

HPE Gen11 服务器 SR 系列阵列卡

Windows/Linux/VMware 系统下 SSACLI 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 SR 系列阵列卡不同系统下使用 Smart Storage Administrator (SSA) CLI 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。

SR 系列阵列卡包含如下型号:

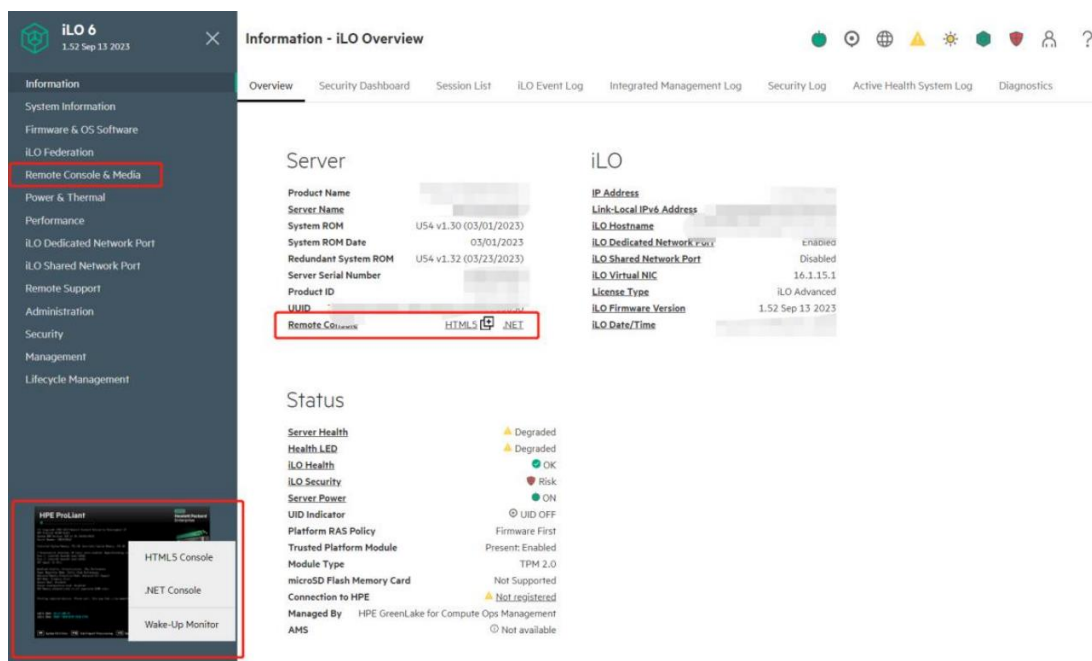
- SR932i-p Gen11
- E208e-p SR Gen10
- 实际情况是否适用本文档，请通过下面导航链接进行确认：
<https://zhiliao.h3c.com/Theme/details/218271>
- 提示：
本文档中的信息（包括产品，软件版本和设置参数）仅作参考示例，具体操作与目标需求设置请以实际为准。
本文档不定期更新维护，请以发布的最新版本为准。

二. 配置准备

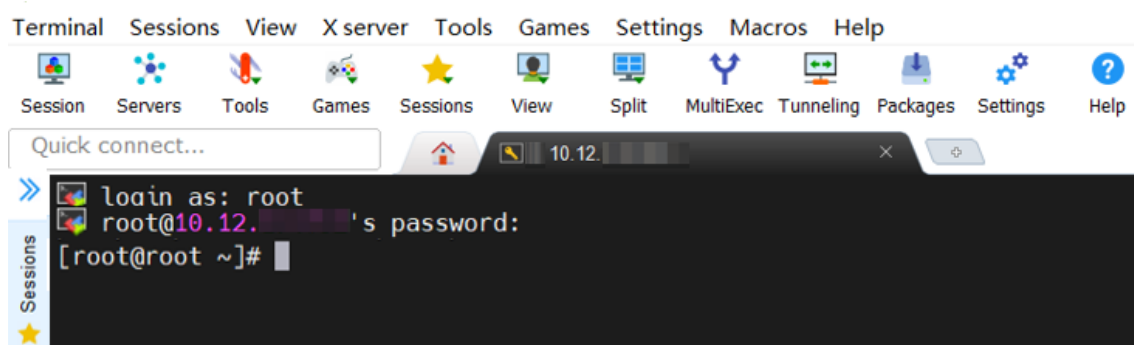
1. 下载 Smart Storage Administrator (SSA) CLI 工具
 - Windows 下载链接：[Smart Storage Administrator \(SSA\) CLI for Windows 64-bit for Gen10/Gen10 Plus/Gen11 Controllers | HPE Support](#)
 - Linux 下载链接：[Smart Storage Administrator \(SSA\) CLI for Linux 64-bit for Gen10/Gen10 Plus/Gen11 Controllers | HPE Support](#)
 - VMware 下载链接：
 - ESXi 7.0: [Smart Storage Administrator \(SSA\) CLI Smart Component for ESXi 7.0 for Gen10/Gen10 Plus/Gen11 Controllers | HPE Support](#)
 - ESXi 8.0: [Smart Storage Administrator \(SSA\) CLI Smart Component for ESXi 8.0 for Gen10/Gen10 Plus/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/216337>

三. 配置步骤

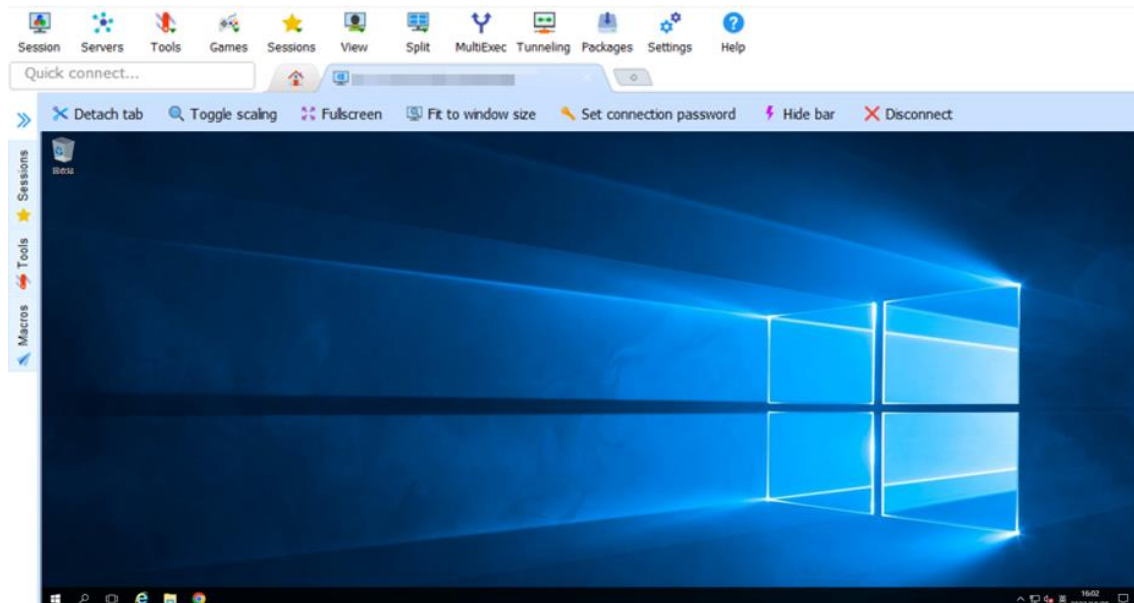
1. 访问系统
 - 1.1 通过 iLO 启用远程控制台访问系统 (Windows Server, Linux, VMware ESXi)
iLO 6 页面 Information -> Overview 的 Remote Console 选项，或页面左下方 Remote Console 选区可直接启用远程控制台；也可在 Remote Console & Media - iLO Integrated Remote Console 页面进行选择。本文以.NET 远程控制台为例。



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



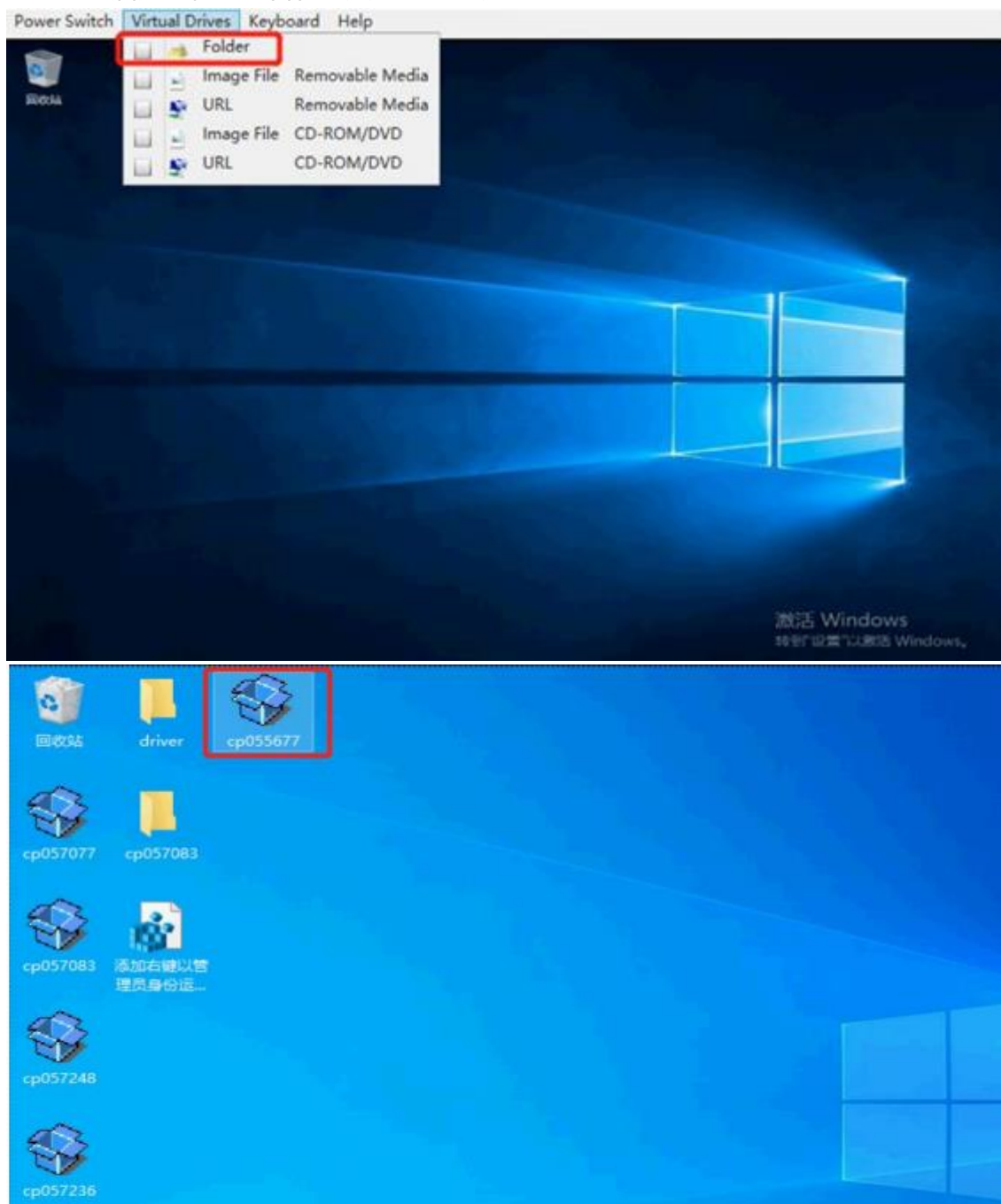
1.3 通过远程桌面或第三方 RDP 工具访问系统 (Windows Server)



2. 将 Smart Storage Administrator (SSA) CLI 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

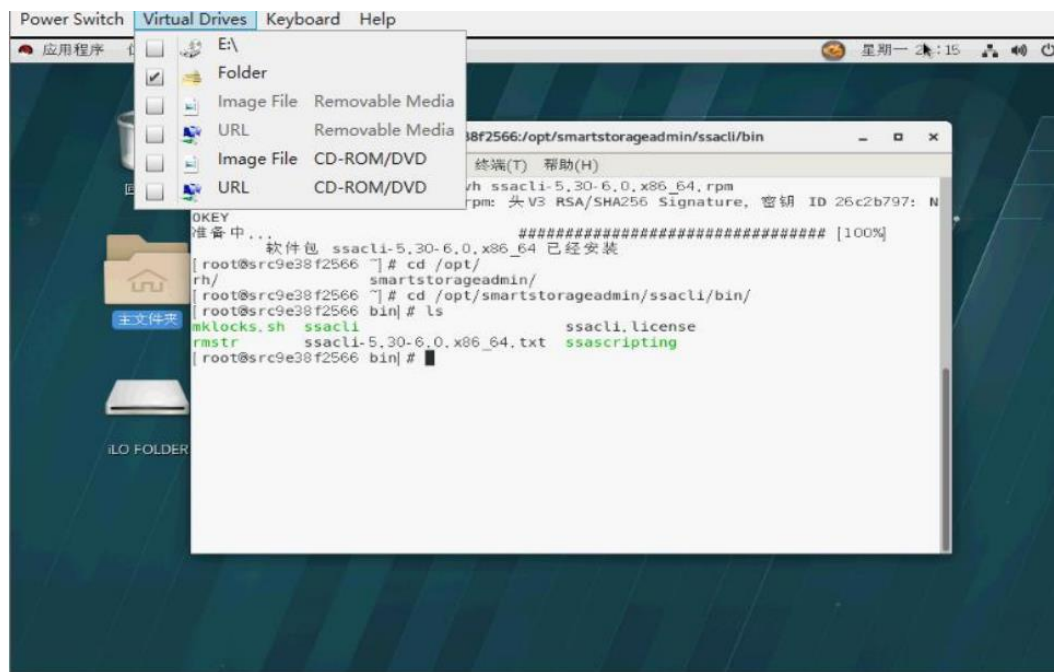


2.1.2 通过 U 盘将文件挂载到系统下

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



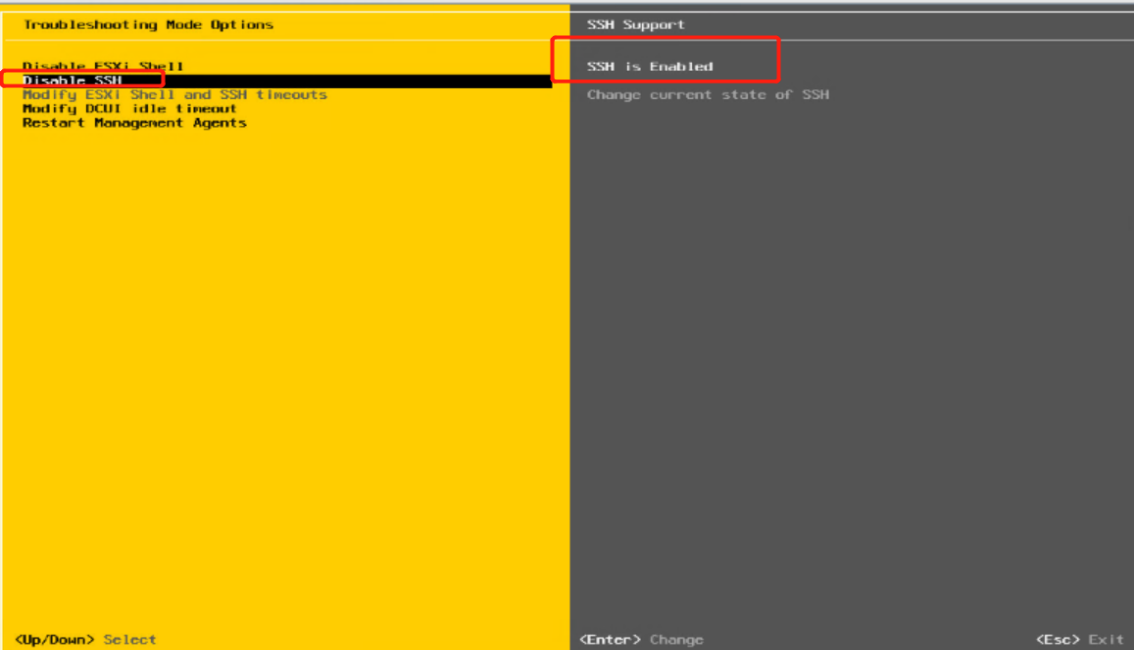
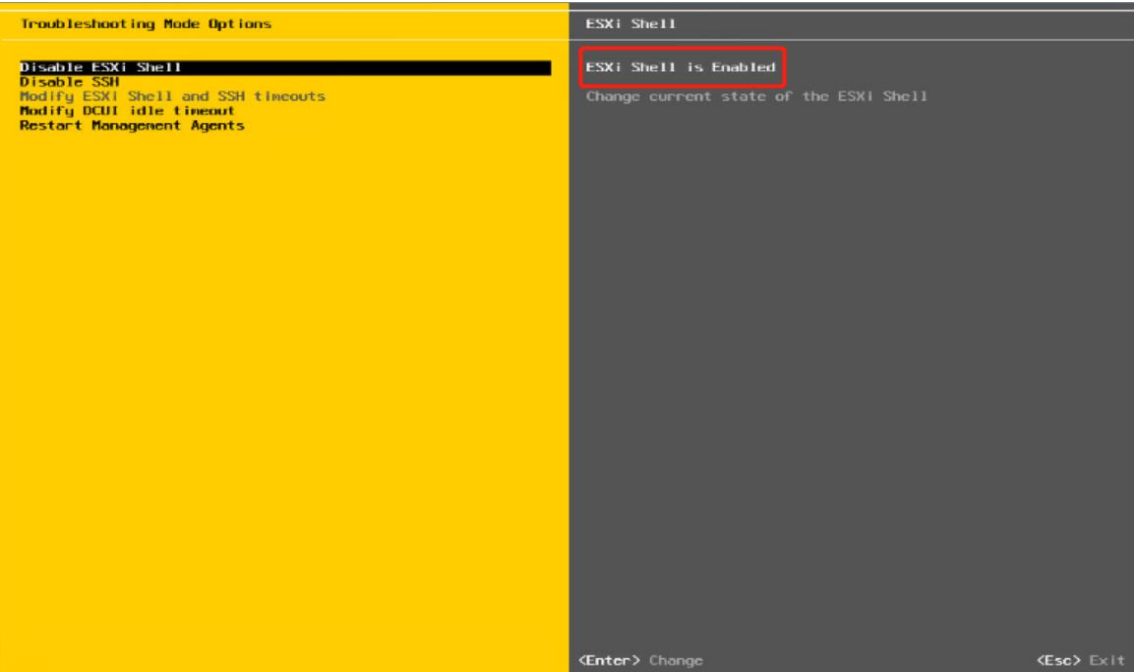
```

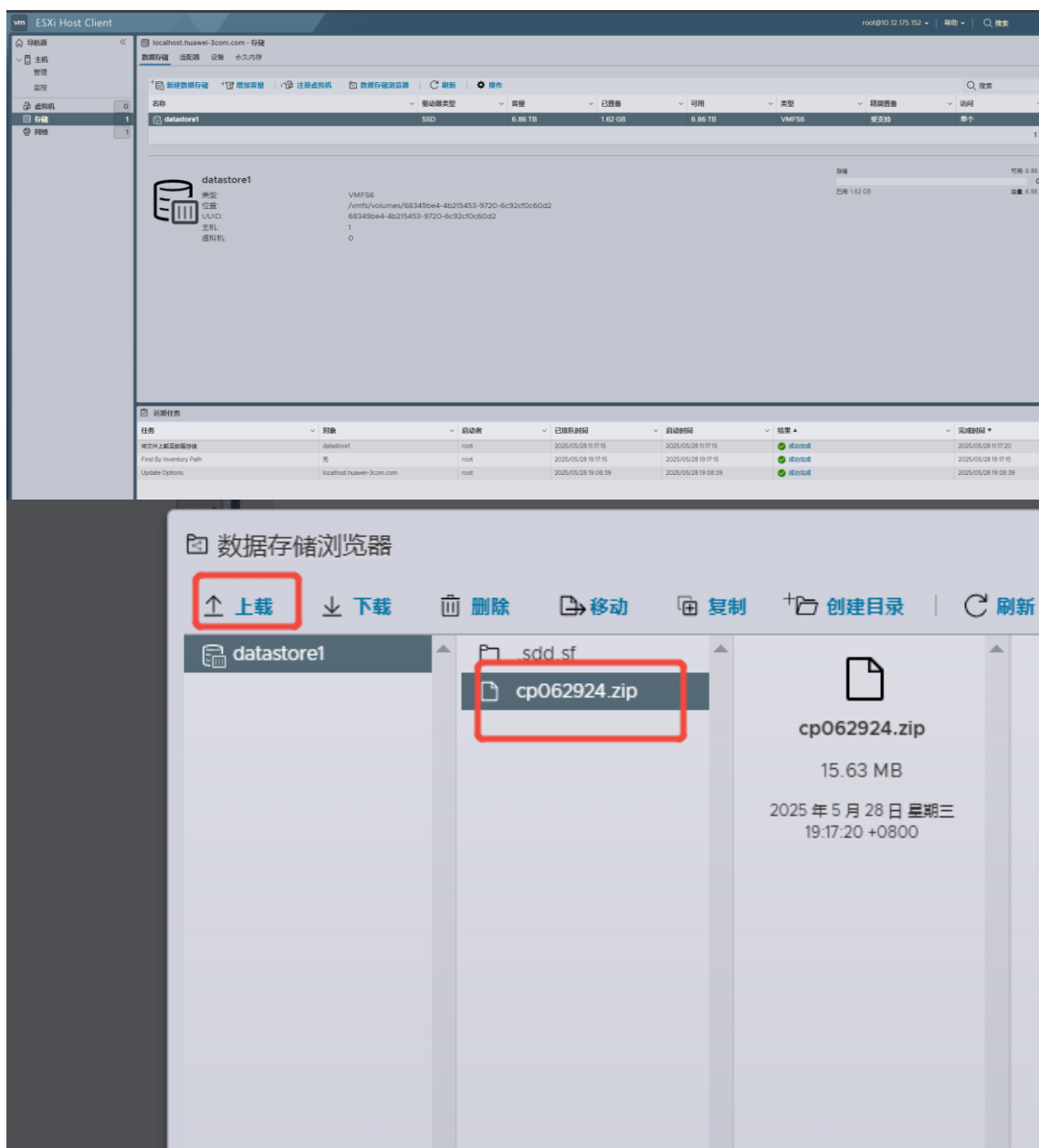
[root@localhost ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda          8:0      0 837.9G  0 disk
├─sda1       8:1      0   200M  0 part /boot/efi
├─sda2       8:2      0     1G  0 part /boot
└─sda3       8:3      0 836.7G  0 part
   ├─rhel-root 253:0     0   50G  0 lvm  /
   ├─rhel-swap 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



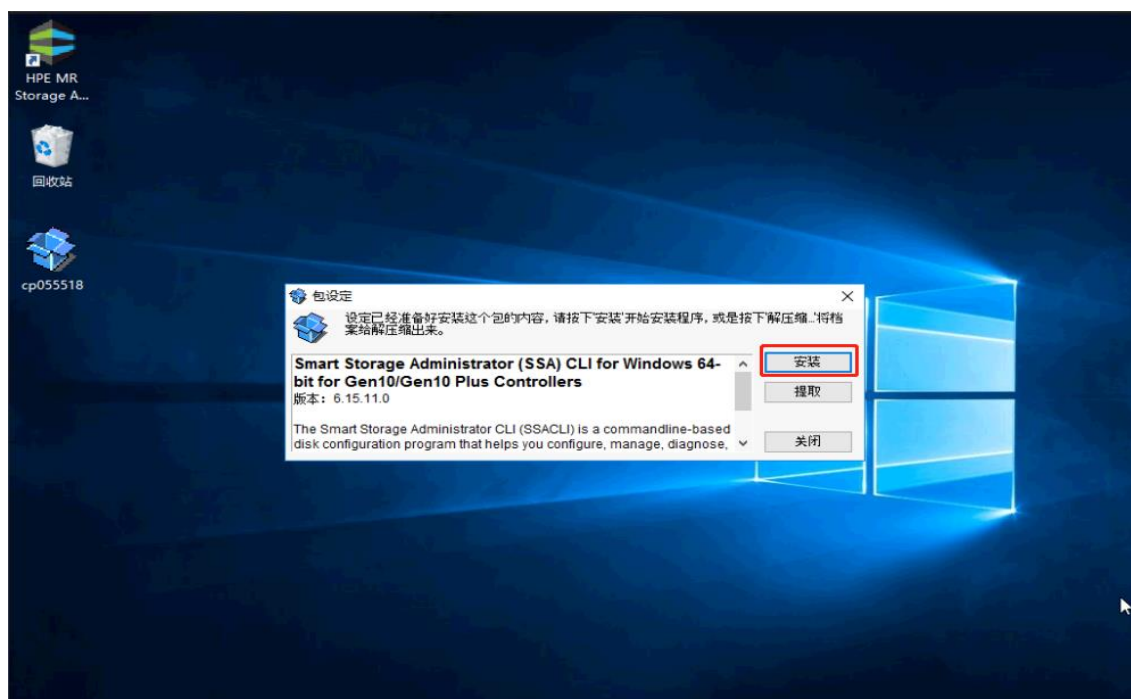


2.3.2 通过第三方 SSH 工具将文件保存到系统下
参考第三方工具使用说明。

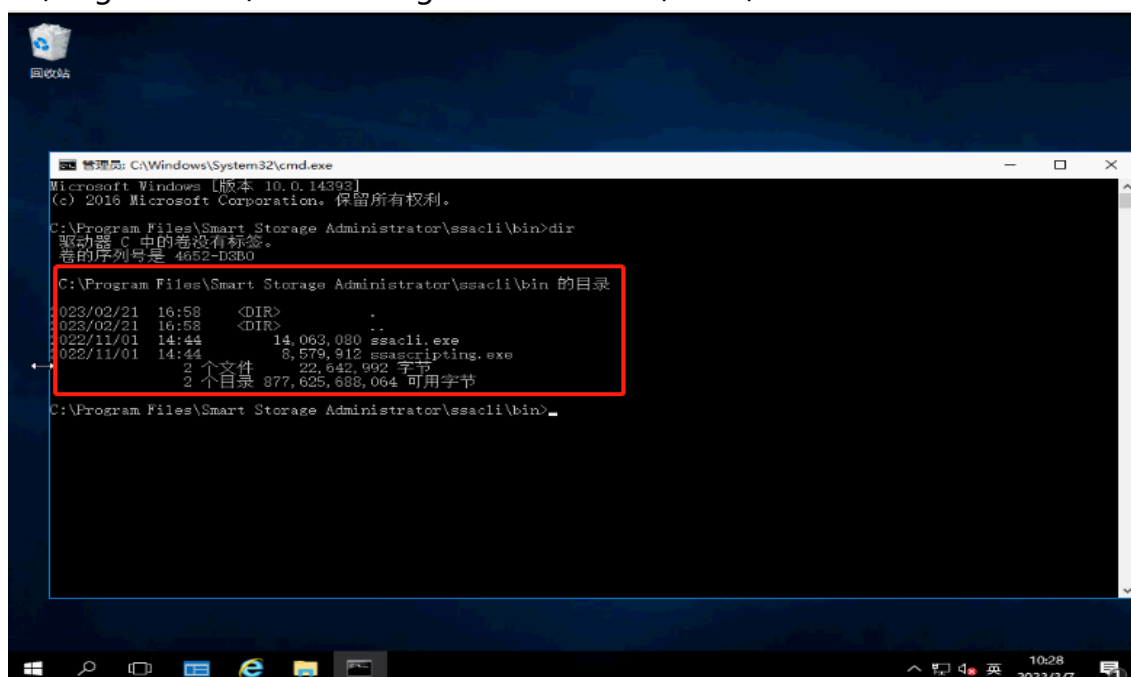
3. 安装 Smart Storage Administrator (SSA) CLI

3.1 Windows Server

1) 双击运行安装程序，点击安装。



- 2) 安装完后, 进入到默认安装路径打开 Smart Storage Administrator CLI 工具。
C:\Program Files\Smart Storage Administrator\ssaccli\bin



3.2 Linux

- 1) rpm -ivh ssaccli-xxxx.rpm 安装 SSACLI。

```
[root@localhost ~]# rpm -ivh ssaccli-6.45-8.0.x86_64.rpm
警告: ssaccli-6.45-8.0.x86_64.rpm: 头V4 RSA/SHA384 Signature, 密钥 ID 74c3a4a2: NOKEY
Verifying... ##### [100%]
准备中... ##### [100%]
正在升级/安装...
1:ssaccli-6.45-8.0 ##### [100%]
```

- 2) 装完成输入 ssaccli 进入工具。

```
[root@localhost ~]# ssaccli
Smart Storage Administrator CLI 6.45.8.0
Detecting Controllers...Done.
Type "help" for a list of supported commands.
Type "exit" to close the console.

=>
```

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
ahsboot.marker  cp062924.zip  stagingdirectory  vmware-root  vmware-uid_0
[root@localhost:/tmp] unzip cp062924.zip
Archive: cp062924.zip
  inflating: cp062924.xml
  inflating: MIS_bootbank_ssaccli2_6.45.8.0-8.0.0.20613240.oem.vib
  inflating: ssaccli2-component_6.45.8.0-8.0.0.24383802.zip
[root@localhost:/tmp] ls
MIS_bootbank_ssaccli2_6.45.8.0-8.0.0.20613240.oem.vib  ssaccli2-component_6.45.8.0-8.0.0.24383802.zip
ahsboot.marker                                         stagingdirectory
cp062924.xml                                           vmware-root
cp062924.zip                                           vmware-uid_0
[root@localhost:/tmp] unzip ssaccli2-component_6.45.8.0-8.0.0.24383802.zip
Archive: ssaccli2-component_6.45.8.0-8.0.0.24383802.zip
  inflating: index.xml
  inflating: vendor-index.xml
  inflating: metadata.zip
  inflating: vib20/ssaccli2/MIS_bootbank_ssaccli2_6.45.8.0-8.0.0.20613240.oem.vib
```

- 2) 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] esxcli software vib install -v /tmp/vib20/ssaccli2/MIS_bootbank_ssaccli2_6.45.8.0-8.0.0.20613240.oem.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: MIS_bootbank_ssaccli2_6.45.8.0-8.0.0.20613240.oem
VIBs Removed: MIS_bootbank_ssaccli2_6.40.6.0-8.0.0.20613240.oem
VIBs Skipped:
Reboot Required: true
DPU Results:
```

- 3) 工具默认安装在/opt/smartstorageadmin/ssaccli/bin 目录下。

```
[root@localhost:~] cd /opt/smartstorageadmin/ssaccli/bin
[root@localhost:/opt/smartstorageadmin/ssaccli/bin] ls
ssaccli  ssaccli_esx  ssaccli_ret
[root@localhost:/opt/smartstorageadmin/ssaccli/bin]
```

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) ctrl all show 查看阵列卡信息 HPE SR932i-p 槽位: 2

```
=> ctrl all show

HPE SR932i-p Gen11 in Slot 2 (sn: PZDLA0B52J608Y)
```

- 2) ctrl slot=2 pd all show 查看物理盘信息，此次将 2:2:3 磁盘扩容到 Raid0 的 Array B 内，
(slot=2 对应阵列卡的 slot 信息)

```

=> ctrl slot=2 pd all show

HPE SR932i-p Gen11 in Slot 2

Array A

    physicaldrive 1:3:2 (port 1:box 3:bay 2, SAS SSD, 7.6 TB, OK)
    physicaldrive 1:3:3 (port 1:box 3:bay 3, SAS SSD, 7.6 TB, OK)

Array B

    physicaldrive 2:2:1 (port 2:box 2:bay 1, SAS SSD, 7.6 TB, OK)
    physicaldrive 2:2:2 (port 2:box 2:bay 2, SAS SSD, 7.6 TB, OK)

Unassigned

    physicaldrive 1:3:1 (port 1:box 3:bay 1, SAS SSD, 7.6 TB, OK)
    physicaldrive 1:3:4 (port 1:box 3:bay 4, SAS SSD, 7.6 TB, OK)
    physicaldrive 1:3:5 (port 1:box 3:bay 5, SAS SSD, 7.6 TB, OK)
    physicaldrive 1:3:6 (port 1:box 3:bay 6, SAS SSD, 7.6 TB, OK)
    physicaldrive 1:3:7 (port 1:box 3:bay 7, SAS SSD, 7.6 TB, OK)
    physicaldrive 1:3:8 (port 1:box 3:bay 8, SAS SSD, 7.6 TB, OK)
    physicaldrive 2:2:3 (port 2:box 2:bay 3, SAS SSD, 7.6 TB, OK)
    physicaldrive 2:2:4 (port 2:box 2:bay 4, SAS SSD, 7.6 TB, OK)
  
```

3) ctrl slot=2 ld all show 查看逻辑盘信息。

```

=> ctrl slot=2 ld all show

HPE SR932i-p Gen11 in Slot 2

Array A

    logicaldrive 1 (13.97 TB, RAID 0,

Array B

    logicaldrive 2 (13.97 TB, RAID 0,
  
```

logicaldrive 2: Array B 的阵列名称

5. 扩容阵列

5.1 磁盘阵列扩容

1) 将“2:2:3”硬盘添加进阵列 B 中扩容。本文档以 1 块硬盘的 RAID0 添加一块硬盘进行扩容为例)

ctrl slot=2 array B add drives=2:2:3, 再输入 y 确认操作

```
=> ctrl slot=2 array B add drives=2:2:3
```

```
Warning: One or more selected drives are currently exposed to the OS. This
action will cause the physical drive(s) to be removed from the
operating system. Continue? (y/n)y
```

注：多盘情况下驱动器列表用逗号隔开，不能有空格。例如 ctrl slot=2 array B add drives=2:2:3, 2:2:4

2) ctrl slot=2 ld all show 可查看阵列扩容进度。

```
=> ctrl slot=2 ld all show
```

```
HPE SR932i-p Gen11 in Slot 2
```

```
Array A
```

```
logicaldrive 1 (13.97 TB, RAID 0, OK)
```

```
Array B
```

```
logicaldrive 2 (13.97 TB, RAID 0, Transforming, 1.04% complete)
```

3) 使用 ctrl all show config 查看扩容后的容量未加入到逻辑卷内，还是未使用的空间。

```
Array B (Solid State SAS, Unused Space: 7325618 MB)
```

```
logicaldrive 2 (13.97 TB, RAID 0, OK)
```

```
physicaldrive 2:2:1 (port 2:box 2:bay 1, SAS SSD, 7.6 TB, OK)
```

```
physicaldrive 2:2:2 (port 2:box 2:bay 2, SAS SSD, 7.6 TB, OK)
```

```
physicaldrive 2:2:3 (port 2:box 2:bay 3, SAS SSD, 7.6 TB, OK)
```

5.2 逻辑卷空间扩容

1) 将全部空间分配至逻辑卷中，ctrl slot=2 ld 2 modify size=max forced

```
=> ctrl slot=2 ld 2 modify size=Max forced
```

```
=> █
```

2) 使用 ctrl all show config 再次查看逻辑卷扩容完毕。

```
Array B (Solid State SAS, Unused Space: 0 MB)
```

```
logicaldrive 2 (20.96 TB, RAID 0, OK)
```

```
physicaldrive 2:2:1 (port 2:box 2:bay 1, SAS SSD, 7.6 TB, OK)
```

```
physicaldrive 2:2:2 (port 2:box 2:bay 2, SAS SSD, 7.6 TB, OK)
```

```
physicaldrive 2:2:3 (port 2:box 2:bay 3, SAS SSD, 7.6 TB, OK)
```