

Rapid Provisioning and Cloning **Command Reference Guide**

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About this guide

You can use your product more effectively when you understand this document's intended audience and the conventions that this document uses to present information.

This guide describes the rapid provisioning and cloning commandlet parameters.

Next topics

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Audience

This document is written with certain assumptions about your technical knowledge and experience.

This guide is for Microsoft System Center Operations Manager 2007 R2 and Windows Hyper-V server administrators and application owners.

Keyboard and formatting conventions

You can use your product more effectively when you understand how this document uses keyboard and formatting conventions to present information.

Keyboard conventions

Convention	What it means
The NOW site	Refers to the NetApp Support site at now.netapp.com/ .
<i>Enter, enter</i>	- Used to refer to the key that generates a carriage return; the key is named Return on some keyboards. - Used to mean pressing one or more keys on the keyboard and then pressing the Enter key, or clicking in a field in a graphical interface and then typing information into the field.
hyphen (-)	Used to separate individual keys. For example, Ctrl-D means holding down the Ctrl key while pressing the D key.

Convention	What it means
type	Used to mean pressing one or more keys on the keyboard.

Formatting conventions

Convention	What it means
<i>Italic font</i>	- Words or characters that require special attention. - Placeholders for information that you must supply. For example, if the guide says to enter the <code>arp -d <i>hostname</i></code> command, you enter the characters "arp -d" followed by the actual name of the host. - Book titles in cross-references.
Monospaced font	- Command names, option names, keywords, and daemon names. - Information displayed on the system console or other computer monitors. - Contents of files. - File, path, and directory names.
Bold monospaced font	Words or characters you type. What you type is always shown in lowercase letters, unless your program is case-sensitive and uppercase letters are necessary for it to work properly.

Special messages

This document might contain the following types of messages to alert you to conditions that you need to be aware of.

Note: A note contains important information that helps you install or operate the system efficiently.

Attention: An attention notice contains instructions that you must follow to avoid a system crash, loss of data, or damage to the equipment.

How to send your comments

You can help us to improve the quality of our documentation by sending us your feedback.

Your feedback is important in helping us to provide the most accurate and high-quality information. If you have suggestions for improving this document, send us your comments by e-mail to doccomments@netapp.com. To help us direct your comments to the correct division, include in the

subject line the name of your product and the applicable operating system. For example, *FAS6070—Data ONTAP 7.3*, or *Host Utilities—Solaris*, or *Operations Manager 3.8—Windows*.

Rapid provisioning and cloning commandlets

By using rapid provisioning and cloning commandlets with Microsoft System Center Virtual Machine Manager (SCVMM) applications, you can utilize your existing storage resources to perform faster and more space-efficient provisioning and cloning of Hyper-V virtual machines.

For more information on installing the rapid provisioning and cloning commandlets, see the ApplianceWatch PRO 2.1 Installation and Administration Guide.

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Related information

<http://now.netapp.com/NOW/>

Windows PowerShell execution policies and profiles

To be able to run commandlets automatically from the Windows PowerShell command line, you must first set the execution policies to the correct level, as well as create administrator profiles on your local host. If you do not set the policies correctly, you might not be able to run the provisioning and cloning commandlets securely or at all.

The following lists the possible values for Windows PowerShell execution policies:

- | | |
|---------------------|--|
| Restricted | Restricts any scripts to be run, downloaded, or installed. |
| AllSigned | Allows scripts to run that have been verified with security certificates. |
| RemoteSigned | Allows scripts to be run, downloaded, or installed. This policy is not secure and malicious code can easily exploit and damage any PowerShell .ps1 or VB script files. |

By default, the Windows PowerShell execution policies are set to **Restricted**. To run the provisioning and cloning commandlets securely, you should set the Windows PowerShell execution policy to **AllSigned**.

For more information on how to set Windows PowerShell execution policies, see the Microsoft TechNet site.

You need to import the SCCmdlets module into your local Windows PowerShell profile, if you want them to be available from any Windows PowerShell session. This allows you to use SCCmdlets module through PowerShell sessions from Microsoft applications, such as System Center Virtual Machine Manager and System Center Operations Manager. For more information on Windows profiles, see the *Windows PowerShell Owner's Manual* on the Microsoft TechNet site.

Related information

Microsoft System Center - <http://technet.microsoft.com>

Standard commandlet parameters

You can use standard parameters to control the amount of output you want to display.

For some commands, the following parameters control the amount of output to display. Commands are not case-sensitive.

verbose This optional parameter provides detailed output when displaying information.

quiet This optional parameter stops any output from displaying.

Note: Even with the quiet parameter specified, failed commands still display their failure message.

debug This optional parameter provides additional information to assist with troubleshooting and maintenance.

New-Storage

This command provisions a new LUN from a storage system to a specified host system or server.

CLI

```
New-Storage [ -Server Server_name ] [ -StoragePath Storage_path_name ] [ -
Size KB | MB | GB | TB ] [ -MountPoint LUN_mountpoint ] [ -InitiatorName
Initiator_name ]
```

Privilege level

Admin

Availability

Operational mode

Description

This command enables you to provision a new LUN from a storage system to a specified host system or host server. You can use either FC or iSCSI protocol to connect the LUN.

Parameters

-Server | **-s** *Server_name*

Specifies the name of the host server from which to provision storage. The default is the local machine. If you specify a remote system, that system must be in the same Windows domain as the local system. You must also have administrative access rights to that remote system.

-StoragePath | **-path** *Storage_path_name*

Specifies the full LUN path, including LUN name, volume name, and storage system name.

-Size | **-z** **KB** | **MB** | **GB** | **TB**

Specifies the LUN size to provision.

-MountPoint | **-mount** *LUN_mountpoint*

Specifies the LUN mountpoint. The default is the volume GUID. You can use a drive letter or a drive letter and directory as a mountpoint. If you use a drive letter and directory, the drive letter must already exist.

-InitiatorName | **-i** *Initiator_name*

Specifies the name of the initiator or initiators to which the LUN is mapped. If you do not specify an initiator, the first available iSCSI initiator with an established session is used. After that, the FC initiator name is used.

If you use FC, the initiator name is the WWPN. You must also zone the initiator port properly with the target port from the storage system.

If you use iSCSI, the initiator name is the IQN. You must establish at least one session between the initiator port from the host system to the target port on the storage system before mapping the LUN.

Example

The following command creates a 10 gigabyte LUN on *storagesystemA* using the path */vol/vol1/lun1*. It then mounts the disk on mountpoint *M* and uses the first available iSCSI session to connect *server1* to the LUN.

```
New-Storage -Server server1 -StoragePath storagesystemA:/vol/vol1/lun1  
-Size 10gb -Mountpoint M:\
```

Connect-Storage

This command connects an existing Data ONTAP LUN on a storage system to a specified host system or server.

CLI

```
Connect-Storage [ -Server Server_name ] [ -StoragePath Storage_path_name ]  
[ -MountPoint LUN_mountpoint ] [ -InitiatorName Initiator_name ]
```

Privilege level

Admin

Availability

Operational mode

Description

This command enables you to connect an existing Data ONTAP LUN on a storage system to a specified host system or server. If this LUN was never initialized on the Windows Host and no file system was created on it, this commandlet fails.

Parameters

-Server | -s *Server_name*

Specifies the name of the host server from which to connect storage. The default is the local machine.

-StoragePath | -path *Storage_path_name*

Specifies the full LUN path, including LUN name, volume name, and storage system name.

-MountPoint | -mount *LUN_mountpoint*

Specifies the LUN mountpoint. The default is the volume GUID. You can use a drive letter or a drive letter and directory as a mountpoint. If you use a drive letter and directory, the drive letter must already exist.

-InitiatorName | -i *Initiator_name*

Specifies the name of the initiator or initiators to which the LUN is mapped. If you do not specify an initiator, the first available iSCSI initiator with an established session is used. After that, the FC initiator name is used.

If you use FC, the initiator name is the WWPN. You must also zone the initiator port properly with the target port from the storage system.

If you use iSCSI, the initiator name is the IQN. You must establish at least one session between the initiator port from the host system to the target port on the storage system before mapping the LUN.

Example

The following command connects *server1* to the LUN using the path */vol/vol2/lun2* on *storagesystemA*. It then mounts the disk on mountpoint *M* using the first available iSCSI session.

```
Connect-Storage -Server server1 -StoragePath storagesystemA:/vol/vol1/  
lun1 -Mountpoint M:\
```

Disconnect-Storage

This command unmounts the file system and disconnects a LUN from the host system or server.

CLI

```
Disconnect-Storage [ -Server Server_name ] [ -StoragePath  
Storage_path_name ] [ -MountPoint LUN_mountpoint ] [-Force]
```

Privilege level

Admin

Availability

Operational mode

Description

This command enables you to unmount the file system and disconnect a LUN from the host system or server. The LUN remains on the storage system. You can reconnect as needed.

Parameters

-Server | -s *Server_name*

Specifies the name of the host server from which to unmount and disconnect storage. The default is the local machine.

-StoragePath | -path *Storage_path_name*

Specifies the full LUN path, including LUN name, volume name, and storage system name, that you want to disconnect. You must use either the storage path or the mountpoint. If you use both, the mountpoint must refer to the same LUN to which the storage path refers.

-MountPoint | -mount *LUN_mountpoint*

Specifies the LUN mountpoint. You must use either the storage path or the mountpoint. If you use both, the mountpoint must refer to the same LUN to which the storage path refers.

-Force | -f

Specifies whether to force the disconnect when the file system in the LUN is in use, has virtual machines, or has open files. If you do not use this option, the file system will not be unmounted and the LUN will not be disconnected. The value is False unless specified.

Example

The following command unmounts the disk on mountpoint *M* and disconnects *server1* from the LUN on *storagesystemA* using the path */vol/vol1/lun1*.

```
Disconnect-Storage -Server server1 -StoragePath storagesystemA:/vol/vol1/lun1 -Mountpoint M:\
```

Remove-Storage

This command unmounts the file system, disconnects a LUN from the host system or server, and deletes the LUN from the storage system.

CLI

```
Remove-Storage [ -Server Server_name ] [ -StoragePath Storage_path_name ] [ -MountPoint LUN_mountpoint ] [-Force]
```

Privilege level

Admin

Availability

Operational mode

Description

This command enables you to unmount a file system, disconnect the LUN from the host system or server, and delete the LUN from the storage system. If you use this command, all user data is deleted.

Parameters

-Server | -s *Server_name*

Specifies the name of the host server from which to remove storage. The default is the local machine.

-StoragePath | -path *Storage_path_name*

Specifies the full LUN path, including LUN name, volume name, and storage system name, that you want to remove. You must use either the storage path or the mountpoint. If you use both, the mountpoint must refer to the same LUN to which the storage path refers.

-MountPoint | -mount *LUN_mountpoint*

Specifies the LUN mountpoint. You must use either the storage path or the mountpoint. If you use both, the mountpoint must refer to the same LUN to which the storage path refers.

-Force | -f

Specifies whether to force the disconnect before removal, when the file system in the LUN is in use, has virtual machines, or has open files. If you do not use this option, the file system will not be unmounted and the LUN will not be disconnected. The value is False unless specified.

Example

The following command unmounts the disk on mountpoint *M*, disconnects *server1* from the LUN on *storagesystemA* using the path */vol/vol1/lun1*, and deletes the LUN from *storagesystemA*.

```
Remove-Storage -Server server1 -StoragePath storagesystemA:/vol/vol1/
lun1 -Mountpoint M:\
```

Get-Storage

This command discovers and lists LUNs mounted on a specified host system or server.

CLI

```
Get-Storage [ -Server Server_name ]
```

Privilege level

Admin

Availability

Operational mode

Description

This command discovers and lists LUNs mounted on a specified host.

Parameters

-Server | -s *Server_name*

Specifies the name of the host server from which to discover and list storage. The default is the local machine.

Example

The following command lists information about the LUNs mounted on *server1*:

```
get-storage -server server1
```

Add-StorageSystemCredential

This command adds user credentials to a local repository so that you can use other commands without entering additional password information.

CLI

```
Add-StorageSystemCredential [ -StorageSystem
Storage_system_name_or_IP_address ] [-Protocol HTTPS | HTTP] [-UserName
User_name] [-Password User_password]
```

Privilege level

Admin

Availability

Operational mode

Description

This command enables you to add credentials to a local repository so that you can use other commands without entering additional password information.

Parameters

-StorageSystem | -system *Storage_system_name_or_IP_address*

Specifies the storage system to which you want to add credentials.

-Protocol HTTPS | HTTP

Specifies the type of protocol that you want to use.

-UserName | -user *User_name*

Specifies a valid user name on the storage system.

-Password *User_password*

Specifies the password associated with the storage system user name.

Example

The following command adds credentials to the local repository for *storagesystemA* using HTTPS protocol:

```
Add-StorageSystemCredential -system storagesystemA -user myUserName -  
Password myPassword -Protocol HTTPS
```

Get-StorageSystemCredential

This command lists all credentials stored in a local repository or credentials for a specified storage system.

CLI

```
Get-StorageSystemCredential [ -StorageSystem Storage system name or IP  
address ]
```

Privilege level

Admin

Availability

Operational mode

Description

This command lists all credentials currently stored in a local repository or credentials for a specified storage system.

Parameters

-StorageSystem | -system *Storage system name or IP address*

Displays all credentials currently stored in a local repository or credentials for the specified storage system.

Example

The following command displays all credentials for *storagesystemA*:

```
get-storagesystemcredential -system storagesystemA
```

```
The input parameters validation successful. User credentials are set
for the following storage system.
StorageSystem: storagesystemA
User: provisionuser
Protocol: http
```

Remove-StorageSystemCredential

This command removes credentials for a specified storage system from the local repository.

CLI

```
Remove-StorageSystemCredential [ -StorageSystem Storage system name or IP
address]
```

Privilege level

Admin

Availability

Operational mode

Description

This command allows you to remove credentials for a specified storage system from the local repository.

Parameters

-StorageSystem | -system *Storage system name or IP address*

Specifies the storage system from which you want credentials removed.

Example

The following command removes credentials from a *storagesystemA*:

```
Remove-StorageSystemCredential -system storagesystemA
```

New-Clone

This command clones, from a Microsoft System Center Virtual Machine Manager template, a virtual machine that is currently shut down. You must execute the `New-Clone` commandlet on the host on which the System Center Virtual Machine Manager template library share exists.

CLI

```
New-Clone [-Mountpoint Mountpoint_location ] -VMMServer Server_name [-
Template Template_name ] [-Server Server_name] [-BaseVMName
Virtual_machine_name] [ -NumberOfClones Number_of_clones] [-CloneInSameLUN
True | False] [-JustCloneVHD True | False] [-JobGroup job_group] [-StartVM
True | False]
```

Privilege level

Admin

Availability

Operational mode

Description

This command enables you to clone, from a Microsoft System Center Virtual Machine Manager template, a virtual machine that is shut down.

The following storage platforms are supported for the `New-clone` command:

- 20xx
- 30xx
- 31xx
- 60xx
- NearStore R200

Parameters

-Mountpoint | **-mount** *mountpoint _location*

Specifies the mountpoint of the LUN that contains the virtual machine you want to connect to the Hyper-V host. This parameter is valid when `-NumberOfClones` is 1. If you create more than one clone, the specified mountpoint is only used for the first clone.

-VMMServer | **-vmms** *server_name*

Specifies the name of the Microsoft System Center Virtual Machine Manager server on which the virtual machine template resides.

-Template | -tn *Template_name*

Specifies the name of the Microsoft System Center Virtual Machine Manager virtual machine template that you want to clone.

-Server | -s *Server_name*

Specifies the name of the Hyper-V server on which the cloned virtual machine will run. The default is the template host.

-BaseVMName | -bv *Virtual_machine_name*

Specifies the base name of the cloned virtual machine.

-NumberOfClones | -nc *number_of_clones*

Specifies the number of clones that you want to create. The default is 1.

-CloneInSameLUN | -csml *True | False*

Specifies whether to locate all of the cloned virtual machines on the same LUN. The default is *False*, and cloned virtual machines are placed on different LUNs. This parameter is only valid with multiple clones. The first clone is always stored on a newly created LUN.

-JustCloneVHD | -jcl *True | False*

Specifies whether to only clone the VHDs of the virtual machine and not to create a cloned virtual machine. The default is *False*, when not specified. This parameter is only valid when creating one clone, so the number of clones must be 1 or not specified. You can mount cloned VHDs at a specified mountpoint or using the volume GUID on the desired server.

-JobGroup*job_group*

Specifies the job GUID when submitting the virtual machine creation job to Microsoft System Center Virtual Machine Manager.

-StartVM | -svm *True | False*

Specifies whether you want to start the virtual machine or machines after creation. The default is *False*. This parameter is not valid when used with the *JustCloneVHD* parameter, and will be ignored.

Example

The following command gathers information on the virtual machine template called *w2k3-x64-template1* from the System Center Virtual Machine Manager server *SCCVMM1*. The command uses this information to create 5 new virtual machines by cloning data to 5 different new LUNs on a Data ONTAP storage system. The virtual machines reside on the Hyper-V host *vmhost12* and use the base virtual machine name *finance-w2k3-oracle* with an appendix of 0-4 for the cloned virtual machines. This commands also starts the virtual machines after creation.

```
New-Clone -server vmhost12 -Vmmserver SCVMM1 -Template w2k3-x64-  
template1 -NumberofClones 5 -BaseVMName finance-w2k3-oracle -StartVM
```


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