

HPE Gen11 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 Gen11 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 DL380 Gen11 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 Gen11
 - HPE MR416i-o Gen11
 - HPE MR216i-p Gen11

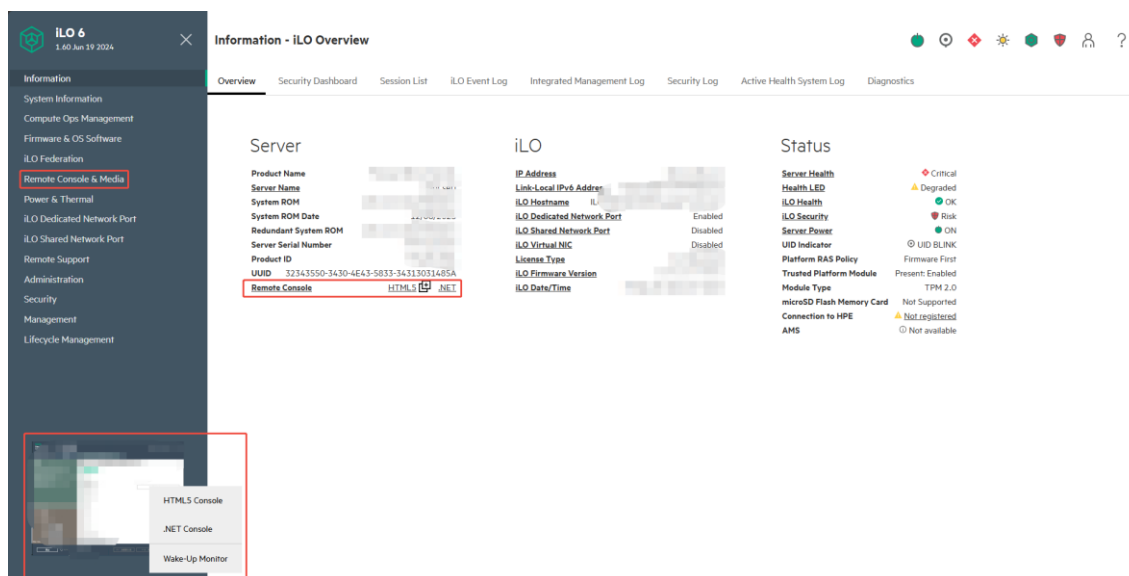
- HPE MR216i-o Gen11
- HPE MR408i-o Gen11
- 实际情况是否适用本文档，请通过下面导航链接进行确认：
<https://zhiliaoh3c.com/Theme/details/218271>
- 提示：
本文档中的信息（包括产品，软件版本和设置参数）仅作参考示例，具体操作与目标需求设置请以实际为准。
本文档不定期更新维护，请以发布的最新版本为准。

二. 配置准备

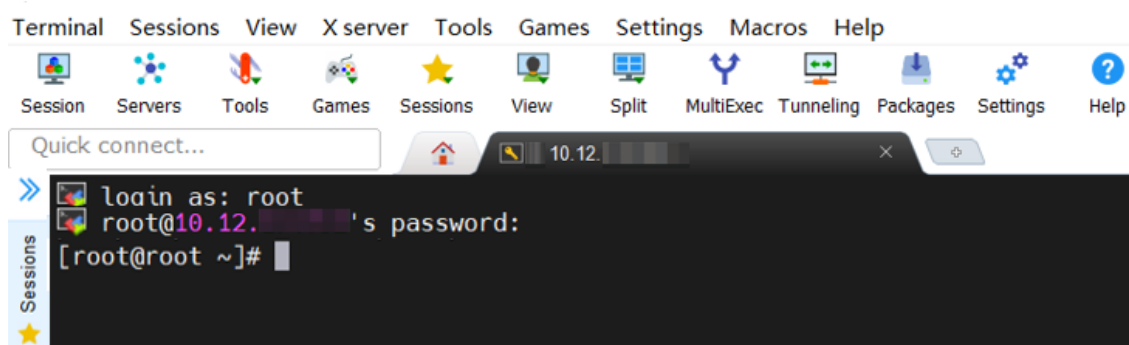
1. 下载 MegaRAID Storage Administrator StorCLI 工具
 - Windows 下载链接：[HPE MegaRAID Storage Administrator StorCLI for Windows 64-bit \(for Gen10P and Gen11 Controllers\) | HPE Support](#)
 - Linux 下载链接：[HPE MegaRAID Storage Administrator StorCLI for Linux 64-bit \(for Gen10 and Gen10 Plus Controllers\) | HPE Support](#)
 - VMware 下载链接：
 - ESXi 6.5: [HPE MegaRAID Storage Administrator StorCLI for VMware6.5 | HPE Support](#)
 - ESXi 6.7: [HPE MegaRAID Storage Administrator StorCLI for VMware6.7 | HPE Support](#)
 - ESXi 7.0: [HPE MegaRAID Storage Administrator StorCLI for VMware7.0 | HPE Support](#)
2. 连接 iLO 与启用远程控制台
具体方法请参考：<https://zhiliaoh3c.com/Theme/details/216337>

三. 配置步骤

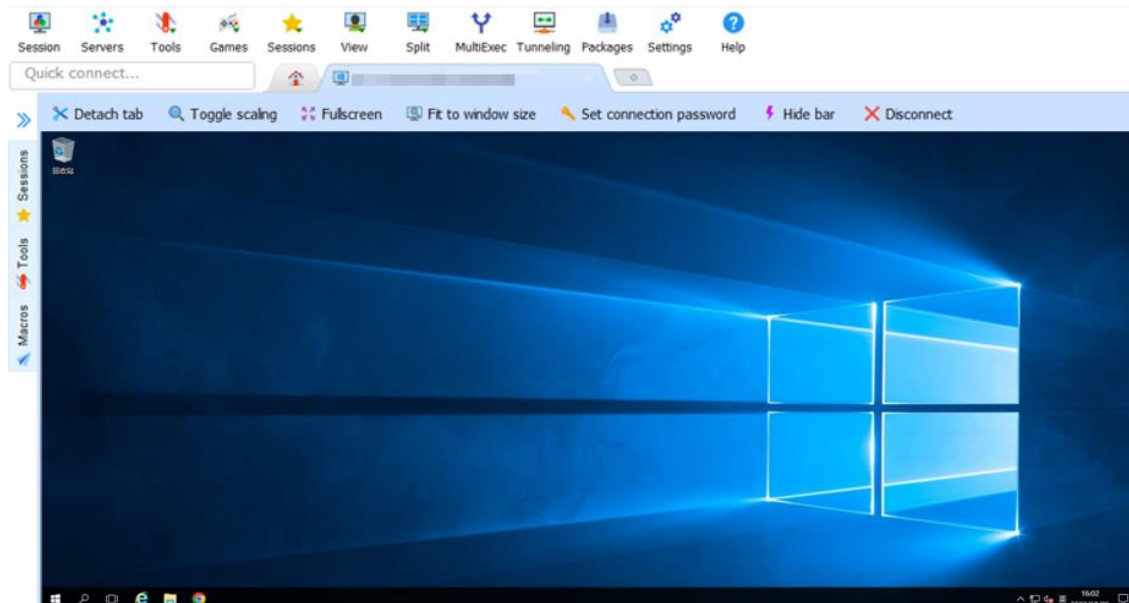
1. 访问系统
 - 1.1 通过 iLO 启用远程控制台访问系统 (Windows Server, Linux, VMware ESXi)
iLO 6 页面 Information -> Overview 的 Remote Console 选项，或页面左下方 Remote Console 选区可直接启用远程控制台；也可在 Remote Console & Media - iLO Integrated Remote Console 页面进行选择。本文以.NET 远程控制台为例。



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



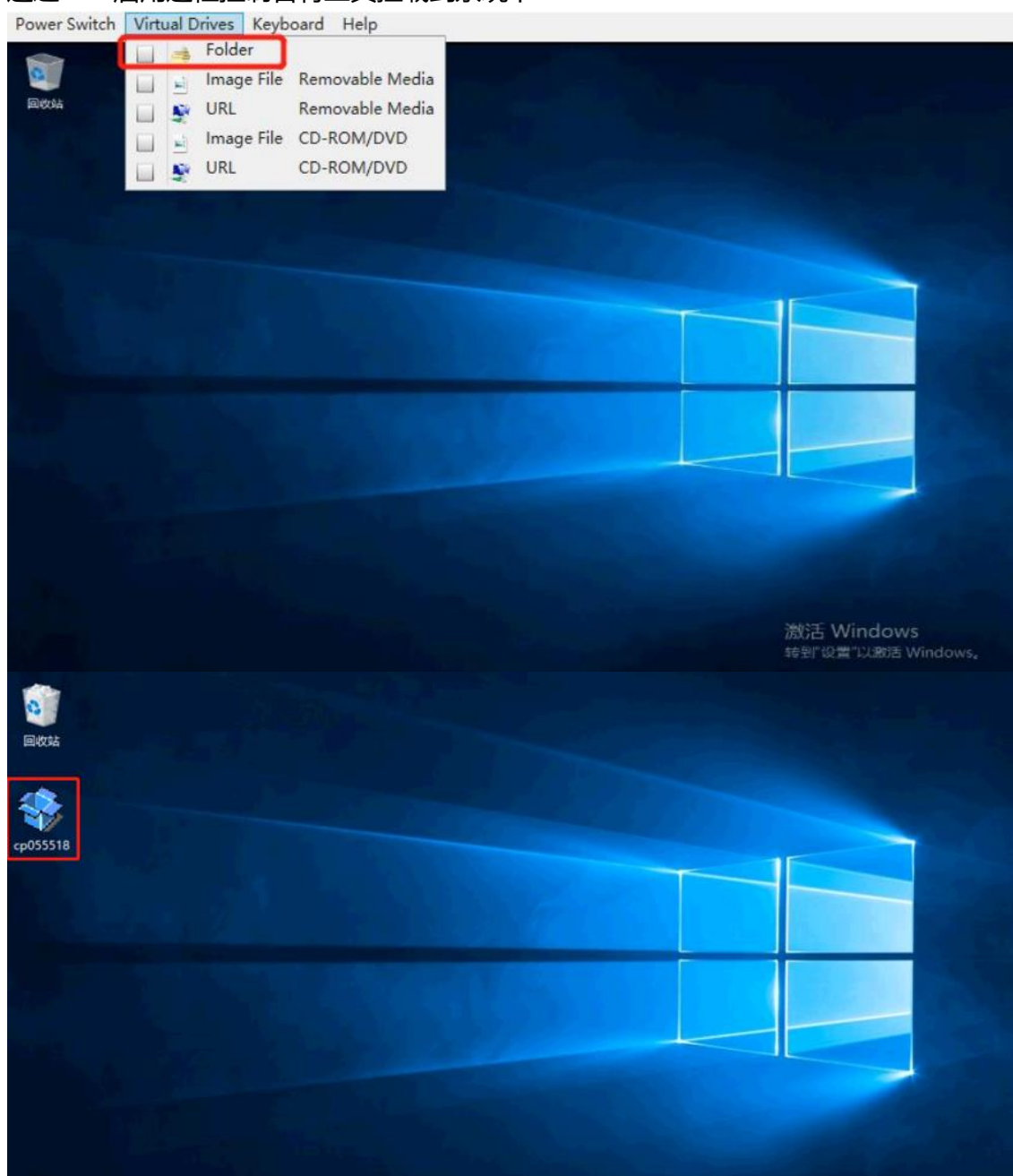
1.3 通过远程桌面或第三方 RDP 工具访问系统 (Windows Server)



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

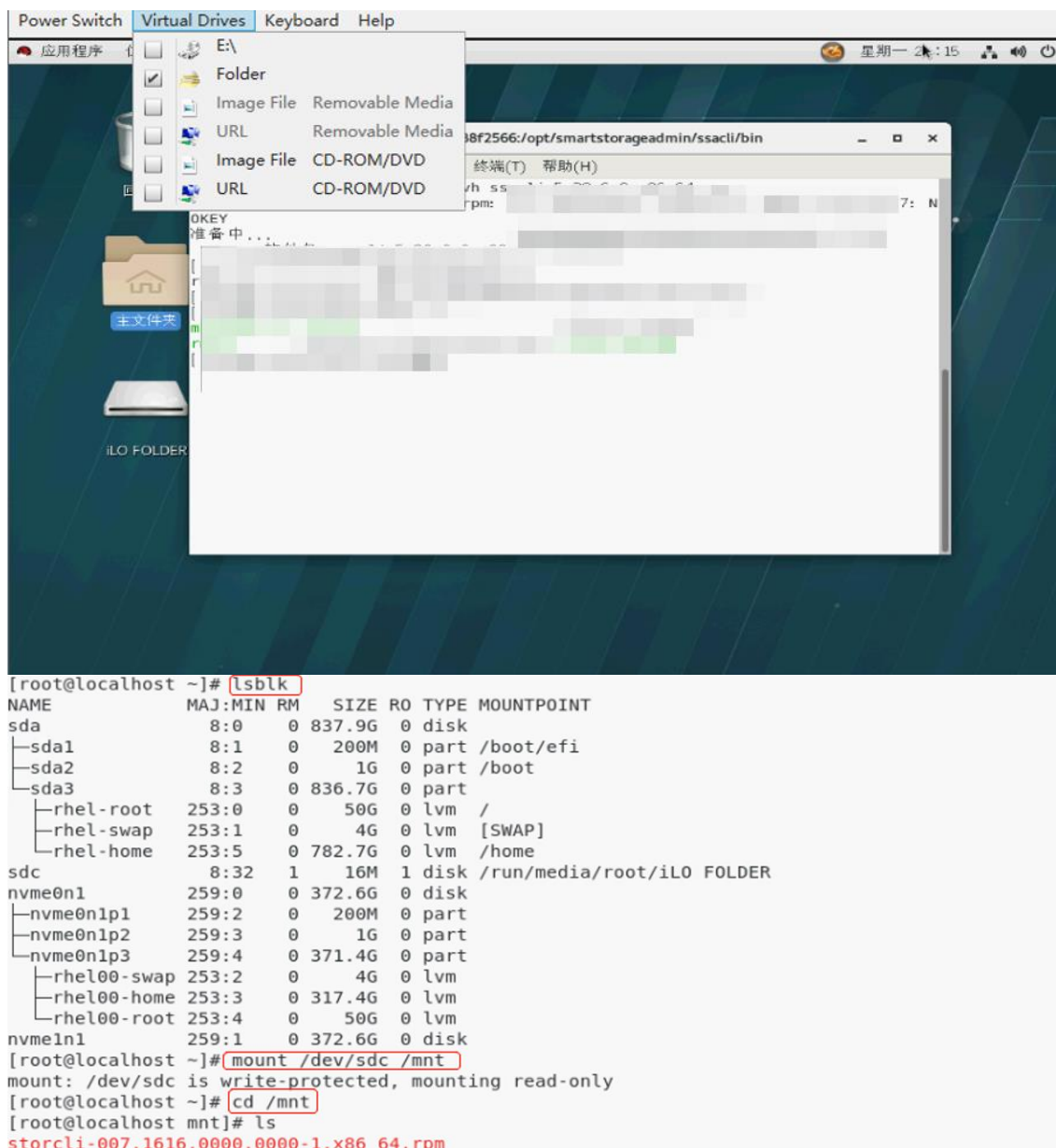


2.1.2 通过 U 盘将文件挂载到系统下

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



2.2.2 通过 U 盘将文件挂载到系统下

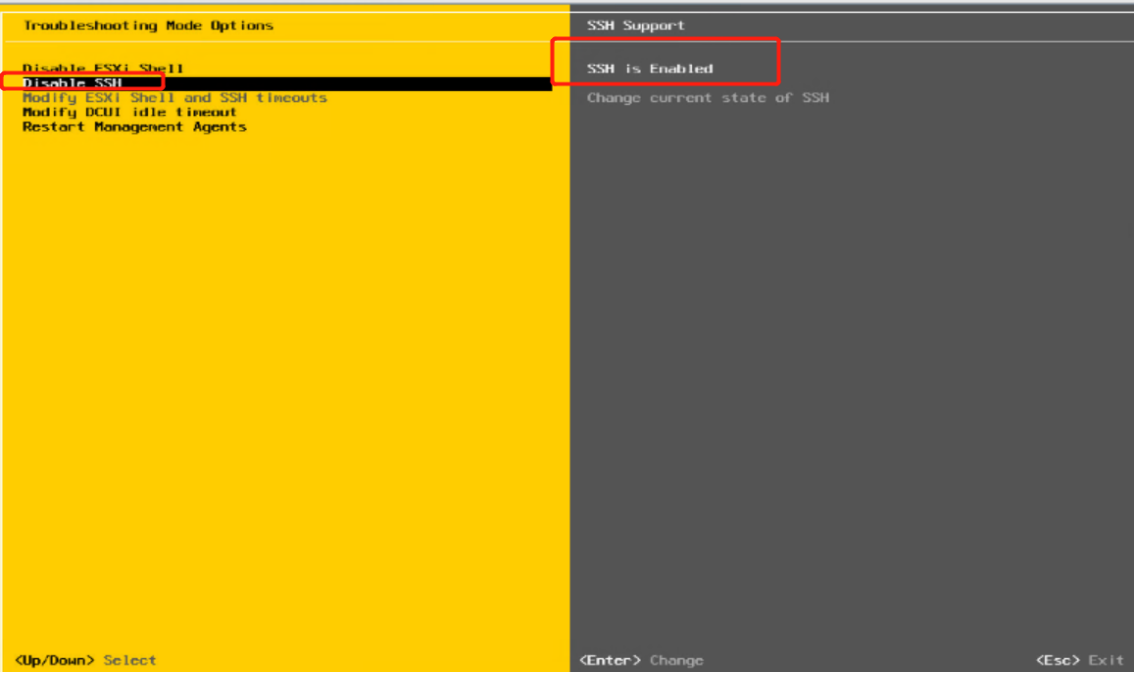
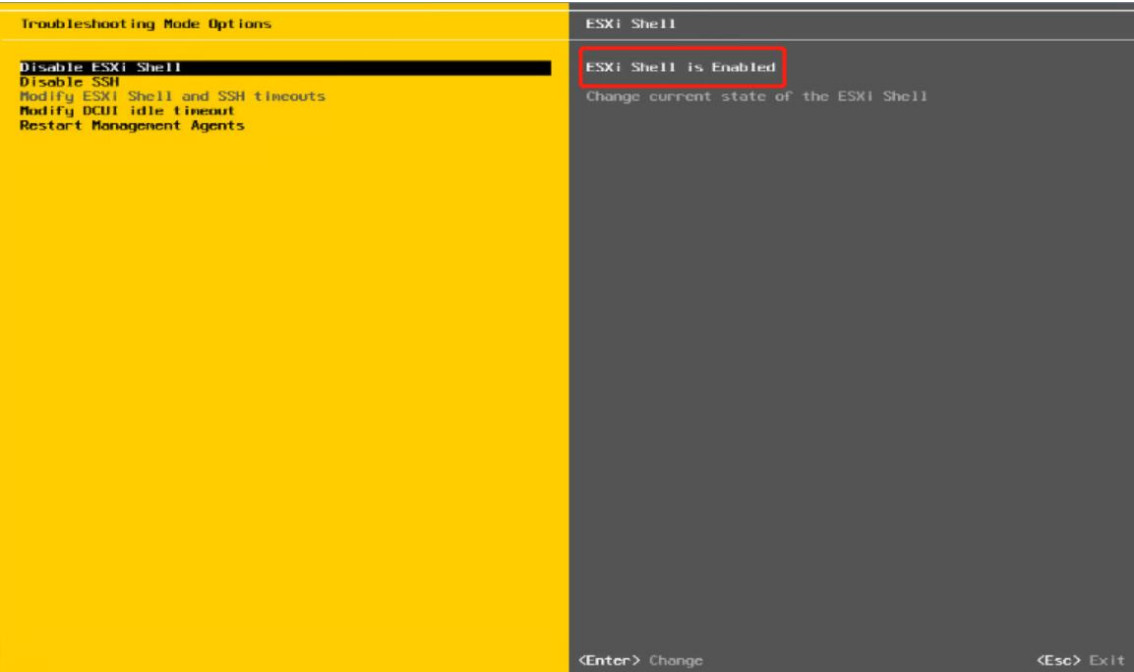
U 盘接入服务器后，在系统下通过 mount 命令挂载。

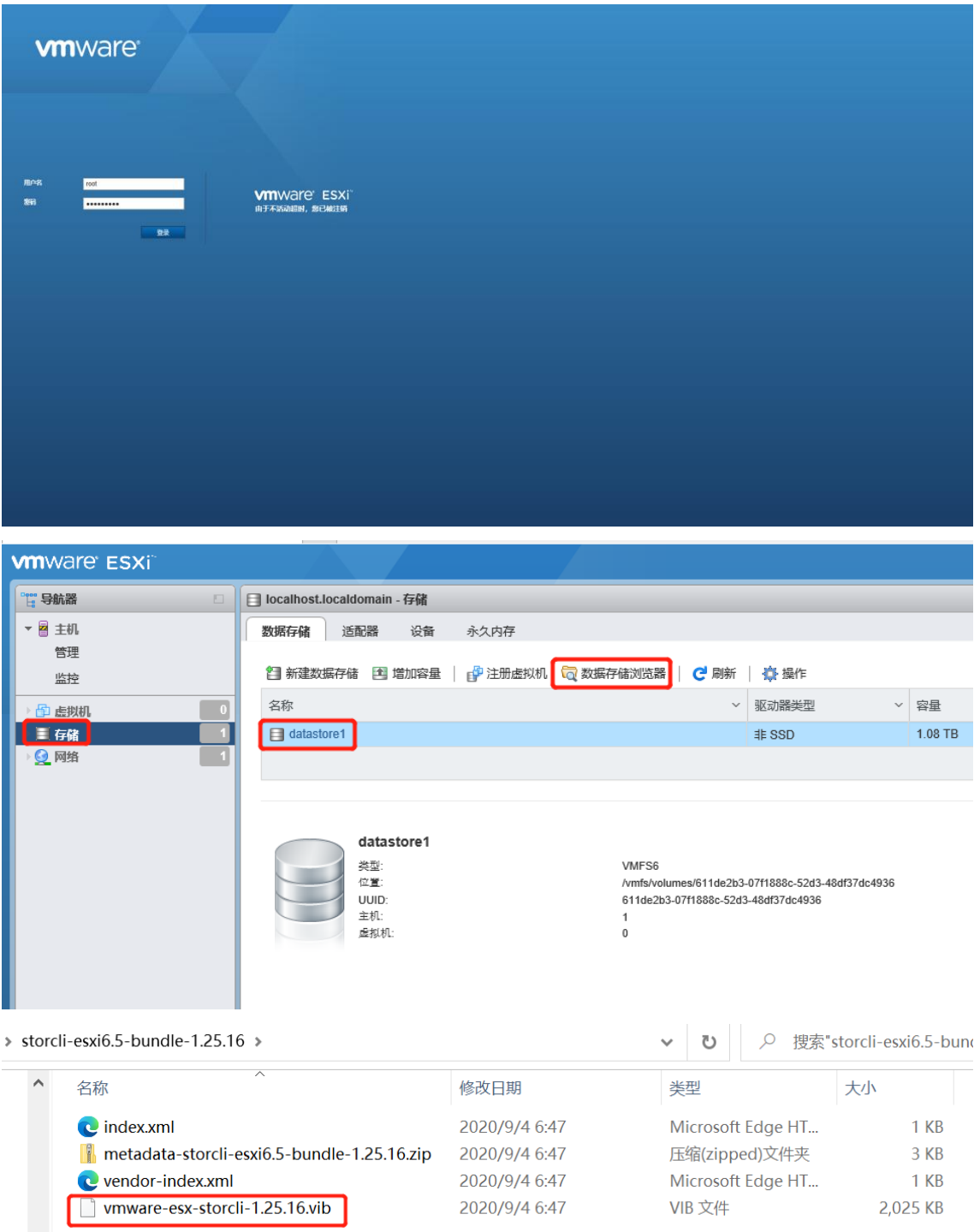
2.2.3 通过第三方 SSH 工具将文件保存到系统下

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





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。

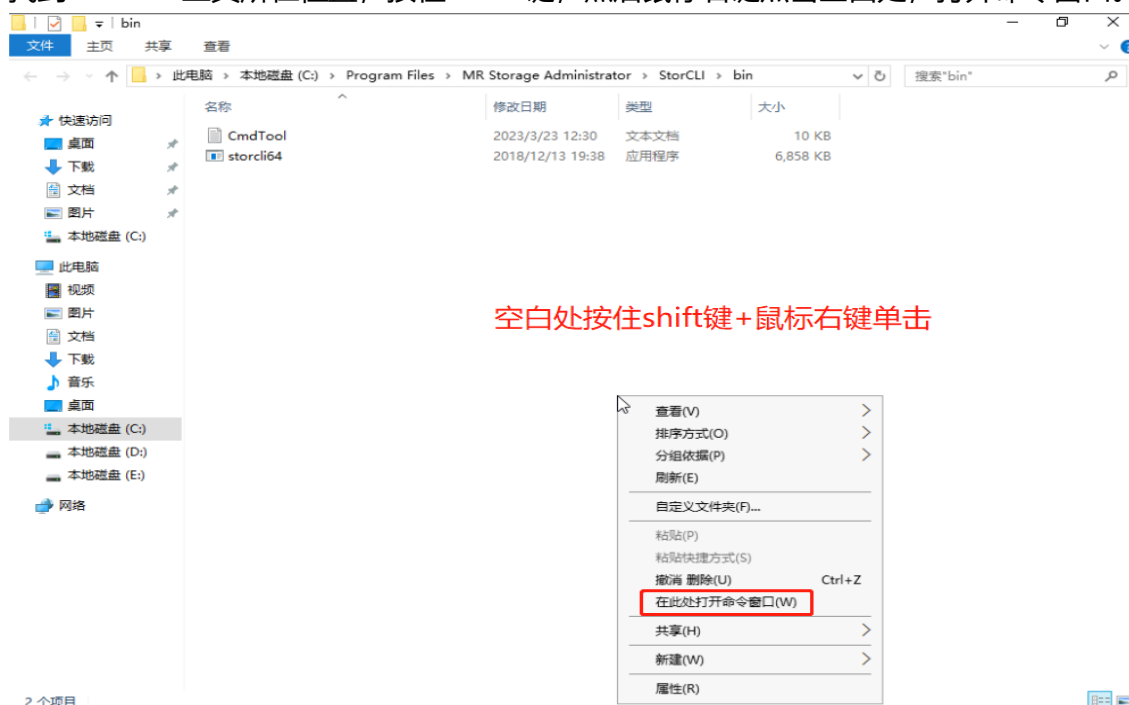
3. 安装 MegaRAID Storage Administrator StorCLI

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。

```
C:\Program Files\MR Storage Administrator\StorCLI\bin>. \storcli64.exe show all
Status Code = 0
Status = Success
Description = None

Number of Controllers = 1
Host Name = WIN-QLDN627IMOU
Operating System = Windows Server 2012

System Overview :
=====
Ctl Model          Ports PDs DGs DNOpt VDs VNOpt BBU sPR DS EHS ASOs Hlth
-----
0 HPEMR416i-p      16   6   4   0   4   0 Opt On  -  N   4 Opt

Ctl=Controller Index|DGs=Arrays|VDs=Virtual drives/Logical drives|Fld=Failed
PDs=Physical drives|DNOpt=DG NotOptimal|VNOpt=VD NotOptimal|Opt=Optimal
Msg=Missing|Dgd=Degraded|NdAtn=Need Attention|Chrg=Charging|MsgCbl=Missing Cable
Unkwn=Unknown|sPR=Scheduled Patrol Read|DS=DimmerSwitch|EHS=Emergency Spare Drive
Y=Yes|N=No|ASOs=Advanced Software Options|BBU=Battery backup unit
Hlth=Health|Safe=Safe-mode boot
```


3.2 Linux

- 1) rpm -ivh 安装 StorCLI 工具。

```
[root@localhost Storcli]# ls
storcli-007.1616.0000.0000-1.x86_64.rpm
[root@localhost Storcli]# rpm -ivh storcli-007.1616.0000.0000-1.x86_64.rpm
warning: storcli-007.1616.0000.0000-1.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID 26
c2b797: NOKEY
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:storcli-007.1616.0000.0000-1 ##### [100%]
```

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

```
[root@localhost /]# cd /opt/hpe/storcli/
[root@localhost storcli]# ls
storcli64
[root@localhost storcli]# ./storcli64

StorCli SAS Customization Utility Ver 007.1616.0000.0000 Dec 24, 2020

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help - lists all the commands with their usage. E.g. storcli help
<command> help - gives details about a particular command. E.g. storcli add help

List of commands:

Commands   Description
```

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/storcli] ls
BCM-vmware-storcli64_007.1616.0000.0000-01_17650073.zip
[root@localhost:/tmp/storcli] unzip BCM-vmware-storcli64_007.1616.0000.0000-01_17650073.zip
Archive:  BCM-vmware-storcli64_007.1616.0000.0000-01_17650073.zip
  inflating: index.xml
  inflating: vendor-index.xml
  inflating: metadata.zip
  inflating: vib20/vmware-storcli64/BCM_bootbank_vmware-storcli64_007.1616.0000.0000-01.vib
```

- 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。

```
[root@localhost:/tmp/storcli] esxcli software vib install -v /tmp/storcli/vib20/vmware-storcli64/BCM_bootbank_vmware-storcli64_007.1616.0000.0000-01.vib --no-sig-check
Installation Result
  Message: Operation finished successfully.
  Reboot Required: false
  VBIs Installed: BCM_bootbank_vmware-storcli64_007.1616.0000.0000-01
  VBIs Removed:
  VBIs Skipped:
```

- 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。

```
[root@localhost:/opt/hpe/storcli64] cd /opt/hpe/storcli64/
[root@localhost:/opt/hpe/storcli64] ls
libstorelib.so storcli.log 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-081JOHKFLA8
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	HPFMR416i-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	NRWBD	-	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:Slit	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:Slot	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