

HPE Gen12 服务器 MR 系列阵列卡

Windows/Linux/VMware 系统下 StorCLI 扩容阵列

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一. 适用范围与注意事项

- 本文档旨在说明 HPE Gen12 系列服务器 MR 系列阵列卡不同系统下使用 MegaRAID Storage Administrator StorCLI 工具扩容阵列的方法,并以 DL360 Gen12 服务器为例进行配置步骤说明。
MR 系列阵列卡包含如下型号:
 - HPE MR416i-p Gen12
 - HPE MR416i-o Gen12
 - HPE MR216i-p Gen12

- HPE MR216i-o Gen12
 - HPE MR408i-o Gen12
 - HPE MR408i-p Gen12
- 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。

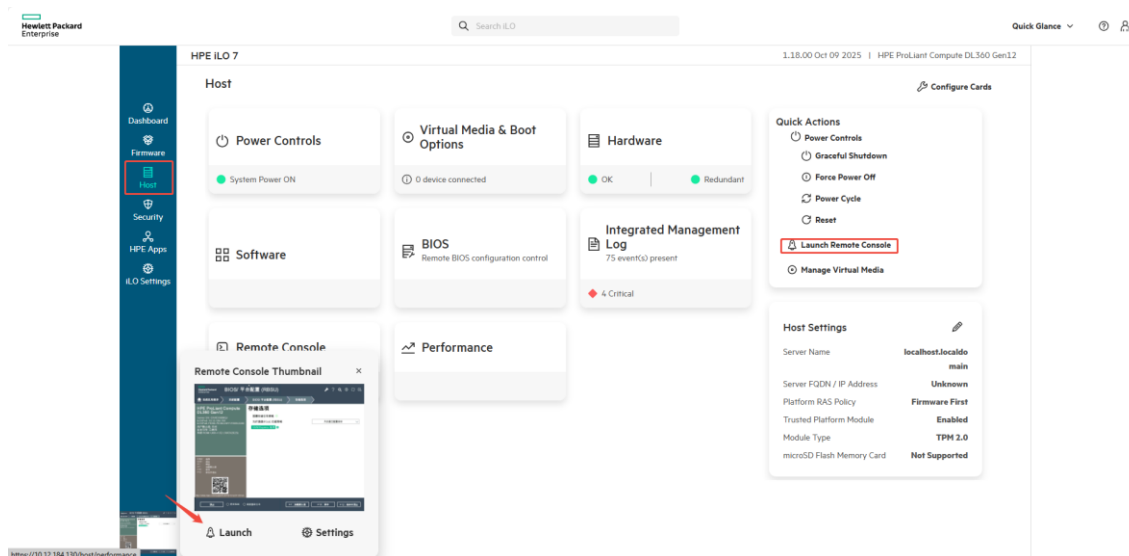
二. 配置准备

1. 下载 MegaRAID Storage Administrator StorCLI 工具
 - Windows 下载链接：[HPE MegaRAID Storage Administrator StorCLI for Windows 64-bit \(for Gen10P and Gen11 Controllers\) | HPE Support Center](#)
 - Linux 下载链接：[HPE MegaRAID Storage Administrator StorCLI for Linux 64-bit \(for Gen10P and Gen11 Controllers\) | HPE Support](#)
 - VMware 下载链接：
 - ESXi 8.0: [HPE MegaRAID Storage Administrator StorCLI for VMware8.0 \(For Gen10P and Gen11 Controllers\) | HPE Support](#)
 - ESXi 9.0: [HPE MegaRAID Storage Administrator StorCLI for VMware9.0 \(For Gen10P and Gen11 Controllers\) | HPE Support](#)
2. 连接 iLO 与启用远程控制台
具体方法请参考：<https://zhiliao.h3c.com/theme/details/233627>

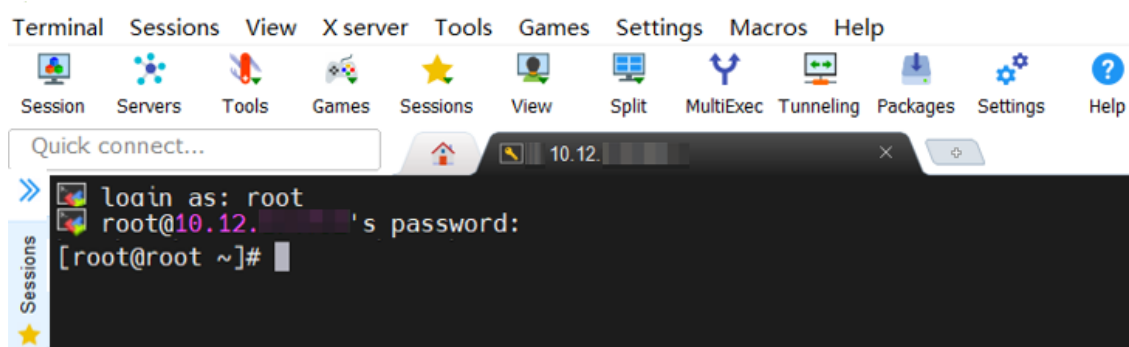
三. 配置步骤

1. 访问系统
 - 1.1 通过 iLO 启用远程控制台访问系统（Windows Server, Linux, VMware ESXi）

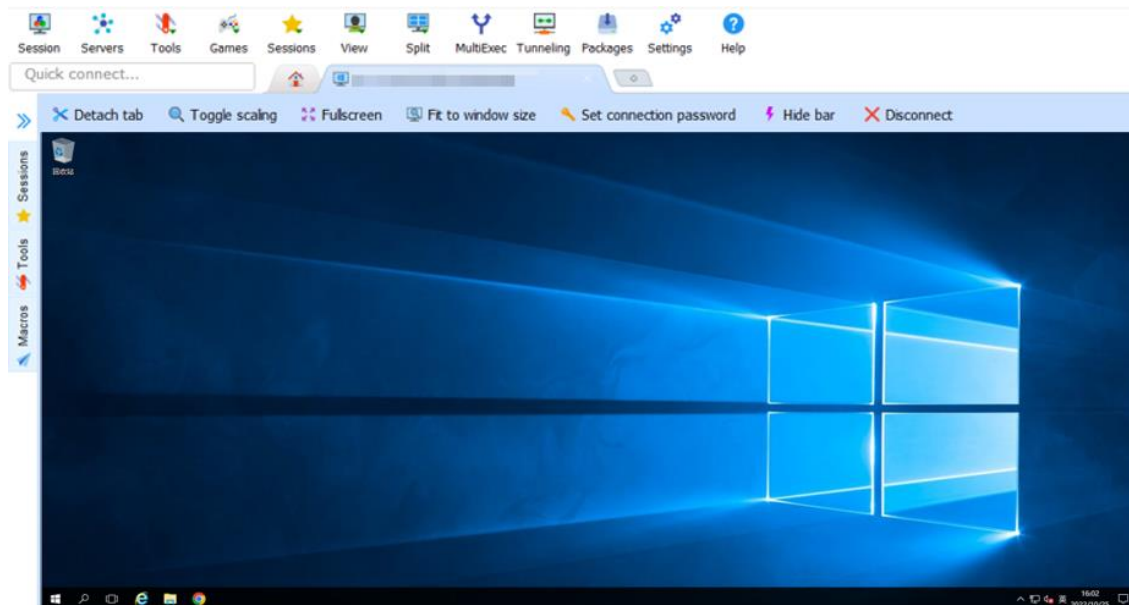
通过 iLO7 页面 **Dashboard - Virtual Media & Remote Console** 选项，或 **Host - Remote Console** 页面，或页面左下方 Remote Console 选区可直接启用远程控制台；也可在上方搜索栏直接搜索 Remote Console 进行选择。本文以 HTML5 远程控制台为例。



1.2 通过第三方 SSH 工具访问系统 (Linux, VMware ESXi)



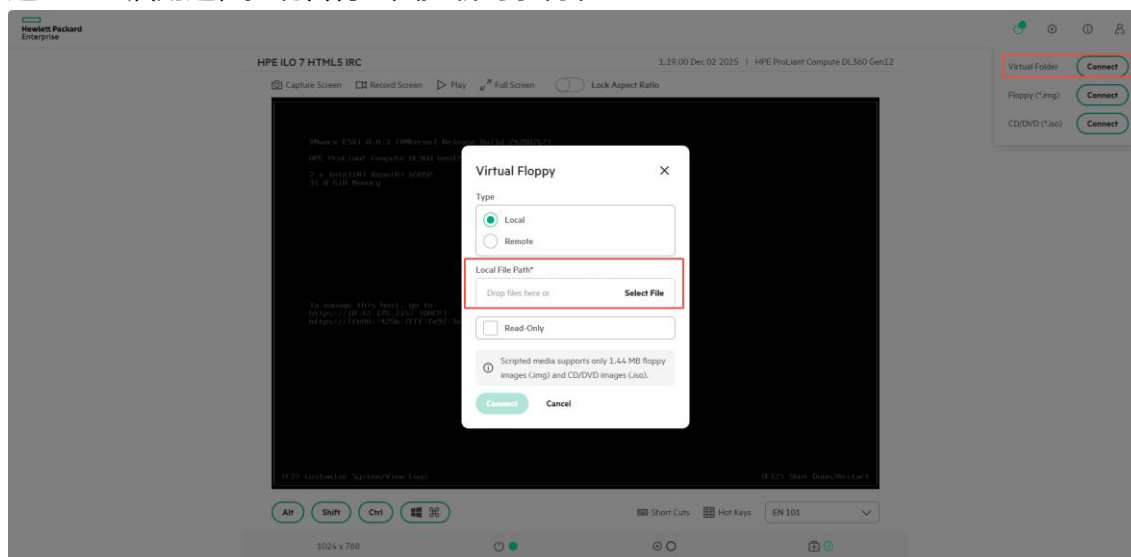
1.3 通过远程桌面或第三方 RDP 工具访问系统 (Windows Server)



2. 将 MegaRAID Storage Administrator StorCLI 工具保存到系统下

2.1 Windows Server

2.1.1 通过 iLO 启用远程控制台将工具挂载到系统下



2.1.2 通过 U 盘将文件挂载到系统下

U 盘接入服务器后，在系统下直接访问挂载点。

2.2 Linux

2.2.1 通过 iLO 启用远程控制台将工具挂载到系统下

```
[root@localhost ~]# lsblk
NAME                MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda                  8:0      0 837.9G 0 disk
├─sda1                8:1      0 200M   0 part /boot/efi
├─sda2                8:2      0    1G   0 part /boot
└─sda3                8:3      0 836.7G 0 part
   ├─rhel-root        253:0     0 50G    0 lvm  /
   ├─rhel-swap        253:1     0  4G    0 lvm  [SWAP]
   └─rhel-home        253:5     0 782.7G 0 lvm  /home
sdc                  8:32     1  16M   1 disk /run/media/root/iLO FOLDER
nvme0n1             259:0     0 372.6G 0 disk
├─nvme0n1p1          259:2     0 200M   0 part
├─nvme0n1p2          259:3     0    1G   0 part
├─nvme0n1p3          259:4     0 371.4G 0 part
│   ├─rhel00-swap     253:2     0  4G    0 lvm
│   ├─rhel00-home     253:3     0 317.4G 0 lvm
│   └─rhel00-root     253:4     0 50G    0 lvm
└─nvme1n1            259:1     0 372.6G 0 disk
[root@localhost ~]# mount /dev/sdc /mnt
mount: /dev/sdc is write-protected, mounting read-only
[root@localhost ~]# cd /mnt
[root@localhost mnt]# ls
storcli-007.1616.0000.0000-1.x86_64.rpm
```

2.2.2 通过 U 盘将文件挂载到系统下

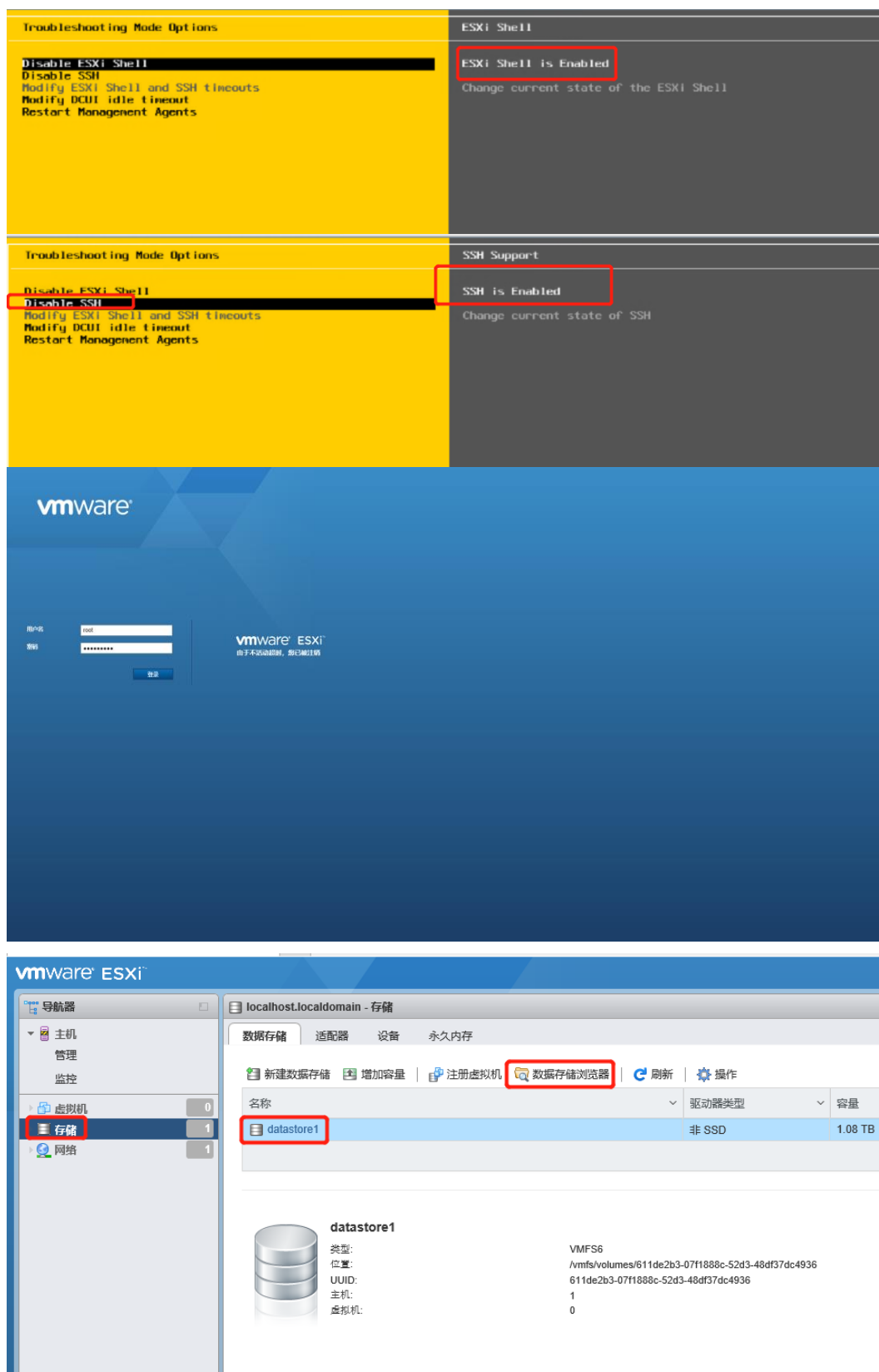
U 盘接入服务器后，在系统下通过 mount 命令挂载。

2.2.3 通过第三方 SSH 工具将文件保存到系统下

参考第三方工具使用说明。

2.3 VMware ESXi

2.3.1 启用 Shell 并通过 Web Client 将文件保存到系统下。



storcli-esxi6.5-bundle-1.25.16

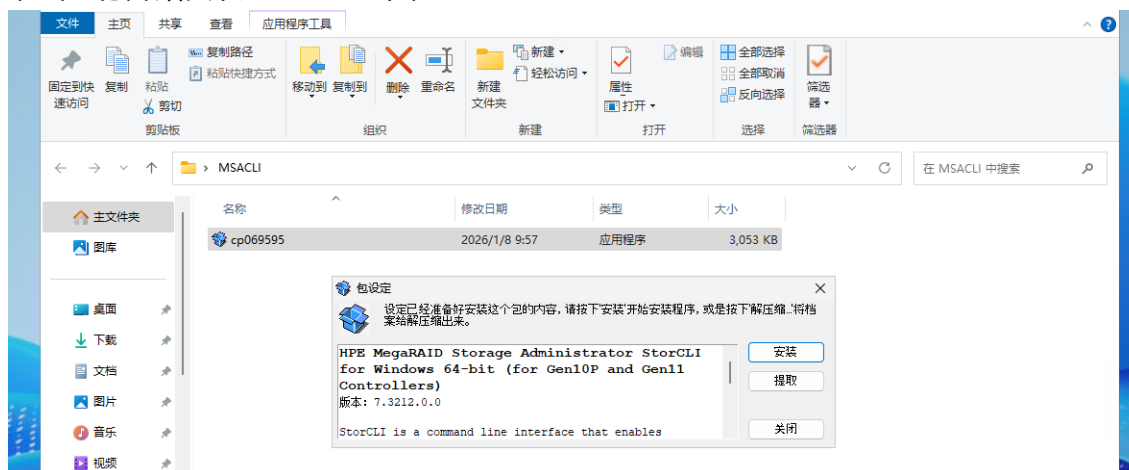
名称	修改日期	类型	大小
index.xml	2020/9/4 6:47	Microsoft Edge HT...	1 KB
metadata-storcli-esxi6.5-bundle-1.25.16.zip	2020/9/4 6:47	压缩(zipped)文件夹	3 KB
vendor-index.xml	2020/9/4 6:47	Microsoft Edge HT...	1 KB
vmware-esx-storcli-1.25.16.vib	2020/9/4 6:47	VIB 文件	2,025 KB

2.3.2 通过第三方 SSH 工具将文件保存到系统下
参考第三方工具使用说明。

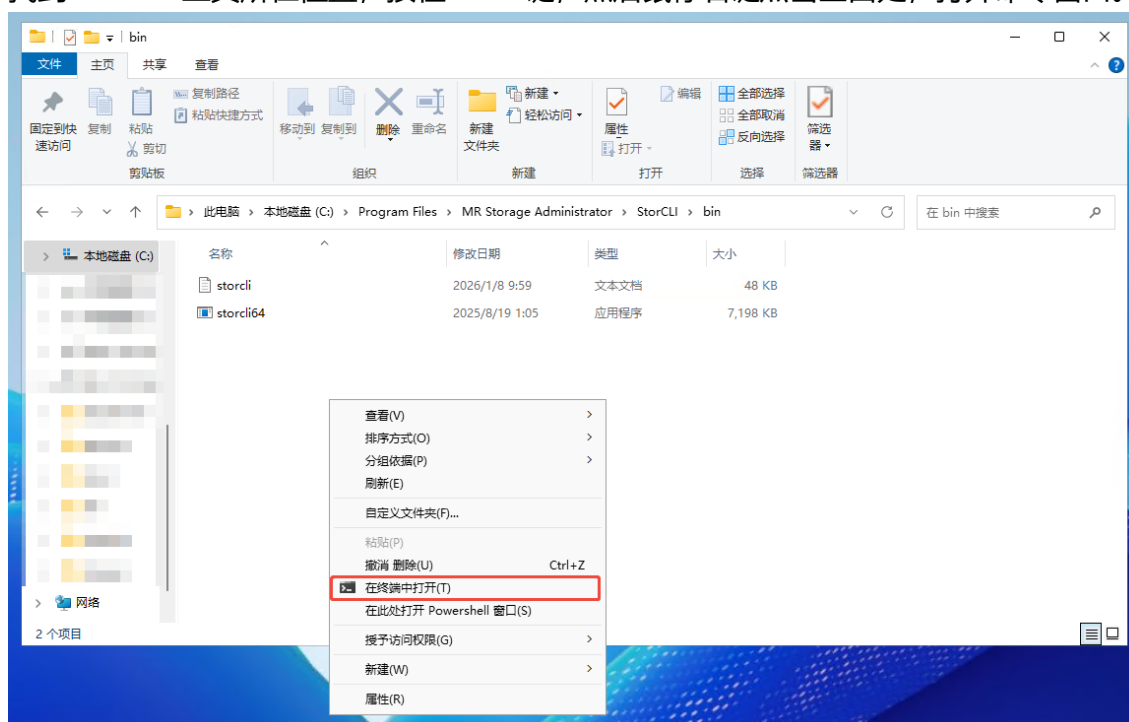
3. 安装 MegaRAID Storage Administrator StorCLI

3.1 Windows Server

1) 双击运行开始安装 StorCLI 工具。



2) 找到 StorCLI 工具所在位置，按住 Shift 键，然后鼠标右键点击空白处，打开命令窗口。



3) `.\storcli64.exe`, 即可运行 StorCLI 工具。

```
PS C:\Program Files\MR Storage Administrator\StorCLI\bin> .\storcli64.exe show all
CLI Version = 007.3212.0000.0000 Apr 16, 2025
Operating system = Windows Server 2025
Status Code = 0
Status = Success
Description = None

Number of Controllers = 1
Host Name = WIN-BMFCFVDM2A4
Operating System = Windows Server 2025
StoreLib IT Version = 07.3300.0200.0300
StoreLib IR3 Version = 16.16-0

System Overview :
=====
```

Ctl Model	Ports	PDs	DGs	DN0pt	VDs	VN0pt	BBU	sPR	DS	EHS	ASOs	Hlth
0 HPEMR416i-oGen11	16	10	3	0	3	0	Opt	On	-	N	4	Opt

3.2 Linux

1) `rpm -ivh` 安装 StorCLI 工具。

```
[root@localhost ~]# rpm -ivh storcli-007.3212.0000.0000-1.noarch.rpm
警告: storcli-007.3212.0000.0000-1.noarch.rpm: 头 V4 RSA/SHA384 Signature, 密钥 ID 74c3a4a2: NOKEY
Verifying... ##### [100%]
准备中... ##### [100%]
正在升级/安装...
1:storcli-007.3212.0000.0000-1 ##### [100%]
egrep: warning: egrep is obsolescent; using grep -E
```

工具默认安装在 `/opt/hpe/storcli` 目录下, `./storcli64` 命令运行。

```
[root@localhost storcli]# ./storcli64 show all
CLI Version = 007.3212.0000.0000 Apr 16, 2025
Operating system = Linux 6.12.0-55.9.1.el10_0.x86_64
Status Code = 0
Status = Success
Description = None

Number of Controllers = 1
Host Name = localhost.localdomain
Operating System = Linux 6.12.0-55.9.1.el10_0.x86_64

System Overview :
=====
```

Ctl Model	Ports	PDs	DGs	DN0pt	VDs	VN0pt	BBU	sPR	DS	EHS	ASOs	Hlth
0 HPEMR416i-oGen11	16	10	3	0	3	0	Opt	On	-	N	4	Opt

3.3 VMware ESXi

1) 进入文件所在位置, 使用 `unzip + xxx.zip` 解压, 得到.vib 文件。

```
[root@localhost:/tmp] ls
cp067756.zip      stagingdirectory  vmware-root      vmware-uid_0
[root@localhost:/tmp] unzip cp067756.zip
Archive:  cp067756.zip
  inflating: BCM-storcli_007.3212.0000.0000-02.zip
  inflating: BCM_bootbank_storcli_007.3212.0000.0000-02.vib
  inflating: cp067756.xml
```

- 2) 使用 **esxcli software vib install -v [软件包所在的绝对路径] [.vib 文件名]** 进行安装。安装完成后若提示需要重启，重启后在路径下可以看到对应工具。

```
[root@localhost:/tmp] esxcli software vib install -v /tmp/BCM_bootbank_storcli_007.3212.0000.0000-02.vib --no-sig-check
Installation Result
  Message: The update completed successfully, but the system needs to be rebooted for the changes to be effective.
  VIBs Installed: BCM_bootbank_storcli_007.3212.0000.0000-02
  VIBs Removed:
  VIBs Skipped:
  Reboot Required: true
  DPU Results:
```

- 3) 工具默认安装在 **/opt/hpe/storcli64** 目录下，使用 **cd /opt/hpe/storcli64/** 进入此目录。不同系统版本可能路径不同，若有差异，可自行在 **opt** 目录下查找，示例为 VMware 8.0 U3。

```
[root@localhost:/opt/storcli/bin] ls
storcli64
```

4. 获取阵列卡编号、逻辑盘编号和物理盘编号（命令通用，以 Windows 系统为例）

- 1) **./storcli64 show all** 查看当前阵列卡型号及编号：MR416i-a 阵列卡 编号：C0。

```
C:\Program Files\MR Storage Administrator\StorCLI\bin> .\storcli64.exe show all
CLI Version = 007.3011.0000.0000 Sep 27, 2024
Operating system = 
Status Code = 0
Status = Success
Description = None

Number of Controllers = 2
Host Name = WIN-081J0HKFLA8
Operating System = 
StoreLib IT Version = 07.3100.0200.0000
StoreLib IR3 Version = 16.16-0

System Overview :
=====
Ctl Model          Ports PDs DGs DNOpt VDs VNOpt BBU sPR DS EHS ASOs Hlth
-----
0  HPEMR416i-a      16   7   1   0   1   0 Opt On  -   N   4 Opt
```

- 2) **./storcli64 /c0/vall show all** 查看当前逻辑卷信息为 RAID0，逻辑卷 VD 为 239。（c0 对应阵列卡的信息）

```
C:\Program Files\MR Storage Administrator\StorCLI\bin>. \storcli64.exe /c0/vall show all
CLI Version = 007.3011.0000.0000 Sep 27, 2024
Operating system = 
Controller = 0
Status = Success
Description = None

/c0/v239 :
=====
```

DG/VD TYPE	State	Access	Consist	Cache	Cac	sCC	Size	Name
0/239 RAID0	Opt1	RW	Yes	NRWD	-	ON	837.843 GiB	LDName_00

VD 为 239 的逻辑卷 RAID0 是由 EID 为 251:1 的成员盘组成

```
PDs for VD 239 :
=====
```

EID:Slt	DID	State	DG	Size	Intf	Med	SED	PI	SeSz	Model	Sp	Type
251:1	1	Onln	0	900.00 GB	SAS	HDD	N	N	512B	EH000900JXLVU	U	-

- 3) **./storcli64 /c0/eall/sall show** 查看物理盘信息，确认要扩容 EID 为 252:2 的硬盘到 RAID0 阵列中去。

```
C:\Program Files\MR Storage Administrator\StorCLI\bin>. \storcli64.exe /c0/eall/sall show
CLI Version = 007.3011.0000.0000 Sep 27, 2024
Operating system = 
Controller = 0
Status = Success
Description = Show Drive Information Succeeded.

Drive Information :
=====
```

EID:Slt	DID	State	DG	Size	Intf	Med	SED	PI	SeSz	Model	Sp	Type
251:1	1	Onln	0	900.00 GB	SAS	HDD	N	N	512B	EH000900JXLVU	U	-
251:2	0	UGood	-	900.00 GB	SAS	HDD	N	N	512B	EH000900JXLVU	U	-
251:3	3	UGood	-	900.00 GB	SAS	HDD	N	N	512B	EH000900JXLVU	U	-
251:4	2	UGood	-	900.00 GB	SAS	HDD	N	N	512B	EH000900JXLVU	U	-
252:1	17	UGood	-	1.92 TB	SATA	SSD	N	N	512B	VK001920GZCNH	U	-
252:2	14	UGood	-	1.92 TB	SATA	SSD	N	N	512B	VK001920GZCNH	U	-
252:3	16	UGood	-	1.92 TB	SATA	SSD	N	N	512B	VK001920GZCNH	U	-

5. 扩容阵列

- 1) 将 EID 为 251:2 的盘扩容到 VD 为 239 的逻辑卷 RAID0 中。

./storcli64 /c0/v239 start migrate type=Raid0 option=add drives=251:2

```
C:\Program Files\MR Storage Administrator\StorCLI\bin>. \storcli64.exe /c0/v239 start migrate type=raid0 option=add drives=251:2
CLI Version = 007.3011.0000.0000 Sep 27, 2024
Operating system = Windows Server 2016
Controller = 0
Status = Success
Description = Start LD Operation Success
```

注：多盘情况下驱动器列表用逗号隔开，不能有空格。例如 **./storcli64 /c0/v239 start migrate type=Raid0 option=add drives=251:2, 251:3**。

- 2) 查看扩容进度，等待扩容完成即可。

./storcli64 /c0/v239 show migrate

```
C:\Program Files\MR Storage Administrator\StorCLI\bin>.\storcli64.exe /c0/v239 show migrate
CLI Version = 007.3011.0000.0000 Sep 27, 2024
Operating system = 
Controller = 0
Status = Success
Description = None

VD Operation Status :
=====

-----
VD Operation   Progress%   Status      Estimated Time Left
-----
239 Transformation  0 In progress 5 Hours 0 Minutes
-----

DG=Arrays | Slot=Drive Bay No|VD=Virtual Drive/Logical Drive|EID=Enclosure Device ID
```