

# VMware vSphere Update Manager PowerCLI Installation and Administration Guide

Update Manager PowerCLI 5.0

EN-000465-00

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# About This Book

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The *VMware vSphere Update Manager PowerCLI Installation and Administration Guide*, provides information about installing and using the Update Manager PowerCLI. The Update Manager PowerCLI contains cmdlets for managing software patches and baselines, and scanning and remediating virtual machines and hosts.

## Intended Audience

This book is intended for administrators who need to install and use Update Manager PowerCLI.

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**NOTE** All Update Manager PowerCLI users are expected to be familiar with the VMware vSphere PowerCLI cmdlets, VMware vSphere administration, VMware vSphere Update Manager, and the Windows operating system. For more information about the functionality of Update Manager, see the *Update Manager Administration Guide*.

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# Installing and Using Update Manager PowerCLI

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The VMware vSphere Update Manager PowerCLI provides a set of cmdlets for downloading software patches, creating and modifying baselines, and for scanning and remediating virtual machines or hosts. These cmdlets are stored in the `VMware.VumAutomation` plug-in, and are available through the VMware vSphere PowerCLI console.

The chapter includes the following topics:

- [“Installing Update Manager PowerCLI”](#) on page 7
- [“Using Update Manager PowerCLI”](#) on page 8

## Installing Update Manager PowerCLI

You can install and use Update Manager PowerCLI on machines that have VMware vSphere PowerCLI installed and have access to a vCenter Server system. You can install Update Manager PowerCLI on a machine that does not have Update Manager or vCenter Server installed.

This section provides information about the following topics:

- [“Supported Platforms”](#) on page 7
- [“Prerequisites”](#) on page 8
- [“Install Update Manager PowerCLI”](#) on page 8
- [“Uninstalling Update Manager PowerCLI”](#) on page 8

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**NOTE** To install Update Manager PowerCLI, you must have vSphere PowerCLI installed on the target machine. To obtain the vSphere PowerCLI package, go to the vSphere PowerCLI [download page](#).

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## Supported Platforms

Update Manager PowerCLI 5.0 is supported on the 32-bit and 64-bit versions of the following Windows operating systems:

- Windows 7
- Windows Server 2008
- Windows Vista
- Windows XP Service Pack 2
- Windows Server 2003 Service Pack 2

## Prerequisites

To install and use Update Manager PowerCLI 5.0, you must have the following software installed on the target machine:

- .NET 2.0 SP1
- Windows PowerShell 2.0
- VMware vSphere PowerCLI 4.1 or higher

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**NOTE** Update Manager PowerCLI 5.0 works only with Update Manager 5.0.

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## Install Update Manager PowerCLI

You can download the Update Manager PowerCLI installer package from the product landing page at <https://www.vmware.com/support/developer/ps-libs/vumps/>.

### To install the Update Manager PowerCLI

- 1 Start the Update Manager PowerCLI installer.
- 2 Click **Next** in the Welcome page to continue with the installation.
- 3 Read and accept the license agreement terms.
- 4 Click **Install**.
- 5 Click **Finish** to complete the installation process.

## Uninstalling Update Manager PowerCLI

To uninstall the Update Manager PowerCLI from your Windows system, you can use the **Add or Remove Programs** utility.

## Using Update Manager PowerCLI

This section explores the basics of the Update Manager PowerCLI cmdlets usage. It discusses the following topics:

- [“Getting Started with Update Manager PowerCLI”](#) on page 8
- [“Examples of Usage of Update Manager PowerCLI Cmdlets”](#) on page 9

## Getting Started with Update Manager PowerCLI

To get started with Update Manager PowerCLI, open the vSphere PowerCLI console from the Windows **Start** menu or by clicking the vSphere PowerCLI shortcut icon.

You can get a list of all Update Manager PowerCLI cmdlets by running the `Get-Command` command with the `-PSSnapin` parameter:

```
Get-Command -PSSnapin VMware.VumAutomation
```

---

**NOTE** You can check the Update Manager PowerCLI version by running the following command:

```
Get-PowerCLIVersion
```

---

To find information on a specific cmdlet, run the `Get-Help` cmdlet with the cmdlet name. For example:

```
Get-Help Get-Patch
```

## Connecting to a vCenter Server

Connect to a vCenter Server that has a Update Manager server installed on it.

### To connect to a vCenter Server

- 1 Run `Connect-VIServer` and provide the server DNS or IP address:  

```
Connect-VIServer 10.23.112.234
```
- 2 When prompted, provide a user name and password to authenticate.

## Examples of Usage of Update Manager PowerCLI Cmdlets

The following examples demonstrate the basic usage of the Update Manager PowerCLI cmdlets. The examples contain vSphere PowerCLI cmdlets for retrieving and managing vSphere objects. To implement the examples' code, you must have an existing vSphere infrastructure.

### Creating Patch Baselines

Patch baselines can be applied to hosts. Depending on the patch criteria you select, patch baselines can be either dynamic or fixed (static). Patch data in dynamic baselines changes depending on the criteria you specify each time Update Manager downloads new patches. Fixed baselines contain only the patches you have selected, regardless of new patch downloads.

#### To create patch baselines

- 1 Retrieve all host patches released after 1st January 2009 for ESX products, and create a fixed baseline named `Static Baseline`, containing the retrieved patches:  

```
$patches = Get-Patch -After "1 Jan 2009" -Product "ESX*"

$staticBaseline = New-PatchBaseline -Static -Name "Static Baseline" -IncludePatch $patches
```
- 2 Create a critical dynamic baseline named `Dynamic Baseline` by using a fetch-all query:  

```
$criticalPatchBaseline = New-PatchBaseline -Dynamic -Name "Dynamic Baseline"
-SearchPatchSeverity Critical
```
- 3 Create an extension baseline that contains all available extensions:  

```
$extensions = Get-Patch -BundleType Extension

New-PatchBaseline -Static -Name "Extension Baseline" -Extension -IncludePatch $extensions
```

### Attaching and Detaching Baselines

Attach baselines to individual objects and to container objects, such as folders, hosts, clusters, and datacenters. Attaching a baseline to a container object transitively attaches the baseline to all objects in the container.

#### To attach and detach baselines

- 1 Attach the host patch baselines stored in the provided variables to the host named `Host`:  

```
Attach-Baseline -Baseline $staticBaseline, $criticalPatchBaseline -Entity Host
```
- 2 Detach the two baselines from the host:  

```
Detach-Baseline -Baseline $dynamicBaseline, $staticBaseline -Entity Host
```

## Scanning a Virtual Machine

Scan a virtual machine against the baselines attached to it or inherited by its parent object.

### To create a task for scanning a virtual machine

- 1 Initialize scanning on a virtual machine named VM against baselines containing virtual machine hardware upgrades and VMware Tools upgrades:

```
$task = Scan-Inventory -Entity VM -UpdateType VmHardwareUpgrade, VmToolsUpgrade -RunAsync
```

The command initializes a task on the server, returns a snapshot object of the initial state of the task, and saves it in the `$task` variable.

- 2 View the initial status of the scanning task:

```
$task
```

---

**NOTE** The task object is not updated with the actual state of the task process running on the server. Even after the task is completed, the `$task` variable value is `running`. To view the actual status of the tasks running on the server, use the `Get-Task` cmdlet.

---

- 3 (Optional) Run the `Wait-Task` cmdlet to watch online the process progress and wait for the task to complete before running other commands:

```
Wait-Task -Task $task
```

### To verify whether a virtual machine has at least one baseline with Unknown compliance status attached to it and start a scan

- 1 Retrieve the compliance statuses with the value `Unknown` for the baselines attached to the VM virtual machine and store them in a variable:

```
$statuses = Get-Compliance -Entity VM -ComplianceStatus Unknown
```

- 2 Verify whether the virtual machine has at least one baseline with `Unknown` compliance status attached to it and start a scan:

```
if ($statuses.Count -gt 0) {
    Scan-Inventory -Entity VM -RunAsync"
}
```

## Staging Patches

Staging allows you to download patches and extensions from the Update Manager server to the ESX/ESXi hosts, without applying the patches and extensions immediately.

### To stage patches for a virtual machine host

- 1 Retrieve a host and assign it to a variable:

```
$host = Get-VMHost -Name 10.23.112.233
```

- 2 Stage the patches for upgrading the host:

```
Stage-Patch -Entity $host
```

---

**NOTE** Staging can be performed only for hosts, clusters, and datacenters.

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## Remediating Inventory Objects

You can remediate virtual machines, virtual appliances, clusters, and hosts.

### To remediate a virtual machine

- 1 Retrieve all baselines attached to the VM virtual machine:

```
$baselines = Get-Baseline -Entity VM
```

- 2 Remediate the virtual machine:

```
Remediate-Inventory -Entity VM -Baseline $baselines
```

### To upgrade virtual machine hardware and VMware Tools for all virtual machines in a datacenter

- 1 Retrieve all virtual machines in the Datacenter datacenter:

```
$vms = Get-VM -Location Datacenter
```

- 2 Retrieve all virtual machine upgrade baselines:

```
$upgradeBaselines = Get-Baseline -TargetType VM -BaselineType Upgrade
```

- 3 Remediate the all virtual machines against the virtual machine upgrade baselines:

```
foreach ($vm in $vms) {
    Remediate-Inventory -Entity $vm -Baseline $upgradeBaselines
}
```

### To remediate a cluster

- 1 Retrieve all baselines attached to the Cluster cluster:

```
$baselines = Get-Baseline -Entity Cluster
```

- 2 Remediate the cluster:

```
Remediate-Inventory -Entity Cluster -Baseline $baselines
-ClusterDisableDistributedPowerManagement -ClusterDisableHighAvailability
-ClusterDisableFaultTolerance
```

---

**NOTE** Before remediation, you must temporarily disable the Distributed Power Management (DPM), High Availability (HA) admission control, and Fault Tolerance (FT) features of the clusters you want to remediate. After remediation, Update Manager automatically re-enables the disabled features.

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### To remediate a host

- 1 Retrieve all baselines attached to the Host host:

```
$baselines = Get-Baseline -Entity Host
```

- 2 Remediate the host:

```
Remediate-Inventory -Entity Host -Baseline $baselines -HostFailureAction Retry
-HostNumberOfRetries 2 -HostDisableMediaDevices $true
```

---

**NOTE** When remediating a host, you can configure the maintenance mode settings. You can temporarily disable any removable media devices that might prevent the host from entering maintenance mode as well.

---

## Downloading Patches and Scanning Objects

You can download patches from previously defined location.

### To start a scan for all entities in a datacenter if new patches are downloaded

- 1 Retrieve all entities in the Datacenter datacenter and save the result in a variable:  
`$entities = Get-Inventory -Location Datacenter`
- 2 Download all available patches and save the result in a variable:  
`$result = Download-Patch`
- 3 Check if new patches are downloaded and start scanning the entities in Datacenter:  

```
if ($result.Count > 0) {  
    Scan-Inventory -Entity $entities  
}
```