Azure StorSimple 8000 Series Copy Utility

Microsoft Corporation
Published: June 30, 2023

Applies to:

General Availability release of the Azure StorSimple 8000 Series Copy Utility.

Copyright

Revision History

Release Date	Description
May 10, 2023	Released for General Availability.
June 30, 2023	V1.1 - Updated syntax and added notes in **Step 13. Start the data copy operation**.

Azure StorSimple 8000 Series Copy Utility

About Azure StorSimple 8000 Series Copy Utility 5

Prerequisites 5

Usage considerations 6

Security and IAM 6

Disk space and file types 6

Network configuration and copy service performance 7

Migration tool configuration 8

Supported PowerShell cmdlets 8

Frequency of Utility operations 9

Data migration workflow 10

Install and run the Utility 12

1. Review requirements, prerequisites, and usage considerations. 12

2. Deploy a VM. 12

3. Install the Az module on the host machine or Azure VM. 12

4. Download the Utility packages to the host machine/Azure VM. 13

5. Install the Utility. 13

6. Download the catalog file. 14

7. Show the catalog file (Optional). 16

8. Import the catalog file. 17

9. Show the Device Manager catalog (Optional). 17

10. Discover backup files. 18

11. List backup files. 18

12. Download backup metadata to prepare for the data copy operation. 19

13. Start the data copy operation. 22

14. Fetch progress of the data copy operation. 25

15. Start another data copy operation. 26

16. Verify a successful data copy operation (Optional). 26

17. Restart a failed data copy operation. 27

Troubleshooting and debugging 27

Unable to install the *StorSimpleCopyUtility* module 27

Cmdlet fails to run 27
Collect a support package.....28
List credentials.....28
Validate credentials 28
Update credentials 29
Show imported catalog.....29
Retrieve your Service Encryption Key.....30
Uninstall the Utility.....30
Remove metadata 30
Additional resources.....31

[This article is subject to change.]

About Azure StorSimple 8000 Series Copy Utility

Azure StorSimple Device Manager and its backend services were decommissioned at the end of March 2023. Both the Data Manager and Device Manager services have been shut down, so you can no longer access StorSimple services in Azure portal.

Microsoft is providing a new read-only data copy utility to recover and migrate your backup files from StorSimple cloud snapshots. The StorSimple 8000 Series Copy Utility is designed to run in your environment. You must use your Service Encryption Key to authenticate and download your metadata from the cloud.

Prerequisites

Before you begin, make sure that:

- You have StorSimple backup files that can be migrated. The Utility works with StorSimple backup files, not live data on the StorSimple device.
- You have a system that meets the following requirements:

Component	**Requirement**
Host OS	Windows Server 2019 (Tested by Microsoft)
CPU	8 cores, 2 GHz core
RAM	32 GB
Run time disk space requirement for the *HcsDataPath* service.	At least 700 GB (Logs+Dumps+Journal data+Metadata from below). For more storage-related information, see Usage considerations in this article.
Logs	1 GB
Dumps	50 GB
Journal data	250 MB
Metadata	400 GB
Additional disk space, if copying to local host as VHDs.	In addition to the runtime requirements of the service, the local host must have disk space to hold the VHDs being retrieved from backups.
Network	1 Gbps for optimal backup retrieval and copy performance.

PowerShell	Version 5.1
Azure modules	Azure modules must be installed.
Language/locale support	English (United States) only.

- You have an Azure subscription. You will be required to provide Azure credentials that authenticate the Utility to access your subscription. Credentials must have access to the subscription where StorSimple Device Manager is present.
- You have Administrator rights on the client machine or the Azure VM where you install the Utility. You must also have *Log on as a service* rights. Without these rights, installation will fail.
- You have a Service Encryption Key (SEK). To import a metadata configuration, you must specify an SEK. The Utility will read the metadata file, validate it, and then import the configuration into the tool. You cannot use the Utility without an SEK. If you do not have an SEK, contact Microsoft Support.
- You have anticipated how to handle a backup policy across appliances.

Usage considerations

Security and IAM

We recommend that you run the Utility in a workgroup/standalone system.

Disk space and file types

- The Utility will convert StorSimple native format data into VHDX format.
- You can use a single instance of the Utility to restore backups with file size of up to 100 TB.

The Utility requires scratch workspace, preferably from SSD or other fast storage medium.

Scratch workspace is space on the target drive dedicated to storage of temporary user data.

We recommend the following scratch space based on the size of your backup files:

Copy size (GB)	Recommended scratch space (GB)
100	26
1024	30
2048	33

Copy size (GB)	Recommended scratch space (GB)
5120	43
10240	61
25600	112
40960	164
51200	199
71680	268
102400	371
153600	544
204800	716
409600	1406
512000	1751

Network configuration and copy service performance

- We recommend that you run the Utility on a virtual/physical machine that's dedicated to doing this job and not running other workloads. Data copy operations will consume significant memory, CPU, and network bandwidth that are likely to interfere with other workloads.
- Slow scratch storage can result in reduced performance of data copy operations.
- Scratch storage must be reliable and durable for smooth data copy operations.
- For optimal Utility performance, we recommend that you run no more than three data copy operations at a time. To run more than three data copy operations in parallel, use multiple instances of the Utility and run each instance on a separate VM.
- If there are network or storage failures, in-flight operations will show a **Failed** state.
- Failed operations will be retried, and the data copy service will attempt to run the operation again.
- Transient or temporary failures will not end data copy operations, but permanent failures will result in repeated **Failed** state messages.

- Any bandwidth settings or firewall latencies that limit network throughput might reduce performance of the Utility.
- If you run the Utility in an Azure region different than where your StorSimple data files are hosted, data will flow across geographic regions and that may result in reduced performance of the Utility.

Migration tool configuration

Run the following cmdlet to retrieve disk space in bytes of metadata disk space requirements. For *–TotalCopySize,* specify the size of the original volume (TB). If original volume size is unknown, specify *64TB*, the maximum supported value.

Get-EstimatedMetadataSize -TotalCopySize

The following configurations are not supported:

- Web proxy is not supported.

Supported PowerShell cmdlets

The following PowerShell cmdlets are included in the Utility:

Cmdlet	Description
`Show-HcsDeviceManagerCatalog`	Fetch the Device Manager catalog.
`Import-HcsDeviceManagerCatalog`	Import the Device Manager catalog.
`Show-HcsImportedDeviceManagerCatalog`	Fetch imported Device Manager catalog.
`Get-HcsStorageAccountCredential`	Fetch storage account credentials.
`Set-HcsStorageAccountCredential`	Update storage account credentials.

Cmdlet	Description
`Get-HcsDataContainer`	Fetch data container.
`Set-HcsDataContainer`	Update data container.
`Start-HcsDiscoverBackups`	Discover backups.
`Get-HcsBackups`	Fetch backups.
`Start-HcsPrepareForDataCopy`	Prepare a data copy operation.
`Start-HcsCopyJob`	Start a data copy operation.
`Get-HcsDataCopyProgress`	Fetch data copy operations.
`Get-HcsCopyUtilityVersion`	Fetch version details for the Data Copy Utility.
`Start-HcsSupportPackage`	Create a support package for the Data Copy Utility.
`Restart-HcsDataCopy`	Restart a data copy operation.
`Remove-HcsDataCopyMetadata`	Delete metadata from a data copy operation.
`Get-EstimatedMetadataSize`	Use *Get-EstimatedMetadataSize -TotalCopysize* to retrieve <size in bytes> of metadata disk space requirements.

Frequency of Utility operations

Some operations are required only once as part of Utility setup or initial configuration, others will be repeated as part of data copy operations.

Consider the following guidance:

Operation	Frequency of use	Cmdlets
Install the Utility	Once per VM	*Install-module* *Import-module* *Install-HcsTool*
Download the catalog file	Once per VM and Device Manager	*Connect-AzAccount* *Set-AzContext* *Import-module* *Get-AzStorageContainer*
Import and show the catalog file, and discover backups	Once per VM and Device Manager	*Show-HcsDeviceManagerCatalog* *Start-HcsDeviceManagerCatalog* *Import-HcsDeviceManagerCatalog* *Show-HcsImportedDeviceManagerCatalog* *Start-HcsDiscoverBackups* *Get-HcsBackups*
Restore the data	Once per backup	*Start-HcsPrepareForDataCopy* *Get-HcsPrepareForDataCopyProgress* *Start-HcsDataCopy* *Get-HcsDataCopyProgress*

Data migration workflow

Here is a high level overview of steps to install and run the Utility.

1. Review requirements, prerequisites, and usage considerations.
2. Deploy a VM.
3. Install Az module on the host machine or Azure VM.
4. Download the Utility packages to the host machine/Azure VM.
5. Install the Utility.

6. Download the catalog file.
7. Show the catalog file (Optional).
8. Import the catalog file.
9. Show the Device Manager catalog.
10. Discover backup files.
11. List backup files.
12. Download backup metadata to prepare for the data copy operation.
13. Start the data copy operation.
14. Fetch progress of the data copy operation.
15. Start another data copy operation.
16. Verify a successful data copy operation.
17. Restart a failed data copy operation.

Install and run the Utility

Use the following steps to install and configure the Utility, import a backup file, create and run a data copy operation, monitor progress of the operation, and verify success.

1. Review requirements, prerequisites, and usage considerations.

Make sure that you have reviewed all requirements and prerequisites.

2. Deploy a VM.

Use one of the following options:

- **Option 1** - Configure an on-premises Windows VM or a physical server to host migrated files. Ensure that the configured VM or server meets system requirements for the Utility.

- **Option 2** - Create an Azure VM resource from Azure portal using a Windows Server Marketplace image. Select an Azure VM size that meets system requirements for the Utility.

  We tested the Utility on the following Azure VM sizes:
  - Standard_D8s_v3 (8 VCPUs, 32 GiB memory).
  - Standard_D16ads_v5 (16 VCPUs, 64 GiB memory).

  For more information, see Dv3 and Dsv3-series and Dasv5 and Dadsv5-series.

3. Install the Az module on the host machine or Azure VM.

Run the following cmdlets to install the Az module:

Install-Module -Name Az -AllowClobber -Scope CurrentUser

Import-module Az

Import-module Az.Accounts

4. Download the Utility packages to the host machine/Azure VM.

1) Ensure that the user running the Utility has Administrator rights and the "Log on as a service" user right. For more information, see Enable Service Logon.
2) Download the Utility:

   Install-Module -Name StorSimpleCopyUtility

   StorSimpleCopyUtility binaries are downloaded to C:\Program Files\WindowsPowerShell\Modules\StorSimpleCopyUtility.

5. Install the Utility.

Run the following cmdlets to install the Utility.

Install-HcsTool

Install-HcsTool has command line options including -*TotalCopySize* and -*ScratchPath*. Use -*TotalCopySize* so that the installation checks for runtime disk space requirements. Use -*ScratchPath* to specify where metadata will be stored.

Example:

PS C:\HcsTool> Install-HcsTool -TotalCopySize 1tb -ScratchPath c:\hcs

Enter Password for user 'Administrator': ********

Here is sample output:

Installation Completed Successfully!!

PS C:\HcsTool>

If installation fails on first run, run *UnInstall-Hcstool* cmdlet before installing again.

UnInstall-HcsTool

To update the Utility to a newer version:

1) Uninstall the Utility:

   Uninstall-HcsTool

2) Close the PowerShell window.
3) Open a new PowerShell window.
4) Delete the previous installed binaries:

   Uninstall-Module -Name StorSimpleCopyUtility

5) Download the latest copy of the Utility:

   Install-Module -Name StorSimpleCopyUtility

6) Install the Utility:

   Example:

   Install-HcsTool -TotalCopySize 1tb -ScratchPath c:\hcs

   Enter Password for user 'Administrator': ********

   Here is sample output:

   Installation Completed Successfully!!

   PS C:\HcsTool>

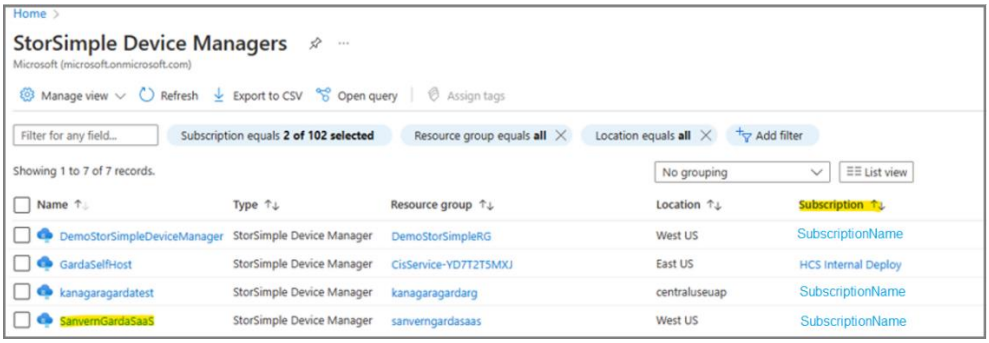
6. Download the catalog file.

Each StorSimple Device Manager is represented by a single catalog file that contains the metadata. A catalog file is used as the input for the Utility. This step is a one-time operation. If you do not see your resource group, storage account, or catalog file, contact Microsoft Support.

You can download catalog files either from Azure portal or using PowerShell cmdlets.

- **Option 1 – Azure portal** - Use the following steps to download a catalog file using Azure portal:

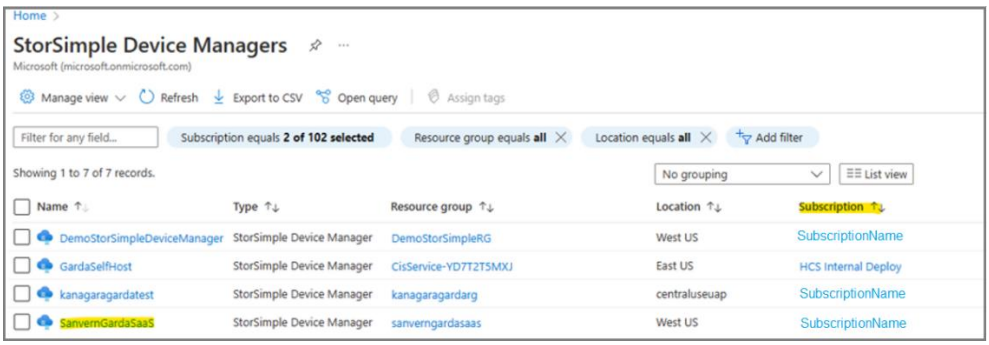
1) Sign in to Azure portal at https://portal.azure.com/ and identify the subscription where you created **StorSimple Device Manager**. In the example below, the **Subscription** name is **SubscriptionName**.



2) Find the resource group **storsimple-metadataconfig-backup-rg** in your subscription.
3) There will be a single storage account in this resource group, and a single storage container in the storage account.
4) Download all of the catalog files as block blobs from the storage account, and save them in a folder, like C:\catalog\blobs, where you will run the Utility.

- **Option 2 – PowerShell** - Use the following steps to download a catalog file using PowerShell:

1) Sign in to Azure portal at https://portal.azure.com/ and identify the subscription where you created **StorSimple Device Manager**. In this example, the subscription name is **SubscriptionName**.



2) Run the following cmdlets to connect to your account and download catalog files as block blobs from the storage account, saving them to a local folder, like C:\catalog\blobs, where you will run the Utility.

Connect-AzAccount

Set-AzContext -Subscription "SubscriptionName"

$sa=Get-AzResource -ResourceGroupName "storsimple-metadataconfig-backup-rg" | Get-AzStorageAccount

Get-AzStorageContainer -Context $sa.Context | Get-AzStorageBlob | Get-AzStorageBlobContent -Destination C:\catalog\blobs

7. Show the catalog file (Optional).

This step is helpful to confirm that you're selecting the correct catalog file. Run the following cmdlet to fetch catalog file details, including *PolicyName*, *PolicyID*, *DeviceId*, *DeviceName*, and *CatalogFileName*. Each Device Manager has a single catalog file that can be used to manage multiple StorSimple appliances.

From output of this cmdlet, use the *PolicyName* and *DeviceId* to identify the catalog file you'd like to import to the Utility.

Show-HcsDeviceManagerCatalog [-CatalogFile] <string>

Example:

Show-HcsDeviceManagerCatalog -CatalogFile C:\catalog\blobs\ExportData-2348678654477907838_12230748.json | ft PolicyName, PolicyId, DeviceId, DeviceName, CatalogFileName

Here is sample output:

```
PS C:\Users\Administrator> Show-HcsDeviceManagerCatalog -CatalogFile C:\temp\ExportData-2348678654477907838_12230748.json | ft PolicyName, PolicyId, DeviceId, DeviceName, CatalogFileName
Start ShowHcsDeviceManagerCatalog

PolicyName                                PolicyId                             DeviceId                             DeviceName                 CatalogFileName
----------                                --------                             --------                             ----------                 ---------------
Infrastructure                            3ec845b1-e19a-410f-bd80-057831c19374 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
InfraFileShareLog_CSV_Default             5a1a3175-4b26-439d-9710-0e79bff2830f 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
Critical Infrastructure                   ada4e70b-8d2b-48df-aea9-9b28117c9359 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
Non-Infra                                 ae38b4d5-d649-418a-ad83-885d160461b6 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
TD111-CriticalTEamFSScratch2-Backup       79850ed7-945d-4110-8b58-bf15e00b9b18 7176ced2-62ca-45c8-a23b-d8ad67824d11 [TD111] 8100-SHX0991003G00L6 ExportData-2348678654477907838_12230748.json
TD111-CriticalTeamFS-ScratchClone-Backup  88081fff-ff8a-495d-af16-7dc9fda7e92c 7176ced2-62ca-45c8-a23b-d8ad67824d11 [TD111] 8100-SHX0991003G00L6 ExportData-2348678654477907838_12230748.json
TestVCDemoPool_Default                    22ef6bd0-39ab-4727-82bd-8095ae186ee1 e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Test_Default                              2803de1e-8d92-4f46-8d5e-64095f54bb53 e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Infrastructure                            3ec845b1-e19a-410f-bd80-057831c19374 e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
InfraFileShareLog_CSV_Default             5a1a3175-4b26-439d-9710-0e79bff2830f e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Test Data Set_Default                     66073480-0428-4250-883a-87953fa2ffea e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Critical Infrastructure                   ada4e70b-8d2b-48df-aea9-9b28117c9359 e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Non-Infra                                 ae38b4d5-d649-418a-ad83-885d160461b6 e534f57b-5774-4a63-b4bc-c2fdac60ab03 [TD101] 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
```

8. Import the catalog file.

Run the following cmdlet to import the catalog file that configures the Utility. This will enable you to access a specific backup file stored in the cloud.

This cmdlet takes the *catalog file path* and *SEK* as inputs. You must have the *SEK* to proceed. If you do not have an SEK, contact Microsoft Support.

Import-HcsDeviceManagerCatalog [-CatalogFile] <string> [-SEK] <string>

Example:

Import-HcsDeviceManagerCatalog -CatalogFile C:\catalog\blobs\ExportData-2348678654477907838_12230748.json -SEK <Device SEK> | ft PolicyName, PolicyId, DeviceId, DeviceName, CatalogFileName

Here is sample output:

```
PS C:\Users\Administrator> Import-HcsDeviceManagerCatalog -CatalogFile C:\temp\ExportData-2348678654477907838_12230748.json -SEK 37fG+BUWCJVxafgMm4B2+g== | ft PolicyName, PolicyId, DeviceId, DeviceName, CatalogFileName
Importing Device Manager Catalog file

PolicyName                                PolicyId                             DeviceId                             DeviceName                CatalogFileName
----------                                --------                             --------                             ----------                ---------------
Infrastructure                            3ec845b1-e19a-410f-bd80-057831c19374 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
InfraFileShareLog_CSV_Default             5a1a3175-4b26-439d-9710-0e79bff2830f 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
Critical Infrastructure                   ada4e70b-8d2b-48df-aea9-9b28117c9359 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
Non-Infra                                 ae38b4d5-d649-418a-ad83-885d160461b6 1cadc834-8b44-4a70-a869-f86bcc31f615 (TD175) 8100-SHG0997879L766J ExportData-2348678654477907838_12230748.json
TD111-CriticalTEamFSScratch2-Backup       79850ed7-945d-4110-8b58-bf15e00b9b18 7176ced2-62ca-45c8-a23b-d8ad67824d11 (TD111) 8100-SHX0991003G00L6 ExportData-2348678654477907838_12230748.json
TD111-CriticalTeamFS-ScratchClone-Backup  88081fff-ff8a-495d-af16-7dc9fda7e92c 7176ced2-62ca-45c8-a23b-d8ad67824d11 (TD111) 8100-SHX0991003G00L6 ExportData-2348678654477907838_12230748.json
TestVCDemoPool_Default                    22ef6bd0-39ab-4727-82bd-8095ae186ee1 e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
test_Default                              2803de1e-8d92-4f46-8d5e-64095f54bb53 e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Infrastructure                            3ec845b1-e19a-410f-bd80-057831c19374 e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
InfraFileShareLog_CSV_Default             5a1a3175-4b26-439d-9710-0e79bff2830f e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Test Data Set_Default                     66073480-0428-4250-883a-87953fa2ffea e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Critical Infrastructure                   ada4e70b-8d2b-48df-aea9-9b28117c9359 e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
Non-Infra                                 ae38b4d5-d649-418a-ad83-885d160461b6 e534f57b-5774-4a63-b4bc-c2fdac60ab03 (TD101) 8100-SHX0991003G00J2 ExportData-2348678654477907838_12230748.json
```

9. Show the Device Manager catalog (Optional).

Run the following cmdlet to display the Device Manager catalog that you imported:

Show-HcsImportedDeviceManagerCatalog

Here is sample output:

```
PS C:\HcsTool> Show-HcsImportedDeviceManagerCatalog | ft *

CatalogFileName                           ResourceName     ResourceId          DeviceName         DeviceId                             PolicyName            PolicyId
---------------                           ------------     ----------          ----------         --------                             ----------            --------
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD18-8600-SANVERN 12d17092-c815-444c-9446-6aa854e1b506 BackupAll            4884c82b-47c1-4c1a-bab7-0f2f02c8c0a2
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD18-8600-SANVERN 12d17092-c815-444c-9446-6aa854e1b506 LocalBackup           5070afc7-c3d2-4084-b3d1-9d57e0c36f7f
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD18-8600-SANVERN 12d17092-c815-444c-9446-6aa854e1b506 Backup5               709a11af-d722-417d-a311-dfeb478198d1
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD18-8600-SANVERN 12d17092-c815-444c-9446-6aa854e1b506 TieredBack1           8f904327-bcdc-4a6f-9577-0792066b7b5e
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD18-8600-SANVERN 12d17092-c815-444c-9446-6aa854e1b506 TieredBack             cb3602ae-6d55-461c-8747-d876fcff6ec5
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD18-8600-SANVERN 12d17092-c815-444c-9446-6aa854e1b506 Backup6               ce4d9902-65ef-477d-bc1f-9b4cd30d287c
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD116-vimalth     36fcc587-386b-40cd-affa-8245473aaf0b Everyday              c060209e-de67-43ec-825f-1e0c7776b4c1
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol6           17c8fcbf-bd85-44bc-bed4-685997686729
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 diffcontpol          2d85d440-ce33-4829-ba36-00317a330d73
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol8           36119b24-899e-4619-8454-0d88dec0343f
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 1tb4volbp            4b298fc9-e61a-4ae6-b8eb-4f1e37448db0
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 abaranwal-policy     4b73748d-0936-49b3-9b9f-ca39b566f7d2
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol5           4d52dc53-0807-43c8-8bec-6feb4af4b0ca
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol2           5064b282-9c40-4875-b15a-7aad19fb70ca
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol4           595c6eac-8835-4598-a848-4f5dc4d4dc75
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 250backupbp1         65de206e-cb6d-46f2-8fed-8fffc414739a
ExportData-2034116964715306797_12230749.json SanvernGardaSaaS 2034116964715306797 TD35-GU5.1-2     5a3511b9-209e-4589-ac6e-5a977667c8c6 250backupbp2         77f031c4-379a-4aac-b59d-8153ba2ded5f
```

10. Discover backup files.

Run the following cmdlet to enumerate all backups for the given policy that are stored in the cloud. This is a synchronous task, and it may take a few minutes to complete.
PolicyId is an optional parameter; however, we recommend that you specify *PolicyId* as an argument to speed up the process so you only discover backups for a single policy. If not provided, the cmdlet will return backups for all policies.

Get the *PolicyId* from the previous cmdlet: *Import-HcsDeviceManagerCatalog/Show-HcsImportedDeviceManagerCatalog*.
Start-HcsDiscoverBackups [[-policyId] <guid>]

Example:
Start-HcsDiscoverBackups -policyId ada4e70b-8d2b-48df-aea9-9b28117c9359

Here is sample output:
Start StartHcsDiscoverBackups
Completed StartHcsDiscoverBackups

11. List backup files.

Run the following cmdlet to show all the backups enumerated by the previous cmdlet. This enables you to identify the correct backup for copying data.
PolicyId is an optional parameter. If not provided, the cmdlet will return all backups that are discovered.
Get-HcsBackups [[-PolicyId] <guid>]

Example:
Get-HcsBackups -PolicyId ada4e70b-8d2b-48df-aea9-9b28117c9359 | ft PolicyName, PolicyId, Time, Size, VolumeName, BackupId

Here is sample output:

```
PS C:\Users\Administrator> Get-HcsBackups -PolicyId ada4e70b-8d2b-48df-aea9-9b28117c9359 | ft PolicyName, PolicyId, Time, Size, BackupId

PolicyName              PolicyId                             Time                Size           BackupId
----------              --------                             ----                ----           --------
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 1073741824     02d0f3b6-71a8-4de1-8ee2-a3977e1a03fa
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 16492674416640 102562f7-1c3b-4b22-b67e-4fe1f95daa67
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 5497558138880  10f184a8-6448-48f1-92b5-3f8625aaf247
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 21990232555520 282c8f3b-1fea-4f37-a65e-c516fb588cf7
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 536870912000   5c3abc3b-3a43-4db4-96ab-b1a62c3745c9
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 10995116277760 a146e66a-5967-455a-be57-432f0c7dee31
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/31/2022 04:00:04 1073741824     c42d86fd-d4df-4356-9dda-cceb69b73640
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 5497558138880  04bee32c-8276-4f72-9085-265c539ddcb6
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 21990232555520 14f0c3d4-e534-4883-96de-9932385bc39d
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 1073741824     82c59cf4-3886-4ae8-868f-f5c142c59763
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 1073741824     870536f1-1bd1-4b64-a890-9df0ca700942
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 16492674416640 c18a26a8-0d41-47cc-82ee-340f5ac92f22
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 10995116277760 ca5aa78c-5ec8-46e3-9ce5-acc528e562bd
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/30/2022 04:00:04 536870912000   e3312ba8-cf58-49e9-a8c9-8fdbabf046e4
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 10995116277760 5e7590c0-9774-4e7d-8865-51d1a1919a6b
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 1073741824     6a5f4348-77e2-4584-9238-e6354cf1fa45
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 16492674416640 753f83a2-3e73-4c49-b5b7-366b59e8df25
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 5497558138880  906cfea1-a4c1-47a0-9a1c-fa443e87ad63
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 1073741824     cd89775d-78c9-454e-9882-336fb39e759e
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 21990232555520 e0d71ca5-ea3c-4f29-95d0-808cd093395b
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/29/2022 04:00:04 536870912000   ffe754b1-a428-45c6-98d2-a643cae6280d
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 10995116277760 1d1f1144-e388-449c-9d14-c5cef4eb44e4
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 21990232555520 49e44838-7c64-4d69-8f4e-288cb9de846c
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 1073741824     98ee6b30-5021-4072-afbc-f1255a3eb17e
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 536870912000   afe9d0f3-a9d9-4d15-b761-0f4c9c57717f
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 16492674416640 c1c94d3c-5b2c-441d-87ae-efcef2ba507c
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 1073741824     ccc56b68-ab6a-4ac0-acf6-bd38045d5952
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/28/2022 04:00:04 5497558138880  da94454f-ed90-4c81-bd4f-780731d89cec
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 536870912000   04c73d53-697f-4f82-a786-3b34952772c3
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 16492674416640 05b30f9a-4246-43f8-80e2-ad04c5aa3074
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 5497558138880  2fe6bd2a-9941-4c82-8caa-c4d282ea5c81
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 1073741824     62026b94-12f1-474d-b716-7e7deaece6eb
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 10995116277760 765746fe-ad29-4fc0-8d1d-73330121a04f
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 1073741824     acc663a5-5cdf-4966-8ee8-35e1e15aa958
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/27/2022 04:00:04 21990232555520 ba25a064-3550-4a4d-a798-982aabdbb880
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 5497558138880  2876e454-9200-464e-8fc6-dd2f86694a8c
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 16492674416640 93b2884b-9ab7-4ac6-9682-d45439163843
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 10995116277760 b4a49fc1-a47d-463b-899a-dd33cc36b05b
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 536870912000   bb4b51e4-63d4-4616-b4c6-1895534bbc17
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 1073741824     ce9eb5ff-02ac-45f4-931b-73f5554c850e
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 1073741824     ed89eeb7-6564-4cda-85d9-4a4a0f1c318b
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/26/2022 04:00:04 21990232555520 f26872ce-e3d4-4363-b0b8-acef6c42374e
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 5497558138880  281b3fc1-17d0-49a8-8f9a-9b0f0c7c2d3e
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 21990232555520 2a6611e6-a8e4-40b5-90d6-be2473ab17cb
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 1073741824     4fc311ef-efba-4142-94ae-d7256d44044d
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 536870912000   859eebd5-d8a7-4d20-910a-3267d8056939
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 16492674416640 8d0e239d-978e-4def-8ac4-9c12053cb376
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 10995116277760 abe53ae8-8673-45cf-861d-5d26e0dd7f99
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/25/2022 04:00:04 1073741824     e3d9cf64-b3c3-46f3-b2b6-a9ddba52acdd
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 16492674416640 1320322a-b6bb-40d3-9da2-41f1db191bd4
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 21990232555520 1d5b7fc8-c6e5-4d7f-bd99-aada3a697019
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 5497558138880  55f5d29f-d384-4459-8ae2-b5d5b9008870
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 1073741824     674d8531-3e08-44bd-9a3b-941d5dbd5f11
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 536870912000   7d87e1f8-c9cc-4b0e-9912-d234435bebd2
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 10995116277760 959f6b4c-7362-4d9e-ab09-208b4a9b27b5
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/24/2022 04:00:05 1073741824     ded52bf6-d9b4-46ea-bc07-db4681ae1f75
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 21990232555520 05c87bfd-0ba0-4131-9047-9a61b3dd8ee7
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 16492674416640 16db9ee1-d527-4729-b8ab-d12794d49e30
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 5497558138880  24eba03b-7819-4a65-bae8-454963e0b524
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 1073741824     5553ddf4-3b41-4159-b44b-32d0b5d2f40d
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 10995116277760 7a6d4122-fec0-49a4-987f-25474311e14d
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 536870912000   8e6aa8e5-47ef-4bda-ab61-978eaa4feb66
Critical Infrastructure ada4e70b-8d2b-48df-aea9-9b28117c9359 12/23/2022 04:00:05 1073741824     c4578469-4396-415c-961d-2745941deae6
```

12. Download backup metadata to prepare for the data copy operation.

Use the following steps to prepare the Utility for a data copy operation.

1) This cmdlet downloads the metadata from the backup and prepares the Utility for the data copy operation. Use the *BackupId* from output of the previous cmdlet.

   If the Disposition is *Success* then proceed to the step: Start data copy operation.

   Start-HcsPrepareForDataCopy [-BackupId] <guid>

Example:

Start-HcsPrepareForDataCopy -BackupId f627266c-04f0-498a-8431-e2c48d02fc0f

Here is sample output:

```
Id                                  : 6a87614b-52b6-4381-8bae-cd2083f64f9d
RunId                               : 264c509b-1c7f-4798-a2a0-4c075873bb01
Description                         : clone job :6a87614b-52b6-4381-8bae-
cd2083f64f9d
Status                              : Stopped
Disposition                         : Success
ErrorInfo                           :
PercentComplete                     : 100
BytesWritten                        : 5849892
BytesProcessed                      : 10737418240
TotalBytes                          : 536870912000
CurrentProcessedThroughput          : 3793182
AverageProcessedThroughput          : 3024763
EstimatedRemainingTime              : 00:00:00
Output                              :
VolumeId                            : 6a87614b-52b6-4381-8bae-cd2083f64f9d
IsBeJobCancelling                   : False
DispositionInfo                     :
```

2) This cmdlet fetches the progress of the prepare data copy operation. Get the job *Id* from output of the previous cmdlet.

   Get-HcsPrepareForDataCopyProgress -Id 6a87614b-52b6-4381-8bae-cd2083f64f9d

   Here is sample output:

```
Id                                  : 6a87614b-52b6-4381-8bae-cd2083f64f9d
RunId                               : 264c509b-1c7f-4798-a2a0-4c075873bb01
Description                         : clone job :6a87614b-52b6-4381-8bae-
cd2083f64f9d
Status                              : Stopped
Disposition                         : Success
ErrorInfo                           :
PercentComplete                     : 100
BytesWritten                        : 6141226
BytesProcessed                      : 536870912000
```

```
TotalBytes                          : 536870912000
CurrentProcessedThroughput          : 0
AverageProcessedThroughput          : 80188
EstimatedRemainingTime              : 00:00:00
Output                              :
VolumeId                            : 6a87614b-52b6-4381-8bae-cd2083f64f9d
IsBeJobCancelling                   : False
DispositionInfo                     :
```

3) In case of failure, do not proceed; instead:
   a. Rerun the previous cmdlet if you experience network issues.
   b. If your credentials are rotated, check troubleshooting methods.
   c. Select a different backup for the *PrepareForDataCopy* cmdlet.

   Here is sample output from a failed *Start-HcsPrepareForCopyJob* cmdlet:

```
Id                                  : 102d704f-32c0-47d8-846e-19c4e58582ce
RunId                               : 80335748-da06-41d5-9bb6-796384170e65
Description                         : clone job :102d704f-32c0-47d8-846e-
19c4e58582ce
Status                              : Stopped
Disposition                         : Failed
ErrorInfo                           :
Microsoft.HCS.Migration.Backup.ErrorManifest
PercentComplete                     : 0
BytesWritten                        : 0
BytesProcessed                      : 0
TotalBytes                          : 0
CurrentProcessedThroughput          : 0
AverageProcessedThroughput          : 0
EstimatedRemainingTime              : 00:00:00
Output                              :
VolumeId                            : 102d704f-32c0-47d8-846e-19c4e58582ce
IsBeJobCancelling                   : False
DispositionInfo                     : An error occurred while restoring the
backup run:
BE_BACKUP_RUN_RESTORE_VOLUME_METADATA_UPDATE_FAILED.
(BackupRunRestoreException)
```

4) Run the following cmdlet to fetch details about the error condition from the *Start-HcsPrepareForCopyJob* cmdlet:

$a=Get-HcsPrepareForDataCopyProgress -Id 102d704f-32c0-47d8-846e-19c4e58582ce

Here is sample output:

$a.ErrorInfo

ExceptionType ExceptionMessage HResult Summary
---------- ---------- ------- -------
{BackupRunRestoreException} {An error occurred while restoring the backup run: BE_BACKUP_RUN_RESTORE_VOLUME_METADATA_UPDATE_FAILED} 30006 An error occurred while restoring the backup run: BE_BACKUP_RUN_RESTORE_VOLUME_METADATA_UPDATE_FAILED. (BackupRunRestoreException)

13. Start the data copy operation.

Use one of the following options to copy your data from the backup and write it to the destination directory. This is a long running operation.

- **Option 1 – For a new VHDx file:** Use the *CopyTargetTypeVHDFile* cmdlet:

Parameter	Description
-*VolumeID*	Use -*VolumeId* from results in *Start-HcsPrepareForDataCopy* cmdlet.
CopyTargetTypeVHDFile	Expose the file share path and VHDx file name where the data copy operation creates the VHDx file and copies the backup data. Make sure that the specified VHDx/drive has enough disk space to accommodate the file size of backup data being copied.

Syntax:

Start-HcsDataCopy [-VolumeId] <guid> [-TargetType] | CopyTargetTypeVHDFile |[[-Folder] <string>] [[-FileName] <string>] [[-JobName] <string>]

Example:

Start-HcsDataCopy -VolumeId 31aee251-d3ea-4897-94f5-e5bfce22795b -TargetType CopyTargetTypeVHDFile -Folder E:\Test\ -FileName TestJob.vhdx -JobName TestJob

- **Option 2 – For a block device:** Use the *CopyTargetTypeBlockDevice* cmdlet*:*

Parameter	Description
-VolumeID	Use *-VolumeId* from results in *Start-HcsPrepareForDataCopy* cmdlet.
CopyTargetTypeBlockDevice	Expose the block device in the devicepath where the data copy operation copies the backup data.
AllowLargerDisk	Note that *AllowLargerDisk* should be true only when target disk size is more than the source volume size. This is applicable only with *CopyTargetTypeBlockDevice TargetType*. *DevicePath* should be *DiskSerialNumber* which can be fetched by running *Get-disk | fl **. Use *Get-disk | fl ** to retrieve *-UniqueId*, which should be passed as *DevicePath* input for *CopyTargetTypeBlockDevice* TargetType.

NOTE:
Before you run this command, ensure that the *TargetTypeBlockDevice* is a RAW disk without any partition. In addition, we recommend use of a larger than required disk with *-AllowLargerDisk $true*.

Syntax:

Start-HcsDataCopy [-VolumeId] <guid> [-TargetType] {CopyTargetTypeBlockDevice | [[-Folder] <string>] [[-FileName] <string>] [[-JobName] <string>] [[-AllowLargerDisk]] [<CommonParameters>]

Example:

Start-HcsDataCopy -VolumeId 7e812324-b255-48d3-aeaa-f7cf324e8600 -TargetType CopyTargetTypeBlockDevice -DevicePath 60022480970436CFBF5677843256517D -JobName CodeReviewLargeDiskJob -AllowLargerDisk $true

- Run the following cmdlets to mount the VHD and retrieve UniqueId, which is used as the -DevicePath.

  Mount-VHD -Path C:\temp\test2.vhdx
  *get-disk | fl **

  Here is sample output:

```
DiskNumber          : 1
PartitionStyle      : RAW
ProvisioningType    : Thin
OperationalStatus   : Offline
HealthStatus        : Healthy
BusType             : File Backed Virtual
UniqueIdFormat      : FCPH Name
OfflineReason       : Policy
ObjectId            : {1}\\WIN-
FH2HG90DR34\root/Microsoft/Windows/Storage/Providers_v2\WSP_Disk
.ObjectId="{1be23ecb-6775-11ed-a3c4-
806e6f6e6963}:DI:\\?\scsi#disk&ven_msft&prod_virtual_disk#2&1f4adffe
&0&000003#{53f56307-b6bf-11d0-94f2-00a0c91efb8b}"
PassThroughClass    :
PassThroughIds      :
PassThroughNamespace :
PassThroughServer   :
UniqueId            : 60022480677CB03FCE7F2C9C3F7A1127
AdapterSerialNumber  :
AllocatedSize       : 0
BootFromDisk        : False
FirmwareVersion     : 1.0
FriendlyName        : Msft Virtual Disk
Guid                :
IsBoot              : False
IsClustered         : False
IsHighlyAvailable   : False
IsOffline           : True
IsReadOnly          : False
```

```
IsScaleOut                  : False
IsSystem                    : False
LargestFreeExtent           : 0
Location                    : C:\temp\test2.vhdx
LogicalSectorSize           : 512
Manufacturer                : Msft
Model                       : Virtual Disk
Number                      : 1
NumberOfPartitions          : 0
Path                        : \\?\scsi#disk&ven_msft&prod_virtual_disk
#2&1f4adffe&0&000003#{53f56307-b6bf-11d0-94f2-00a0c91efb8b}
PhysicalSectorSize          : 4096
SerialNumber                :
Signature                   :
Size                        : 536870912000
PSComputerName              :
CimClass                    :
ROOT/Microsoft/Windows/Storage:MSFT_Disk
CimInstanceProperties       : {ObjectId, PassThroughClass,
PassThroughIds,
PassThroughNamespace...}
CimSystemProperties         :
Microsoft.Management.Infrastructure.CimSystemProperties
```

Here is sample output from *Start-HcsDataCopy*:

```
Id                          : 31aee251-d3ea-4897-94f5-e5bfce22795b
Name                        : TestJob
Description                 :
Started                     : 2023-03-30 11:14:34 PM
Stopped                     : 0001-01-01 12:00:00 AM
Status                      : HcsCopyJobRunning
Disposition                 : Pending
ErrorInfo                   :
PercentComplete             : 0
BytesCopied                 : 0
TotalBytes                  : 108447924224
IsBeJobCancelling           : False
DispositionInfo             :
```

14. Fetch progress of the data copy operation.

Run this cmdlet to fetch progress of the data copy operation. If you don't provide the *Id*, the cmdlet will return progress of all running data copy operations. Once the Status is

HcsCopyJobSuccess and Disposition is *Success,* you can check the destination folder for results.

Get-HcsDataCopyProgress -Id 6a87614b-52b6-4381-8bae-cd2083f64f9d

Here is sample output:

```
Id                    : 31aee251-d3ea-4897-94f5-e5bfce22795b
Name                  : TestJob
Description           :
Started               : 2023-03-30 11:14:34 PM
Stopped               : 0001-01-01 12:00:00 AM
Status                : HcsCopyJobRunning
Disposition           : Pending
ErrorInfo             :
PercentComplete       : 4
BytesCopied           : 5077204992
TotalBytes            : 108447924224
IsBeJobCancelling     : False
DispositionInfo       :

PS C:\hcstool>
```

15. Start another data copy operation.

Once a data copy operation has started, you can identify another backup file and, using its *BackupId*, repeat the steps starting from Step 12. Download backup metadata and kick off another copy operation.

16. Verify a successful data copy operation (Optional).

Mount the VHD to access the data and use compare tools for data validation.

If necessary, copy the data to the final destination, usually an Azure File share. Then, in the destination Azure File share, take a snapshot of the data, and document the **Date** of the original StorSimple backup in the **Snapshot Comment** field. This step enables you to use the comment to identify which snapshot maps to the original StorSimple backup.

For more information, see:

- Overview of share snapshots for Azure Files.
- Manage virtual hard disks (VHD).

- Mount-VHD.

17. Restart a failed data copy operation.

Use the following cmdlet to restart a failed data copy operation:

Restart-HcsDataCopy

Example:

Restart-HcsDataCopy [-Id] <guid> [<CommonParameters>]

Troubleshooting and debugging

Unable to install the S*torSimpleCopyUtility* module

If you are unable to install the S*torSimpleCopyUtility* module:

1. Update the *psget* module.
2. Install the latest version PowerShellGet module: See Update PowerShellGet for Windows PowerShell 5.1.
3. After updating the *psget* module, close the PowerShell window and then open a new PowerShell window.

Cmdlet fails to run

If any StorSimpleCopyUtility command fails with error:

is not recognized as the name of a cmdlet

Run the following command:

import-module "C:\Program Files\WindowsPowerShell\Modules\StorSimpleCopyUtility\0.0.2\Microsoft.HCS.Migration.dll

Collect a support package

Use the following cmdlet to collect a support package for a data copy operation.

Start-HcsSupportPackage

Example:

Start-HcsSupportPackage [-path] <string> [[-flags] <int>] [<CommonParameters>]

List credentials

Run the following cmdlet to list all storage account credential objects.

The *Id* property is optional. If an *Id* is not specified, the cmdlet will return all storage account credential objects.

Get-HcsStorageAccountCredential [[-Id] <guid>]

Example:

Get-HcsStorageAccountCredential -Id e6131ae5-9e04-4962-b33f-bc4bec15f124

Here is sample output:

```
PS C:\HcsTool> Get-HcsStorageAccountCredential -Id e6131ae5-9e04-4962-b33f-bc4bec15f124

Id                 : e6131ae5-9e04-4962-b33f-bc4bec15f124
Alias              : kana
Provider           : CLOUD_TYPE_AZURE
Location           :
Hostname           : blob.core.windows.net
Login              : kana
Password           :
AltPassword        :
SSL                : True
GoogleAuthToken    :
GoogleRefreshToken :
GoogleProjectId    :
GoogleStorageUrl   :
NirvanixAppKey     :
NirvanixAppName    :
```

Validate credentials

Run the following cmdlet to validate credentials:

Invoke-HcsStorageAccountCredentialValidate [[-Id] <guid>]

Here is sample output:

```
PS C:\HcsTool> Invoke-HcsStorageAccountCredentialValidate

Id                                      Login   Result    error
--                                      -----   ------    -----
e6131ae5-9e04-4962-b33f-bc4bec15f124    kana    Pass
d70c6d07-04ad-420f-8f8b-dfcc6cf016ba    sanv    Pass
6fb6e1bb-d5cb-4941-88e9-e742bab1d1d9    sanv    Pass
34fe0a44-6985-486c-937d-96eb8dcb6f6d    sanv    Pass
3a19a489-999f-4667-ae98-707727abbd20    sanv    Pass
14f2d47f-483d-4004-b899-835e9f93e177    naga    Pass
d6f042bc-7ed0-4ba6-9ba0-09a8d90c8c68    sanv    Pass
d40a03bf-668a-45ca-bb63-3f8966764976    sanv    Pass
d0865d80-3c02-4c6d-acf2-c255c4a0bbb9    kana    Pass
83188c22-80e1-4b64-b6f4-e5201b6fb025    sanv    Pass
f3ebd169-47e4-4bf1-a2df-3437afaeca04    sanv    Pass
04b7c8f3-b5b0-4d16-a17f-cd5230995dd4    sanv    Pass
d2ef02f0-a18d-4262-a977-14cdcec39869    kana    Pass
86cc81e3-e397-4437-a811-11d2f4051f70    sanv    Pass
131bbd71-02fa-427c-8981-bdbe62f8b85f    kana    Pass
c64acadf-1ec3-4afb-a54f-11753739f757    kana    Pass
```

Update credentials

Run the following cmdlet to update the *Password* or *SSL*.

Set-HcsStorageAccountCredential [-Id] <guid> [[-Password] <string>] [[-UseSSL] <bool>]

Example to update a password:

Set-HcsStorageAccountCredential -Id e6131ae5-9e04-4962-b33f-bc4bec15f124 -Password XXX

Show imported catalog

Run the following cmdlet to show the imported catalog.

Show-HcsImportedDeviceManagerCatalog

Here is sample output:

```
PS C:\HcsTool> Show-HcsImportedDeviceManagerCatalog | ft *

CatalogFileName                                ResourceName     ResourceId          DeviceName          DeviceId                            PolicyName            PolicyId
---------------                                ------------     ----------          ----------          --------                            ----------            --------
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD18-8600-SANVERN  12d17092-c815-444c-9446-6aa854e1b506 BackupAll            4884c82b-47c1-4c1a-bab7-0f2f02c8c0a2
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD18-8600-SANVERN  12d17092-c815-444c-9446-6aa854e1b506 LocalBackup           5070afc7-c3d2-4084-b3d1-9d57e0c36f7f
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD18-8600-SANVERN  12d17092-c815-444c-9446-6aa854e1b506 Backup5               709a11af-d722-417d-a311-dfeb478198d1
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD18-8600-SANVERN  12d17092-c815-444c-9446-6aa854e1b506 TieredBack1           8f904327-bcdc-4a6f-9577-0792066b7b5e
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD18-8600-SANVERN  12d17092-c815-444c-9446-6aa854e1b506 TieredBack             cb3602ae-6d55-461c-8747-d876fcff6ec5
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD18-8600-SANVERN  12d17092-c815-444c-9446-6aa854e1b506 Backup6               ce4d9902-65ef-477d-bc1f-9b4cd30d287c
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD116-vimalth      36fcc587-386b-40cd-affa-8245473aaf0b Everyday               c060209e-de67-43ec-825f-1e0c7776b4c1
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol6            17c8fcbf-bd85-44bc-bed4-685997686729
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 diffcontpol           2d85d440-ce33-4829-ba36-00317a330d73
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol8            36110b24-899e-4619-8454-0d88dec8343f
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 1tb4volbp             4b298fc9-e61a-4ae6-b8eb-4f1e37448db0
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 abaranwal-policy      4b73748d-0936-49b3-9b9f-ca39b566f7d2
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol5            4d52dc53-0807-43c8-8bec-6feb4af4b0ca
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol2            5064b282-9c40-4875-b15a-7aad19fb70ca
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol4            595c6eac-8835-4598-a848-4f5dc4d4dc75
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 250backupbp1          65de206e-cb6d-46f2-8fed-8fffc414739a
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 250backupbp2          77f031c4-379a-4aac-b59d-8153ba2ded5f
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 localvolbp            7d3c5534-9189-4a11-90dc-bf034ad83645
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 2000bppol1            87286f9f-c4ca-43a9-bba3-b1b1428f716f
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 mulpolgptrawmbr       a6908370-c452-4862-ba16-0936bb7b957e
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 linuxpol              b4322a15-f8eb-458d-bbfc-14e301d0ca6c
ExportData-203411696471530679 7_12230749.json SanvernGardaSaaS 203411696471530679 7 TD35-GU5.1-2       5a3511b9-209e-4589-ac6e-5a977667c8c6 250backupbp3          b55c07f0-b5e5-4015-bf2b-c8bb78797b3a
```

If there are no catalog files imported, you will see the following error message:

```
PS C:\HcsTool> Show-HcsImportedDeviceManagerCatalog
    Show-HcsImportedDeviceManagerCatalog : No catalog imported
At line:1 char:1
+ Show-HcsImportedDeviceManagerCatalog
+ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  + CategoryInfo          : NotSpecified: (:) [Show-HcsImportedDeviceManagerCatalog],
HcsCatalogNotImportedException
  + FullyQualifiedErrorId :
Microsoft.HCS.Migration.Exceptions.HcsCatalogNotImportedException,Microsoft.HCS.Migra
tion.Powershell.Cmdlets.ShowHcsImportedDeviceManagerCatalog
```

Retrieve your Service Encryption Key or Service Data Encryption Key

To retrieve your Service Encryption Key (SEK)/Service Data Encryption Key (SDEK), contact Microsoft Support. Please note that Microsoft Support can only help retrieve this key if the physical appliance is still functioning and the administrator password is known by you. Microsoft does not maintain a copy of this key.

Uninstall the Utility

Run the following cmdlet to uninstall the Utility:

UnInstall-HcsTool

Remove metadata

Run the following cmdlet to remove metadata for a data copy operation:

Remove-HcsDataCopyMetadata

Example:

Remove-HcsDataCopyMetadata [[-VolumeId] <guid>] [<CommonParameters>]

Additional resources

- StorSimple Overview.
- Create an Azure support ticket.