

# ESX 4.1 Patch Management Guide

ESX 4.1

This document supports the version of each product listed and supports all subsequent versions until the document is replaced by a new edition. To check for more recent editions of this document, see <http://www.vmware.com/support/pubs>.

EN-000353-00

**vmware**<sup>®</sup>

You can find the most up-to-date technical documentation on the VMware Web site at:

<http://www.vmware.com/support/>

The VMware Web site also provides the latest product updates.

If you have comments about this documentation, submit your feedback to:

[docfeedback@vmware.com](mailto:docfeedback@vmware.com)

Copyright © 2010 VMware, Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/go/patents>.

VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

**VMware, Inc.**  
3401 Hillview Ave.  
Palo Alto, CA 94304  
[www.vmware.com](http://www.vmware.com)

# Contents

About This Book	5
<b>1 About Patches and Updates</b>	<b>8</b>
Types of Software Updates	8
About the esxupdate Utility	9
Patch Maintenance Strategy	9
Customizing Your Patch Process	10
<b>2 Installing Updates</b>	<b>11</b>
Bundle Zip Files	11
Scanning for Applicable Bulletins	11
Retrieving Bulletin Information	12
Verifying Disk Space	14
Staging an Installation	14
Maintenance Mode	15
Installing Bulletins	15
Install Bulletins on an ESX 4.1 Host	16
Verifying Bulletin Installations	16
<b>3 Reference Information</b>	<b>19</b>
esxupdate Options and Commands	19
esxupdate Commands	20
esxupdate Exit Codes and Error Messages	21
Frequently Asked Questions	22
<b>4 ESX Patch Management Tools</b>	<b>23</b>
About VMware vCenter Update Manager	23
About vihostupdate vSphere CLI	23
Index	25



# About This Book

---

This book, *ESX 4.1 Patch Management Guide*, provides background information on processing patches for ESX 4.1 hosts and describes how to use the `esxupdate` utility to apply software updates and to track software installed on ESX 4.1 hosts.

This book provides information specific to ESX 4.1 hosts and the `esxupdate` utility. It does *not* discuss the following:

- How to patch ESX 4.1 hosts automatically with the VMware Update Service and the VMware vCenter Update Manager. For information on these tools, see [Chapter 4, “ESX Patch Management Tools,”](#) on page 23.
- How to patch ESXi 4.1 hosts with the `vihostupdate` vSphere Command Line Interface (CLI). For information on `vihostupdate`, see [Chapter 4, “ESX Patch Management Tools,”](#) on page 23.
- How to patch versions of ESX released prior to version 4.1. For information on this process, see the *Patch Management for ESX Servers* tech note and the *ESX Server 3 Patch Management Guide*.
- How to upgrade ESX hosts. For information on upgrading, see the *vSphere Upgrade Guide*. For a list of VMware release definitions, see the *VMware Upgrade and Update Policy* by going to <http://www.vmware.com/support/policies/upgrade.html>.

## Intended Audience

This manual is intended for anyone who must manually apply patches to ESX 4.1 hosts. The information in this manual is written for system administrators who use a service console to manage ESX hosts.

## VMware Technical Publications Glossary

VMware Technical Publications provides a glossary of terms that might be unfamiliar to you. For definitions of terms as they are used in VMware technical documentation go to <http://www.vmware.com/support/pubs>.

## What’s Changed from ESX 3.x

This manual has been updated from the *ESX Server 3 Patch Management Guide* to include new definitions and procedures that are unique to ESX 4.1.

## Document Feedback

VMware welcomes your suggestions for improving our documentation. If you have comments, send your feedback to [docfeedback@vmware.com](mailto:docfeedback@vmware.com).

## VMware vSphere Documentation

The VMware vSphere documentation consists of the combined vCenter Server and ESX documentation set.

## Technical Support and Education Resources

The following sections describe the technical support resources available to you. To access the current version of this book and other books, go to <http://www.vmware.com/support/pubs>.

### Online and Telephone Support

To use online support to submit technical support requests, view your product and contract information, and register your products, go to <http://www.vmware.com/support>.

Customers with appropriate support contracts should use telephone support for the fastest response on priority 1 issues. Go to [http://www.vmware.com/support/phone\\_support](http://www.vmware.com/support/phone_support).

### Support Offerings

To find out how VMware support offerings can help meet your business needs, go to <http://www.vmware.com/support/services>.

### VMware Professional Services

VMware Education Services courses offer extensive hands-on labs, case study examples, and course materials designed to be used as on-the-job reference tools. Courses are available onsite, in the classroom, and live online. For onsite pilot programs and implementation best practices, VMware Consulting Services provides offerings to help you assess, plan, build, and manage your virtual environment. To access information about education classes, certification programs, and consulting services, go to <http://www.vmware.com/services>.



# About Patches and Updates

---

This chapter contains the following sections:

- “Types of Software Updates” on page 8
- “About the esxupdate Utility” on page 9
- “Patch Maintenance Strategy” on page 9
- “Customizing Your Patch Process” on page 10

## Types of Software Updates

Software patches provide immediate fixes for one or more security issues or critical fixes for a specific area of the product. For information about a specific patch, go to the VMware vSphere Download Center at <http://www.vmware.com/download/vsphere/>.

Types of software updates and related terms:

- **Bulletin.** A grouping of one or more VIBs (vSphere Installation Bundle). Bulletins are defined within metadata.
- **Depot.** A logical grouping of VIBs and associated metadata that is published online.
- **Extension.** A bulletin that defines a group of VIBs for adding an optional component to a ESX host. An extension is usually provided by a third party that is also responsible for patches or updates to the extension.
- **Metadata.** Extra data that defines dependency information, textual descriptions, system requirements and bulletins.
- **Offline Bundle zip.** An archive that encapsulates VIBs and corresponding metadata in a self-contained package that is useful for offline patching.
- **Patch.** A bulletin that groups one ore more VIBs together to address a particular issue or enhancement.
- **Roll-up.** A collection of patches that is grouped for ease of download and deployment.
- **RPM.** Binary packages that include a set of control scripts, which provide information for the RPM about how to install the package and any post installation configuration that is needed.
- **Update.** A periodic release of an ESX image, which contains multiple fixes and support for new hardware.
- **VIB.** A VIB is a single software package.

Patches do not have installation wizards. You install them with a patch update tool. The patch update tool for ESX 4.1 hosts is `esxupdate`. For information about patch update tools for other ESX versions, see [Chapter 4, “ESX Patch Management Tools,”](#) on page 23.



## About the esxupdate Utility

You use the patch maintenance utility, `esxupdate`, to retrieve information about updates and extensions from VMware and third parties, to track installed software, and to apply software packages to ESX 4.1 hosts. You run `esxupdate` from the service console while you are logged on to an ESX 4.1 host as user `root`. You can run only one instance at a time on the same ESX 4.1 host.

A record of each installed bulletin is written to the `/etc/vmware/esxupdate` directory on the host. The record includes the bulletin ID, the installation time, the VIBs installed, and other details. This directory acts as a patch database and is used by `esxupdate` to query the patches installed on the host.



**CAUTION** This directory is read-only. If you change the contents, when `esxupdate` performs an integrity check, it will fail for the changed files. In such cases, `esxupdate` exits with an IntegrityError message. For more information, see [“esxupdate Exit Codes and Error Messages”](#) on page 21.

For ESX 4.1 hosts, there are four basic modes of `esxupdate`: inspection mode, scan mode, test mode, and update mode.

- **Inspection mode.** Queries your system for bulletins and bulletin details. You use two commands to retrieve bulletin information: `esxupdate query` and `esxupdate info`.
  - Use the `esxupdate query` command to display a list of bulletins installed on ESX 4.1 host. The output lists the bulletins in ascending installation order and includes the bulletin name, installation date, and a 40-character summary of the bulletin. All bulletins that are installed are listed. Bulletins that are superseded by another bulletin are considered obsolete and are not displayed in this output.
  - Use the `esxupdate info` command to display information on the contents of one or more bulletins. The output includes the bulletin name, release date, and details about the metadata files, including the VIB packages that are part of the bulletin.

You can use the `info` command for both installed and uninstalled bulletins. For more information, see [“Retrieving Bulletin Information”](#) on page 12.
- **Scan mode.** Determines which bulletins are applicable to the ESX 4.1 host by querying the bulletins in a depot, offline bundle zip, and the bulletins installed on the host for bulletin and system dependencies. Use the `esxupdate scan` command before you install bulletins to determine which ones are applicable to the host. For more information, see [“Scanning for Applicable Bulletins”](#) on page 11.
- **Test mode.** Enables `esxupdate` to go through all installation operations without installing the specified bulletins. Test mode downloads the appropriate files, preloads the `esxupdate` depot cache for HTTP and FTP servers, checks for RPM package dependencies, and determines which RPMs to install. For more information, see [“Staging an Installation”](#) on page 14.
- **Update mode.** Installs bulletins on ESX 4.1 hosts. Use the `esxupdate update` command to install individual bulletins, a bundle zip, or an online depot. Update mode scans the depot for dependencies and handles them, if possible, before installing. For more information, see [“Install Bulletins on an ESX 4.1 Host”](#) on page 16.

For information on `esxupdate` syntax and commands, see [“esxupdate Options and Commands”](#) on page 19.

## Patch Maintenance Strategy

Use the following guidelines to manage patching for your ESX 4.1 hosts.

- Keep your environment as current as possible. Determine whether any bulletins are necessary for your environment and apply those bulletins. Minimize the change to your software environment whenever possible. For more information on determining bulletin applicability, see [“Scanning for Applicable Bulletins”](#) on page 11.
- Analyze the risk factor of applying the bulletin. For example, assess the virtual machine and ESX 4.1 host downtime requirements. The `scan` command provides the information you need to analyze risks and server downtime.

- Download and install roll-ups rather than individual bulletins. This method saves you download time and ensures, when dependencies exist, that your depot contains all necessary bulletins.
- For a multihost environment, set up patch depots on a centralized server that is accessible by all ESX hosts. Create a separate depot for each ESX version in your environment. Although you can put depots on an ESX host, VMware does not recommend it.

## Customizing Your Patch Process

You can write custom scripts to automate your patch process. For example, you can create a `cron` job to periodically download roll-ups to a depot. You can write a script to scan the depot for applicable bulletins and install all at one time. If during the scan operation, `esxupdate` finds a bulletin that requires virtual machines to be powered off, you can write a script that puts them into maintenance mode.

If you use custom scripts to automate the ESX 3 patch process, you must update them to work with ESX 4.1. Specifically, upgrade your scripts to use the `esxupdate -m` option to point to the depot and to install multiple bulletins at one time.

# Installing Updates

---

You must perform several procedures to set up your patch environment and install bulletins on your ESX 4.1 hosts.

This chapter contains the following sections:

- [“Bundle Zip Files”](#) on page 11
- [“Scanning for Applicable Bulletins”](#) on page 11
- [“Retrieving Bulletin Information”](#) on page 12
- [“Verifying Disk Space”](#) on page 14
- [“Staging an Installation”](#) on page 14
- [“Verifying Bulletin Installations”](#) on page 16

## Bundle Zip Files

A bundle zip contains a metadata zip which defines the bulletins available for installation and also contains one or more packages. Each package is a VIB file that is translated into one RPM package during the installation process.

## Scanning for Applicable Bulletins

To determine which bulletins in your depot are applicable to your ESX 4.1 host, use the `esxupdate scan` command. A bulletin is applicable if at least one VIB package applies to the ESX platform and it updates a package on the ESX host, or if it is a new package. When you scan a depot, by default the `scan` command only displays applicable bulletins that have updated or new packages. The `--all` option displays all of the bulletins including inapplicable bulletins.

If `esxupdate` can handle all dependencies and does not find any conflicts, it can install the patches included in the scan. If conflicts exist, they are listed when you use the `stage` or `update` command.

The following Example 1 shows the information returned from an `esxupdate scan` command on a depot.

### Example 2-1. scan Command Sample Output

Bulletin ID	---Date---	----- Summary -----
bul_1	2008-11-12	This is the bul_1
bul_2	2008-11-12	This is the bul_2

### To scan for applicable bulletins

- 1 Log into the service console on the ESX 4.1 host as user `root`.  
If you do not have direct access to the ESX 4.1 host, connect remotely to the service console using `ssh`.
- 2 If the depot is not on the ESX 4.1 host, type the following command to enable an outgoing connection for the service console.

```
esxcfg-firewall --allowOutgoing
```

- 3 Run the `esxupdate scan` command.

---

**NOTE** You cannot run `esxupdate` in the current directory without `-m` or `--bundle`.

---

- To scan applicable bulletins in a depot:  
`esxupdate -m <metadataURL> scan`
  - To scan for applicable bulletins in a bundle zip:  
`esxupdate --bundle <bundleZipURL> scan`
  - To list all the bulletins regardless of applicability or software platform, add the `--all / -a` option.
- 4 When you are done accessing the depot, reset the service console firewall to high security:  
`esxcfg-firewall --blockOutgoing`

For information on scanning, see [“Scanning for Applicable Bulletins”](#) on page 11. For information on `esxupdate` syntax and commands, see [“`esxupdate scan`”](#) on page 20.

## Retrieving Bulletin Information

The `esxupdate query` and `esxupdate info` commands retrieve information about installed bulletins and bulletins that are in a depot or bundle zip.

### To retrieve information about installed bulletins

- 1 From the service console, log on to the ESX 4.1 host as user `root`.  
If you do not have direct access to the ESX 4.1 host, connect remotely to the service console using `ssh`.
- 2 Run the `esxupdate query` or `info` command.

- To retrieve a brief summary of all installed bulletins:

```
esxupdate query
```

This command lists all installed bulletins in ascending installation order and includes the installation date and a brief summary for each bulletin.

- To retrieve details about bulletins returned by the query:

```
esxupdate -b <bulletin1> -b <bulletin2> info
```

Obsoleted bulletins are not listed by default. To list all obsoleted compliant bulletins, use the `compliant` option. To list all bulletins regardless of obsolescence or compliance, use the `all` option. For information on `esxupdate` syntax and commands, see [“`esxupdate query`”](#) on page 20 and [“`esxupdate info`”](#) on page 20.

The following Example 2 shows the information returned when you run the `esxupdate query` command on an ESX 4.1 host.

**Example 2-2. query Command Sample Output**


---

Installed software bulletins

```

-----Bulletin ID-----      --Installed--      -----Summary-----
bul_1                          2008-07-08T19:55:04  This is the summary
Cisco Swordfish Drop 071420082008-07-19T05:03:22  Swordfish VIB for COS only

```

---

**To retrieve information about bulletins in a depot or bundle zip**

- 1 From the service console, log on to the ESX 4.1 host as user root.  
If you do not have direct access to the ESX 4.1 host, connect remotely to the service console using ssh.
- 2 If the depot is not on the ESX 4.1 host, type the following command to enable an outgoing connection for the service console.

```
esxcfg-firewall --allowOutgoing
```

- 3 Run the `esxupdate info` command.

- To retrieve details of all bulletins in a metadata file:

```
esxupdate -m <metadataURL> info
```

- To retrieve details of specific bulletins in a depot:

```
esxupdate -m <metadataURL> -b <BulletinID1> -b <BulletinID2> info
```

- To retrieve detailed information on all bulletins in a bundle zip:

```
esxupdate --bundle <bundleZipUrl> info
```

- 4 When you are done accessing the depot, reset the service console firewall to high security.

```
esxcfg-firewall --blockOutgoing
```

For information on `esxupdate` syntax and commands, see [“esxupdate info”](#) on page 20.

This Example 3 shows the information returned when you run the `esxupdate info` command on a single installed bulletin.

**Example 2-3. info Command Sample Output**


---

```

ID          - QADBB-217563-full
Release Date - 2009-12-16T01:16:53
Vendor      - VMware
Summary     - QA Daily Build Bulletin -- all vib
Severity    - general
Urgency     - general
Category    - general
Install Date - 2010-05-07T12:29:01
Description - QA Daily Build Bulletin
KB URL      - Not Available
Contact     - VMware
Compliant   - False
RebootRequired - True
HostdRestart - False
RequiresMaintenanceMode - True
List of constituent VIBs:
  deb_vmware-esx-tools-light_4.1.0-0.0.217563
  deb_vmware-esx-viclient_4.1.0-0.0.217563
  deb_vmware-esx-firmware_4.1.0-0.0.217563

```

---

## Verifying Disk Space

Check the following requirements to make sure the host system has enough disk space.

- The disk space allocated to the service console has an amount of free space that is twice the size of the bulletin to be installed.
- Before installing patches, use the `stage` command. See [“Staging an Installation”](#) on page 14.

## Staging an Installation

Staging an installation allows `esxupdate` to perform the following tasks without installing any bulletins:

- Downloads the appropriate bulletins and VIB packages to the host to reduce downtime when a large number of updates must be installed
- Checks for VIB signature
- Checks for VIB and RPM dependencies
- Determines the bulletin order
- Determines which RPMs must be installed, but does not install them

This command also populates the `esxupdate` cache for the HTTP and FTP depots as well as bundle zips. As a result, when you run the update command, the download step can be skipped.

### To stage an installation

- 1 From the service console, log on to the ESX 4.1 host as user `root`.  
If you do not have direct access to the ESX 4.1 host, connect remotely to the service console using `ssh`.
- 2 If the depot is not on the ESX 4.1 host, type the following command to enable an outgoing connection for the service console.

```
esxcfg-firewall --allowOutgoing
```

- 3 Run the `esxupdate stage` command.

- To run a test installation of all bulletins in a depot:

```
esxupdate -m <metadataURL> stage
```

- To run a test installation of multiple bulletins in a depot:

```
esxupdate -m <metadataURL> -b <BulletinID> -b <BulletinID> stage
```

- To run a test installation of a bundle zip:

```
esxupdate --bundle <bundleZipUrl> stage
```

- 4 When you are done accessing the depot, reset the service console firewall to high security:

```
esxcfg-firewall --blockOutgoing
```

## Maintenance Mode

When a host is in maintenance mode there are no running virtual machines, and any shut down or VMotion operations are complete. Virtual machines cannot be started in maintenance mode. Some VIBs might require the ESX host to be in maintenance mode during installation.

If any VIB requires maintenance mode, `esxupdate` checks for maintenance mode before the installation starts. `Esxupdate` will return a `MaintenanceModeError` if the host does not meet this state.

- This check only affects update commands, not the stage command.
- This check is skipped for VIMA hosts and for offline ESXi updates using `vibddi` when `platform.offline` is set in `esxupdate.conf`.
- If `hostd` is down and `vim-cmd` fails to connect, a `MaintenanceModeError` is displayed.
- The `--maintenancemode` option can be used to skip this check.

## Installing Bulletins

You use the `esxupdate update` command to install bulletins. You can install any number of bulletins from one or more depots. You can install one or more bundle zip files. The bundle zip files are independent from any depot and can be located on the local ESX host, a CD-ROM drive, or any remote HTTP, NFS, or FTP server. When installing bulletins, keep in mind the following `esxupdate` behavior:

- If you do not specify bulletin IDs to install, `esxupdate` installs all applicable bulletins in the depot.
- If you specify one or more bulletin IDs to install, the following can happen:
  - If no dependencies exist, `esxupdate` installs only those bulletins.
  - If dependencies exist and a specified bulletin requires you to install one or more unspecified bulletins, you are given the option to install additional packages. These packages are installed if you enter `y`.

The host system should have the following space available to ensure space for the installation:

- A minimum of 24MB for the `/tmp` and `/boot` directories.
- A minimum of 100MB for the `/root` directory.
- In general, the installation requires twice the size of the downloaded bulletins.

Before you install bulletins or bundle zip files, you must run the `stage` or `update` command to download all packages, validate signatures, and check for dependencies and conflicts. The advantage of using the `stage` command first is that packages are downloaded to the local host, which reduces the installation time with the `update` command.

During the installation process, `esxupdate` validates each VIB package by using a set of signature keys. If any VIB package in a patch contains a missing or invalid signature, `esxupdate` does not install the bulletin.

After validating the bulletins, `esxupdate` performs the following tasks during the install:

- Filters out any packages that do not apply to the current version ESX.
- Checks for software dependencies and prerequisites, for example, if the bulletin is the correct ESX version, if virtual machines are powered off, and so on.
- Verifies the digital signatures of the packages in each bulletin.
- Checks for adequate disk space.
- Removes obsolete packages from the ESX 4.1 host.
- Installs the packages. Packages installed already or superseded by a newer installed version are not installed.
- Updates the `initrd` image, which ensures updated drivers are loaded on ESX for the next boot.

During the installation, if an `esxupdate` patch is available, the utility updates itself. If the `initrd` and driver configurations require changes, the changes are made after all bulletins are installed.

For information on installing bulletins, see [“Install Bulletins on an ESX 4.1 Host”](#) on page 16. For information on checking for patch dependencies, see [“Scanning for Applicable Bulletins”](#) on page 11.

## Install Bulletins on an ESX 4.1 Host

The installation process is recorded in the `esxupdate.log` file. By default, this file is located in the `/var/log/vmware` directory.

### To install bulletins on an ESX host

- 1 Verify that the host has enough disk space to perform the installation.  
See [“Verifying Disk Space”](#) on page 14.
- 2 From the service console, log on to the ESX 4.1 host as user `root`.  
If you do not have direct access to the ESX 4.1 host, connect remotely to the service console using `ssh`.
- 3 If the depot is not on the ESX 4.1 host, type the following command to enable an outgoing connection for the service console.  
`esxcfg-firewall --allowOutgoing`
- 4 Scan the desired bulletins to determine if they are applicable.  
See [“To scan for applicable bulletins”](#) on page 12.

---

**NOTE** `Esxupdate` never reboots your host.

---

- 5 Run `esxupdate update` command.
  - To install all applicable bulletins in the depot:  
`esxupdate -m <metadataURL> update`
  - To install specific bulletins in the depot:  
`esxupdate -m <metadataURL> -b <Bulletin1> update`
  - To install all applicable bulletins in a bundle zip:  
`esxupdate --bundle <rollupBundleZipURL> update`
- 6 If necessary, reboot the system.
- 7 Run the `esxupdate query` command to verify the installation was a success.  
See [“Verifying Bulletin Installations”](#) on page 16.
- 8 When you are done accessing the depot, reset the service console firewall to high security:  
`esxcfg-firewall --blockOutgoing`

## Verifying Bulletin Installations

This command lets you verify all installed bulletins were installed correctly, that none were missing or had the wrong version number.

### To verify bulletin installations

- 1 If necessary, log on to the ESX 4.1 host as user `root`.  
If you do not have direct access to the ESX 4.1 host, connect remotely to the service console using `ssh`.
- 2 If the depot is not on the ESX 4.1 host, type the following command to enable an outgoing connection for the service console.  
`esxcfg-firewall --allowOutgoing`



- 3 Run the `esxupdate query` command.

```
esxupdate query
```

Verify the bulletin you installed is in the return list. See [“Retrieving Bulletin Information”](#) on page 12 for more information.



## Reference Information

This chapter contains the following sections:

- [“esxupdate Options and Commands”](#) on page 19
- [“esxupdate Exit Codes and Error Messages”](#) on page 21
- [“Frequently Asked Questions”](#) on page 22

### esxupdate Options and Commands

The `esxupdate` utility is a patch maintenance tool for ESX. You use it to review the contents of a bulletin, install software, and track installed software.

You run `esxupdate` from the ESX service console while logged in as user `root`. The activity of the tool is recorded in the `esxupdate.log` file. By default, this file is located in the `/var/log/vmware` directory.

To see help information for `esxupdate`, run the utility with no arguments.

**Table 3-1.** esxupdate Options

Option	Flag	Description
<code>--meta &lt;metadataURL&gt;</code>	<code>-m</code>	Specifies the location of metadata file inside a depot. Can be repeated. A metadata URL may point to a vendor's web site directly, if vendors make their updates available online, or to a locally mirrored copy. When you use the <code>-m</code> flag without the <code>-b</code> flag, <code>esxupdate</code> selects all the bulletins in the metadata. For example: (HTTP): <code>esxupdate -m http://downloads.vmware.com/vi4/update1-metadata.zip -m http://updates.dvs.cisco.com/fake/esx4/metadata.zip</code> (HTTPS): <code>esxupdate -m https://downloads.vmware.com/vi4/update1-metadata.zip -m https://updates.dvs.cisco.com/fake/esx4/metadata.zip</code> (FTP): <code>esxupdate -m ftp://&lt;FTP_Server_Hostname&gt;/esx/vi4/metadata.zip -b VMW_ESX4_Patch1</code> (NFS): <code>esxupdate -m file:///var/updates/esx4/metadata.zip</code>
<code>-b &lt;BulletinID&gt;   &lt;*&gt;</code>	<code>-b</code>	Specifies one or more bulletins. If not specified, all bulletins are handled. Must be combined with the <code>-m</code> or <code>--bundle</code> options. Use one <code>-b</code> flag for each bulletin to install. For example: <code>esxupdate -m &lt;metadataURL&gt; esxupdate -b ESX350-200802055-BG -b ESX350-200803066-SG</code>
<code>--bundle &lt;bundlezipURL&gt;</code>		Specifies the location of an offline bundle zip. <code>esxupdate</code> downloads and unpacks the zip. Can be used with <code>-b</code> option to select bulletins within the bundle zip. Can be repeated. Use with the <code>scan</code> , <code>info</code> , <code>stage</code> , <code>update</code> commands. For example: <code>esxupdate --bundle &lt;bundleZipURL&gt; scan</code>
<code>--compliant</code>		The <code>query</code> command displays installed bulletins. Installed bulletins that are obsoleted are not displayed by default. If the <code>compliant</code> option is used, all compliant bulletins are displayed, regardless of whether they are obsolete.

**Table 3-1.** esxupdate Options (Continued)

Option	Flag	Description
--http_proxy <proxy_server>: <port>		Use <proxy_server> at <port> for HTTP connections.
--all		Lists all the bulletins in metadata or bundle zips, instead of just the applicable ones. Use this option with the <code>esxupdate scan</code> or <code>esxupdate query</code> command.
--loglevel <number or level name>		Changes the level of detail written to the <code>esxupdate.log</code> file. Possible values are as follows: <ul style="list-style-type: none"> <li>■ CRITICAL — Critical Error</li> <li>■ or DEBUG — Debugging information</li> <li>■ or INFO — Detailed Information</li> <li>■ or WARNING — Warning</li> <li>■ or ERROR — Error</li> </ul>
--nocache		The <code>esxupdate</code> update command uses its cache of already downloaded VIBs if possible, but there are times when the cache can become stale. Use the <code>--nocache</code> option to force <code>esxupdate</code> update to always download all VIBs.
--retry		Specifies the number of times to retry a connection to an HTTP, HTTPS or FTP server. The default value is defined in the [defaults] section of <code>esxupdate.conf</code> . If you enter a specific value the default value 5 is overridden. For example, if you enter 7, it supersedes 5 and <code>esxupdate</code> tries to reconnect to an HTTP, HTTPS or FTP server seven times in case of a broken connection.
--timeout		Specifies the amount of time to wait when connecting to or reading from an HTTP, HTTPS, FTP server or proxy.

## esxupdate Commands

**Table 3-2.** esxupdate Commands

Command	Description
<code>esxupdate info</code>	Displays information about bulletins, including a brief summary, and build and install times. This command retrieves the bulletin definitions from the metadata or the patch database on the ESX host ( <code>/etc/vmware/esxupdate</code> ). <code>esxupdate info</code> displays the impact in the output for bulletins that are not installed, such as Reboot, Hostd, restart, or Maintenance Mode. See <a href="#">“Retrieving Bulletin Information”</a> on page 12. Syntax for bulletins in a depot: <code>esxupdate -m meta1URL -b bulletinID [-b bulletin2 ...] info</code> <code>esxupdate --bundle bundleZipURL [-b bulletinID [-b bulletin2 ...]] info</code> Syntax for bulletins in the patch database: <code>esxupdate -b installed-bulletinID info</code>
<code>esxupdate query</code>	Returns a list, in install order, of all bulletins installed on the ESX host. See <a href="#">“To retrieve information about installed bulletins”</a> on page 12. Syntax <code>esxupdate query</code>
<code>esxupdate remove</code>	The <code>remove</code> command is used to uninstall bulletins and their associated VIBs. This is useful for third party extensions. The <code>remove</code> command should only be used for extensions which are added after the initial install, but not for removing ESX patch and update bulletins. Syntax <code>esxupdate -b &lt;bulletin id&gt; remove</code> You must put the host into <code>MaintenanceMode</code> before removing bulletins which include VIBs that require <code>MaintenanceMode</code> . If you attempt to remove the VIB without putting the host in <code>MaintenanceMode</code> , an error message is displayed.
<code>esxupdate scan</code>	Returns a list of the applicable bulletins in a depot metadata or in a bundle zip. Use with <code>--all</code> option to return a list of all bulletins. See <a href="#">“Scanning for Applicable Bulletins”</a> on page 11. Syntax <code>esxupdate [--meta &lt;metadataURL&gt;] [--bundle &lt;bundle-zip-URL&gt;] [--all]] scan</code>

**Table 3-2.** esxupdate Commands (Continued)

Command	Description
esxupdate stage	Downloads the appropriate VIBs for the selected bulletins, preloads the esxupdate depot cache for HTTP and FTP servers, and checks for VIB and RPM dependencies. For example: <pre>esxupdate -m &lt;metadataURL&gt; stage</pre> You can use the -b option to stage only the desired bulletins. For example: <pre>esxupdate -m &lt;metadataURL1&gt; [-m &lt;metadataURL2&gt; ... ] [-b bulletinID1 [-b bulletinID2 ... ]] stage</pre> See “ <a href="#">Staging an Installation</a> ” on page 14.
esxupdate update	Checks the specified bulletins for dependencies, checks the ESX host for dependencies, determines which bulletins to install, and installs them on the ESX host. See “ <a href="#">Install Bulletins on an ESX 4.1 Host</a> ” on page 16. Syntax <pre>esxupdate -m https://meta1.zip [-m https://meta2.zip ... ] [-b bulletinID1 [-b bulletinID2 ... ]] update</pre> <pre>esxupdate --bundle https://offline-bundle.zip [-b bulletin1 [-b bulletin2 ... ]] update</pre>

## esxupdate Exit Codes and Error Messages

**Table 3-3.** esxupdate Error Codes and Error Messages

Exit Code	Error Message	Explanation and Workaround
0		Command completed successfully.
1	NotRootError	Not root. esxupdate must be entered as the root user.
2		Invalid command line syntax or arguments.
3	LockingError	Cannot acquire lock. Another esxupdate is running.
4	MetadataDownloadError	Downloading or extraction of data failed. Verify that the correct URL was specified, and is reachable. Use <code>esxcfg-fi rewal l</code> to open additional ports. If the target URL or file has been copied from another source, verify that it has been copied correctly.
5	MetadataFormatError	
7	VibDownloadError	
26	BundleDownloadError	
27	BundleFormatError	
8	VibFormatError	Not a VIB archive, missing files, files in wrong order, <code>descriptor.xml</code> invalid.
9	VibIOError	Indicates an error reading or writing files to or from local storage. Verify that adequate free space exists on mounted file systems.
10	FileIOError	
11	DatabaseFormatError	<code>vibs.xml</code> not a valid XML file. Bulletins zip not a zip archive. Invalid structure in either file.
13	NoMatchError	VIB or Bulletin ID not in metadata, or requested VIBs or bulletin do not apply to host platform (stage, update only).
14	DependencyError	esxupdate was unable to resolve dependencies. This condition is due to conflicts between any of the requested VIBs, required dependencies and the host, packages on the host obsoleting requested VIBs or their requirements, or due to one or more requirements not being found in the metadata (stage, update only). This condition is different from <code>UnsatisfiedDependencies</code> .
15	PackageManagerError	RPM or ipkg transaction failed.
18	MaintenanceModeError	ESX host is not in maintenance mode when it must be, or hostd is down. Maintenance mode cannot be determined.
19	PostScriptError	A post script exited with a nonzero status.

**Table 3-3.** esxupdate Error Codes and Error Messages (Continued)

Exit Code	Error Message	Explanation and Workaround
20	VibSigMissingError	One or more VIBs contain invalid or untrusted signature data. If the data has been copied from another source, verify that it has been copied correctly. Verify that the host date is set correctly. If problems persist, contact VMware Support.
21	VibSigVersionError	
22	VibSigFormatError	
23	VibSigInvalidError	
24	VibSigDigestError	
25	UnsatisfiedDependencies	Additional VIBs are required for installation, and the user declined to install them. This condition is specifically different from DependencyError. While dependencies were successfully resolved, they could not be automatically installed due to user input (CLI) or failure of the caller to specify required VIBs on the command line (HA or CLI).
28	UnsupportedCommandError	The requested command is not supported on the platform.
80		Not an error. The system must be rebooted to complete the update.
81		--HA mode only. The host agent must restart itself.
82		Not an error. Host was not updated, no changes required.

## Frequently Asked Questions

**When an RPM on my ESX host has a Linux equivalent, can I use the Linux RPM to update my system?**

No. VMware recommends that you update your ESX 4.1 host with RPMs supplied by VMware.

**Can I remove installed VMware patches from my ESX host?**

No. Patches cannot be removed after they are installed.

**Should the build number of the ESX host change after I apply a patch?**

It is normal for some portions of the ESX 4.1 software installation to change build numbers when patches are applied. For information on determining the build number for each of the components of your ESX installation, see the VMware knowledge base article, [KB 1001179](#).

# ESX Patch Management Tools

---

This section describes three patch management tools that VMware provides in addition to the `esxupdate` utility:

- [“About VMware vCenter Update Manager”](#) on page 23
- [“About vihostupdate vSphere CLI”](#) on page 23

You can access the most current versions of the documentation for each tool by going to <http://www.vmware.com/support/pubs>.

You can find information about the VMware *Upgrade and Update Policy* by going to <http://www.vmware.com/support/policies/upgrade.html>.

## About VMware vCenter Update Manager

VMware vCenter Update Manager is an optional module for vCenter Server that periodically downloads patch information from the Internet. Update Manager performs user-defined scan operations on ESX 4.1 and ESXi 4.0 hosts for patch compliance. If it determines a patch is required, VMware vCenter Update Manager downloads the patch and installs it based on user-defined configurations. VMware vCenter Update Manager can perform scan and installation operations with latest patches in an air gap or semi-air gap environment that has no Internet access, by using a shared repository. The Update Manager plug-in is an optional feature that requires vSphere Client.

The VMware vCenter Update Manager documentation consists of release notes, an administration guide, and online help integrated with the VMware vCenter Update Manager vSphere Client plug-in.

## About vihostupdate vSphere CLI

The `vihostupdate` vSphere CLI command can scan ESX/ESXi hosts for installed patches, enforce software update policies, and install software patches. It can perform software updates to ESX/ESXi images and install and update ESX/ESXi extensions such as VMkernel modules, drivers, and CIM providers. For ESX/ESXi 4.0 hosts, run `vihostupdate`. For ESX/ESXi 3.5 hosts, run `vihostupdate35`.

See the *vSphere CLI Installation and Reference Guide* and the *vSphere Upgrade Guide*.





# Index

## B

- bulletins
  - about extracting **11**
  - about installing **15**
  - installing **16**
  - querying bulletins in a depot **13**
  - querying installed bulletins **12**
  - retrieving RPM details **13**
  - scanning **11, 12**
  - test install **14, 15**
  - verifying installation **16**

## C

- customizing patching, about **10**

## D

- depots
  - querying bulletins **13**
- disk space
  - requirements **14**

## E

- error messages **21**
- esxupdate
  - all option **20**
  - b option **19**
  - exit codes and error messages **21**
  - info operation **20**
  - loglevel option **20**
  - query operation **20**
  - scan operation **20**
  - stage operation **21**
  - update operation **21**
- esxupdate utility
  - about **9**
  - commands **19, 20**
  - options **19**
- Exit codes **21**

## F

- frequently asked questions **22**

## I

- info command
  - about **20**
  - sample output **13**

- installation
  - disk space **14**
  - verifying **16**
- installed bulletins
  - listing **12**

## P

- patching
  - customizing **10**
  - strategy **9**
- patching tools
  - vihostupdate vSphere CLI **23**
  - VMware vCenter Update **23**

## Q

- query command
  - about **20**
  - sample output **13**

## R

- roll-ups
  - about installing **15**
  - installing **16**
- RPM packages
  - retrieving details **13**

## S

- scan command
  - sample output **11**
- scanning bulletins **12**
  - about **11**

## T

- test install, running **14, 15**

## U

- update command
  - about **21**

## V

- vihostupdate vSphere CLI **23**
- VMware vCenter Update **23**

