消勾选需要移除的硬盘，点击 **OK。**



8) 点击 **Finish**



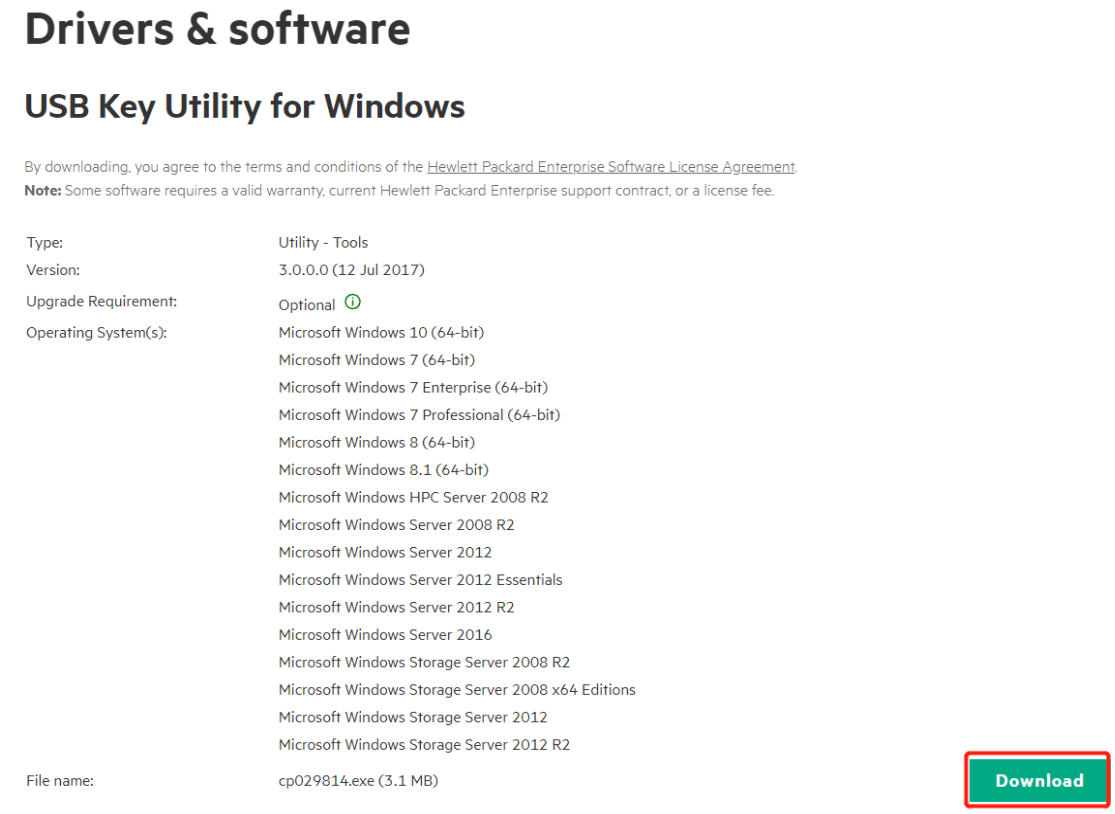
9) 等待转换完成之后，会看到 bay2 硬盘被移除阵列。


Hewlett Packard Enterprise
Smart Storage Administrator
3.30.14.0
Configure
Refresh
Selected Controller
Smart Array P440ar
Embedded Slot
3
Controller Devices
Logical Devices
1 array, 1 logical drive
Physical Devices
4 physical drives
Unassigned Drives
2 unassigned drives
Tools
Cache Manager
License Manager
Encryption Manager
Encryption Not Set
Logical Devices
Show
All
Array A - 1 Logical Drive(s)
0 MiB (0.00%) Free Space
Logical Drive 1
838.33 GiB (900.15 GB), RAID 0
900 GB SAS HDD
Port 1I : Box 3 : Bay 1
900 GB SAS HDD
Port 1I : Box 3 : Bay 2
Logical Drive 1
838.33 GiB (900.15 GB), RAID 0
Actions
Delete Logical Drive
Deletes a logical drive. Any data contained on the logical drive will be lost and if the logical drive being deleted is the only logical drive in an array, the array will be deleted as well.
Set Logical Drive Label
Sets the logical drive label, which can be viewed in the Logical Drive Details section.
Logical Drive Details
Status
Transforming: 0.50%
Drive Type
Data
Size
838.33 GiB (900.15 GB)
RAID Level
RAID 0
Legacy Disk Geometry (C/H/S)
65535 / 255 / 32
Strip Size
256 KiB / 256 KiB

附录：通过 USB Key Utility 制作可引导 SSA U 盘

1) HPE 官网下载 USB KEY 工具。

https://support.hpe.com/hpesc/public/swd/detail?swItemId=MTX_360731071b404454b454390208



Drivers & software

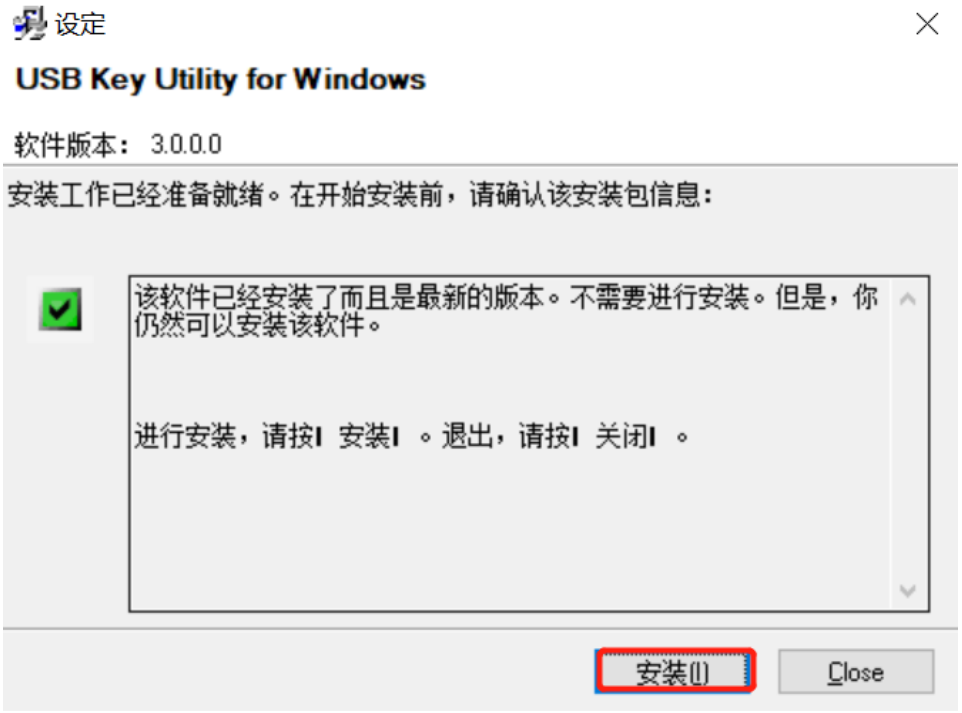
USB Key Utility for Windows

By downloading, you agree to the terms and conditions of the Hewlett Packard Enterprise Software License Agreement.
Note: Some software requires a valid warranty, current Hewlett Packard Enterprise support contract, or a license fee.

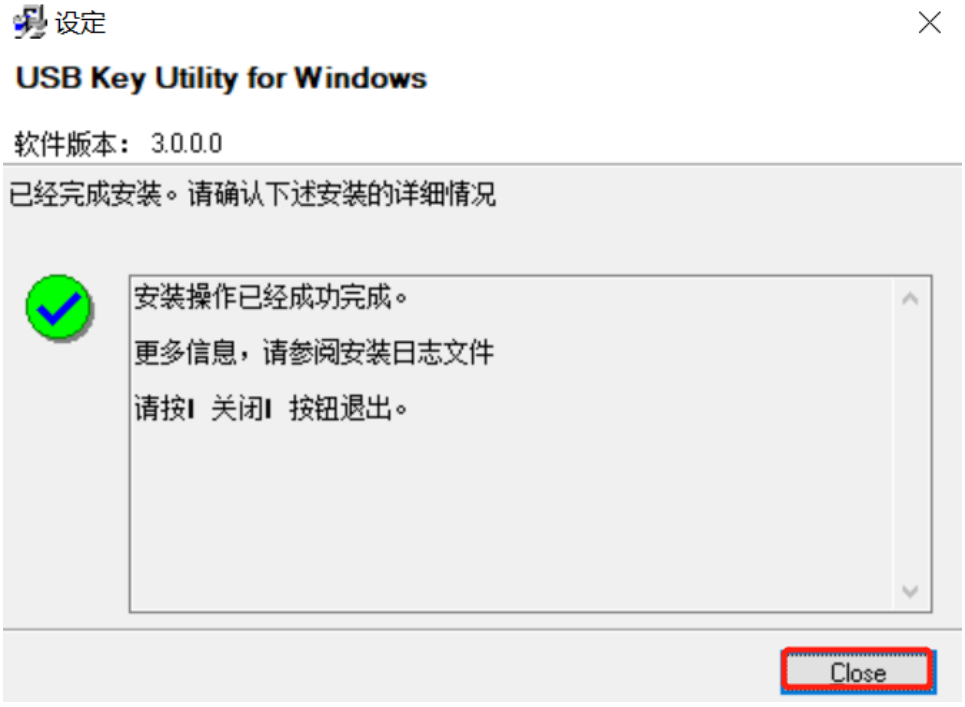
Type:	Utility - Tools
Version:	3.0.0.0 (12 Jul 2017)
Upgrade Requirement:	Optional
Operating System(s):	Microsoft Windows 10 (64-bit) Microsoft Windows 7 (64-bit) Microsoft Windows 7 Enterprise (64-bit) Microsoft Windows 7 Professional (64-bit) Microsoft Windows 8 (64-bit) Microsoft Windows 8.1 (64-bit) Microsoft Windows HPC Server 2008 R2 Microsoft Windows Server 2008 R2 Microsoft Windows Server 2012 Microsoft Windows Server 2012 Essentials Microsoft Windows Server 2012 R2 Microsoft Windows Server 2016 Microsoft Windows Storage Server 2008 R2 Microsoft Windows Storage Server 2008 x64 Editions Microsoft Windows Storage Server 2012 Microsoft Windows Storage Server 2012 R2
File name:	cp029814.exe (3.1 MB)

Download

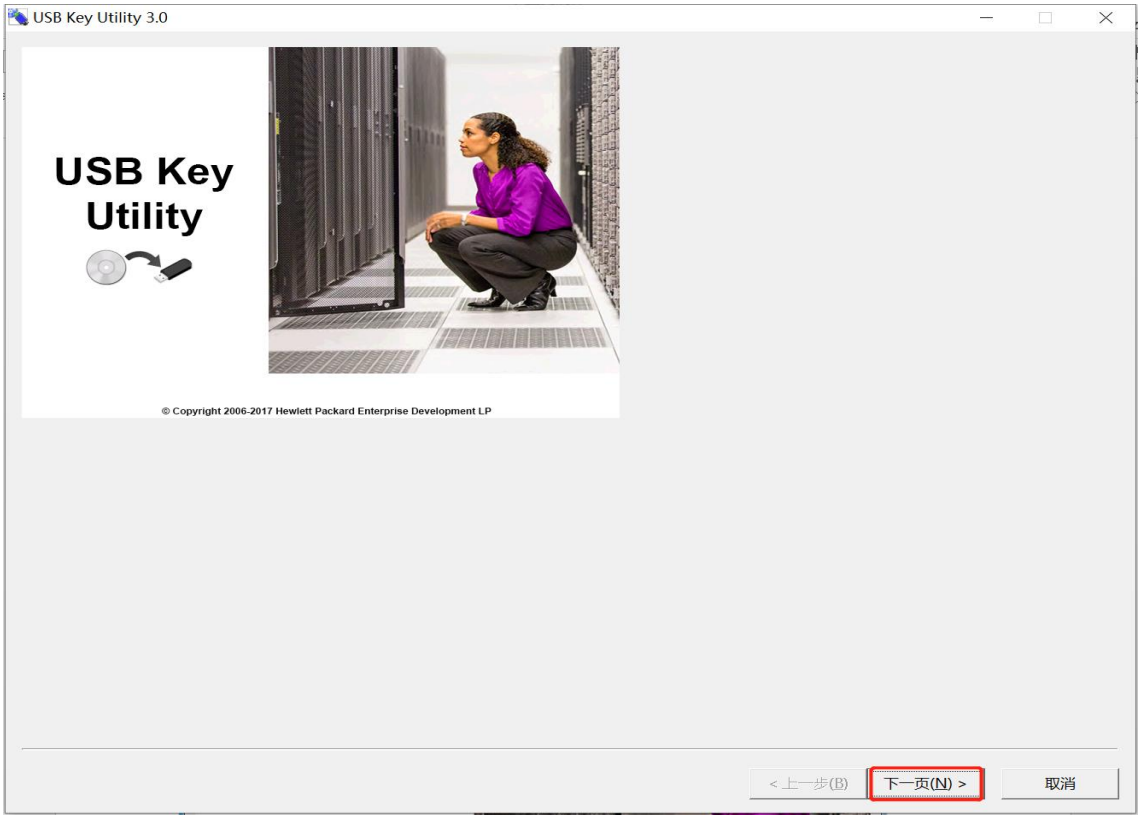
2) 双击.exe 包，点击**安装**。



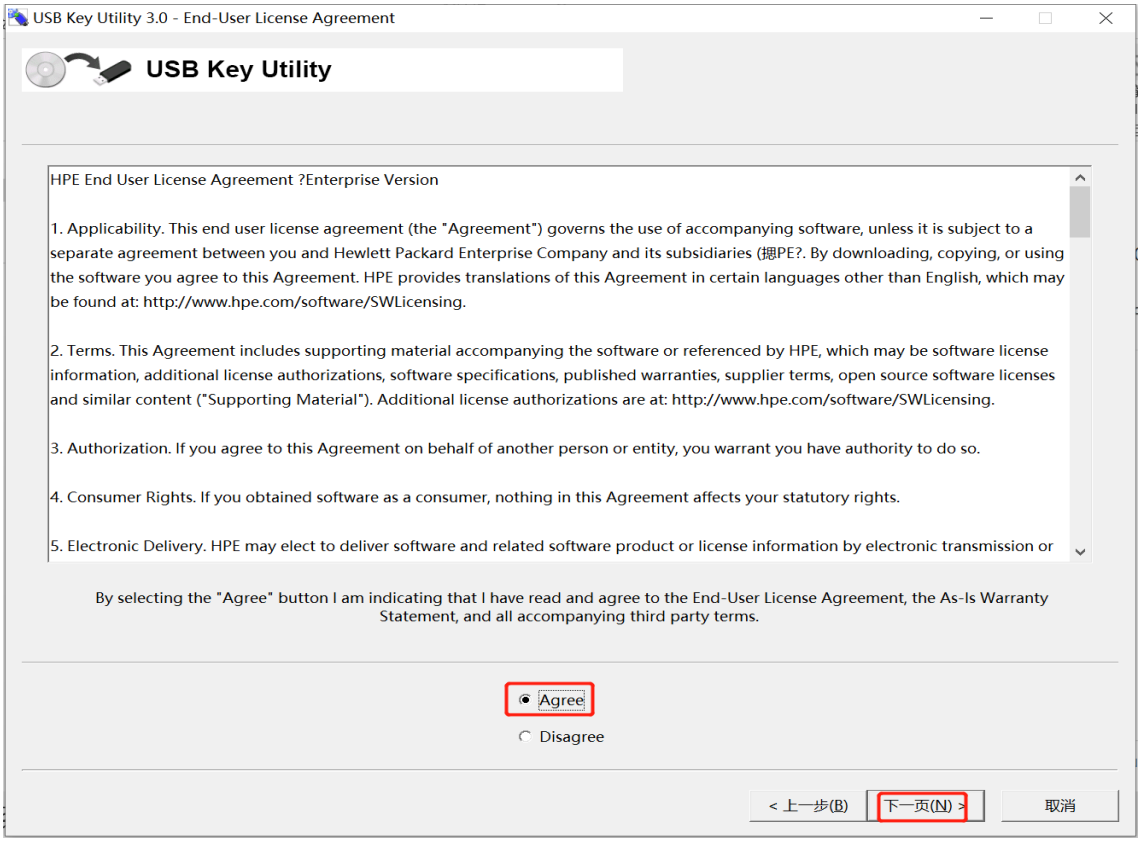
点击 **Close。**



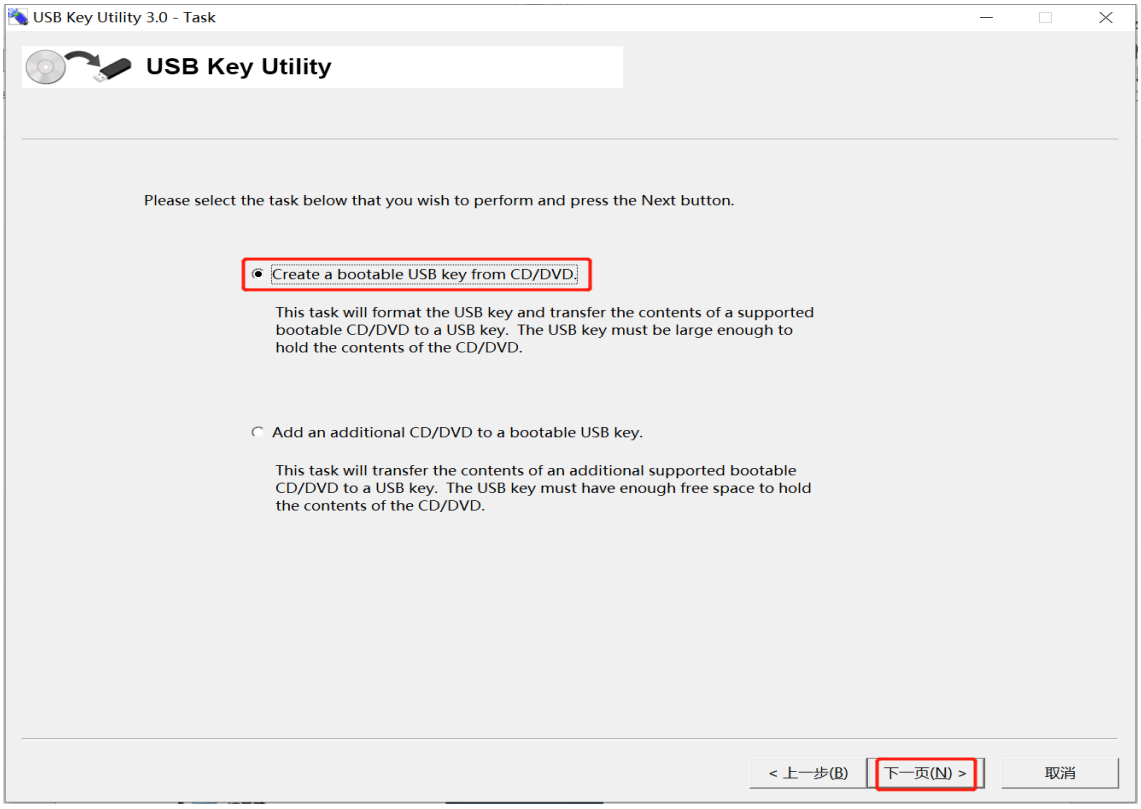
3) 找到下载好的工具，打开点击**下一页。**



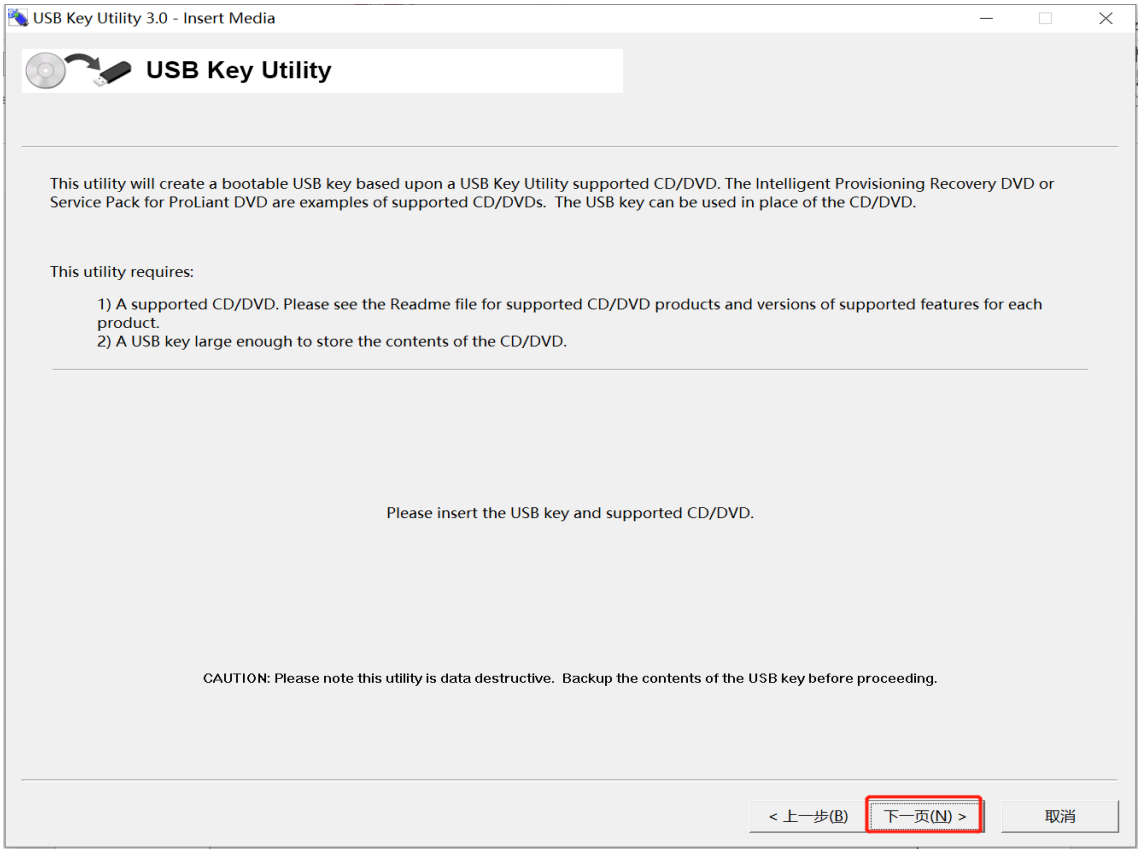
4) 同意条款后，点击**下一页。**



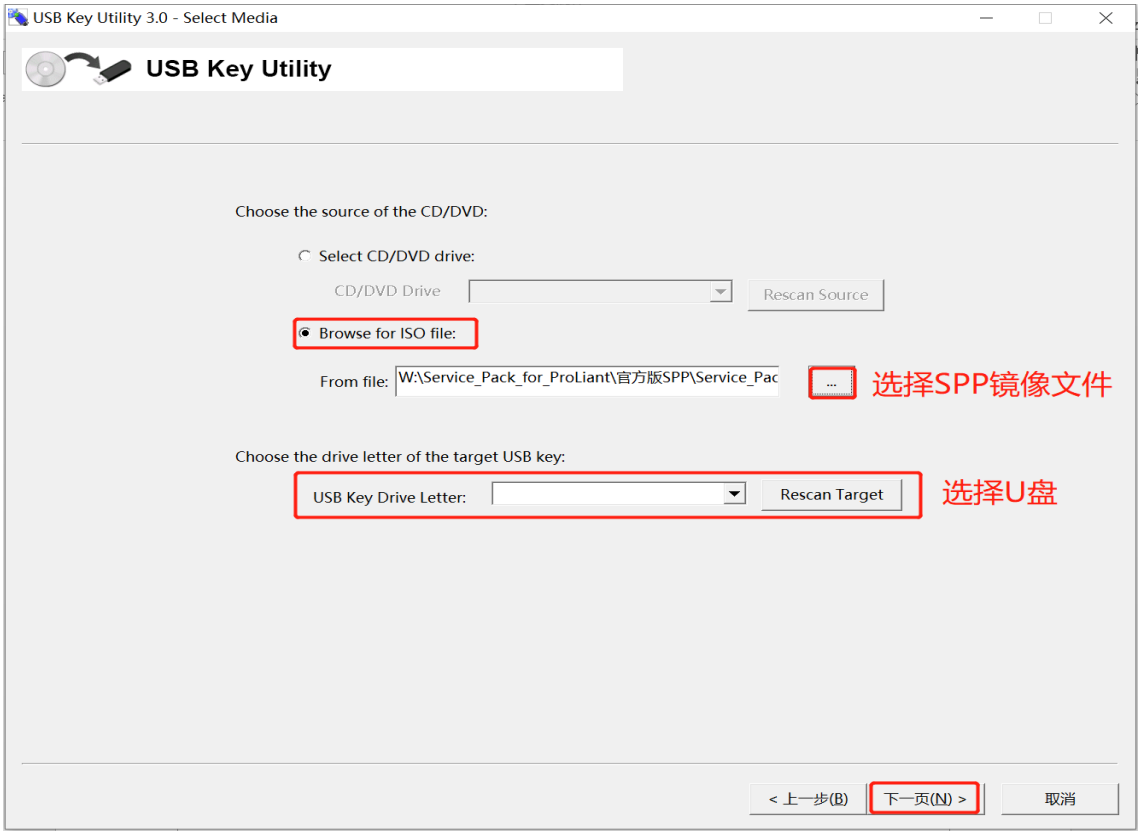
5) 选择第一个 Create a bootable USB Key from CD/DVD，点击**下一页。**



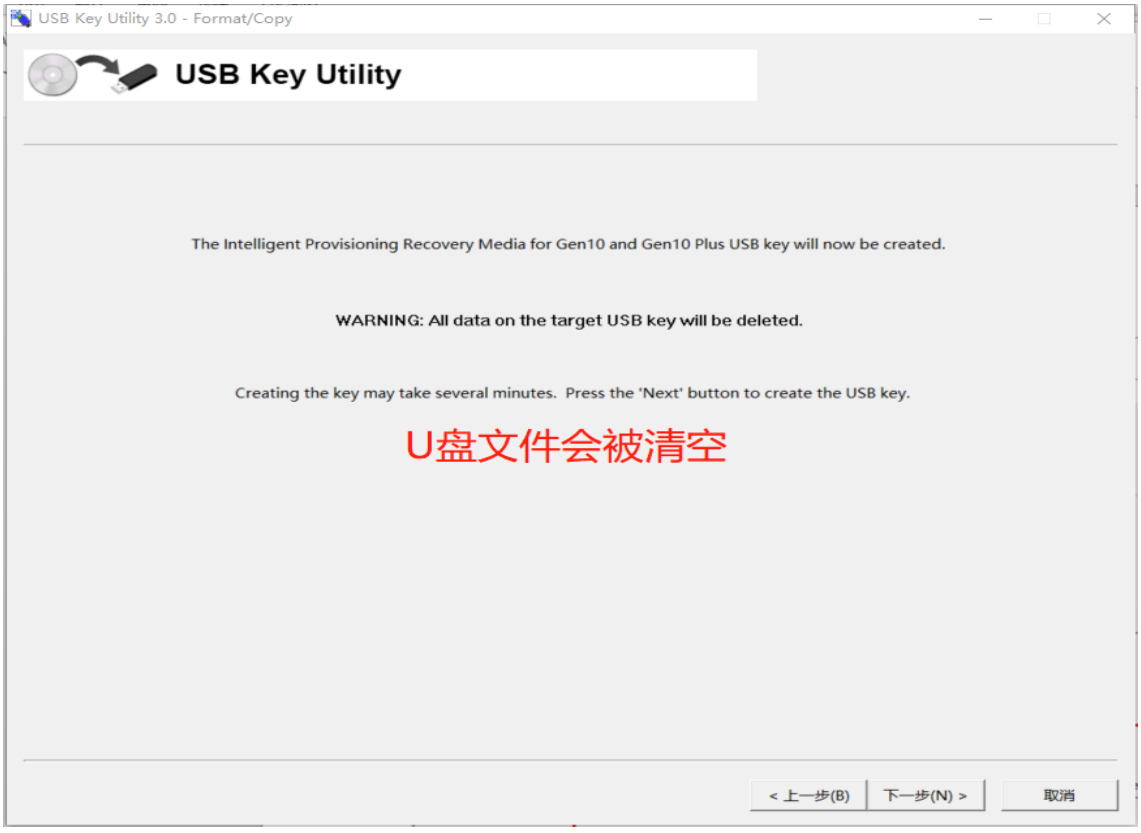
6) 点击**下一页。**



7) 选择第二个 Browse for ISO file，浏览找到 SPP 镜像文件，选择 U 盘，点击**下一页**。



8) 提示会清空 U 盘里的数据，点击**下一步**即可。



9) 等待一段时间后制作完成。