SnapDrive® 7.1 for Windows®

Administration Guide

For SMB 3.0 Environments

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Contents

SnapDrive overview

SnapDrive for Windows enables you to automate storage provisioning tasks and to manage data in Microsoft Windows environments. You can run SnapDrive on Windows hosts in either a physical or virtual environment.

New features in SnapDrive 7.1.4 for Windows

SnapDrive 7.1.4 for Windows is a maintenance release that includes important enhancements and support for Windows Server 2016.

- Critical bug fixes

Automated storage provisioning and data management using SnapDrive for Windows

SnapDrive for Windows helps you automate storage provisioning tasks and manage data in SAN and SMB 3.0 Windows environments. You can run SnapDrive for Windows software on Windows hosts in either a physical or a virtual environment.

SnapDrive for Windows software integrates with Windows Volume Manager so that storage systems can serve as virtual storage devices for application data in Windows Server 2008 and later. You can also use SnapDrive for Windows to provision storage for Windows virtual machines hosted on ESX and Microsoft Hyper-V.

SnapDrive for Windows manages LUNs on a storage system, making these LUNs available as local disks on Windows hosts. This allows Windows hosts to interact with the LUNs just as if they belonged to a directly attached redundant array of independent disks (RAID).

SnapDrive for Windows PowerShell cmdlets support volume and share provisioning in SMB 3.0 environments. You can also use SnapDrive for Windows PowerShell cmdlets to create and manage Snapshot backups; manage mounting, restore, and discovery operations; and to troubleshoot.

SnapDrive for Windows provides the following additional features:

- It enables online storage configuration, LUN expansion, and streamlined management.

- It enables connection of up to 168 LUNs.

- It integrates Data ONTAP Snapshot technology, which creates point-in-time images of data stored on LUNs.

- It works in conjunction with SnapMirror software to facilitate disaster recovery from either asynchronously or synchronously mirrored destination volumes.

- It enables SnapVault updates of qtrees to a SnapVault destination.

- It enables management of SnapDrive for Windows on multiple hosts.

- It enables support on Microsoft cluster configurations.

- It enables iSCSI session management.

SnapDrive PowerShell cmdlet environment support at a glance

You can use the cmdlet environment support table to understand SnapDrive PowerShell cmdlet environment support.

Cmdlet	SAN environments	SMB environments
Debug-SdHost	Supported	Supported
Dismount-SdSnapshot	Unsupported	Supported
Get-SdInfo	Supported	Supported
Get-SdSMBShadowCopyEmsMessage	Supported	Supported
Get-SdSnapMirror	Supported in clustered Data ONTAP only	Supported
Get-SdSnapMirrorPolicyRule	Supported	Supported
Get-SdSnapshot	Limited SAN support	Supported
Get-SdStorage	Supported	Supported
Get-SdStorageConnectionSetting	Supported	Supported
Get-SdVM	Supported	Supported
Invoke-SdEmsAutosupportLog	Supported	Supported
Invoke-SdSnapMirrorUpdate	Supported	Supported
Mount-SdSnapshot	Unsupported	Supported
New-SdSMBShare	Supported in clustered Data ONTAP only	Supported
New-SdSnapshot	Supported	Supported
New-SdVolume	Supported in clustered Data ONTAP only	Supported
Remove-SdSMBShare	Supported in clustered Data ONTAP only	Supported
Remove-SdSnapMirrorPolicyRule	Supported	Supported
Remove-SdSnapshot	Supported	Supported
Remove-SdStorageConnectionSetting	Supported	Supported
Remove-SdVolume	Supported in clustered Data ONTAP only	Supported
Rename-SdSnapshot	Supported	Supported
Restore-SdSnapshot	Supported	Supported
Set-SnapMirrorPolicyRule	Supported	Supported
Set-SdSnapshot	Supported in clustered Data ONTAP only	Supported

Cmdlet	SAN environments	SMB environments
Set-SdStorageConnectionSetting	Supported	Supported

Understanding SnapDrive for Windows components

Several components are integrated into the SnapDrive for Windows software and are automatically installed. These components enable you to manage LUNs, Windows volumes, or SMB shares. You can use these components together to enable SnapDrive for Windows workflows, including provisioning Snapshot copy management; and backup, restore, and mounting operations.

SnapDrive for Windows "snap-in"

This software module integrates with Microsoft Management Console (MMC) to provide you a graphical interface for managing LUNs on the storage system. The module does the following:

- Resides in the Windows Server computer management storage tree

- Provides a native MMC snap-in user interface for configuring and managing LUNs

- Supports remote administration so that you can manage SnapDrive on multiple hosts

- Provides SnapMirror integration

- Provides AutoSupport integration, including event notification

SnapDrive for Windows command-line interface

The sdcli.exe utility enables you to manage LUNs from the command prompt of the Windows host. You can perform the following tasks with the sdcli.exe utility:

- Enter individual commands

- Run management scripts

PowerShell cmdlets

The SnapDrive for Windows PowerShell cmdlets enable you to perform provisioning; Snapshot copy management; and backup, restore, and mounting operations in an SMB 3.0 environment.

For the latest information about supported PowerShell versions, see the Interoperability Matrix Tool.

NetApp Interoperability Matrix Tool

Underlying SnapDrive for Windows service

This software interacts with software on the storage system to facilitate LUN management for the following:

- A host

- Applications running on a host

ONTAP Volume Shadow Copy Service (VSS) Hardware Provider on Windows Server hosts

The ONTAP VSS Hardware Provider is a module of the Microsoft VSS framework. The ONTAP Hardware Provider enables VSS Snapshot technology on the storage system when SnapDrive for Windows is installed on Windows Server hosts.

Understanding the Volume Shadow Copy Service

The Data ONTAP VSS Hardware Provider is installed with SnapDrive for Windows and can be used with Microsoft Volume Shadow Copy Service.

For complete information on using and troubleshooting VSS, see the Microsoft TechNet web site.

Configuring remote VSS for SnapDrive for Windows SMB environments

You should be aware of some steps required for remote VSS configuration for SnapDrive for Windows SMB environments.

Steps

1. For SnapDrive for Windows remote VSS backup, your SMB share needs requestor permissions (VSS requestor service account, for example SnapManager for Hyper-V = read access at a minimum).

2. For SnapManager for Hyper-V remote VSS restore, your share needs SnapDrive for Windows service account permissions (SnapDrive for Windows service account = full control).

   Note: It is recommended that the service accounts used for SnapDrive for Windows and SnapManager for Hyper-V both have full control to the SMB 3.0 continuously share on the clustered Data ONTAP.

For details on Data ONTAP remote VSS configuration requirements, see *Clustered Data ONTAP File Access and Protocols Management Guide*.

For more information about Microsoft VSS, see *Protect Data on Remote SMB File Shares using VSS*.

Virtual storage server configuration considerations

Before you use the SnapDrive PowerShell cmdlet capabilities, you must configure your virtual storage server credentials, which requires you to be familiar with some of the conditions for doing so.

- You can configure mixed LIFs (data combined with management) in SMB 3.0 environments only.

- In clustered Data ONTAP 8.2 and later, you are not required to have cluster credentials before configuring or using SnapDrive.

- You can configure your virtual storage server credentials using SnapDrive PowerShell cmdlets, the SnapDrive MMC, SDCLI, or SnapManager for Hyper-V MMC.

- When you are configuring virtual storage server credentials in clustered Data ONTAP, the credentials are pushed to all the nodes of the cluster.

Managing storage system access for SnapDrive

You can use `Set-SdStorageConnectionSetting` and `Remove-SdStorageConnectionSetting` to manage SnapDrive access to Data ONTAP storage systems.

Setting up storage system access for SnapDrive

Use `Set-SdStorageConnectionSetting` to set the credentials, protocol, and port with which you access Data ONTAP storage systems.

About this task

When you run `Set-SdStorageConnectionSetting` in a cluster Data ONTAP environment, you need to configure your storage connection settings only once, rather than on each node of the cluster.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
Set-SdStorageConnectionSetting
-StorageSystem "storagesystem_name"
-Credential "user_name" "password"
-Protocol "connection_protocol"
-Port "port_number"
```

Parameters specified have the following values:

-StorageSystem

Specifies the name of the storage system for which you want to set connection settings.

-Credential

Designates the user name and password you want to use to authenticate your connection to the storage system.

-Protocol

Specifies the protocol type you want to use. Possible values are HTTP, HTTPS, and RPC. By default, connections are attempted with a secure HTTPS connection to the storage controller. If that connection is unsuccessful, the connection is made with HTTP. Specify HTTPS, or HTTP to only use those protocols without any fallback to another protocol.

Note: RPC is supported in 7-Mode Data ONTAP version 8.0 and 8.1 storage systems only.

-Port

Specifies the port on which you want to connect to the storage controller. If you do not set this value, the default is 80 for HTTP and 443 for HTTPS. This parameter only applies to HTTP and HTTPS protocols.

2. If you want to overwrite existing storage system connection settings, use `-Force`.

3. In clustered Data ONTAP environments, if you want to set storage system connections only on a specific cluster node, use `-HostOnly`.

Setting up named storage system connection settings

This example saves the specified storage system connection settings into the configuration repository. These settings are later used to connect to the `vmStorageServer` virtual storage server storage system. You are prompted for the password using the given login of **vsadmin**.

```
Set-SdStorageConnectionSetting
-Name 'VmStorageServer'
-Protocol https
-Credential vsadmin
-Port 443
```

Setting and using default storage system connection settings

You can use `Set-SdStorageConnectionSetting` parameters to set and use default storage systems connection settings.

Step

1. From a PowerShell command prompt, enter the following syntax:

```
Set-SdStorageConnectionSetting
-DefaultSetting
-StorageSystem "storage_system"
-Protocol "protocol"
-Port "port_number"
-Credential "name" "password"
```

Parameters specified have the following values:

-DefaultSetting

Indicates that the credentials, protocol, and port number you are setting up for the storage system should be used as default settings.

-StorageSystem

Specifies the name of the storage system for which you want to set connection settings.

-Credential

Designates the user name and password you want to used to authenticate your connection to the storage system.

-Protocol

Specifies the protocol type you want to use. Possible values are HTTP, HTTPS, and RPC. By default, connections are attempted by using a secure HTTPS connection to the storage controller, but if the HTTPS connection is unsuccessful, the connection is made in HTTP. Specify a protocol to use only that protocols without any fallback to another protocol.

RPC is supported in 7-Mode Data ONTAP version 8.0 and 8.1 storage systems only.

-Port

Specifies the port you want to connect to the storage controller. If you do not set this value, the default is 80 for HTTP and 443 for HTTPS. This parameter applies only to HTTP and HTTPS protocols.

Result

After you have configured your default storage system connection settings, you can specify -UseDefaultSetting to connect to your storage system without having to enter all your storage system connection information.

Using default settings to access the storage system

```
Set-StorageConnectionSetting
     -UseDefaultSetting
     -StorageSystem "storage_system_name"
```

Support for mixed LIFs in SMB 3 environments

SMB3 share enumeration supports mixed LIFs (CIFS and management).

When configuring the mixed LIFs, you need to consider the following scenarios:

- The CIFS server and Vserver names can be the same or different. If the names are different, you need to add the Vserver name to the DNS record for the Vserver IP address. CIFS server mapping automatically goes to the DNS.

- If you have one dedicated LIF for management and one dedicated LIF for CIFS, you need to add the management LIF name to the DNS record for the management LIF IP address for SnapDrive to work.

Removing storage system connection settings

Use Remove-SdStorageConnectionSetting to delete user credentials, protocol, and port connection settings from your storage system.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
Remove-SdStorageConnectionSetting
-StorageSystem "storage_system_name"
```

2. Optionally, you can use either -All or -DefaultSetting to indicate that you want to remove all the storage system connection settings or just the default settings.

Removing all connection settings from a storage system

This example syntax removes all the connection settings from the configuration repository, including the default connection settings.

```
Remove-SdStorageConnectionSetting
-All
-PassThru

Name        : vmStorageServer
Port        : 80
Protocol    : Http

Name        : vmStorageServer
```

```
Port       : 443
Protocol   : Https
```

Provisioning volumes and shares

You can use SnapDrive PowerShell cmdlets to provision new volumes and SMB shares for your applications. You can use provisioning templates from the Templates to automate much of the provisioning process. The templates are created with best provisioning practices for your application.

Understanding your provisioning options

There are three sample provisioning templates, available in the installation folder, that you can use for SMB provisioning. The provisioning templates have volume or share creation settings based on best practices built into them. In addition, you can also create new templates from and override settings in the existing provisioning templates.

Sample provisioning template

You can review the sample SnapManager for Hyper-V provisioning template to understand the provisioning settings.

```xml
<?xml version="1.0"?>
<ProvisioningTemplate xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <TemplateName>HyperVProvisioningTemplate</TemplateName>
  <Description>for HyperV provisioning</Description>
  <CreationTime>2012-06-18T12:12:53.1726005-07:00</CreationTime>
  <ModificationTime xsi:nil="true" />
  <Settings>
    <ProvisioningSettings xsi:type="CIFSShareProvisioningSettings">
      <SettingsName>cifs settings</SettingsName>
      <TargetType>share</TargetType>
      <CIFSShareSettings>
        <Name>SampleHyperVShare</Name>
        <Path>/SampleJunctionPath</Path>
        <ShareProperties>
          <string>browsable,continuously-available</string>
        </ShareProperties>
        <SymlinkProperties>
          <string>enable</string>
        </SymlinkProperties>
        <FileUmask>1</FileUmask>
        <DirUmask>1</DirUmask>
        <Comment>Hyper-V SMB share</Comment>
        <AttributeCacheTtl>1</AttributeCacheTtl>
        <CIFSServer>SampleCIFSServer</CIFSServer>
      </CIFSShareSettings>
    </ProvisioningSettings>
    <ProvisioningSettings xsi:type="VolumeProvisioningSettings">
      <SettingsName>volume settings</SettingsName>
      <TargetType>volume</TargetType>
      <VolumeSettings>
        <Size>10GB</Size>
        <Name>SampleVolume</Name>
        <Aggregate>SampleAggregate</Aggregate>
        <JunctionPath>/SampleJunctionPath</JunctionPath>
        <StorageSystem>SampleStorageSystem</StorageSystem>
        <GroupId xsi:nil="true" />
        <IndexDirectoryFormat xsi:nil="true" />
        <JunctionActive xsi:nil="true" />
        <MaxDirectorySize xsi:nil="true" />
        <NvFailEnabled xsi:nil="true" />
        <UserId xsi:nil="true" />
        <VserverRoot xsi:nil="true" />
        <SnapshotCloneDependency xsi:nil="true" />
```

```
              <EnableSnapdiff xsi:nil="true" />
              <SpaceGuarantee>volume</SpaceGuarantee>
              <SnapReserve>5</SnapReserve>
              <FractionalReserve>100</FractionalReserve>
              <SpaceMgmtTryFirst>snap_delete</SpaceMgmtTryFirst>
              <SpaceNearlyFullThresholdPercent xsi:nil="true" />
              <SpaceFullThresholdPercent xsi:nil="true" />
              <Files xsi:nil="true" />
              <FilesysSizeFixed xsi:nil="true" />
              <AutosizeIncrementPercent xsi:nil="true" />
              <AutosizeGrowThresholdPercent xsi:nil="true" />
              <AutosizeShrinkThresholdPercent xsi:nil="true" />
              <AutoDeleteEnabled>true</AutoDeleteEnabled>
              <TargetFreeSpace xsi:nil="true" />
         </VolumeSettings>
       </ProvisioningSettings>
   </Settings>
</ProvisioningTemplate>
```

Provisioning an SMB share

You can use `New-SdSMBShare` to provision a new SMB share in clustered Data ONTAP 8.2
environments. Provisioning templates are available, and contain the best practices for provisioning a
share for your application.

Before you begin

- You are running SnapDrive in a clustered Data ONTAP 8.2 environment or later.

- If you want to provision an SMB share from a template, ensure that you have selected the
  appropriate template from the `Templates` folder in your installation directory.

About this task

You can use the available provisioning templates available in the `Templates` folder in your
installation directory. You can use individual parameters to override individual provisioning template
values. Alternately, you can manually provision a new share with the `New-SdSMBShare` parameters.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
New-SdSMBShare
-Path "path_name"
-Name "new_share_name>
-CIFSServer "CIFS_server_name"
-TemplateName "template_path"
```

Parameters specified have the following values:

-Path

    Designates the file system path that is shared through your SMB share. This is a
    required parameter.

-Name

    Specifies the name of the SMB share you want to provision. The SMB share name
    must be a UTF-8 string. This is a required parameter.

    You cannot use control characters from 0x00 through 0x1F, 0x22 (double quotes),
    and the following special characters:

    \ / [ ] : | < > + = ; , ?

-CIFSServer

> Specifies the SMB server you want to use for provisioning the share. This is a required parameter.

-TemplateName

> Specifies the provisioning template name. You should also include the path to the template, if the template resides in a folder other than the `Templates` folder.

2. Optionally, you can use additional `New-SdSMBShare` parameters to customize your new volume.

   For full `New-SdSMBShare` syntax, see *SnapDrive for Windows PowerShell Cmdlet Reference Guide*.

Sample New-SdSMBShare output

```
Acl               : {Everyone / Full Control}
AttributeCacheTtl : 1
CifsServer        : HyperVFileServer
VServer           : HyperVirtualStorageServer
Comment           : Hyper-V SMB share
DirUmask          : 1
FileUmask         : 1
Path              : /
Volume            : HyperVVolume
ShareName         : HyperVShare
ShareProperties   : {browsable, continuously_available}
SymlinkProperties : {enable}
UNCPathType       : SMBShare
IsMountedToDrive  : False
MountedDrive      :
ResourceType      : SDSMBShare
ResourceName      : \\HyperVFileServer\HyperVShare
Ranges            :
```

Provisioning a volume

You can use `New-SdVolume` to provision a new volume in clustered Data ONTAP 8.2 environments or later. Provisioning templates are available, and contain the best practices for provisioning a share for your application.

Before you begin

- You are running SnapDrive in a clustered Data ONTAP 8.2 environment or later.

- You have selected the appropriate template from the `Templates` folder in your installation directory.

About this task

You can use the available provisioning templates available in the `Templates` folder in your installation directory. You can use individual parameters to override individual provisioning template values. Alternately, you can manually provision a new share with the `New-SdVolume` parameters.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
New-SdVolume
-Name "vol_name"
```

```
-Aggregate "aggregate_name"
-JunctionPath "vol_junction_path"
-TemplateName "template_path"
-Size "vol_size"
-StorageSystem "storage_system_name"
```

Parameters specified have the following values:

-Name

Indicates the name of the new volume. This is a required parameter.

-Aggregate

Specifies the name of the containing aggregate. This is a required parameter.

-JunctionPath

Specifies the junction path at which this volume is to be mounted. This is a required parameter.

-TemplateName

Indicates the name of the provisioning template. You should qualify path the to the template if the template resides in a folder other than SnapDrive `Templates` folder.

-Size

Designates the size of the new volume. This is a required parameter.

-StorageSystem

Specifies the virtual storage server for provisioning the SMB share. The virtual storage server should already have an SMB server configured. This parameter does not have to be specified if the SMB server is already qualified.

2. Optionally, you can use additional `New-SdVolume` parameters to customize your new volume.

For full `New-SdVolume` syntax, see *SnapDrive for Windows PowerShell Cmdlet Reference Guide*.

Sample `New-SdVolume` output

```
Name               : sqldbvolume
Vserver            : sqlvirtualstorageserver
FullPath           : sqlvirtualstorageserver:/vol/sqldbvolume
JunctionPath       : /sqldbvolume
JunctionParentName :
SizeTotal          :
SizeUsed           :
SnapMirrorSource   :
SnapMirrorDest     :
SnapVaultPrimary   :
SnapVaultSecondary :
FlexCloneEnabled   :
IsFlexClone        :
ResourceType       : SDStorageVolume
ResourceName       : sqlvirtualstorageserver:/vol/sqldbvolume
Ranges             :
```

Creating and managing Snapshot backups

You can use SnapDrive PowerShell cmdlets to create, delete, rename, and manage Snapshot backup copies. PowerShell cmdlets support Snapshot backup management in SMB 3.0 environments.

Creating new Snapshot backup copies

You can use `New-SdSnapshot` to create Snapshot backup copies of specified Windows disks or SMB shares.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
New-SdSnapshot
-Path "SnapshotPath"
-Snapshot "NewSnapshotName"
```

Parameters specified have the following values:

-Path

> Provides the path to the Windows disk or SMB shares of which you want to make Snapshot backup copies. You cannot mix a logical disk or mount point with SMB shares in the same input path.

-Snapshot

> Designates the name of the new Snapshot copy. You cannot use special characters in a Snapshot backup copy name. If you do not specify a Snapshot backup copy name, a GUID appended with a timestamp is generated and used as the Snapshot backup copy name.

2. (Optional) You can use `-NoCleanUpOnError` to indicate that you want to delete the new Snapshot copy, if you encounter an error backing up your Windows disk or SMB share.

3. (Optional) You can use `-UpdateMirror` to initiate a vault or mirror update after your new Snapshot copy operation finishes.

Updating SnapMirror relationships

You can use `Invoke-SdSnapMirrorUpdate` to update the SnapMirror relationships for Windows disks, SMB shares, or clustered Data ONTAP storage system volumes.

About this task

For the specified resources, you can determine the underlying storage layout and issue SnapMirror updates on the corresponding storage volumes, provided that the SnapMirror relationship is already created and initialized. SnapMirror updates and returns are executed immediately.

Load-sharing mirrors are not supported in clustered Data ONTAP environments.

Step

1. From the PowerShell command prompt, enter the following syntax:

```
Invoke-SdSnapMirrorUpdate
-Path "resource_path"
```

Sample Invoke-SdSnapMirrorUpdate output

```
HostResource:  \\fileserver\sqlshare
Source:   [cluster_prod:]//sqlvserver1/vol1
Destination:  [cluster_dr:]//sqlvserver2/vol1
State:  Transferring
TransferRate: 1024
```

Updating SnapVault relationships

After creating a new Snapshot backup copy, you can update your SnapVault relationships using `Invoke-SdSnapMirrorUpdate`.

About this task

For the specified resources, you can determine the underlying storage layout and issue SnapVault updates on the corresponding storage volumes, if the SnapVault relationship is already created and initialized. SnapVault updates and returns are executed immediately.

Step

1. From the PowerShell command prompt, enter the following syntax:

```
Invoke-SdSnapMirrorUpdate
-Path "resource_path"
-Snapshot "snapshot_name"
```

Parameters specified have the following values:

-Path

> Provides a volume, logical disk, and SMB share for which you want SnapVault updates.
>
> You cannot mix a logical disk or mount point with SMB shares in the same input path.
>
> When you update a SnapMirror relationship, you can specify a share, storage system volume, or Windows disk. When you update a SnapVault relationship, you can specify a share or storage system volume.

-Snapshot

> Specifies the Snapshot copy you want to transfer. This cmdlet is processed only for SnapVault relationships; in the case of SnapMirror relationships, this parameter is ignored if specified.

Updating your SnapVault relationship for a single share

In this example syntax, you determine the underlying storage footprint for `\\fileserver`
`\sqlshare` and initiate a SnapVault update on the underlying volume:

```
Invoke-SdSnapMirrorUpdate
-Path "\\fileserver\sqlshare"
-Snapshot "weeklybackup"


HostResource:  \\fileserver\sqlshare
Source:   [cluster_prod:]//sqlvserver1/vol1
Destination:  [cluster_dr:]//sqlvserver2/vol1
State:  Transferring
TransferRate: 1024
```

Renaming Snapshot backup copies

You can use `Rename-SdSnapshot` to rename Snapshot backup copies created on a Windows disk or
SMB share.

About this task

You can rename a single Snapshot backup copy, a Snapshot backup copy that resides on multiple
SMB shares, a Snapshot backup copy on a specified storage system and volume, or a single Snapshot
backup copy on a disk.

Step

1. From the PowerShell command prompt, enter the following syntax:

   Rename-SdSnapshot -Path *PathName* -Snapshot *OldSnapshotName* -NewName
   MyNewSnap

   ```
   Rename-SdSnapshot
   -Path "path_name"
   -Snapshot "old_snapshot_name"
   -NewName "new_snapshot_name"
   ```

   Parameters specified have the following values:

   -Path

   > Specifies a list of SMB shares or Windows volumes. You cannot mix a logical disk
   > or mount point with SMB shares in the same input path.

   -Snapshot

   > Specifies the name of the Snapshot backup copy you want to rename.

   -NewName

   > Indicates the new name of the Snapshot copy.

Renaming a single Snapshot backup copy

This example renames a Snapshot backup copy from `MySnap` to `MyNewSnap`:

```
Rename-SdSnapshot
-Path \\SQLCIFSServer\SalesDBShare
-Snapshot MySnap
-NewName MyNewSnap
```

```
SnapshotName        AccessPoint                   StorageSystemName
Volume
------------        -----------                   -----------------
------
MyNewSnap           \\SQLCIFSServer\SalesDBShare  MyStorageSystem1
vol1
```

Deleting Snapshot copies for SMB shares

You can use `Remove-SdSnapshot` to delete Snapshot copies created on Windows disks, SMB shares, or storage system volumes.

Step

1. From the PowerShell command prompt, enter the following syntax:

Remove-SdSnapshot -Path *"SnapshotLocation"* -Snapshot *"SnapshotName"*

```
Remove-SdSnapshot
-Path "snapshot_location"
-Snapshot "snapshot_name"
```

Parameters specified have the following values:

-Snapshot

> Lists the Snapshot backup copies you want to delete.

-Path

> Lists the SMB shares, volumes, or logical disks for the Snapshot copies you want to delete. You cannot mix a logical disk or mount point with SMB shares in the same input path.

Removing specified Snapshot backup copies on multiple SMB shares

This example removes Snapshot copies `snapshot_1` and `snapshot_2` created on SMB shares `\\172.17.12.101\share1` and `\\172.17.12.101\share2`.

```
Remove-SdSnapshot
-Path "\\172.17.12.101\share1","\\172.17.12.101\share2"
-Snapshot "snapshot_1","snapshot_2"
```

Managing mount operations

You can use PowerShell cmdlets to perform mount and unmount operations for Snapshot backup verification.

> **Note:** SnapManager verification of backups with load-sharing mirrors does not work in clustered Data ONTAP environments.

Mounting shares from a primary Snapshot backup

You can use `Mount-SdSnapshot` when mounting a Windows disk or SMB shares from the specified Snapshot copy as a different set of shares. You can use this mounting operation to perform backup operation verification.

Before you begin

- You are working in an SMB 3.0 environment.

- The aggregate of the volume that is the source of the FlexClone operation is assigned to the virtual storage server aggregates list.

About this task

You can mount the database and log shares from the Snapshot copy and perform your verification operations. The mounted share names are automatically appended with a unique identifier. The ACLs on the mounted share are same as the original share.

Steps

1. To mount shares from a primary Snapshot copy, from the PowerShell command prompt, enter the following syntax:

   ```
   Mount-SdSnapshot
   -Path "snapshot_location"
   -Snapshot "snapshot_name"
   ```

   Parameters specified have the following values:
   -Path

   Specifies the location of the Windows disk or SMB shares you want to mount.

   -Snapshot

   Specifies the name of the Snapshot copy you want to use for mounting the SMB shares or Windows volumes. You must use a Snapshot copy that is valid for all the shares in your list.

2. Optionally, if you are working on a system with name length restrictions, you can specify `-PrefixForVolumeClone` to set a short name for the share on which you are mounting your Snapshot backup.

3. Optionally, you can choose to specify a limit to the clone depth by using the `-ValidateCloneDepth` parameter. The default clone depth is two.

Sample `Mount-SdSnapshot` output when you are mounting a primary Snapshot backup

```
OriginalResource                     MountedResource
==============                       ==============
\\SQLFileserver\DBShare        \\SQLFileserver\DBShare-
A470FF3A-5107-4B6A-B0C1-FB3D8744F14C
\\SQLFileserver\LogShare       \\SQLFileserver\DBShare-
E6980DF6-3E64-45BD-965A-7F7A9B02156A
```

Mounting shares from a secondary Snapshot backup

You can use `Mount-SdSnapshot` mounting a Windows disk or SMB shares from the secondary Snapshot copy as a different set of shares. You can use this mounting operation to perform backup operation verification.

Before you begin

- You are working in an SMB 3.0 environment.

- The aggregate of the volume that is the source of the FlexClone operation is assigned to the virtual storage server aggregates list.

About this task

You can mount the database and log shares from the Snapshot copy and perform your verification operations. The mounted share names are automatically appended with a unique identifier. The ACLs on the mounted share are same as the original share.

To mount the shares from a secondary Snapshot copy, you must specify the storage system and volume.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
Mount-SdSnapshot
-Path "share_location"
-Snapshot "snapshot_name"
-StorageSystem "mirror_vserver"
-VolumeName "dbmirror_volume"
```

Parameters specified have the following values:

-Path

> Specifies the location of the Windows disk or SMB shares you want to mount.

-Snapshot

> Specifies the name of the Snapshot copy you want to use for mounting the SMB shares or Windows volumes. You must use a Snapshot copy that is valid for all the shares in your list.

-StorageSystem

> Indicates the name of the storage system in which the Snapshot copy you want to mount is located.

-VolumeName

Indicates the name of the storage system volume in which the Snapshot copy you
want to mount is located.

2. Optionally, if you are working on a system with name length restrictions, you can specify `-PrefixForVolumeClone` to set a short name for the share on which you are mounting your
Snapshot backup.

**Sample Mount-SdSnapshot output after mounting from a secondary Snapshot
backup**

```
OriginalResource      MountedResource
==============        ===============
\\SQLFileserver\DBShare        \\DRSQLFileServer\DBShare-
A470FF3A-5107-4B6A-B0C1-FB3D8744F14C
\\SQLFileserver\LogShare       \\DRSQLFileServer\DBShare-
E6980DF6-3E64-45BD-965A-7F7A9B02156A
```

Unmounting shares that have Snapshot backup copies

You can use `Dismount-SdSnapshot` to unmount a volume, a logical disk, or a list of SMB shares
that is mounted from the specified Snapshot backup copy as a different set of shares.

About this task

You can use this cmdlet during backup verification operations. First, you can use `Mount-SdSnapshot` to mount database and log shares from the Snapshot backup copy. Next, you perform
verification operations. When you have completed your backup verification, you can use this cmdlet
to unmount your shares.

Steps

1. To unmount shares, from the PowerShell command prompt, enter the following syntax:

```
Dismount-SdSnapshot
-Path "share_name"
```

The parameter specified has the following value:

-Path

Specifies a logical disk, mount point, or a comma-separated list of SMB shares you
want to dismount. You cannot mix a logical disk or mount point with SMB shares
in the same input path.

2. Optionally, you can specify that you want to delete any offline parent volume clones using `-DeleteParentClones`.

Unmounting multiple shares that were mounted from a Snapshot copy

You can use this example syntax to dismount your Snapshot copies mounted on the specified
shares:

```
Dismount-SdSnapshot
-Path "\\SQLFileserver
```

```
\DBShareSdClone607fb343_2b3c_41f6_8912_8762a1800290","\
\SQLFileserver\DBShareSdClone6bcf3df5_3384_4ba4_9b33_25bb9636a486"
```

Managing restore operations

You can use PowerShell cmdlets to restore files and directories from Snapshot copies.

Considerations before performing restore operations

You should be aware of some requirements and limitations when you are restoring files and directories.

- Domain of CIFS server has to be the same as the domain of your local host, or there must be a trust relationship between the two domains.

- When you are restoring from a Snapshot copy on a share, you can restore everything from that Snapshot copy.

- When you are restoring from a Snapshot copy in a SAN environment, you can restore disks only.

- In SAN environments, you can perform one restore operation at a time.

- When you are restoring from the secondary Snapshot copy, you must have a CIFS server on the secondary server.

- When you are restoring multiple files or directories under the same SMB share from your SnapVault secondary, you cannot specify the CIFS server name in the path by referring to IP/Name/Fully qualified domain name (FQDN.) You must specify the CIFS server name using only IP or Name or FQDN.

- You cannot perform file-level restore operations using `Restore-SdSnapshot` in SAN environments.

Restoring files and directories from a primary Snapshot copy

You can use `Restore-SdSnapshot` to restore files and directories from a primary Snapshot copy.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
Restore-SdSnapshot
-Path "file_location"
-Snapshot "snapshot_name"
```

Parameters specified have the following values:

-Path

> Specifies the a list of files, directories, and disks for the Snapshot backup you want to restore. You cannot mix a logical disk or mount point with SMB shares in the same input path.

-Snapshot

> Specifies the Snapshot copy name you want to restored.

2. You can also use the following parameters to customize your restore operation:

-ForceRestore

>Indicates that you want to forcibly restore your Snapshot copy.

-Host

>Specifies the name or IP address of the host on which you execute the operation.
>The default is your local machine.

Restore multiple files and directories under a SMB share from a Snapshot copy

This example restores a file named `file0.txt` under the root of the SMB share, a named `file1.txt` under directory `dir1`, directory named `dir2` and `dir3` and their contents, from the Snapshot copy named `snapshot_1`.

```
Restore-SdSnapshot
-Path "\\172.17.12.101\share\file0.txt","\\172.17.12.101\share
\dir1\file1.txt","\\172.17.12.101\share\dir2\*","\
\172.17.12.101\share\dir3\*" -Snapshot snapshot_1
```

Restoring files and directories from a secondary Snapshot copy

You can use `Restore-SdSnapshot` to restore files and directories from a secondary Snapshot copy.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
Restore-SdSnapshot
-Path "file_location"
-Snapshot "snapshot_name"
-StorageSystem "storage_system"
-VolumeName "volume_name"
```

Parameters specified have the following values:

-Path

>Specifies the location of the files, directories, and disks for the Snapshot copies you want to restore. You cannot mix a logical disk or mount point with SMB shares in the same input path.

-Snapshot

>Specifies the name of the Snapshot copy you want to restore.

-StorageSystem

>Specifies the name of the storage system in which the Snapshot copy specified for the restore operation is located.

-VolumeName

>Specifies the name of the storage system volume in which the Snapshot copy specified for the restore operation is located.

2. To indicate that you want to force restore fires or directories from a secondary Snapshot backup copy, -use `-ForceRestore`.

**Restoring a file on a SMB share from a Snapshot copy on a secondary
SnapVault storage system**

This example restores a file named file1.txt under directory dir1 from the Snapshot copy
named snapshot_1 on the secondary SnapVault storage system:

```
Restore-SdSnapshot
-Path "\\172.17.12.101\share\dir1\file1.txt"
-Snapshot "snapshot_1"
-StorageSystem 172.17.165.29
-VolumeName vaultdest_vol
```

Managing clone operations

You can use PowerShell cmdlets to perform cloning operations. You can use clones of a production database to test changes in a safe environment and to run report queries so as not to impact production database performance.

Preparing for a split clone operation

Before you perform a split clone operation, you should ensure that you have enough space to complete the operation successfully.

Step

1. To estimate the space required for your split clone operation, enter the following syntax from the PowerShell command prompt:

   Example

   ```
   get-sdvolumeclonesplitestimate
   -path \\192.0.2.255\clone1
   ```

   Specified parameters have the following value:
   -path
   > Specifies the path or mount point to the clone volume you want to split.

Performing a split clone operation

You can use PowerShell cmdlets to split a clone. Clone splitting operations enable you to split your clone volume from the parent volume and turn it into an independent FlexVol volume.

Step

1. To split a clone, enter the following syntax from the PowerShell command prompt:

   Example

   ```
   start-sdvolumeclonesplit
   -path \\192.0.2.255\clone1
   ```

   The specified parameters have the following values:
   -path
   > Specifies the path or mount point to the clone volume you want to split.

Stopping a split clone operation

You can user PowerShell cmdlets to stop a clone splitting operation. Stopping a clone splitting operation is useful if you discover you do not have enough space to complete the clone split.

Step

1. To stop a clone splitting operation, enter the following syntax from the PowerShell command prompt:

Example

```
stop-sdvolumeclonesplit
-path \192.0.2.255\clone1
```

The specified parameters have the following values:

-path

>   Specifies the path or mount point to the clone volume you want to stop splitting.

Performing discovery operations

You can use several PowerShell cmdlets to perform discovery operations to get information about your storage system, Snapshot backup copies, available VMs, SnapMirror relationship status, and SnapDrive.

The following cmdlets support discovery operations:

- `Get-SdInfo`

- `Get-SdSMBShadowCopyEMSMessage`

- `Get-SdSnapMirror`

- `Get-SdSnapMirrorPolicyRule`

- `Get-SdSnapshot`

- `Get-SdStorage`

- `Get-SdStorageConnectionSetting`

- `Get-SdVM`

Getting information about VMs

Use `Get-SdVM` to retrieve information about a single VM and its attributes, to retrieve information about the Snapshot backup copies and virtual disks, or to enumerate available VMs.

Retrieving attributes for a VM

To get information about a specific VM, from the PowerShell command prompt, enter the following syntax:

```
Get-SdVM
-Name "vm_name"
```

Retrieving all virtual disks on a VM

To enumerate virtual disks on a VM, from the PowerShell command prompt, enter the following syntax:

```
 (Get-SdVM "vm_name").VirtualDisks
```

Retrieving all virtual disks and Snapshot backups on a VM

To enumerate virtual disks and Snapshot backups on a VM, from the PowerShell command prompt, enter the following syntax:

```
 (Get-SdVm -GetHyperVSnapshot "vm_name").VirtualDisks
```

Enumerating available Hyper-V VMs

To list all available Hyper-V VMs, from the PowerShell command prompt, enter the following syntax:

```
Get-SdVM
```

To list all available Hyper-V VMs on a specific Hyper-V server, from the PowerShell command prompt, enter the following syntax:

```
Get-SdVM -ComputerName "Hyper-V_server_name"
```

Getting information about SnapDrive

Use `Get-SdInfo` to retrieve information about the SnapDrive instance you are running.

To get detailed information about the SnapDrive instance you are running, from the PowerShell command prompt, enter the following syntax:

```
Get-SdInfo -Details
```

Sample Get-SdInfo output

```
Version: 7.0.0.5702

Snapshot Service
InterfaceName:              SDSnapshot_v1_1
Version:                                    7.0.0.5702
URLForInterface:     net.tcp://localhost:808/SnapDrive/Snapshot
URLForWSDL:

Discovery Service
InterfaceName:              SDDiscovery_v10
Version:                                    7.0.0.5702
URLForInterface:     net.tcp://localhost:808/SnapDrive/Discovery
URLForWSDL:

Virtualization Service
InterfaceName:
SnapDrive.Nsf.Interfaces.Virtualization.IVirtualMachineManagement
Version:                                    7.0.0.5702
URLForInterface:        net.tcp://localhost:808/SnapDrive/
Virtualization
URLForWSDL:

Configuration Service
InterfaceName:
SnapDrive.Nsf.Interfaces.SDConfiguraiton
Version:                                    7.0.0.5702
URLForInterface:        net.tcp://localhost:808/SnapDrive/
Configuration
URLForWSDL:

StorageResolution Service
InterfaceName:
SnapDrive.Nsf.Interfaces.SDStorageResolution
Version:                                    7.0.0.5702
URLForInterface:        net.tcp://localhost:808/SnapDrive/
StorageResolution
URLForWSDL:

CIFS ShadowCopy Service
InterfaceName:
```

```
SnapDrive.Nsf.Interfaces.SDCIFSShadowCopyManagement
Version:                                       7.0.0.5702
URLForInterface:        net.tcp://localhost:808/SnapDrive/
CIFSShadowCopyManagement
URLForWSDL:

SnapRemote Service
InterfaceName:                 SDSnapRemote_v1_3
Version:                                       7.0.0.5702
URLForInterface:        net.tcp://localhost:808/SnapDrive/
SnapshotRemote
URLForWSDL:

Administration Service
InterfaceName:              SDAdmin_v10
Version:                                       7.0.0.5702
URLForInterface:      net.tcp://localhost:808/SnapDrive/SDAdminNext
URLForWSDL:

InterfaceName:              SDAdmin
Version:                                       7.0.0.5702
URLForInterface:      net.tcp://localhost:808/SnapDrive/SDAdminInfo
URLForWSDL:

Provisioning Service
InterfaceName:
SnapDrive.Nsf.Interfaces.SDProvisioningManagement
Version:                                       7.0.0.5702
URLForInterface:      net.tcp://localhost:808/SnapDrive/
ProvisioningManagement
URLForWSDL:
```

Getting SnapMirror relationship status information

In clustered Data ONTAP 8.2 environments, use `Get-SdSnapMirror` to retrieve information about the SnapMirror relationship status for the volumes you specify.

From the PowerShell command prompt, enter the following syntax:

```
Get-SdSnapMirror
-StorageSystem "storage_system_name"
-Volume "volume_name"
```

Parameters specified have the following values:

-StorageSystem

Specifies the primary storage system name or IP address containing the volumes for which you want to retrieve the SnapMirror relationship status.

-Volume

Indicates a comma-separated list of storage system volumes for which you want to retrieve the SnapMirror relationship status. If you do not specify any volumes, you retrieve SnapMirror relationships for all registered virtual storage servers.

Example `Get-SdSnapMirror` output

```
Get-SdSnapMirror
-StorageSystem "storage_system_name"
-Volume "volume_name"


Source:     //prodvserver/voldb
Destination:  //prodvserver/voldr
```

```
Source virtual storage server: prodvserver
Source Volume : voldb
Destination virtual storage server: drvserver
Destination Volume : voldr
State:  Transferring
TransferRate: 1024
```

Getting information about Snapshot backup copies

You can use `Get-SdSnapshot` to retrieve a variety of information about Snapshot backup copies. You retrieve limited information when you run `Get-SdSnapshot` on a LUN in a 7-Mode environment.

Getting Snapshot backup copy information about a list of SMB shares

From the PowerShell command prompt, enter the following syntax to get information about Snapshot backup copies on a list of SMB shares:

```
Get-SdSnapshot
-Path "SMBShare1_path","SMBShare2_path
```

Getting information about a specific Snapshot backup copy

From the PowerShell command prompt, enter the following syntax to get information about a specific Snapshot backup copy:

```
Get-SdSnapshot
-Path "snapshot_location"
-Snapshot "snapshot_name"
```

Getting the latest Snapshot backup copy for an SMB share

From the PowerShell command prompt, enter the following syntax to get the latest Snapshot backup copy for an SMB share:

```
Get-SdSnapshot
-Path "SMBShare_path" | sort-object AccessTimeDT -ascending | select-
object -last 1
```

Getting secondary Snapshot backup copies for a list of SMB shares

From the PowerShell command prompt, enter the following syntax to get secondary Snapshot backup copies for a list of SMB shares:

```
Get-SdSnapshot
-Path "SMBShare1_path","SMBShare2_path"
-GetSecondarySnapshots
```

Getting information about a specific version of a Snapshot backup copy

From the PowerShell command prompt, enter the following syntax to get information about a specific version of a Snapshot backup copy:

```
Get-SdSnapshot
-Path "SMBShare_path"
-SnapshotVersionUuid "UUid"
```

Getting information about a Snapshot backup copy on a LUN

From the PowerShell command prompt, enter the following syntax to get information about a Snapshot backup copy on a LUN:

```
Get-SdSnapshot
-Path "drive_letter"
```

Getting information about your storage system

Use `Get-SdStorage` to retrieve an information about your storage system, storage system resources, SMB shares on your storage system, and storage system volume mirror information.

Retrieving the storage system path for SMB shares

To retrieve the storage system path a list of SMB shares, enter the following syntax from the PowerShell command prompt:

```
Get-SdStorage
-Path "SMBShare1_path","SMBShare2_path"
```

Getting detailed information about host and storage system resources

To get detailed information about host and storage system resources, enter the following syntax from the PowerShell command prompt:

```
Get-SdStorage
-Path "SMBShare_path" | %{$_.HostResource,$_.StorageSystemResource}
```

Enumerating SMB shares on specified storage systems

To enumerate SMB shares on specified storage systems, enter the following syntax from the PowerShell command prompt:

```
Get-SdStorage
-StorageSystem "storage_system1,"storage_system2"
```

Note: When you are working in 7-Mode environments, you can specify the storage system name only by using `-StorageSystem`. Do not use the IP address.

Getting volume mirror information for a specified storage system

To get volume mirror information for a specified storage system, enter the following syntax from the PowerShell command prompt:

```
(Get-SdStorage
-StorageSystem "storage_system"
-GetMirrorInfo).StorageSystemResource.Volume
```

Getting information about your storage system connection settings

Use `Get-SdStorageConnectionSetting` to retrieve storage system transport protocol and credential settings. These settings include the storage system server name (virtual storage server name or IP,) port, transport type, user login, and password.

Getting connection setting information about a specific storage system

To get connection setting information about a specific storage system, enter the following sytnax from the PowerShell command prompt:

```
Get-SdStorageConnectionSetting
-Name "storage_system_name"
```

Getting connection setting information for all available storage systems

To get connection setting information for all available storage systems, enter the following syntax from the PowerShell command prompt:

```
Get-SdStorageConnectionSetting
```

Getting default storage system connection settings

To get default storage system connection settings, enter the following syntax from the PowerShell command prompt:

```
Get-SdStorageConnectionSetting
-DefaultSetting
```

Getting information about clone split operations

You can use PowerShell cmdlets to get information about active clone splitting operations. This information helps you to understand what clone split operations you have running and their status.

Step

1. To get information about active clone splitting operations, enter the following syntax from the PowerShell command prompt:

   Example

   ```
   get-sdvolumeclonesplit
   -path \\192.0.2.255\clone1
   ```

Specified parameters have the following value:

-path

>Specifies the path or mount point to the clone volume whose splitting operation you want to know more about.

Troubleshooting SnapDrive for Windows in an SMB 3.0 environment

You have some troubleshooting options available to you when you are running SnapDrive for Windows in an SMB 3.0 environment. `Debug-SdHost` is available to help you debug your host system setup. `Get-SdSMBShadowCopyEmsMessage` enables you to view SMB shadow copy EMS messages from the event log, so that you can find backup failure details.

Debugging your host system

You can use `Debug-SdHost` to troubleshoot your SnapDrive host system setup. Run this cmdlet to check your system for compliance with various rules and best practices.

About this task

You can use `Debug-SdHost` to check your host system setup for compliance with these rules and best practices:

Storage connections rule

> The storage connection rule verifies that the storage connection settings on your host system are valid and active.

Export-policy rule

> The export-policy rule verifies that the client trying to access the data objects is doing so using the SMB protocol.

SMB share ACL setup rule

> This rule verifies that the share ACL has host permissions, and if your host is a part of a cluster, this rule verifies that the share has cluster permissions.

SMB share continuously available property rule

> This rule verifies that your SMB share contains the continuously available property. The continuously available property is mandatory for installing a VM.

If you are running `Debug-SdHost` in a clustered Data ONTAP environment, run the cmdlet on each node of your cluster.

Steps

1. To specify the host system you want to debug, enter the following syntax from the PowerShell command prompt:

```
Debug-SdHost
-Host
```

2. If you want to troubleshoot a specific area only, use `-RuleCategory`.

    You can select from the following available categories:

    - General

    - SMB

    - Hyper_V

Using Debug-SdHost to troubleshoot your host system

Running `Debug-SdHost` returns information that looks similar to this:

```
Debug-SdHost

Rule:     Storage Connections
Description: The storage connection rule verifies that the storage
connection settings on your host system are valid and active.
Category:         General
Source:           CLAB-A13-10
Severity:         Info
Problem:          All your storage connection settings are valid and
active.
Impact:         N/A
Resolution:       N/A
Message:          Success.


Rule:             Export-Policy Rule
Description:      The export-policy rule verifies that the client
trying to access the data objects through is doing so using the SMB
protocol.
Category:         SMB
Source:           CLAB-A13-10
Severity:         Error
Problem:          The virtual storage servers export-policy rule is
not using the SMB protocol.
Impact:         The SMB share access fails.
Resolution:         Make sure that your export policy rule includes
the SMB protocol.
Message:          Error: The virtual storage servers
sdw_jenkins_vserver export-policy rule is not using the SMB
protocol.


Rule:             SMB Share ACL Setup
Description:      This rule verifies that the share ACL has host
permissions, and if your host is a part of a cluster it verifies
that the share has cluster permissions.
Category:         Hyper_V
Source:           CLAB-A13-10
Severity:         Error
Problem:          Your shares do not have access control set for the
host or the cluster.
Impact:         You cannot access these shares from your host.
Resolution:         Add the host or the cluster to your share's ACL.
Message:          Error. The following shares do not have host or
clusters set in the ACLs: \\DATASERVER\admin$,\\DATASERVER\ipc$,\
\JENKINS-CIFS\ipc$,\\JENKINS-CIFS\admin$


Rule:             SMB Share "continuously-available" Property
Description:         This rule verifies that your SMB share
contains the continuously-available property. The continuously-
available property is mandatory for installing a Virtual Machine.
Category:         Hyper_V
Source:           CLAB-A13-10
Severity:         Error
Problem:          Some of the shares do not contain continuously-
available property.
Impact:         You cannot install a Virtual Machine on the share.
Resolution:         Set the share property to continuously-
available.
Message:          Error. The following shares do not have
continuously-available property set: \\DATASERVER1\admin$,\
\DATASERVER1\jenkinsvm,\\DATASERVER1\ipc$, \\DATASERVER1\dbshare,\
\DATASERVER1\logshare
```

Related information

[SnapDrive for Windows PowerShell Help: Debug-SdHost](#)

Retrieving shadow copy EMS messages from the event log

You can use `Get-SdSMBShadowCopyEMSMessage` to view shadow copy EMS messages from the
event log, so that you can view backup failure details.

About this task

- You can retrieve information for one SMB share at a time.

- You cannot mix a logical disk or mount point with SMB shares in the same SMB share path.

Steps

1. From the PowerShell command prompt, enter the following syntax:

```
Get-SdSMBShadowCopyEmsMessage
-Path
```

-Path

Specifies the SMB share path for shadow copy EMS messages. Enter one path only.
If you enter more than one path value, the search is performed only on the first
path. You cannot mix a logical disk or mount point with SMB shares in the same
input path.

2. If you want to search for a particular message ID, use `-SearchPatern`.

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