

VMware vSphere 4.1 PowerCLI



VM Operations

```

Get-VM
Move-VM
New-VM
Remove-VM
Set-VM
Start-VM
Stop-VM
Restart-VM
Suspend-VM

Get-CDDrive
New-CDDrive
Remove-CDDrive
Set-CDDrive
Get-FloppyDrive
New-FloppyDrive
Remove-FloppyDrive
Set-FloppyDrive
Copy-HardDisk
Get-HardDisk
New-HardDisk
Remove-HardDisk
Set-HardDisk
New-NetworkAdapter
Remove-NetworkAdapter
Set-NetworkAdapter
Get-Snapshot
New-Snapshot
Remove-Snapshot
Set-Snapshot
Get-UsbDevice
Remove-UsbDevice
Get-VMQuestion
Set-VMResourceConfiguration
Set-VMResourceConfiguration
Invoke-VMScript
Get-VMStartPolicy
Set-VMStartPolicy

```

VMware vSphere PowerCLI Quick Reference

Virtual Machine Operations

To list all VMs on the connected VMware vSphere Server and some of their properties: **Get-VM**

To create a new VM:
\$esxhost = Get-VMHost "ESXHost01.mydomain.com"
New-VM -Name XPVM -VMHost \$esxhost -DiskMB 4000 -MemoryMB 256

To remove a VM:
Remove-VM -VM myVM -DeleteFromDisk

To move a VM:
Get-VM -Name XP_VC_Tech | Move-VM -Destination (Get-VMHost 10.23.112.235)

To change the configuration of a VM:
Set-VM -VM "Win XP SP1" -Name "Win XP SP2" -GuestId "winXPProGuest" -Description "My updated Win XP virtual machine."

To run a script or command inside a VM:
Invoke-VMScript -VM myVM -ScriptText "dir"

Other VM-specific cmdlets include:
Start-VM
Stop-VM
Suspend-VM
Restart-VM

The following is a list of all other VM-related cmdlets; use the Get-Help function for example uses:

```

Get-CDDrive
Remove-CDDrive
New-FloppyDrive
Set-FloppyDrive
Get-HardDisk
Set-HardDisk
Get-NetworkAdapter
Set-NetworkAdapter
Restart-VMGuest
Suspend-VMGuest
Get-VMResourceConfiguration
Set-VMStartPolicy
Set-VMHostNetworkInterface
Set-VMHostHba
Set-VMQuestion
Get-VMHostAvailableTimezone
Get-VMHostNetworkAdapter
Copy-VMGuestFile
Get-VMGuestRoute

New-CDDrive
Set-CDDrive
New-FloppyDrive
Remove-FloppyDrive
New-HardDisk
New-NetworkAdapter
Remove-NetworkAdapter
Get-VMGuest
Shutdown-VMGuest
Set-VMResourceConfiguration
Get-VMStartPolicy
Set-VMGuestRoute
Set-VMHostStorage
Remove-VMHostRoute
Get-VMQuestion
Get-VMHostNetworkInterface
New-VMGuestRoute

```

PowerCLI Books

vSphere 4.1 Quick Start Guide
 Managing VMware Infrastructure with Windows PowerShell

Network Operations

```

Get-iScsiHbaTarget
New-iScsiHbaTarget
Remove-iScsiHbaTarget
Set-iScsiHbaTarget
Get-NicTeamingPolicy
Set-NicTeamingPolicy
Get-OSCustomizationNicMapping
New-OSCustomizationNicMapping
Remove-OSCustomizationNicMapping
Set-OSCustomizationNicMapping
Add-PassthroughDevice
Get-PassthroughDevice
Remove-PassthroughDevice
Get-ScsiLun
Set-ScsiLun
Get-ScsiLunPath
Set-ScsiLunPath
Get-VirtualPortGroup
New-VirtualPortGroup
Remove-VirtualPortGroup
Set-VirtualPortGroup
Get-VirtualSwitch
New-VirtualSwitch
Remove-VirtualSwitch
Set-VirtualSwitch
Set-VIToolkitConfiguration

Get-VMGuestNetworkInterface
Set-VMGuestNetworkInterface
New-VMGuestRoute
Remove-VMGuestRoute
Set-VMGuestRoute
Get-VMHostFirewallDefaultPolicy
Set-VMHostFirewallDefaultPolicy
Get-VMHostFirewallException
Set-VMHostFirewallException
Get-VMHostHba
Set-VMHostHba
Get-VMHostNetwork
Set-VMHostNetwork
Get-VMHostNetworkAdapter
New-VMHostNetworkAdapter
Remove-VMHostNetworkAdapter
Set-VMHostNetworkAdapter
Add-VMHostNtpServer
Get-VMHostNtpServer
Remove-VMHostNtpServer
Test-VMHostSnmpp
Get-VMHostSnmpp
Set-VMHostSnmpp
Test-VMHostStorage

```

Host Profiles

```

Get-VMHostProfile
Set-VMHostProfile
New-VMHostProfile
Apply-VMHostProfile

Remove-VMHostProfile
Import-VMHostProfile
Export-VMHostProfile
Test-VMHostProfileCompliance

```

Guest OS

```

Get-VMGuest
Restart-VMGuest
Shutdown-VMGuest
Suspend-VMGuest
Update-Tools
Mount-Tools
Dismount-Tools
Copy-VMGuestFile

```

Cluster Operations

```

Get-Cluster
Set-Cluster
New-Cluster
Move-Cluster
Remove-Cluster

```

Datacenter Operations

```

Get-Datacenter
Set-Datacenter
New-Datacenter
Move-Datacenter
Remove-Datacenter

```

Resource Pool Operations

```

Get-ResourcePool
Set-ResourcePool
New-ResourcePool
Move-ResourcePool
Remove-ResourcePool

```

VMware vSphere Client

Third-Party Code ISVs/Customers

vSphere Web Services SDK | vSphere SDK for Perl | vSphere PowerCLI | vSphere vCLI

VMware vSphere API

VMware vCenter™

VMware ESXi™ and ESX | VMware ESXi and ESX | VMware ESXi and ESX

VMware vCenter Update Manager PowerCLI Commandlets.

```

Attach-Baseline
Detach-Baseline
Get-Baseline
Remove-Baseline
Get-Compliance

Remediate-Inventory
Scan-Inventory
Download-Patch
Get-Patch
Stage-Patch

Get-PatchBaseline
New-PatchBaseline
Set-PatchBaseline

```

Resources for VMware vCenter Update Manager — PowerCLI

Download vCenter Update Manager PowerCLI vCenter Update Manager PowerCLI Community
 Visit Official vCenter Update Manager PowerCLI Website <http://vmware.com/go/powercliupdate>
 Downloads, Forums, Sample Code, and Documentation

VMware vSphere Server

```

Get-Annotation
Set-Annotation
Get-CustomAttribute
New-CustomAttribute
Remove-CustomAttribute
Set-CustomAttribute
Remove-CustomField
Set-CustomField
Get-Datacenter
New-Datastore
Remove-Datastore
Set-Datastore
Get-Datastore
Copy-DatastoreItem
Apply-DrRecommendation
Get-DrRecommendation

Get-DrRule
New-DrRule
Remove-DrRule
Set-DrRule
Move-Folder
New-Folder
Remove-Folder
Set-Folder
Get-Folder
Move-Inventory
Remove-Inventory
Get-NetworkAdapter
Get-Task
Stop-Task
Wait-Task

Get-Template
Move-Template
New-Template
Remove-Template
Set-Template
Export-VApp
Import-VApp
New-VApp
Remove-VApp
Set-VApp
Start-VApp
Stop-VApp
Get-View
Get-VIObjectByView

Get-VIPermission
New-VIPermission
Remove-VIPermission
Set-VIProperty
New-VIProperty
Remove-VIProperty
Get-VIRole
New-VIRole
Remove-VIRole
Set-VIRole
Connect-VIServer
Disconnect-VIServer
Add-VMHost
Get-VMHost
Remove-VMHost
Get-VMHostStorage

```

VM Host Operations

```

Move-VMHost
Restart-VMHost
Get-VMHost
Start-VMHost
Stop-VMHost
Suspend-VMHost
Get-VMHostAccount
New-VMHostAccount
Remove-VMHostAccount
Set-VMHostAccount
Get-VMHostAdvancedConfiguration
Set-VMHostAdvancedConfiguration
Get-VMHostAvailableTimezone

Get-VMHostDiagnosticPartition
Set-VMHostDiagnosticPartition
Get-VMHostFirmware
Set-VMHostFirmware
Get-VMHostModule
Set-VMHostModule
Install-VMHostPatch
Import-VMHostProfile
New-VMHostProfile
Remove-VMHostProfile
Set-VMHostProfile
Test-VMHostProleCompliance
Get-VMHostRoute

New-VMHostRoute
Remove-VMHostRoute
Set-VMHostRoute
Get-VMHostService
Restart-VMHostService
Set-VMHostService
Start-VMHostService
Stop-VMHostService
Get-VMHostStartPolicy
Set-VMHostStartPolicy
Get-VMHostSysLogServer
Set-VMHostSysLogServer

```

Logs/Reporting/Configuration

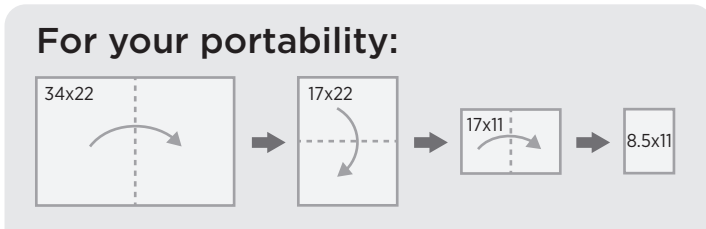
```

Get-ErrorReport
Get-Log
Get-LogType
Get-OSCustomizationSpec
New-OSCustomizationSpec
Remove-OSCustomizationSpec
Set-OSCustomizationSpec
Get-PowerCLICommunity
Get-PowerCLIConfiguration
Get-PowerCLIDocumentation
Get-PowerCLIVersion
Get-Stat
Get-StatInterval
New-StatInterval
Remove-StatInterval
Set-StatInterval
Get-StatType
Get-VICredentialStoreItem
New-VICredentialStoreItem
Remove-VICredentialStoreItem
Get-VIEvent
Set-VMHostSysLogServer
Get-VMResourceConfiguration

```

VMware vSphere PowerCLI is a powerful yet easy-to-use scripting interface to manage the vSphere platform. Administrators can leverage more than 200 commandlets to simplify everyday tasks.

For the latest documentation, sample code, and information, visit: <http://vmware.com/go/powercli>



PowerCLI Quick Reference by Alan Renouf

Virtual Machine Operations

To list all VMs on the connected VMware vSphere Server and some of their properties: **Get-VM**

To create a new VM:
\$esxhost = Get-VMHost "ESXHost01.mydomain.com"
New-VM -Name XPVM -VMHost \$esxhost -DiskMB 4000 -MemoryMB 256

To remove a VM:
Remove-VM -VM myVM -DeleteFromDisk

To move a VM:
Get-VM -Name XP_VC_Tech | Move-VM -Destination (Get-VMHost 10.23.112.235)

To change the configuration of a VM:
Set-VM -VM "Win XP SP1" -Name "Win XP SP2" -GuestId "winXPProGuest" -Description "My updated Win XP virtual machine."

To run a script or command inside a VM:
Invoke-VMScript -VM myVM -ScriptText "dir"

Other VM-specific cmdlets include:
Start-VM
Stop-VM
Suspend-VM
Restart-VM

The following is a list of all other VM-related cmdlets; use the Get-Help function for example uses:

```

Get-CDDrive
Remove-CDDrive
New-FloppyDrive
Set-FloppyDrive
Get-HardDisk
Set-HardDisk
Get-NetworkAdapter
Set-NetworkAdapter
Restart-VMGuest
Suspend-VMGuest
Get-VMResourceConfiguration
Set-VMStartPolicy
Set-VMHostNetworkInterface
Set-VMHostHba
Set-VMQuestion
Get-VMHostAvailableTimezone
Get-VMHostNetworkAdapter
Copy-VMGuestFile
Get-VMGuestRoute

New-CDDrive
Set-CDDrive
New-FloppyDrive
Remove-FloppyDrive
New-HardDisk
New-NetworkAdapter
Remove-NetworkAdapter
Get-VMGuest
Shutdown-VMGuest
Set-VMResourceConfiguration
Get-VMStartPolicy
Set-VMGuestRoute
Set-VMHostStorage
Remove-VMHostRoute
Get-VMQuestion
Get-VMHostNetworkInterface
New-VMGuestRoute

```

PowerCLI Books

vSphere 4.1 Quick Start Guide
 Managing VMware Infrastructure with Windows PowerShell

Virtual Switch Operations

To list all virtual switches attached to a VM and some of their properties:
Get-VirtualSwitch -VM (Get-VM -Name "MS Win XP SP2")

To create a new virtual switch:
New-VirtualSwitch -VMHost (Get-VMHost -Name 10.23.112.234) -Name Switch02

To remove a virtual switch:
\$vs = Get-VirtualSwitch -VMHost 10.23.112.345 -Name VS23
Remove-VirtualSwitch -VirtualSwitch \$vs

To change the configuration of a virtual switch:
\$vs = New-VirtualSwitch -Host 10.23.115.67 -Name VirtSwitch

Set-VirtualSwitch -VirtualSwitch \$vs -MTU 500

Port Group Operations

To list all the port groups and some of their properties:
\$vs = Get-VirtualSwitch -VMHost 10.23.112.123 -Name Switch02
Get-VirtualPortGroup -VirtualSwitch \$vs

To add a new port group to a virtual switch:
\$vs = Get-VirtualSwitch -VMHost 10.23.112.123 -Name Switch02
\$vpg = New-VirtualPortGroup -VirtualSwitch \$vs -Name VG1

Resource Pool Operations

To list all resource pools on the connected VMware vSphere Server and some of their properties: **Get-ResourcePool**

To create a new resource pool:
\$clusterRootRP = Get-ResourcePool -Location (Get-Cluster ResearchAndDevelopmentCluster) -Name Resources

New-ResourcePool -Location \$clusterRootRP -Name DevelopmentResources -CpuExpandableReservation \$true -CpuReservationMhz 500 -CpuSharesLevel high -MemExpandableReservation \$true -MemReservationMB 500 -MemSharesLevel high

Other resource pool cmdlets:
Move-ResourcePool
Remove-ResourcePool
Set-ResourcePool

Task Information

To list all tasks for a VMware vSphere Server and some of their properties:
Get-Task -Server (Connect-VIServer -Server 10.23.112.235) -Status Error

To stop a task (example: stops the task of removing the VM):
Stop-Task -Task (Remove-VM -VM "MS Win XP SP2" -Confirm -RunAsync)

To wait until a task is completed before continuing:
Wait-Task -Task (Remove-VM -VM "MS Win XP SP2" -Confirm -RunAsync)

Snapshot Operations

To list all the snapshots for all VMs:
Get-VM | Get-Snapshot

To snapshot a VM:
New-Snapshot -VM "XP SP2" -Name BeforePatch1

To remove a snapshot:
Remove-Snapshot -Snapshot \$snapshot1 -RemoveChildren

Other * cmdlets include:
Set-Snapshot

Cluster Operations

To list all the clusters on the connected VMware vSphere Server and some of their properties: **Get-Cluster**

To add a new cluster:
New-Cluster -Name MyCluster -DRSEnabled -DRSMode FullyAutomated

Other cluster cmdlets include:
Move-Cluster
Remove-Cluster
Set-Cluster

API Operations

Return a VMware vSphere .Net view object by specified search criteria:
\$vm = Get-View (Get-Host "ESX1" | get-view).ConfigManager.ResourcePool

\$hostView = Get-View -ID \$vm.Runtime.Host

\$hostView.Summary.Runtime

Another example:
(Get-View (Get-Host "ESX1" | get-view).ConfigManager.VmotionSystem).SelectVnic ("vmk0")

Getting Started

VMware vSphere PowerCLI frequently asked questions (FAQs) Link: <http://communities.vmware.com/docs/DOC-4210>

To find out what cmdlets are available: **Get-VICommand**

To show documentation for all available cmdlets: **Get-PowerCLIDocumentation**

For help with a cmdlet: **Get-Help cmdlet-name -Full | More**

How to Connect to vCenter Server or ESX and ESXi

To connect to a VMware vSphere server. Start a new session or re-establish a previous session with a VMware vSphere server.
\$srv = Connect-VIServer -Server 10.23.115.133 -User Admin -Password Pass01

To disconnect from the connected VI Server:
Disconnect-VIServer -Server \$srv -Confirm:\$false

Security Operations

The below is a list of security cmdlets. Use the Get-Help function for example uses:
Get-VIPermission -Entity (Get-Datacenter) -Principal Administrator

Other security cmdlets:
Get-VIPrivilege **Set-VIRole** **Remove-VIPermission**
Get-VIRole **New-VIPermission** **Remove-VIRole**
Set-VIPermission **New-VIRole**

Datacenter Operations

To list all datacenters from a VMware vSphere server:
Get-Datacenter

To add a new datacenter:
New-Datacenter -Name France

Other datacenter cmdlets:
Move-Datacenter
Remove-Datacenter
Set-Datacenter

DRS Rules

Retrieve a list of DRS rules for the specified clusters:
Get-DrRule -Cluster (Get-Cluster "Production")

Other DRS Rule cmdlets:
New-DrRule
Remove-DrRule
Set-DrRule

Datastore Operations

For a list of datastores and other properties:
Get-Datastore

Other Datastore cmdlets include:
New-Datastore
Remove-Datastore
Set-Datastore

Folder Operations

The below is a list of all Folder related Cmdlets. Use the Get-Help function for example uses:
Get-Folder
Move-Folder
New-Folder
Remove-Folder
Set-Folder

VM Host Operations

To list all the VMware vSphere Servers (VMHost) on the connected VI Server and some of their properties:
Get-VMHost

To add a new VMHost:
Add-VMHost 10.23.113.24 -Location (Get-Datacenter Main) -User root -Password MyPass

To remove a VMHost:
\$myVMHost = Get-VMHost 10.22.112.235
Remove-VMHost \$myVMHost

To move a VMHost:
Move-VMHost 10.23.112.113 -Destination (Get-Datacenter MyDatacenter)

To change the state of a VMHost:
Set-VMHost -VMHost Host01 -State "Disconnected"

The following is a list of all other VMHost-related Cmdlets; use the Get-Help function for example uses:

```

Get-VMHostAccount
Remove-VMHostAccount
Set-VMHostAdvancedConfiguration
Set-VMHostDiagnosticPartition
Set-VMHostFirewallDefaultPolicy
Set-VMHostFirewallException
Get-VMHostFirmware
Set-VMHostModule
Get-VMHostNetwork
Remove-VMHostNetworkAdapter
Remove-VMHostNetworkAdapter
Set-VMHostAdvancedConfiguration
Set-VMHostDiagnosticPartition
Get-VMHostFirewallDefaultPolicy
Get-VMHostNtpServer
Get-VMHostService
Set-VMHostService
Stop-VMHostService
Get-VMHostSnmpp
Test-VMHostSnmpp
Restart-VMHost
Start-VMHost

New-VMHostAccount
Set-VMHostAccount
Set-VMHostFirmware
Set-VMHostModule
Set-VMHostNetwork
Set-VMHostNetworkAdapter
Set-VMHostNetworkAdapter
Add-VMHostNtpServer
Restart-VMHostService
Start-VMHostService
Set-VMHostSnmpp
Set-VMHostStartPolicy
Get-VMHostStorage
Get-VMHostNtpServer
Remove-VMHostNtpServer
Get-VMHostStartPolicy
Get-VMHostSysLogServer
Set-VMHostSysLogServer
Stop-VMHost
Suspend-VMHost
* VMHostRoute
* VMHostPatch

```

vApp Operations

The following is a list of vApp cmdlets; use the Get-Help function for example uses:
New-VApp -Name MyVApp -CpuLimitMhz 4000 -CpuReservationMhz 1000 -Location (Get-VMHost MyHost)

Other vApp cmdlets:
Export-VApp
Get-VApp
Import-VApp
Set-VApp
Start-VApp
Stop-VApp

Other Operations

The following is a list of all other cmdlets; use the Get-Help function for example uses:

```

New-CustomField
Get-VIToolkitConfiguration
Remove-CustomField
Apply-DrRecommendation
Get-DrRecommendation
Copy-DatastoreItem
Copy-HardDisk
Remove-HardDisk
Get-Annotation
Set-Annotation
Get-CustomAttribute
Set-CustomAttribute
New-CustomAttribute
Remove-CustomAttribute
New-iScsiHbaTarget
Set-iScsiHbaTarget
Remove-iScsiHbaTarget
Get-iScsiHbaTarget
Set-iScsiHbaTarget
Get-Stat
Remove-StatInterval
Set-StatInterval
Get-StatType
Set-StatType
Get-OSCustomizationSpec
Set-OSCustomizationSpec
New-OSCustomizationSpec
Remove-OSCustomizationSpec
Get-OSCustomizationNicMapping
Set-OSCustomizationNicMapping
New-OSCustomizationNicMapping
Remove-OSCustomizationNicMapping
Get-PowerCLIConfiguration
Set-PowerCLIConfiguration
Get-PowerCLIVersion
Install-VMHostPatch
Move-Template
Set-PowerCLIConfiguration
Get-UsbDevice
Remove-UsbDevice
Get-VMHostRoute
New-VMHostRoute
Remove-VMHostRoute
Set-VMHostRoute
Get-ErrorReport
Get-VMHostPatch.

```

Resources

For more information and help with the VMware vSphere PowerCLI, use the following cmdlets:
Get-VICommand **Get-PowerCLIHelp** **Get-PowerCLICommunity**

Important 3rd party websites to visit for scripts, tips, and other useful information:
<http://virtu-ai.net> <http://powerscripting.net/>
<http://www.lucd.info/> <http://ict-freak.nl>
<http://get-scripting.blogspot.com/> <http://www.van-lieshout.com>

VMware Services for PowerCLI: Scripting Support
<http://vmware.com/go/sdksupport>

PowerCLI Training: vSphere Automation
<http://vmware.com/go/vsphereautomation>

Third Party Training: <http://trainsignal.com>