

HPE Gen11 服务器 SR 系列阵列卡

Windows/Linux/VMware 系统下 SSACLI 配置阵列

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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 工具配置阵列的方法，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 | HPE Support](#)
- Linux 下载链接：[Smart Storage Administrator \(SSA\) CLI for Linux 64-bit | HPE Support](#)
- VMware 下载链接：
 - ESXi 7.0: [Smart Storage Administrator \(SSA\) CLI for ESXi 7.0 | HPE Support](#)
 - ESXi 8.0: [Smart Storage Administrator \(SSA\) CLI for ESXi 8.0 | HPE Support](#)

2. 连接 iLO 与启用远程控制台

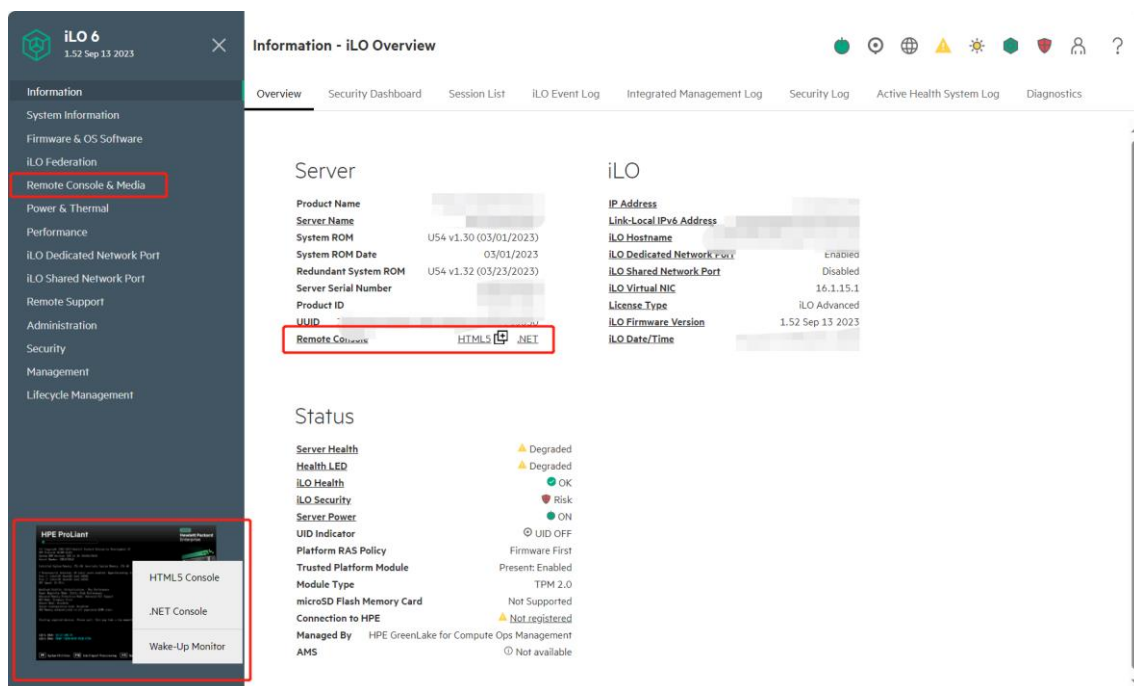
具体方法请参考：<https://zhiliao.h3c.com/Theme/details/216337>

三. 配置步骤

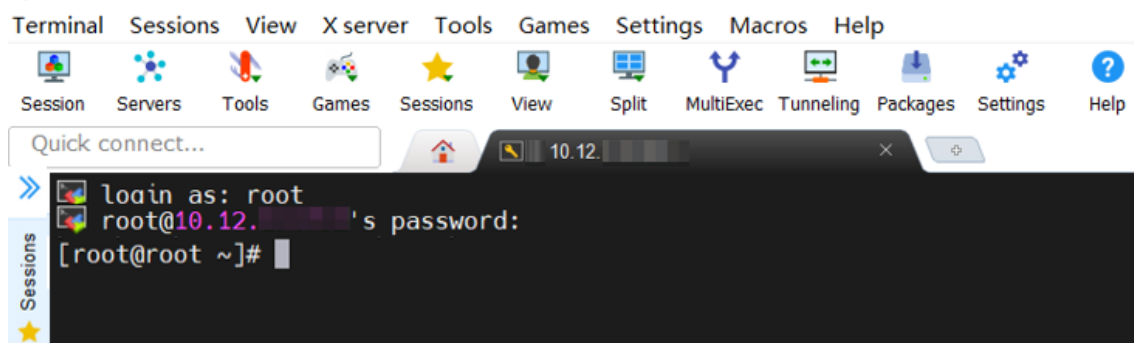
1. 访问系统

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

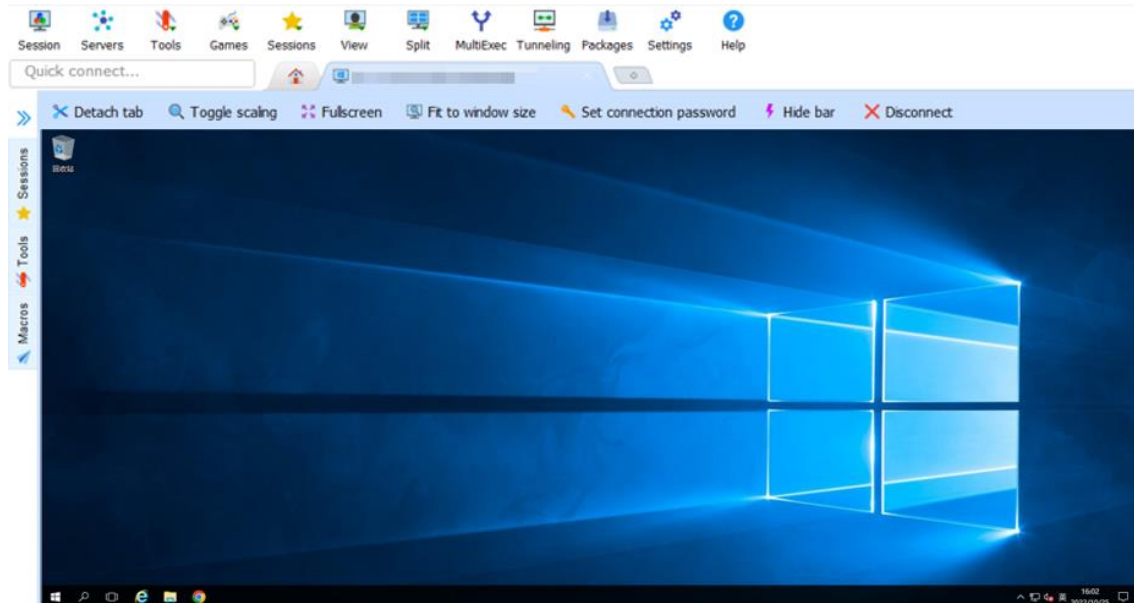
iLO 6 页面 Information -> Overview 的 Remote Console 选项，或页面左下方 Remote Console 选区可直接启用远程控制台；也可在 Remote Console & Media - iLO Integrated Remote Console 页面进行选择。本文以.NET 远程控制台为例。



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



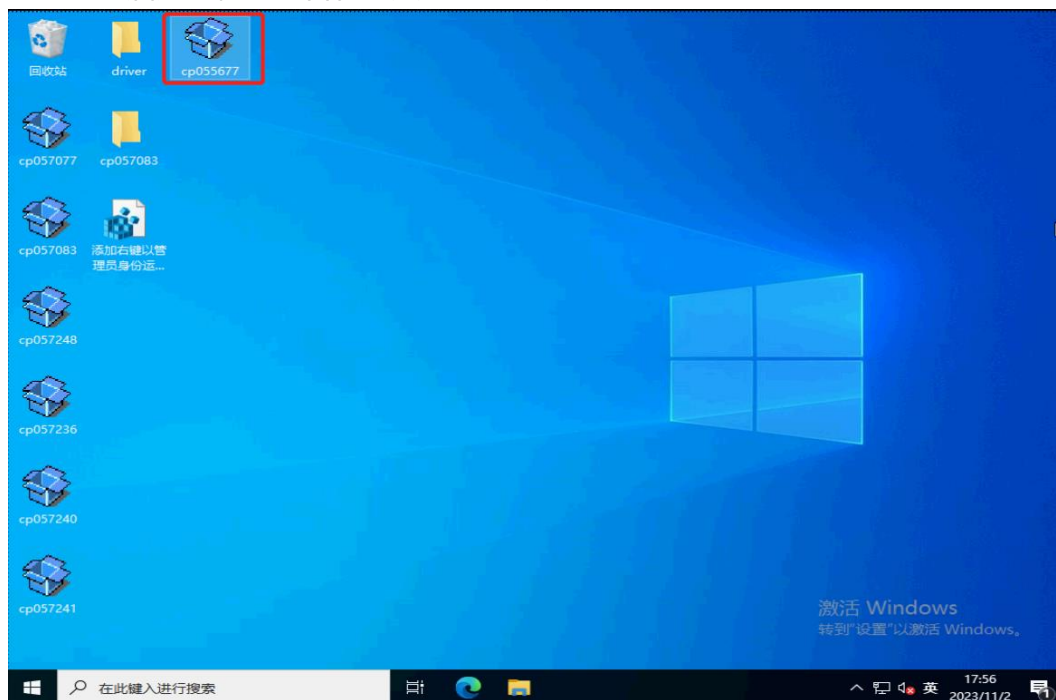
1.3 通过远程桌面或第三方 RDP 工具访问系统 (Windows Server)



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

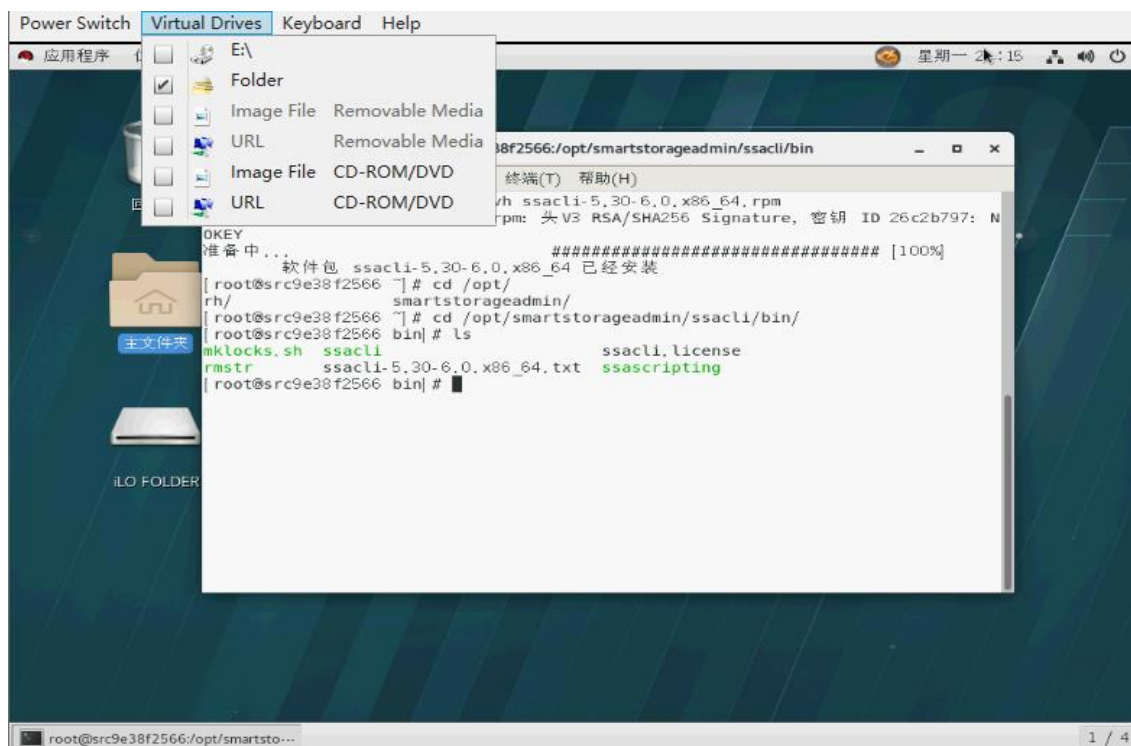


2.1.2 通过 U 盘将文件挂载到系统下

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



2.2.2 通过 U 盘将文件挂载到系统下

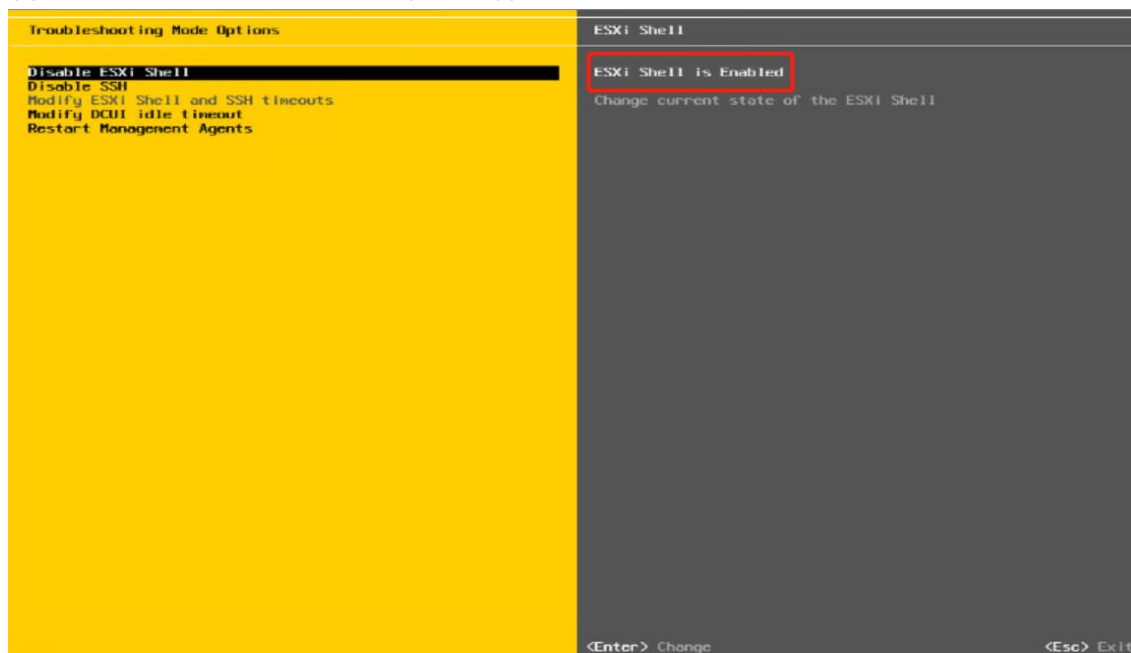
U 盘接入服务器后，在系统下通过 mount 命令挂载。

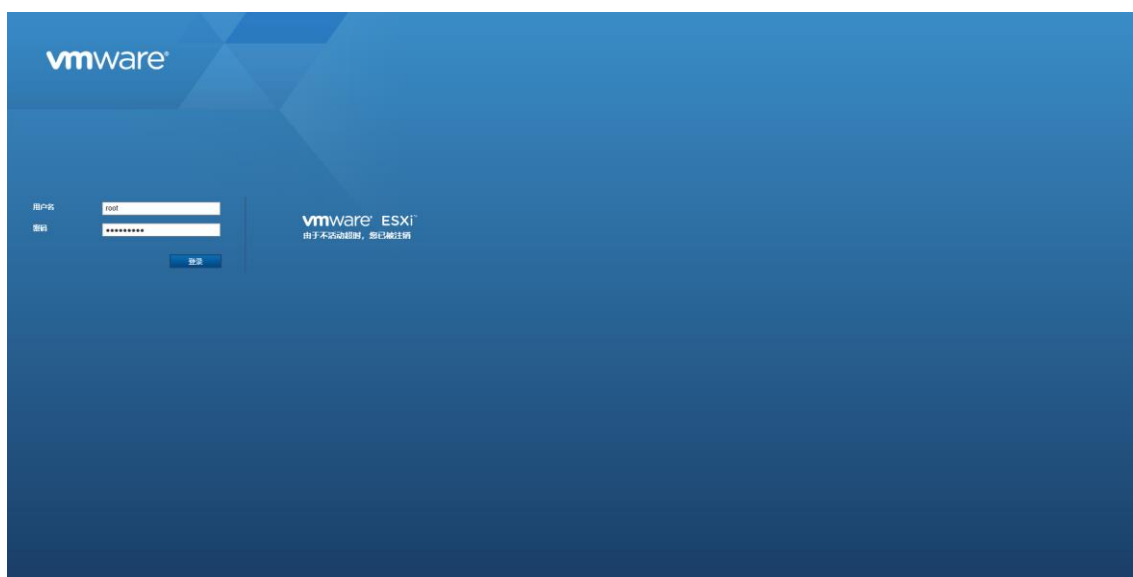
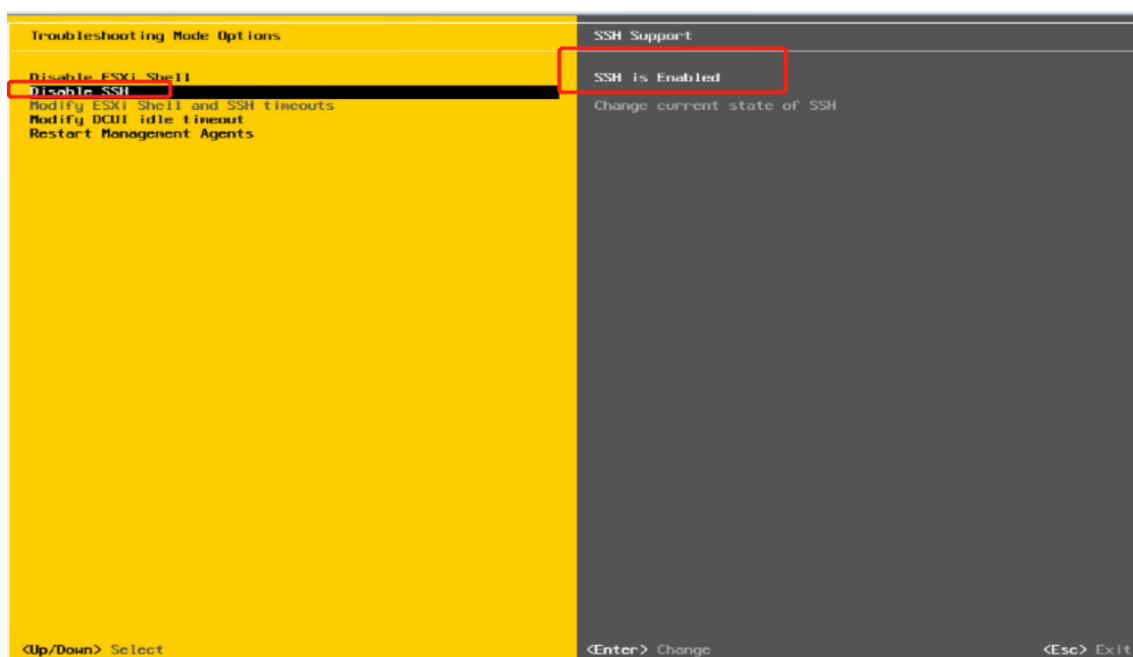
2.2.3 通过第三方 SSH 工具将文件保存到系统下

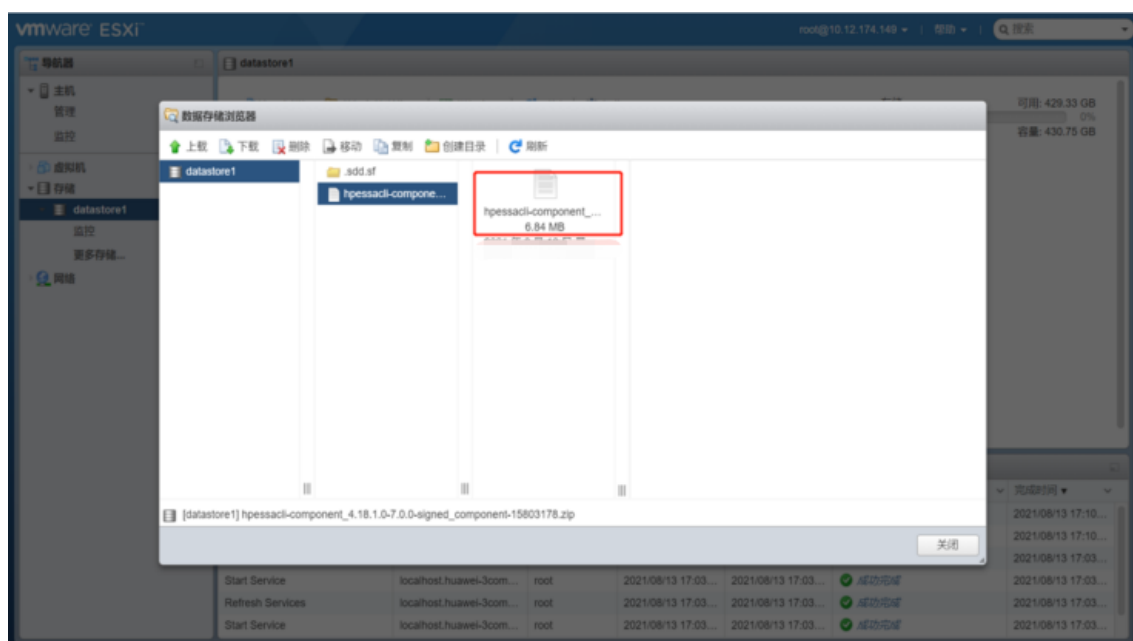
参考第三方工具使用说明。

2.3 VMware ESXi

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





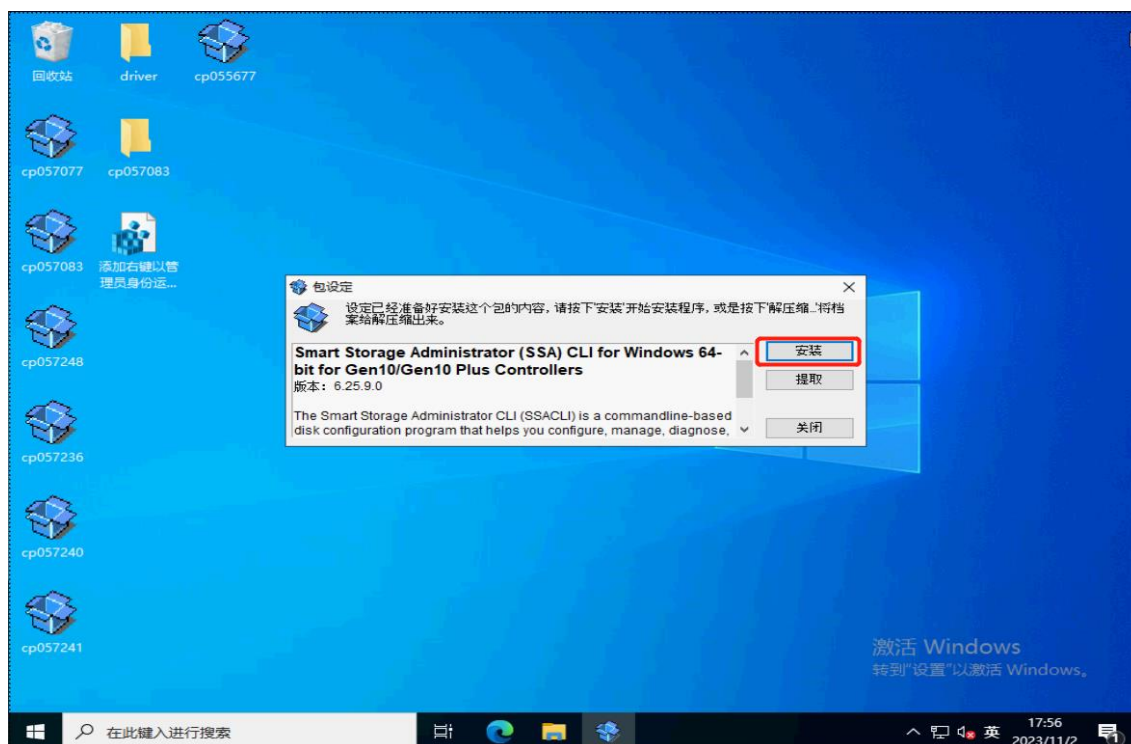


2.3.2 通过第三方 SSH 工具将文件保存到系统下
参考第三方工具使用说明。

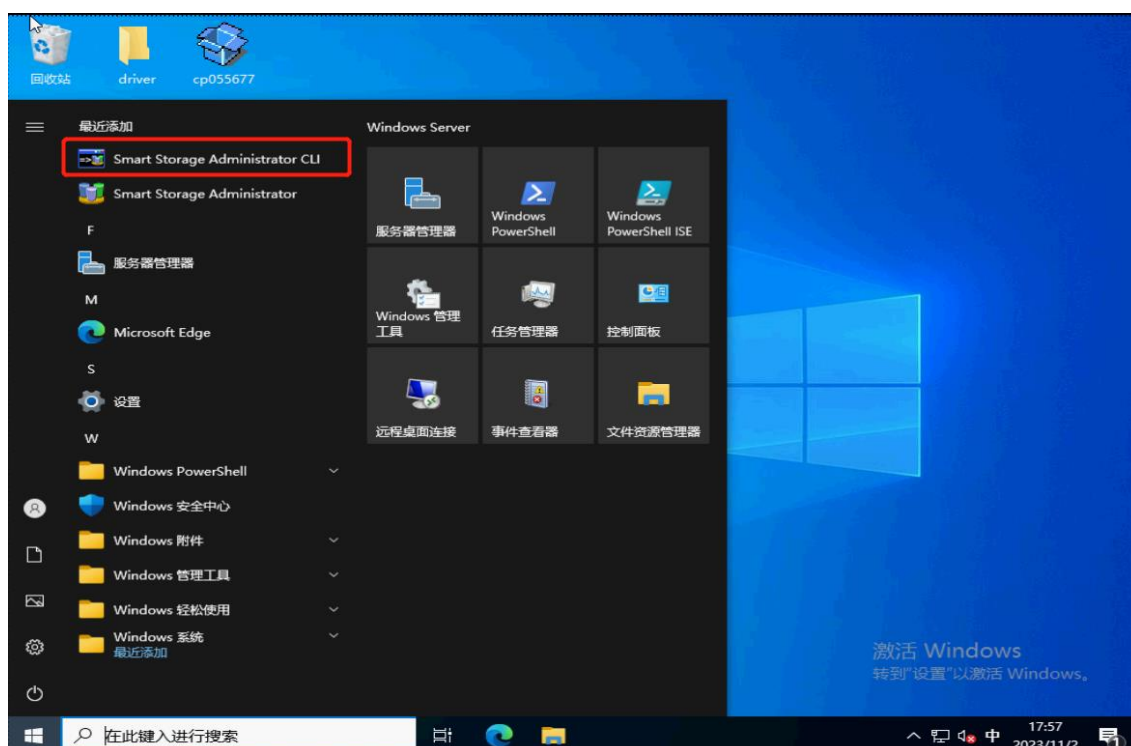
3. 安装 Smart Storage Administrator (SSA) CLI

3.1 Windows Server

1) 双击运行安装程序，点击安装。



2) 安装完后，打开安装好的 SSACLI 工具



3.2 Linux

`rpm -ivh ssaccli-6.15-11.0.x86_64.rpm` 安装 ssaccli 工具。


```
[root@localhost ssaccli]# rpm -ivh ssaccli-6.15-11.0.x86_64.rpm
警告: ssaccli-6.15-11.0.x86_64.rpm: 头V3 RSA/SHA256 Signature, 密钥 ID 26c2b797: NOKEY
Verifying... ##### [100%]
准备中... ##### [100%]
正在升级/安装...
1:ssaccli-6.15-11.0 ##### [100%]
```

cd /opt/smartstorageadmin/ssaccli/bin 进到 ssaccli 工具默认安装目录下。

输入# ssaccli 进入工具界面

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/ssaccli] ls
hpessaccli-component_5.30.6.0-7.0.0_19303168.zip
[root@localhost:/tmp/ssaccli] unzip hpessaccli-component_5.30.6.0-7.0.0_19303168.zip
Archive:  hpessaccli-component_5.30.6.0-7.0.0_19303168.zip
  inflating: index.xml
  inflating: vendor-index.xml
  inflating: metadata.zip
  inflating: vib20/hpessaccli/MIS_bootbank_hpessaccli_5.30.6.0-7.0.0.15525992.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/ssaccli] esxcli software vib install -v /tmp/ssaccli/vib20/hpessaccli/MIS_bootbank_hpessaccli_5.30.6.0-7.0.0.15525992.oem.vib --no-si
g-check
Installation Result
  Message: Operation finished successfully.
  Reboot Required: false
  VIBs Installed: MIS_bootbank_hpessaccli_5.30.6.0-7.0.0.15525992.oem
  VIBs Removed:
  VIBs Skipped:
```

- 3) 工具默认安装在 /opt/smartstorageadmin/ssaccli/bin 目录下，使用 cd /opt/smartstorageadmin/ssaccli/bin 进入此目录。

```
[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）

- 1) ctrl all show 查看阵列卡信息 HPE SR932i-p 槽位: 5

```
=> ctrl all show
HPE SR932i-p Gen11 in Slot 5 (sn: PZDLA0A52H40CU)
```

- 2) ctrl slot=5 pd all show 查看物理盘信息。

```
=> ctrl slot=5 pd all show

HPE SR932i-p Gen11 in Slot 5

  Array A
    physicaldrive 1:3:1 (port 1:box 3:bay 1, NVMe SSD, 1.9 TB, OK)

  Array B
    physicaldrive 1:3:2 (port 1:box 3:bay 2, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:3 (port 1:box 3:bay 3, NVMe SSD, 1.9 TB, OK)

  Unassigned
    physicaldrive 1:3:4 (port 1:box 3:bay 4, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:5 (port 1:box 3:bay 5, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:6 (port 1:box 3:bay 6, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:7 (port 1:box 3:bay 7, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:8 (port 1:box 3:bay 8, NVMe SSD, 1.9 TB, OK)
```

- 3) ctrl slot=5 ld all show 查看逻辑盘信息。

```
=> ctrl slot=5 ld all show

HPE SR932i-p Gen11 in Slot 5

  Array A
    logicaldrive 1 (1.75 TB, RAID 0, OK)

  Array B
    logicaldrive 2 (1.75 TB, RAID 1, OK)
```

5. 创建与删除阵列

5.1 创建阵列

- 1) 例如在 slot 5 的控制器上用 1l:3:1,1l:3:2 创建 raid1。

ctrl slot=5 create type=ld drives=1l:3:1,1l:3:2 raid=1

```
=> ctrl slot=5 create type=ld drives=1:3:1,1:3:2 raid=1

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
```

- 2) ctrl slot=5 pd all show 可看到两块硬盘的新阵列 Array A。

```
=> ctrl slot=5 pd all show
HPE SR932i-p Gen11 in Slot 5

Array A
    physicaldrive 1:3:1 (port 1:box 3:bay 1, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:2 (port 1:box 3:bay 2, NVMe SSD, 1.9 TB, OK)

Unassigned
    physicaldrive 1:3:3 (port 1:box 3:bay 3, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:4 (port 1:box 3:bay 4, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:5 (port 1:box 3:bay 5, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:6 (port 1:box 3:bay 6, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:7 (port 1:box 3:bay 7, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:8 (port 1:box 3:bay 8, NVMe SSD, 1.9 TB, OK)
```

5.2 删除阵列

ctrl slot=5 Array A delete force 删除 Array A。

ctrl slot=5 pd all show 查看 Array A 已被删除。

```
=> ctrl slot=5 Array A delete forced
=> ctrl slot=5 pd all show
HPE SR932i-p Gen11 in Slot 5

Unassigned
    physicaldrive 1:3:1 (port 1:box 3:bay 1, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:2 (port 1:box 3:bay 2, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:3 (port 1:box 3:bay 3, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:4 (port 1:box 3:bay 4, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:5 (port 1:box 3:bay 5, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:6 (port 1:box 3:bay 6, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:7 (port 1:box 3:bay 7, NVMe SSD, 1.9 TB, OK)
    physicaldrive 1:3:8 (port 1:box 3:bay 8, NVMe SSD, 1.9 TB, OK)
```

6. 创建与删除热备

-  **Dedicated(专用):** 当硬盘损坏时, 必须使用备用驱动器上的数据进行重建。在专用模式下, 一个备用驱动器可以专用于多个阵列。
-  **Auto-Replace Drives(自动更换驱动器):** 发生故障的数据驱动器的备用驱动器自动变为更换数据驱动器。当更换备用驱动器时, 数据驱动器不需要重建, 在自动更换模式下, 备用驱动器无法在阵列之间共享。
-  **注意:** 给 RAID0 逻辑卷创建热备盘时, 需要使用 ./ssacli ctrl slot=0 modify spareactivationmode=predictive 命令调整热备盘替换的模式为“硬盘预损坏即替换”。

6.1 创建热备

6.1.1 创建专属热备

- 1) 将 11:3:3 硬盘设置为阵列 Array A 的专用热备盘。

```
ctrl slot=5 Array A add spares=11:3:3 spartype=dedicated
```

```
=> ctrl slot=5 Array A add spares=1:3:3 spartype=dedicated_
```

- 2) ctrl slot=5 pd all show 查看 11:3:3 硬盘已设置为专用热备。

```
=> ctrl slot=5 pd all show
HPE SR932i-p Gen11 in Slot 5

Array A

physicaldrive 1:3:1 (port 1:box 3:bay 1, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:2 (port 1:box 3:bay 2, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:3 (port 1:box 3:bay 3, NVMe SSD, 1.9 TB, OK, spare)

Unassigned

physicaldrive 1:3:4 (port 1:box 3:bay 4, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:5 (port 1:box 3:bay 5, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:6 (port 1:box 3:bay 6, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:7 (port 1:box 3:bay 7, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:8 (port 1:box 3:bay 8, NVMe SSD, 1.9 TB, OK)
```

6.1.2 创建自动替换热备

- 1) 将 1l:3:3 硬盘设置为 Array B 的自动替换热备。

ctrl slot=5 Array B add spares=1l:3:3 sparetype=autoreplace

```
=> ctrl slot=5 Array A add spares=1:3:3 sparetype=autoreplace
Warning: Any existing spare drives of a different spare type will be removed.
Continue? (y/n)y
```

- 2) ctrl slot=5 pd all show 查看 1l:3:3 硬盘设置为自动替换热备。

```
=> ctrl slot=5 pd all show
HPE SR932i-p Gen11 in Slot 5

Array A

physicaldrive 1:3:1 (port 1:box 3:bay 1, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:2 (port 1:box 3:bay 2, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:3 (port 1:box 3:bay 3, NVMe SSD, 1.9 TB, OK, auto replace spare)

Unassigned

physicaldrive 1:3:4 (port 1:box 3:bay 4, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:5 (port 1:box 3:bay 5, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:6 (port 1:box 3:bay 6, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:7 (port 1:box 3:bay 7, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:8 (port 1:box 3:bay 8, NVMe SSD, 1.9 TB, OK)
```

6.2 删除热备

ctrl slot=5 Array A remove spares=1l:3:3 删除热备。

```
=> ctrl slot=5 Array A remove spares=1:3:3
=> ctrl slot=5 pd all show
HPE SR932i-p Gen11 in Slot 5

Array A

physicaldrive 1:3:1 (port 1:box 3:bay 1, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:2 (port 1:box 3:bay 2, NVMe SSD, 1.9 TB, OK)

Unassigned

physicaldrive 1:3:3 (port 1:box 3:bay 3, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:4 (port 1:box 3:bay 4, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:5 (port 1:box 3:bay 5, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:6 (port 1:box 3:bay 6, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:7 (port 1:box 3:bay 7, NVMe SSD, 1.9 TB, OK)
physicaldrive 1:3:8 (port 1:box 3:bay 8, NVMe SSD, 1.9 TB, OK)
```